Before the Hearing Panel
Appointed by the Waimakariri District Council

Under	the Resource Management Act 1991
In the matter of	the proposed Waimakariri District Plan, Hearing Stream 12F: Special Purpose Zone – Rangiora Airfield ('SPZ(RA)')
	Submission by DM & AD Smith Investments Ltd

Supplementary Evidence of Christopher Brown

5 August 2024

Introduction

Background on My Role for Waimakariri District Council

1 My full name is Christopher Gray Brown. I have a Bachelor's Degree majoring in Parks from Lincoln University. I have worked for Waimakariri District Council ('**WDC**') since 2011. I was first employed as the Greenspace Manager and had regular operational involvement in the Rangiora Airfield. In 2020 I was employed as the General Manager Community and Recreation for Waimakariri District Council. My portfolio includes Aquatic Centres, Libraries, Property, Regeneration, Community and the Greenspace Team.

2 The Greenspace and Property Teams at WDC have regular operational and strategic involvement in the Airfield. I have been very involved in the Council's development and review of the master plan of the Rangiora Airfield, Aeronautical study, redevelopment of the standard ground lease and appointment of the Airfield Manager among other things. I am not an aviation specialist. Technical advice regarding airfield related development and management is provided by WDC's Airfield Manager, external consultant and the Rangiora Airfield Advisory Group.

Code of Conduct

3 Whilst this is a Council Hearing, I acknowledge that I have read and am familiar with the Environment Court's Code of Conduct for Expert Witnesses, contained in the Environment Court's updated Practice Note 2023, and agree to comply with it. I confirm that the issues addressed in this rebuttal evidence are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Scope of Supplementary Evidence

4 Grant MacLeod, WDC's Greenspace Manager prepared a statement of evidence dated 11 March 2024 on the rezoning proposal by Daniel Smith. Mr MacLeod is on scheduled sick leave until late August to recover from surgery. Given my background and close operational and strategic involvement in the Rangiora Airfield I have been asked to address matters raised in the section 42A Report dated 20 June 2024 and prepared by Mr Bryce Powell in Mr MacLeod's absence.

5 The matters raised in the section 42A report which are within my expertise to address relate to the function and operation of the Rangiora Airfield and the long term vision/ future role of the airfield.

6 My statement as follows addresses these particular matters raised.

Scale, intensity, and nature of enabled land uses

7 The section 42A report has requested further information on the supply of land available within the current airfield to meet the identified demand for airfield activities. Mr MacLeod, addressed this in his evidence, where he stated:

"At present there are no more hanger spaces or land to develop hangers available on the main part of the airfield. The Council presently has a waiting list of nearly 40 people seeking hanger space. Whilst some development could currently be enabled on the Priors Road frontage via the Airfield Purposes designation within land owned by the Council as part of the airfield this would necessitate some considerable expenditure, including servicing and the upgrading of Priors Road which is currently a shingle surface [Para 12]".

8 As addressed by Mr MacLeod, the Rangiora Airfield is currently at capacity in terms of the available developable space that can cater for either commercial, recreational or General Aviation hangar space and there is a waiting list of more than 40 people who have requested a lease at the Rangiora Airfield.

9 In order to cater for growth of the Rangiora Airfield, the WDC purchased additional land adjacent to the airfield with access from Priors Road in 2003, this land is identified on Figure 1 below.

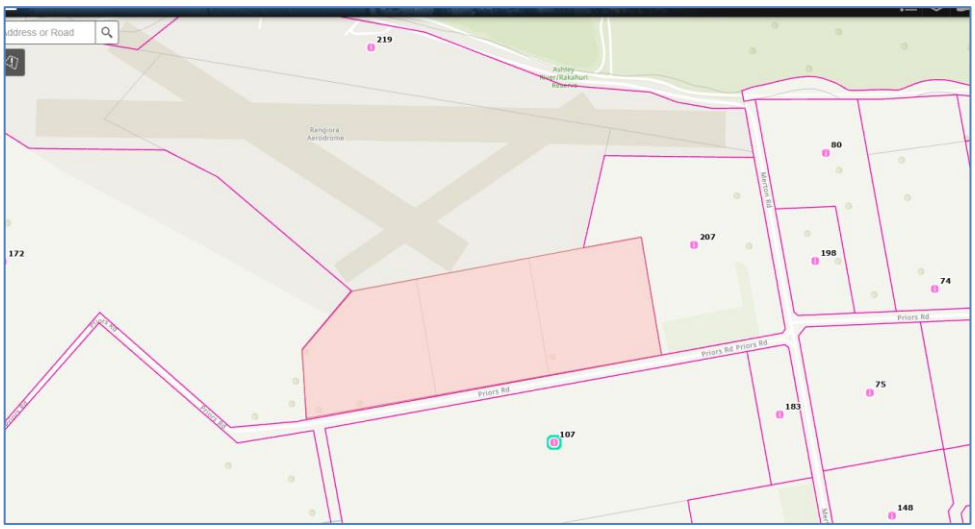


Figure 1: Additional Land Purchased by WDC for the Rangiora Airfield (shaded in pink)

10 Before this land identified in Figure 1 above can be developed and used, it is required to be serviced with water and wastewater infrastructure and Priors Road would need to be upgraded. To date, it has not been serviced because a suitable master plan was needed to be developed and funding allocated in the Long Term Plan. Beyond these limitations, the land is also significantly constrained because of the flight path of the North West Runway. The Council approved a master plan (attached to Mr Groome's evidence) for the Airfield at its meeting on the 2nd May 2023, as shown in Figure 2 below which included an extension to this runway to allow for safer landing in certain wind conditions.

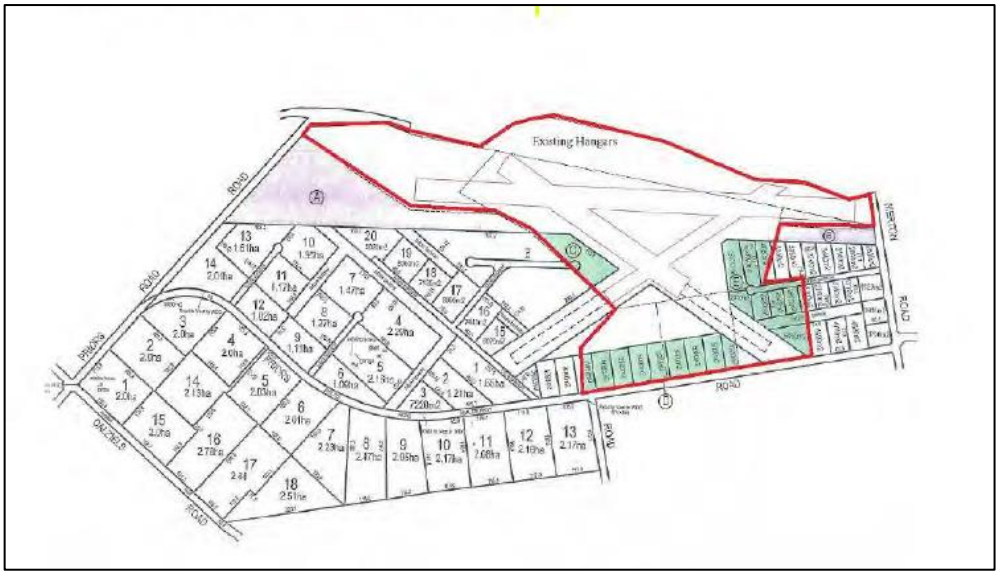


Figure 2: Master plan approved at Council Meeting on 2 May 2023 with runway extensions (shown in dashed lines)

11 With the runway restricting hanger locations it is anticipated that approximately 32 additional general aviation or recreational hangers could be developed on the land owned by Council. Noting that with the waiting list of more than 40 people wanting to lease at the Rangiora Airfield, WDC is, in its capacity as Airfield owner and operator, in a situation where additional, developable land is required to meet current and future growth. This does not include any potential growth of activities such as aviation training facilities or engineering workshops associated with aircraft.

Master planning

12 A significant amount of consultation has occurred to date with key user groups including the following:

- Canterbury Aero Club
- General Aviation
- Way to go helicopters
- Sport Aviation
- Airfield Business representative
- Canterbury Recreational Aircraft Club
- Air Training Corporation
- Two Council appointed representatives with extensive experience in aviation.

13 Initially WDC started the development of a Master Plan independent to the Daniel Smith proposal. The Council engaged Mike Groome from Avsafe Consultants to undertake the latest master planning process. Previous master planning processes for the Rangiora Airfield had taken place

such as the 2007 Airbiz report. This master plan had been partially implemented however due to its age was out of date.

14 At the same time, Daniel Smith in consultation with the Rangiora Airfield Advisory Group[1] (RAAG) prepared a plan which included the airfield land but also aviation related commercial/industrial and residential land surrounding the airfield on the land now owned by Daniel Smith. The RAAG were in favour of the work being undertaken by Mr Groome incorporating the proposal of Mr Smith and as a result the scope of the master plan was modified to the following:

Review of the Rangiora Airfield Plans for Consideration by the Waimakariri District Council

This is a review of the present and future state of the Rangiora Airfield, commissioned by the Waimakariri District Council (WDC), for consideration to the Airfield Master Plan.

The brief is to look at the following factors:

(1) The current physical characteristics of the Airfield.

(2) Consider the Developers plan and how that would affect the current airfield dynamics.

(3) Look into the regulatory considerations and the impact that they may have on the development.

(4) Look at the long-term requirements and wishes of the WDC.

(5) Offer alternative options to the proposed Developers plan to protect the WDC.

15 The report from Avsafe was presented to Council in a report on the 2 May 2023 (see the Agenda in Appendix 1). The Council supported the Master Plan noting that it had been prepared and discussed with the RAAG.

16 The Master Plan approved by Council was subsequently modified following detailed design. The detailed design involved a review of the potential future uses of the airfield in terms of the types of planes and therefore runway width requirements. This work was undertaken by Council in consultation with the RAAG to make sure that development surrounding the airfield was done to allow growth of the runway to cater for future demand. RAAG specifically requested that the main runway be designed for a 24m wingspan (code 2) – Air Transport Instrument Flight Rules (IFR). The final design was supported by Councils Community and Recreation Committee on the 7th May 2024.

[1] The Rangiora Airfield Advisory Group is a Council initiated group with representation from the main user groups currently utilising the airfield. This includes recreational, commercial and training representation.

17 The Daniel Smith proposal, as shown in Figure 3 below, was modified to cater for the additional width required to future proof the runway.

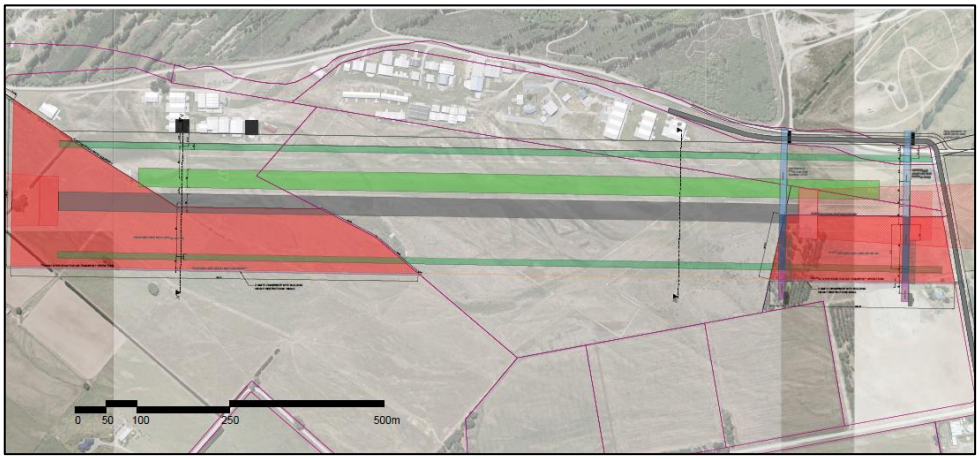


Figure 3: Main runway plan of widening

Funding of Infrastructure and Servicing

18 The section 42A report requested an update be provided on whether an approved funding agreement is in place to connect the airfield and Areas A and B to reticulated water and wastewater. A funding agreement has been developed between Council and Daniel Smith for the provision of water and wastewater services. It is important to note however that the Airfield requires reticulated water services to be installed regardless of any surrounding residential or commercial development. As referred to in Mr MacLeod's evidence the Airfield is now considered a public water supply and therefore requires water supply to comply with new regulations.

Need for Council to Increase Revenue to Maintain the Airfield

19 The Rangiora Airfield currently runs at a significant financial loss with Ratepayer money required to top up user charges to ensure that the airfield meets safety requirements and user expectations Currently, the main charges come from hanger lease fees and landing fees. These make up approximately 40% of the total revenue required with rates topping up the other 60%.

20 Pressure on rates affordability is putting pressure on the Council to increase the commercial viability of the airfield and reduce the portion of rates reliability. The Council has a programme of work ahead to look at the user fee's structure. It is anticipated that should the surrounding airpark development be undertaken, the Council will be able to generate more revenue through access agreements for use of the runway Furthermore, through the cost share agreement for provision of services, the Council spend required to make the necessary water and wastewater upgrades will be less than if the Council solely funded these services.

Potential tenant options that the Airfield is seeking to provide for i.e. Canterbury Aero Club and International Aviation Academy of NZ

21 The Council and the RAAG have both had conversations with the Canterbury Aeroclub regarding a move to the Rangiora Airfield. Currently the Aero Club is located at the Christchurch International Airport however, it has a limited life left on its current lease and it understood that the Christchurch International Airport is unlikely to extend the lease term.

22 There are a number of options available for the Canterbury Aero club however the Rangiora Airfield is well placed to cater for their operation should the Master Plan be implemented. The Master Plan has been developed to facilitate the Canterbury Aero Club should they wish to relocate the Rangiora Airfield and also enables other flight school operators. Activities such as these would bring much needed income to the Airfield as well as economic development for the Waimakariri District.

Conclusion

23 From a Council position, as the owners and operators of the Rangiora Airfield I am satisfied that the rezoning request sought by Daniel Smith has been well considered through Master Planning processes to inform the long term vision and future role of the airfield. In my view it will address the demand for space, assist in generating more revenue for the Airfield and assist in providing the essential servicing for the airfield.

Dated 5 August 2024

Chris Brown

Appendix 1: Waimakariri District Council Agenda for Tuesday 2 May 2023

Waimakariri District Council

Agenda

Tuesday 2 May 2023
1.00pm

Kaikanui Room (Upstairs)
Ruataniwha Kaiapoi Civic Centre
176 Williams Street
Kaiapoi

Members:

Mayor Dan Gordon
Cr Neville Atkinson
Cr Al Blackie
Cr Robbie Brine
Cr Brent Cairns
Cr Tim Fulton
Cr Jason Goldsworthy
Cr Niki Mealings
Cr Philip Redmond
Cr Joan Ward
Cr Paul Williams

WAIMAKARIRI
DISTRICT COUNCIL

AGENDA CONTENTS – COUNCIL MEETING 4 APRIL 2023

WAIMAKARIRI DISTRICT COUNCIL

REPORT FOR DECISION

FILE NO and TRIM NO:	AIR-05: TRIM:230420056169
REPORT TO:	COUNCIL
DATE OF MEETING:	2 May 2023
AUTHOR(S):	Grant MacLeod (Greenspace / Airfield Manager)
SUBJECT:	Airfield development, Aeronautical Study and Master Planning

ENDORSED BY:
(for Reports to Council, Committees or Boards)

General Manager | Acting Chief Executive

1. SUMMARY

1.1. This report identifies three of the main issues at the airfield which require Council sign off to help progress the future development and planning of the asset. Staff are seeking decision on the instruction to proceed with the airfield becoming certified following the submission of an Aeronautical Study to Council. Staff also require a decision on the Council's preference on how to progress the planning/zoning following the development and review of the master plan created in 2021. Alongside these two issues, staff are also wanting to give an update on the operational projects currently underway or pending at the airfield.

1.2. In July 2020 the Airfield was designated under the District Plan. The designation provides both security for the activity under the District Plan whilst also placing appropriate restrictions (or conditions) on how the asset can be used and managed. With the designation in place, staff began to work with the RAAG on a master plan for the airfield. During this time Daniel Smith Industries (DSI) approached both the RAAG and staff with a proposed master plan that would see both DSI land and Council land developed together for the future of the airfield.

1.3. Staff had engaged Avsafe consultants to develop a master plan and work alongside the RAAG so part of that scope became to review the plan submitted by DSI. The master plan was reviewed and submitted for RAAG, staff and also DSI to continue working together on. The outcome of this has been proposals to extend runways, the possibility of land exchanges or swaps between the two parties and ensuring egress through an access agreement from the private land onto the airfield.

1.4. As part of the review staff also sought advice on how best to navigate the planning framework given the District Plan is currently under review. Staff approached Cavell Leitch to better understand how best to engage or work alongside DSI. The conclusion of the advice was that there is benefit to the Council in what is being proposed by DSI. It also noted the benefit to DSI as well as the land owner surrounding the airfield. The conclusion went on to outline that DSI should prepare the original application for the plan change and the Council consider adopting it prior to notification. This outcome would lead to a cost share agreement between Council and DSI as Council would become the lead applicant on this proposal to the District Plan. It should be noted that Council would be doing this as an applicant and not as the regulatory body for the District Plan. The advice also outlined that the Council should not instigate the plan change.

1.5. A number of projects (both capital and operational) are currently underway at the airfield or pending delivery. This is a list of works that has been developed in collaboration with the Rangiora Airfield Advisory Group (RAAG). Projects on this list include some items that will help improve safety whilst others are general maintenance or operational fixes to current assets such as road ways, no stopping areas and the installation of gates.

1.6. Following the master plan being reviewed and presented to the RAAG, the Civil Aviation Authority (CAA) attended the airfield in early 2022 following a high period of airside incidents being raised with them. CAA are the airside regulator in New Zealand and in May 2022, the Director of CAA sent Council a letter instructing that an Aeronautical Study be conducted under Part139 of the CAA rules. The main triggers for this include multiple runway options, 40,000 plus movements per year over a three year period (we anticipate nearly 50,000 annually), high incident rates and a mix of different aircraft type. Rangiora has microlights, general aviation and helicopters all operating. Avsafe were identified as an organisation that had the ability to conduct this study so were asked to do so given they had prepared the master plan document and had knowledge and relationships with groups already at the airfield.

1.7. The Aeronautical Study has put forward nine recommendations for consideration by the CAA. The first and most significant for the Council being for the airfield to become a "Qualifying Certified Aerodrome". This certification has an impact on the master planning of the aerodrome as it would dictate the rules and compliance any plan would look to achieve.

The following is taken from https://www.aviation.govt.nz/rules/rule-part/show/139

'Part 139 adopts the standard layout for the rule parts relating to the certification of organisations. The layout prescribes specific requirements for the certification (entry standards), operation (continued operations), and safety audit (surveillance) of aerodromes. Part 139 also details the requirements for security measures to be complied with by the aerodrome certificate holder.'

1.7.1. the certification and operation of aerodromes;

1.7.2. the security measures applicable to aerodromes;

1.7.3. the use of aerodromes by aircraft operators;

the provision of UNICOM and AWIB services.

It was fundamental for staff to be aware of this as we looked to progress the relationship with our neighbouring land owner and the development opportunity presented by them.

1.8. The CAA has received this study and has contacted aerodrome users to seek feedback on the recommendations that this review has made. CAA engaged directly with airfield users on the 18th April 2023 at Mainpower Stadium to outline safety protocols and demonstrate an interest in the ongoing management of the airfield. Both the Director and Deputy Director were in attendance and led the conversation outlining CAA's intent to be more active in its relationship with Rangiora Airfield.

Attachments:

i. DSI concept – Appendix one of this report
ii. Airbiz master plan 2009 (Draft) (TRIM:230420055834)
iii. Draft Rangiora Airfield review 2022 (TRIM:230420056143)
iv. Rangiora Airfield master plan review 2022 option three variation (TRIM:230420056145)
v. Variation to option three layout plan (TRIM: 230420056147)
vi. Cavell Leitch legal advice on planning process (TRIM:230424057518)
vii. Aeronautical study 2023 (TRIM:230420055829)
viii. Aeronautical study governance structure option (TRIM:230420055911)
ix. Letter from CAA to undertake an aeronautical study (TRIM:22050671135)
x. Project projection 2023 Rangiora Airfield (TRIM:230420056169)

Explanation of attachments iv and v.
These were supplementary to the draft master plan review to better define specific options within. These have now been superseded as a process by the Aeronautical Study however they provide good context to the options put forward by DSI over the last two years.

2. RECOMMENDATION

THAT the Council

(a) **Receives** Report No. AIR-05: TRIM:230420056169.

(b) **Supports** the proposed concept plan/master plan that includes input from Daniel Smith Industries (DSI). Notes that DSI would be using this as the basis for a plan change to Council.

(c) **Notes** this concept plan/master plan has been discussed and prepared with the Rangiora Airfield Advisory Group.

(d) **Approves** the CE and General Manager Community and Recreation to create a cost share agreement with Daniel Smith Industries in relation to implementation of the plan change process associated with the airfield development. The cost share agreement would be brought back to the Council for approval.

(e) **Notes** this cost share agreement would only be given effect to, should the Council adopt a plan change through the planning process.

(f) **Approves** staff progressing with certification of the airfield as a qualifying aerodrome under CAA Rule Part 139. Noting that there would be a cost to this of approximately $55,000 which is currently identified in the draft Annual Plan.

(g) **Approves** staff to work with the Rangiora Airfield Advisory Group to propose governance changes as outlined in option two of the aeronautical study. That the changes proposed be brought to the Council for ratification.

(h) **Notes** that the Civil Aviation Authority have begun their own feedback process on the aeronautical study with users of the airfield.

(i) **Notes** that the Civil Aviation Authority engagement process is unlikely to see a change in recommendation to become a certified aerodrome.

(j) **Notes** staff have applied for $150,000 in the draft Annual Plan to assist with certification requirements. It is expected that this would cover the compliance required within the aeronautical study including fencing improvements, taxi way improvements, *AWIB and **management system.
** AWIB Service means an automatic broadcast of aerodrome and weather information provided specifically for the facilitation of aviation*
***A management system is a system for the management of safety at aerodromes including the organisational structure, responsibilities, procedures, processes and provisions for the implementation of aerodrome safety policies by an aerodrome operator, which provides for the control of safety at, and the safe use of, the aerodrome.*

3. BACKGROUND

3.1. Rangiora airfield was designated under the District Plan in 2020. This designation set off a chain reaction of opportunities which have led to the recommendations of this report including development opportunities and regulatory requirements.

3.2. Following the designation in 2020, staff and the RAAG began discussion on creation of a master plan for the airfield, noting that there had been a plan done previously (although not officially adopted) by Airbiz. The bones of this development were used as a rough guide for the placement of additional hangars and other infrastructure that can be found in place today.

3.3. During this time in 2020, the neighbouring properties to the airfield along Priors and Mertons road were sold and purchased by one owner, creating an opportunity for joint planning between the two areas and the creation of an airpark (an airpark is also known as a fly in community, houses with airside access and a hangar).

3.4. The airfield master plan and the proposal from DSI both look to address the future proofing of the airfield as well as consideration of residential development (on the adjacent private land owned by DSI). The master plan also reviewed the best way to utilise land owned by both parties and how an airpark would integrate into the

operational airfield. One of the main areas of interest for the RAAG was the opportunity to increase runways, this was being considered under the master plan for two of the three runway corridors, with the inclusion of private land this gave the opportunity for the southwest runway (the proposed extension is mostly on the DSI land) to also be considered. Avsafe have reviewed this as part of the master plan draft they submitted prior to the Aeronautical Study being undertaken.

3.5. Staff also noted at this time that with the increase in complexity, risk and user numbers at the airfield, and with the resignation of the airfield safety officer, a specific on staff airfield specialist position should be created. Council approved this position in its 2021 Long Term Plan as an Airfield Manager and Safety Officer position. During the course of 2022, this position was advertised with no success in an appointment. This role is presently out for recruitment in April 2023.

3.6. The new owner of the properties along Priors and Mertons road approached both the Council and the RAAG to open up dialogue on the possibility of a joint venture in regards to a combined outline development plan. This discussion identified early on that there was benefit to both parties in exploring how best to formulate a partnership which has led to the advice for Greenspace staff to look at recommending Council adopt the plan change.. This led to external legal advice to ensure that the right planning mechanism was being followed. The advice is, that the Council has benefit from this proposal and that Council can consider to either adopt, decline or accept the plan change. The differences between the three options are if Council declines, then the plan change is rejected and will not proceed, if Council accepts, then DSI is responsible for all the costs of the preparation of the plan change, and if Council adopts, then the Council would become the lead applicant and work alongside DSI, this last option would lead to the need for a cost share agreement an also provides DSI with assurance from Council on its partnership with this project. The advice from Cavell Leitch identifies that there are merits in Council adopting the plan change, however if Council adopts, then it is responsible for the costs, the benefits to DSI would be financially greater, hence a cost share agreement is an appropriate mechanism if Council adopts the plan change lodged by DSI, the financial cost is shared.

3.7. With this opportunity in place, staff tendered for a specialist airfield planner to assist in both reviewing the plans put forward by DSI and to incorporate the Airbiz masterplan and the RAAG/users views into a draft master plan. Avsafe (through Mike Groome) have been contracted to Council since to help with the specialist planning and advice on this matter.

- Rangiora Airfield Boundary in Red.

3.8. The plan pictured above shows a number of areas that have driven the conversation with DSI. The red outline depicts the boundary of the airfield as it is today. On this plan it can be seen that one of the runway extensions is within Council administered land on Priors Road. The two other runway extensions can be seen in block A and also the southwest runway. The plan also identifies areas for discussion on potential swaps. This was reviewed as part of the master plan and advice given that the Priors road land that Council administers in Green, should be retained, as should area C in some form (area C due to it acting as an intersection and view shaft for where the runways would cross and future taxi ways). As can be seen with the plan above, there is further negotiation required on the exact extent of what any land swap or exchange may look like. Undertaking a plan change would protect land that may be used for future runway extension and also give DSI certainty on noise contours and how land can be zoned and developed. The plan would also offer egress and airside access to the airpark development and provide new hangar opportunities for commercial and residential air enthusiasts. It is worth noting that currently there are no further hangar lots available at the airfield unless a lessee is willing to on sell their rights.

3.9. Throughout 2021 DSI has put forward plans and proposals to move this process forward and has shown solid commitment to progress this opportunity. Both the RAAG and its Council representatives are eager to see an enabling of the proposal so that all organisations can progress and show true commitment to each other.

3.10. In February 2022 the airfield was visited by representatives of the Civil Aviation Authority. CAA had become increasingly interested in the airfield due to the number of reported incidents and criteria around runway complexity, annual movement numbers and the mix of aircraft type operating from the airfield.

3.11. During 2022, Avsafe continued to put the Aeronautical Study together, including site visits, interviews and presentations with airfield users. The result of this was the submission of an Aeronautical Study to the Waimakariri District Council in early 2023.

This study was then also sent to the CAA as the requestor of this work in order for Council to fulfil its requirements to them as the regulator.

3.12. The Aeronautical Study identified nine recommendations for the airfield including the appointment of an airfield manager, the airfield becoming certified and a number of operational and asset improvements for the facility. Overall the airfield was seen as a sound aerodrome that required some capital investment and further education given the mix and number of users.

Recommendations from the aeronautical study:

1. The WDC initiates the process for the Rangiora Airfield to become a "Qualifying Certified Aerodrome" under the CAA Rule Part 139.

   Staff are recommending that this is the action taken by Council. See recommendation section.

2. Employ an Airfield Manager.

   Council approved this role in its 2021 Long Term Plan. An offer has been made twice unsuccessfully and is currently being recruited for again.

3. Initiate monthly meetings between the Chief Flying Instructors, Chief Pilots and other senior operators on the airfield.

   This has been discussed with CAA staff and it is in process, with expectation that the Airfield Manager would set this group up.

4. Upgrade the northern taxiway surface and with clear boundaries defined.

   This is part of the $150,000 that staff have applied for in the draft annual plan.

5. Install windsocks at the ends of each runway.

   There is a windsock available at the airfield and this has been actioned.

6. Consider installing an Automatic Aerodrome and Weather Broadcast system (AWIB).

   This is part of the $150,000 that staff have applied for in the draft annual plan.

7. Consider changing the circuit direction of runway 10/28 to a northerly direction as are the other two runways.

   This needs further discussion with users of the aerodrome and how this would impact the landing plate/circuit. Further discussion is required and needs to be worked on by aviation advisors such as the Rangiora Airfield Advisory Group and the new Airfield Manager.

8. Continue the discussions with the developer around the plans and the WDC requirements for having an airpark next to the airfield.

   Staff are recommending that we continue to work with DSI on joint planning in relation to the future development of the airfield.

9. Revise the Part 149 and Part 103 Rules regarding powered microlight aircraft.

   Council doesn't have a specific role to play with this recommendation as it relates to a change in CAA Rules.

3.13. The Aeronautical Study also identified the development opportunities available to Council and RAAG with the neighbouring property owner and has recommended that

these discussions and this opportunity continue. It is seen as a genuine benefit to provide further capacity for new users as well as educational opportunities around flying. These changes are likely to lead to the need for an updated designation, however this detail needs to be further considered as discussion and agreements continue.

3.14. On April 18th 2023, CAA Director and Deputy Director meet with Rangiora Airfield users at Mainpower Stadium to address them on safety matters and how they as a regulator are taking an interest in the airfield and its development. CAA has also sent the Aeronautical Study out to users for further comment prior to it given Council an instruction on the recommendations within.

3.15. Council staff are also working alongside the RAAG to undertake works that have been identified through ongoing conversations and supported through the master plan review. This list of works include:

- a recent update to the baseline lease for lessees
- gates to be installed to help delineate the operational area and help to control cars entering the taxi way areas
- road surfacing maintenance (which had been undertaken but has identified that a greater intervention is required)
- boundary fence improvements and realignment of no stopping areas at the end of the runways
- Security cameras to be installed throughout the airfield
- There is also two projects underway to bring water compliance to the airfield for both potable and waste water. Both projects are currently in planning and design phase.

4. ISSUES AND OPTIONS

There are three sections to the options given the components of this report. The first set of options addresses the idea of a land swap as a mechanism to secure land adjacent to the airfield, the second describes the Aeronautical study, whilst the third set of options addresses the master plan and concept plan opportunity with DSI.

Land swap:

The master plan has shown areas of land that could be exchanged. Staff do not recommend the land swap at this time as there is further negotiation required on both the land areas required by each party and the most appropriate zoning process to use. This is also consistent with the legal advice from Cavell Leitch on how best to approach the idea of a plan change.

The land swap would require a Private Developer Agreement to negotiate land that could be swapped between the two parties. This would see land exchanged primarily to benefit the Council extending the runways whilst DSI is interested in areas of land that would have a benefit to its development in the commercial areas and has also requested land on Priors Road. This option would require up front capital to support the land swap should the exchange have a cost component associated with it. The original Master Plan review by Avsafe did note that Council should retain ownership of the Priors Road land parcels as this offers the aerodrome some operational surety and does not land lock the asset.

The zoning process that is advised from Cavell Leitch would require a Cost Share Agreement to be developed between the two parties. As this is primarily the preparation of documents to support an application to the District Plan the cost would mostly be on funding the process in the short-medium term. The outline development plan would identify and protect areas for certain activities with further negotiations to take place on how the ownership might work for each land area. This would provide long term surety for the airfield and also for DSI in understanding how the development of private land can be undertaken.

In the recommendations of the report, staff are recommending that the Council approves the zoning process approach, this provides surety for the land owner as well as protects the airfield and the proposed runways as per the Master Plan from Avsafe.

Aeronautical study options:

4.1. Receive the aeronautical study and wait for further instruction from the Civil Aviation Authority

This option would allow the Council to wait for the CAA to instruct it on the recommendations, however it would not take advantage of the current Annual Plan budget setting process and it is very likely that becoming certified will be requested. Opting to do this shows good faith and a willingness to work with the authority on compliance and safety standards for the aerodrome. Becoming qualifying also puts the airfield under greater jurisdiction of CAA. This would mean visits and other processes required for compliance would now be business as usual for the CAA and Waimakariri District Council would not be expected to pay for particular services in this regard.

4.2. Receive the aeronautical study and agree to Rangiora Airfield becoming a Certified Qualifying Aerodrome and enact the recommendations that the Council has control over (2,3,4,5,6,7,8)

This option receives the aeronautical study and its recommendations whilst also allowing staff to continue to work positively with CAA on the certification process for the airfield. This will give certainty to both the works required at the airfield and the development opportunity with the neighbouring land owner.

It is worth noting that recommendation nine in the aeronautical study is not something that Council has control on and as such is not considered something staff can give direction on. This directly involves a part of the CAA rules being considered for change by the Director, that being Part 103 and 149.

Anecdotal conversations have indicated that if Council do not voluntarily become qualifying it is very likely that CAA will instruct Waimakariri District Council to undertake this process. It would be beneficial to be proactive in working with CAA and offer to do the certification so that Council can work with them on how this process looks, rather than being instructed by the regulator.

Planning options:

4.3. Council lodge the plan change

Advice from Cavell Leitch, is that whilst the District Plan is under review, it is not advised that Council lead a plan change.

4.4. Reject the plan change opportunity

This option would outright decline the option and remove Council from the table in regards to discussing development with our immediate neighbour. This also goes against the recommendation in the Aeronautical Study that has been submitted to Council and CAA. The lost opportunity would be detrimental to both the RAAG and general airfield users as well as the aviation community.

4.5. Council supports the master plan in this report as the basis for DSI submitting a plan change to Council and staff preparing a cost share agreement.

The actual cost share agreement would only be activated if Council adopts the plan change. Supporting the master plan would offer some certainty to the process and fulfil the recommendation within the Aeronautical Study. It would ensure Council is taking steps to improve user capacity at the airfield and offer further opportunities for hangars and commercial operators to support the general aviation users of Rangiora. There is no further space without development on the Mertons and Priors road frontages for further buildings/hangars at the airfield, which this process would enable long term. Staff believe we have a vested interest in this being the recommended outcome for the

airfield. Advice from Cavell Leitch did identify that this is the most appropriate option for consideration once a plan change is lodged.

4.6. Plan change variation

Whilst this option would offer the most certainty, it also means the entire proposed District Plan timeframe is put on hold whilst this is undertaken. This would create significant time delays and is not supported by staff. Other options as identified in 4.5, exist so as to not delay the District Plan.

4.7. Accept the plan change

This option allows for the planning to continue, however it offers no certainty to the developer of Council's position other than providing staff to be open to conversation and joint planning. This leaves the plan change at the developers responsibility and as the lead. DSI has made it clear that they want to see support from the organisation as part of the application so some certainty can be offered given the amount of capital that would be invested in this option. Cavell Leitch suggested that due to the benefit of the Council asset, this is not preferred against adoption once the plan change is lodged.

Implications for Community Wellbeing

There are not implications on community wellbeing by the issues and options that are the subject matter of this report.

4.8. The Management Team has reviewed this report and support the recommendations.

5. COMMUNITY VIEWS

5.1. Mana whenua

Te Ngāi Tūāhuriri hapū are to be affected by,or have an interest in the subject matter of this report. The airfield is adjacent to a large water way being the Ashley River and has a number of bird species present. Whilst the airfield itself doesn't have a direct environmental impact, its operation does have some impacts on flora and fauna in the surrounding area.

5.2. Groups and Organisations

There are groups and organisations likely to be affected by, or to have an interest in the subject matter of this report. In particular the CAA and RAAG. Apart from these two organisations there is benefit in the recommendations to users of the airfield and in particular educational operators such as chief flying instructors.

5.3. Wider Community

The wider community is likely to be affected by, or to have an interest in the subject matter of this report. The designation process did outline that the wider community (non aviation) has an interest in the airfield and its development, especially if this leads to an increase in movements. Engagement planning must include wider community to ensure awareness and the opportunity exists for people to be involved in the decision making process for the airfield. The plan change process would allow for this to occur.

Council has also undertaken work on the noise contours should the runways be extended. Marshall Day have provided information on this which indicates that there would not be a major difference in noise contours should the runway extensions be supported in principle.

6. OTHER IMPLICATIONS AND RISK MANAGEMENT

6.1. Financial Implications

There are financial implications of the decisions sought by this report. Staff are seeking assistance with the works program that can be found in the appendices of this report, a total of $150,000. This budget is included in the draft Annual Plan, staff have submitted

a capital budget (based on borrowing) within the draft annual plan of $150,000. This would be broken down as highlighted in the following table.

Project title	Project description	Amount
Taxi way improvements	Grass and soil improvements to the taxi way areas as well as greater definition between the operational runway	$40k
Certification application	Undertake further works defined by CAA to meet certification requirements	$55k
Fence line improvements	Improvements to the fence line of the airfield to secure the operational area	$20k
Road way improvements	Resealing/patching of sections of the road west of the ATC building	$15k
*AWIB / Management System	This is currently unknown and further work needs to be done in order to understand the requirements for this	TBC (this will have an impact on the extent of taxi way improvement depending on how much is required)

** AWIB Service means an automatic broadcast of aerodrome and weather information provided specifically for the facilitation of aviation*

**A management system is a system for the management of safety at aerodromes including the organisational structure, responsibilities, procedures, processes and provisions for the implementation of aerodrome safety policies by an aerodrome operator, which provides for the control of safety at, and the safe use of, the aerodrome.*

6.2. **Sustainability and Climate Change Impacts**

The recommendations in this report do have sustainability and/or climate change impacts. These are in existence regardless of the works proposed within this report and exist due to the presence of the airfield. CAA have indicated that we are able to apply for restricted fly zones based on nesting birds.

The airfield currently has electric planes operating (one of the only airfields in the country to be doing so). CAA have indicated that electric planes may become more common as the technology becomes more affordable and could lead to more people moving through the skies in smaller electric craft. Being certified would open up Rangiora to this opportunity and align with CAA's future thinking on this as an opportunity for regional airfields.

6.3 **Risk Management**

There are risks arising from the adoption/implementation of the recommendations in this report. The airfield is currently listed as a high risk for the council. As an uncontrolled airfield it is currently not managed to the specifications of part 139, which would mitigate

risk to both council and the users of the airfield. It is this risk that both the CAA and staff are keen to see managed with specialist involvement such as the hiring of an airfield expert on council staff (currently advertising) and having CAA certification in place.

During the previous designation of the airfield Council as the applicant did have some opposition to this process. Members of the wider community and some immediate neighbours did pose opposition based on noise impacts and night time use. It should be noted that the recommendations would lead to further hearings through a planning process so it is expected that these concerns would be raised again. An engagement plan will be necessary to help provide voice for those with concerns and ensure they can be part of the process.

6.3 Health and Safety

There are health and safety risks arising from the adoption/implementation of the recommendations in this report. The works proposed are expected to form the basis of greater risk compliance at the airfield. The works will aide in the management and control of safety and risk within the operational area in particular and would go someway to meeting the requirements of becoming a certified airfield.

CAA has noted an increase in airside incidents at the airfield as one of the drivers for its interest in Rangiora. CAA are also taking a greater interest in safety and compliance of non certified airfields following a fatal incident in Masterton and the outcome of the investigation into that event.

7. CONTEXT

7.1. Consistency with Policy

The recommendations within this report would see engagement through the district plan process that Council runs as well as consideration of section 76 of the Local Government Act and sections of the Reserves Act that pertain to decision making and engagement. If the recommendation to proceed with the concept plan is supported and the planning process is required, then the Resource Management Act would identify the scope of notices for how this is communicated with effected parties and include the wider community.

7.2. Authorising Legislation

Resource Management Act

Local Government Act

Reserves Act

CAA Rules

7.3. Consistency with Community Outcomes

The Council's community outcomes are relevant to the actions arising from recommendations in this report.

7.4. Authorising Delegations

The Council holds the delegation for decision making at the Rangiora Airfield noting advice being provided by the Rangiora Airfield Advisory Group and Civil Aviation Authority.

Appendix one, proposal from DSI on integrating with Airfield.

- Rangiora Airfield Boundary in Red.

Rangiora Airport

COMMERCIAL MASTER PLAN

22 January 2009

Contents

1 Introduction

1.1. Background

Rangiora Airport operates as a General Aviation (GA) airport with no scheduled services and is considered to be one of the largest microlight bases in the country.

Current operations at Rangiora Airport include the following;

- Microlight operations
- Rangiora airport based general aviation
- Itinerant general aviation
- Helicopters
- Warbirds
- Limited maintenance facilities
- Agricultural operators

The airport has previously hosted sky-diving operations, however these have relocated to other locations.

Rangiora Airport is in close proximity to Christchurch International Airport, the main hub in the South Island for international, domestic and GA operations. The airport is also a neighbour to a number of other small aerodromes catering to a range of operations from small scheduled services to sky diving and helicopter operations.

Waimakariri District Council (WDC) has recently purchased additional land to the south of the airport with a view to developing a commercial precinct for aeronautical related business activities.

This study can be considered as a “companion” study to the Rangiora Airport Strategic Planning exercise that was undertaken by Airbiz in 2007.

1.2. Scope of Report

The scope of work for this Commercial Master Plan includes:

- Collation of any new information since the 2007 work carried out by Airbiz.
- Collation of operational information about levels of aircraft movement activity and utilisation of runways.
- Analysis of historical wind data to prepare a wind rose.

- Recommendations for possible reconfiguration of the runway and taxiway system to optimise use of the expanded site for complementary air operations and land development.
- Confirmation of key planning parameters developed in the 2007 study including:
    - Design aircraft
    - Airfield dimensions
    - Commercial land requirements
    - Hangar and apron unit sizes
- Preparation of an Airport Commercial Master Plan depicting the recommended airfield configuration, precincts for commercial, recreational and microlight activities and general layout of roads and lots for the new commercial precinct.
- Advice on whether additional land acquisition would significantly assist the development of the Airport.
- Commentary on options for leasing of basic land for development by tenants versus development and leasing of purpose-built facilities.

The next chapter of this report describes the current airfield layout, design aircraft and facilities at the airport.

Chapter 3 deals with runway usability. This includes a wind analysis to find the predominant wind directions at Rangiora. This analysis is carried out with the pretext of possibly closing one of the two cross runways (either 10/28 or 04/22) in order to free up some land for future commercial developments on the southern side of the Airport.

Chapter 4 discusses planning parameters that are adopted to create hangars, taxiways and aprons. It specifies the areas of hangars for different and the dimensions of taxiways, taxilanes and aprons for the various aircraft Code types. It also specifies the requirements for aircraft hangars and apron areas that are being proposed to be developed on the newly acquired land.

Chapter 5 discusses future land protection and the types of development envisaged for the new land. It also discusses land control options, land purchasing options and the difference between Building Lease and Ground Lease.

Chapter 6 discusses the two Airport Commercial Master Plan options that efficient usage of land on the newly purchased Lots.

Finally, Chapter 7 presents recommendations arising from this study.

2 Current Situation

2.1. Airfield

Rangiora Airport occupies 37.1 hectares and is surrounded by primarily rural land. The airport lies on the southern banks of the Ashley River.

The airport has in the region of 100 based aircraft ranging from microlights to GA aircraft such as Cessna 172s. The airfield itself has three grass runways in operation. These runways are detailed in Table 2.1 below.

Runway		Length (m)	Strip Width (m)	CAA Code Number	Take-off Distance (m)	Landing Distance (m)
07 - 25	07	1180	60	2	955	940
	25	1180	60	2	940	955
10 - 28	10	583	60	1	561	583
	28	583	60	1	583	561
04 - 22	04	515	35	1	515	497
	22	515	35	1	497	515

TABLE 2-1 RUNWAY CHARACTERISTICS

Runway 07/25 is the main runway servicing the majority of aircraft operations. The main runway declared lengths are less than the actual runway length (shorter landing and take-off distances) as the approach and departure paths are obstructed by trees at either end of the runway.

The current runway layout is somewhat unusual in that there are three runways in operation. Most airports in New Zealand operate a one or two runway system (a main runway and possibly a crosswind runway). All three runways are grassed and are in good condition following a major maintenance programme.

The airport operates with no officially designated taxiway system however aircraft move between hangars and runways via a grass strip, essentially a taxiway.

An asphalt apron has been provided in front of the two fuelling stations operated by BP and Shell.

There are no navigational aids, nor runway or taxiway lighting, thus the airport operates as day-only airport.

2.2. Design Aircraft

Table 2-2 shows typical GA aircraft likely to be operating at Rangiora. It demonstrates the range of aircraft considered with their associated specifications. The design aircraft adopted for the previous Rangiora Airport Strategic Planning study and carried forward into this study is the Cessna Grand Caravan (aircraft Code B). This aircraft has been chosen as it represents the broadest possible aircraft type that could practically use the airport. The choice of this aircraft as the design aircraft will ensure the airport protects areas for Code B aircraft operations into the future.

2.3. Facilities

The airport site currently has 40 hangars, all on long term ground lease contracts. Typically the lease contracts are on 30 year terms with many of the older leases being 15 years into the term. All hangars are constructed and owned by the lessees.

The airport also houses the following:

- Aero club
- Minor maintenance facilities
- 2 refuelling spots, Avgas and Jet A1
- Helicopter training area

2.4. Access

Current access to the airport is from the east via Merton Road. This is currently the only access point into the airport.

Aircraft	Aircraft Type	Wingspan (m)	Length (m)	Tail Height (m)	Typical Passengers	Take-off Field Length[1] (m)	Landing Field Length[1] (m)
Code A (Wingspan < 15m)							
BN2 Islander	Twin Piston	14.9	10.9	4.2	9	480	400
Piper PA31 Navajo[2]	Twin Piston	12.4	10.0	4.0	8	314	584
Piper PA24 Comanche	Single Piston	10.9	7.6	2.3	4	N/A[3]	N/A[3]
Piper PA28 Cherokee	Single Piston	10.6	7.3	2.2	4	N/A[3]	N/A[3]
Piper PA38 Tomahawk	Single Piston	10.3	7.0	2.7	2	N/A[3]	N/A[3]
Beechcraft B58 Baron[2]	Twin Piston	11.6	9.1	2.9	6	451	448
Beechcraft A36 Bonanza[2]	Single Piston	10.9	8.2	2.7	4	244	189
Cessna C152	Single Piston	10.2	7.2	2.6	2	N/A[3]	N/A[3]
Cessna C172[2]	Single Piston	10.2	8.4	2.6	4	347	256
Code B (Wingspan 15m to 24m)							
Beechcraft 1900D	Twin Turboprop	17.7	17.7	4.6	19	1,163	854
Metro 23	Twin Turboprop	17.4	18.1	5.1	19	1,615	850
Jetstream 32P	Twin Turboprop	15.9	14.4	5.4	19	1,384	1,242
SAAB 340B	Twin Turboprop	21.5	19.8	7.0	37	1,290	1,035
Beechcraft B200 King Air[2]	Twin Turboprop	16.6	13.4	4.6	15	592	536
Cessna Grand Caravan	Twin Turboprop	15.9	12.7	4.7	13	737	547

Source *(1)* *Flight International 1 – 7 November 2005, unless noted (ISA conditions – 15°C, 1013hPa; sea level; MTOW)*

(2) *Janes "All the World's Aircraft" 1977-98*

(3) *Information for typical single engine aircraft was not readily available for this report. However, single piston general aviation aircraft all have similar characteristics which will be heavily influenced by factors such as wind speed, temperature, atmospheric pressure, runway gradient, etc.*

TABLE 2-2 KEY AIRCRAFT PARAMETERS

3 Runway Usability

3.1. Runway Usability

Airports should be designed to allow aircraft to land into the wind with minimal cross-wind component. Large aircraft can sustain stronger crosswinds with minimal inconvenience. However, general aviation aircraft are more sensitive to cross-winds, especially if the pilot is an ab-initio student pilot.

The Civil Aviation Authority of New Zealand (CAANZ) recommends that general aviation aircraft, such as those used at Rangiora Airport, operate in cross-winds not exceeding 10 knots.

CAANZ Advisory Circular AC 139-6 also states that “the number and orientation of runways at an aerodrome should be such that the usability factor is not less than 95% for the aircraft that the aerodrome is intended to serve”.

The runway usability factor is defined as “the percentage of time the winds at an aerodrome allow it to be used by aeroplanes with specific limiting cross-wind landing capability”. Hence, this theoretical figure is obtained solely based on historical wind speed and directions.

3.2. Current Use of Runways

Anecdotal information on runway operations was sourced from two key contacts, local GA operators Pat Scotter and Bruce Drake from Drake Aviation. These are summarised below.

Runway 07/25 (main runway)

- Mostly used as it is closest to being into wind most of the time
- Significantly longer than other runways
- Predominant wind direction from northeast thus favouring Runway 07
- Runway 07 accounts for about 50% of total movements
- Runway 25 estimated use about 35% of total movements
- Runway 25 is favoured not only in southwesterly winds, but also sometimes in a developing west situation. (This runway bears almost true west)

Runway 04/22 (cross runway)

- Too short for a significant number of light aircraft to use when fully loaded
- “Trikes” (powered hang-glider machines) use this runway as they are unable to handle any significant cross-wind on take-off and landing

- Shorter Runway 22 is used in strong southerlies because this wind direction is usually associated with frontal passage, and immediate post-frontal conditions
- Runway 22 is used about 5% of the time
- Runway 04 very occasionally used in strong northerly winds
- Shorter runways not used a lot, however there availability is imperative

Runway 10/28 (cross runway)

- Too short for a significant number of light aircraft to use when fully loaded
- "Trikes" (powered hang-glider machines) use this runway as they are unable to handle any cross wind on take-off and landing
- Runway 28 used only in strong northwest conditions
- Runway 28 accounts for less than 10% of total movements
- Shorter runways not used a lot, however there availability is imperative

Anecdotal movements information

- Significant seasonal variations
- Mid winter weekday movements, including helicopters, are sometimes about 4-5 take offs and landings. Maybe 20 each day
- Summer peak, particularly on weekends and public holidays, perhaps in the order of 100 per day
- Estimated 5,000 take-offs and landings per annum.

Table 3-1 summarises the estimated runway movements and utilisation derived from these anecdotal sources

Runway	Estimated Runway Movements
07	50%
25	35%
04	2%
22	5%
10	1%
28	7%
Total	100%

TABLE 3-1 ESTIMATED RUNWAY UTILISATION

Clearly the predominant runway is the main runway which is approximately aligned east-west, while there is less use of Runway 22 which is directed into southwesterly and Runway 28 into the northwesterly.

It is interesting to note that the use of Runway 04 – which is aligned towards the predominant northeasterly – has very low usage reported. One of the reasons could be that Runway 07/25 is ideally aligned in the prevailing wind direction for the pilots, as it offers just the right amount of cross-wind factor needed for ab-initio training. Whereas, even though it lies in the path of the predominant northeast wind direction, Runway 04 does not receive a strong cross-wind component for training purposes. In addition, this runway is short and does not have enough land at either end for future development.

3.3. Wind Analysis

Wind data was obtained for the Aerodrome Weather Station at Rangiora Airport from NIWA (National Institute of Water and Atmospheric Research).

The data included hourly wind speed (in knots) and direction (degrees true north) for years 2002 to 2008, sufficient to provide an accurate wind analysis for Rangiora Airport. Data excludes sporadic wind gusts.

3.4. Wind Rose

Wind roses identify patterns of prevailing winds and speeds at a given location. Figure 3-5 illustrates a wind rose for Rangiora Airport based on the airport's operational hours which were assumed to be from 07:00 – 19:00 (12 hours), over a period of six years from 2002 to 2008.

Initial observations show little differences between the 12 hour and 24 hour wind roses. Hence it is likely that the runway usability will remain similar even if night winds are not considered in the analysis.

The wind rose highlights the predominant northeasterly winds and winds in the range of northwest to southwest.

3.5. Runway Systems

Various scenarios of runway configuration were investigated to see if there might be realistic opportunities to reconfigure the runways in order to get a better balance of land usage between airfield, aviation facilities and possible non-aviation uses. These scenarios are:

- Triple Runway System – Current situation
- Dual Runway System – 07/25 and 04/22
- Dual Runway System – 07/25 and 10/28

Figures 3-1 to 3-4 are wind roses illustrating this usability factor by overlaying a possible variety of runway configurations over the wind data showed by frequency for various wind speeds and directions.

3.6. Triple Runway System

This runway usability scenario illustrates the current situation at Rangiora Airport which includes the two cross-runways with 10 knots maximum crosswind component. This system provides usability of 98.5% and is illustrated in Figure 3-1.

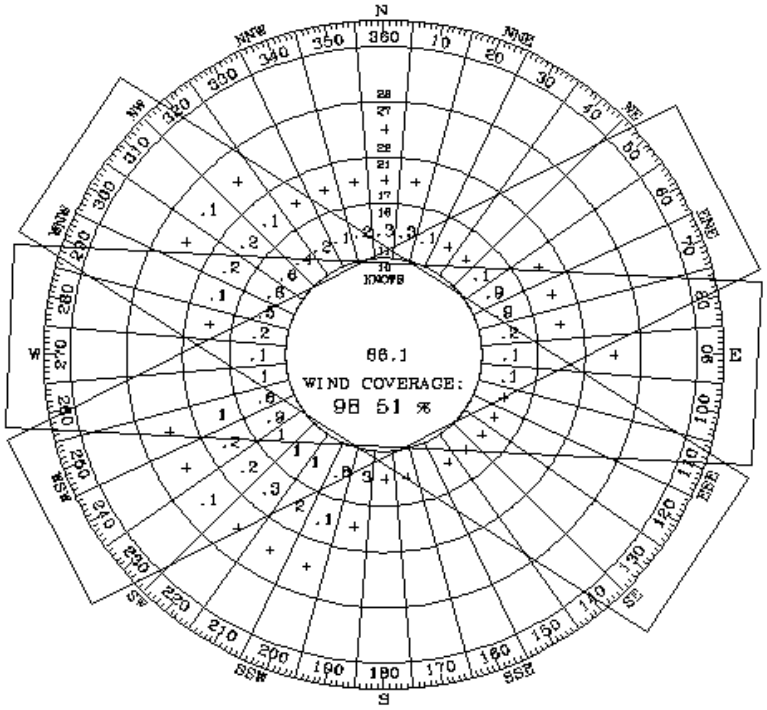


FIGURE 3-1 RUNWAY USABILITY WITH THREE RUNWAYS

3.7. Dual Runway System – 07/25 and 04/22

This scenario illustrates retaining main runway 07/25 and cross-runway 04/22 with 10 knots maximum crosswind component. This system provides usability of 97.5%. See Figure 3-2.

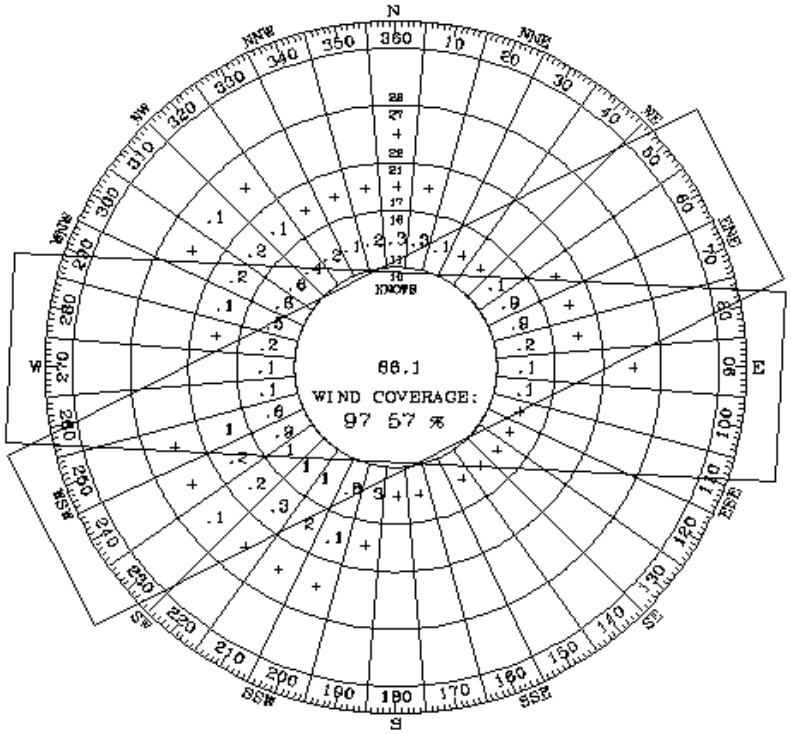


FIGURE 3-2 RUNWAY USABILITY FACTOR WITH TWO RUNWAYS (07/25 AND 04/22)

3.8. Dual Runway System – 07/25 and 10/28

As part of next option, in terms of development on the newly acquired land, closure of Runway 04/22 is being investigated. This scenario would involve operations of the two Runways 07/25 and 10/28 with 10 knots maximum crosswind. This scenario results in usability of 94.8% which is very close to but slightly less than the CAA recommended usability factor of 95%. See Figure 3-3.

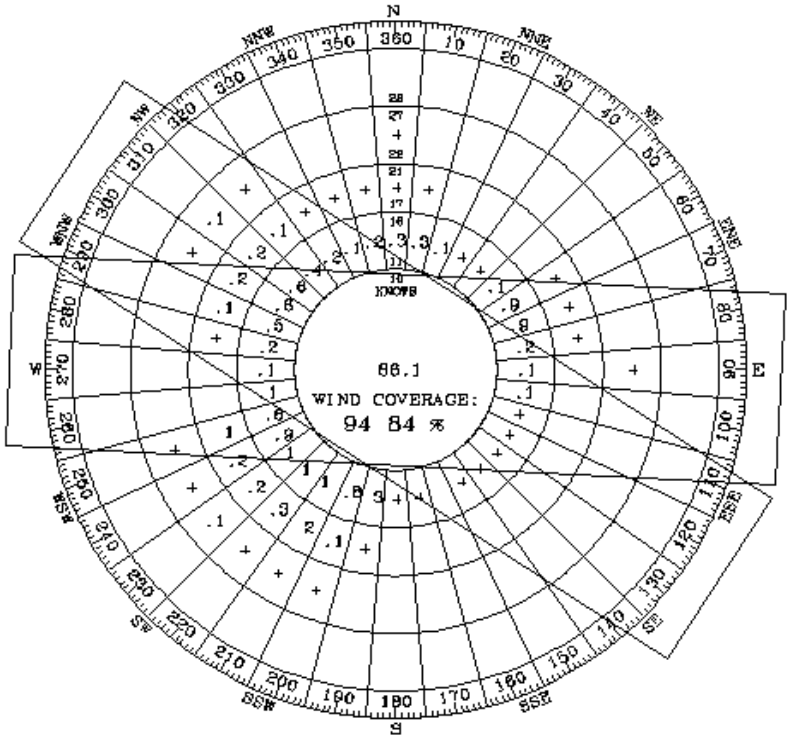


FIGURE 3-3 RUNWAY USABILITY FACTOR WITH TWO RUNWAYS (07/25 AND 10/28)

The three scenarios so far have given satisfactory runway usability percentage i.e. at or close to 95% or above. The existing Triple Runway System has a very high runway usability percentage, however future commercial growth on the newly acquired Lots would be restricted by the current cross runway layout, particularly Runway 04/22, even though it sits in the path of the prevailing wind direction, because the main Runway 07/25 is serving the purpose of operations in northeast conditions.

The Dual Runway System – 07/25 and 04/22 provides a runway usability percentage of 97.5%. This system effectively provides two runways that are in the direction of the predominant wind i.e. northeasterly. However this layout would restrict lengthening of Runway 04/22 as it has no land available on the southwestern side for further development. Also, it is still considered to be very important to maintain a northwest runway i.e.

Runway 10/28 for safety and comfort because of the intensity and turbulence of the northwest winds in Canterbury.

The Dual Runway System – 07/25 and 10/28 provides a runway usability percentage of 94.8% which is slightly lower than 95% however there is enough room for extension of Runway 10/28 as it is well situated, in terms of location, for future expansion on the newly acquired land.

It seems feasible to close Runway 04/22 and have Runway 10/28 as the only cross runway as this would free up more space for further future commercial developments on the newly acquired Lots at the south/southeast side of the Airport.

It is also possible to further improve the land use balance of the Dual Runway System – 07/25 and 10/28 scenario. This is explained below in Section 3.9.

3.9. Modified Dual Runway System – 07/25 and 11/29

This scenario would involve retaining Runway 07/25 and re-aligning the northwest cross-wind runway closer to the western boundary of the Airport and rotating the runway by approximately 8 degrees clockwise. This results in usability of 95.1%, is slightly above the CAA recommended usability factor of 95%. See Figure 3-4.

This runway would then, essentially, become a new Runway 11/29. The re-alignment of this runway would free up further land on its eastern side which could be used for further future development.

The reconstruction of this runway together with the recent acquisition of land to the south would enable the runway to be lengthened to a more practical length of approximately 683m.

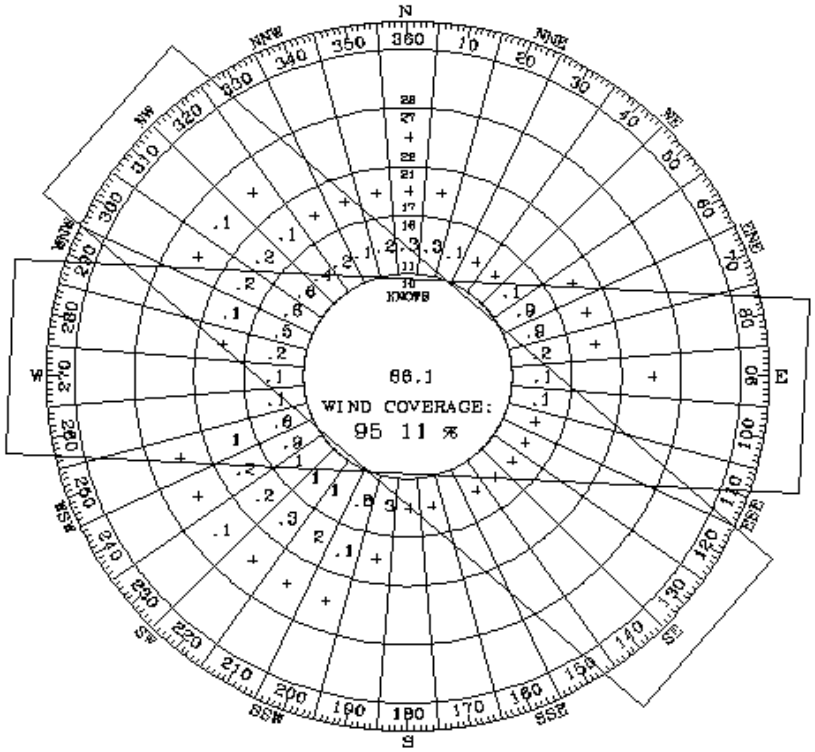


FIGURE 3-4 RUNWAY USABILITY FACTOR WITH TWO RUNWAYS (07/25 AND 11/29)

The comparison of the four scenarios in Table 3-2 illustrates the added usability of rotating cross-runway 10/28 approximately 8 degrees clockwise to become a new Runway 11/29.

Cross-Wind Tolerance	Runway Usability			
	Existing Triple Runway	Dual Runway 07/25 and 04/22	Dual Runway 07/25 and 10/28	Modified Dual Runway 07/25 and 11/29
10 knots	98.5%	97.5%	94.8%	95.1%

TABLE 3-2 RUNWAY USABILITY COMPARISON

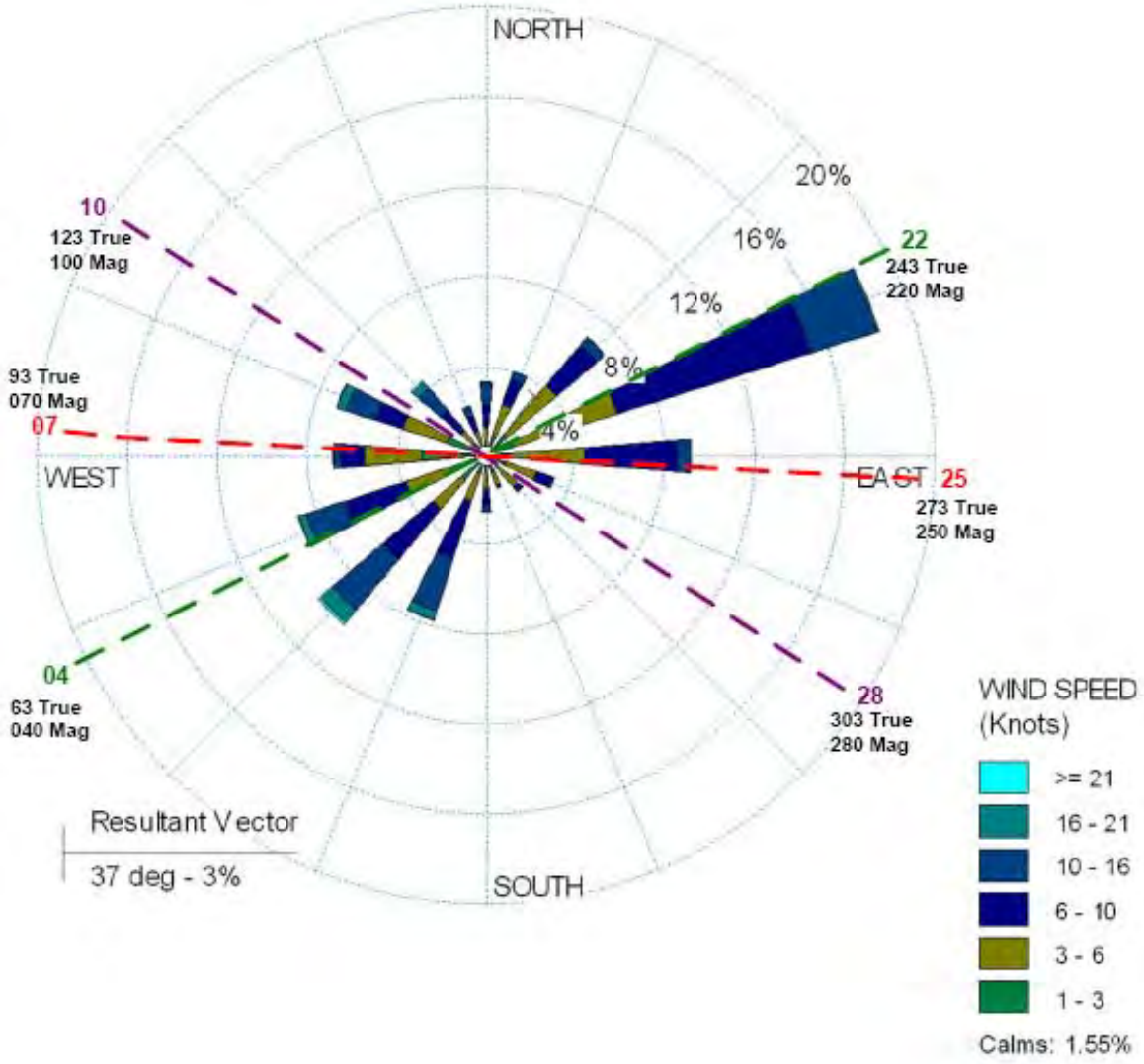


FIGURE 3-5 RANGIORA WINDROSE – 12 HOURS 07:00 – 19:00

4 Planning Parameters

4.1. General

This section provides key planning parameters recommended for the layout of taxiways, aprons and buildings for future fixed wing GA and helicopter operations, based on accommodating the design aircraft identified in Section 2.

4.2. Fixed Wing

Two levels of development are proposed for fixed wing GA types, namely:

- Code A aircraft (e.g. small single engine types such as C172, PA28) – storage in “lock-up” hangars
- Code B aircraft (e.g. small twin turboprop types such as Twin Otter, Y12) – storage and maintenance with aprons in front of hangars.

Planning parameters, in accordance with the requirements of the Civil Aviation Authority of New Zealand Advisory Circular, for Code A types are illustrated on Figure 4-1 and for Code B types on Figure 4-2.

NZCAA Advisory Circular AC139-7a – Aerodrome Design – Aeroplanes at or below 5700kg MCTOW, is applicable in this situation.

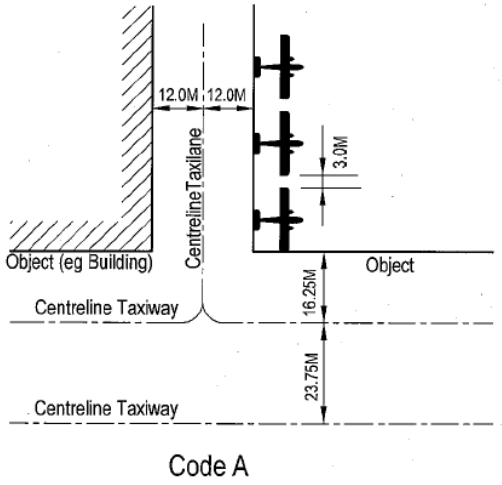


FIGURE 4-1 CODE A AIRCRAFT PLANNING PARAMETERS

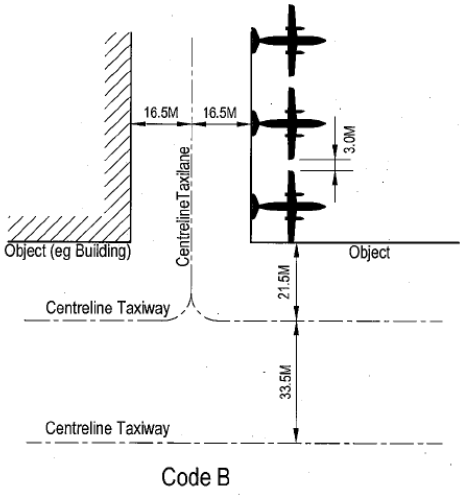


FIGURE 4-2 CODE B AIRCRAFT PLANNING PARAMETERS

4.3. Helicopters

Planning parameters, in accordance with the requirements of the Civil Aviation Authority of New Zealand Advisory Circular AC139-8a, for the set-out of helicopter facilities, based on the Bell B212 design helicopter are shown on Figure 4-3.

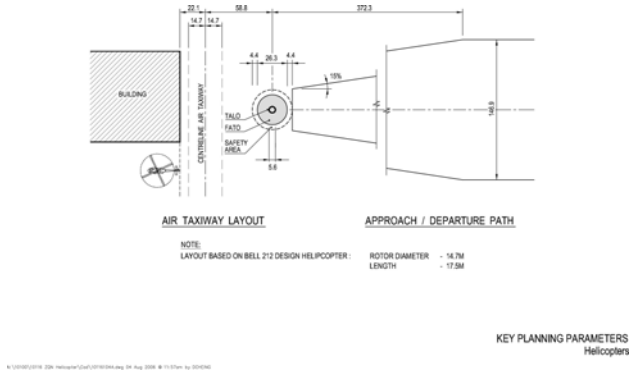


FIGURE 4-3 HELICOPTER PLANNING PARAMETERS

4.4. Aircraft Hangars

Hangars should be constructed to fit the class of aircraft to be accommodated. They are often extended and reconfigured to house workshops, sideshops, offices and staff areas.

Code A Aircraft

Small hangars should generally measure no less than 12m by 12m. A useful size of individual small hangar in New Zealand has been 14m by 16m.

At some airports, multi-aircraft hangars have been built to 12m by 60m specifications. Aircraft are then stored in an alternating “T” style to make the most effective use of the hangar footprint. Grass taxiways and aprons are usually sufficient for smaller GA aircraft.

Code B Aircraft

Hangars required to house Code B aircraft will normally also house engineering sideshops, stores areas, administration offices and facilities for employees. Standard hangar sizes are not the norm, but a useful guide would be in the area of 60m by 20m. Hangars are generally designed so the aircraft can “nose” in. Maintenance shops and offices are often constructed over two levels to each side of the nose.

Apron Areas

Sealed apron areas outside hangars are used for:

- Providing a surface for light aircraft maintenance
- Parking aircraft
- Loading freight and baggage
- Loading passengers
- Storage of ground service equipment

Sealed apron manoeuvring areas avoid intake ingestion of foreign objects and minimise the effects of propwash blowing dirt and gravel.

The size of any given apron should be such that aircraft can be taxied safely, parked and powered out where appropriate. Additionally, ground vehicles should be provided with sufficient space for operators to perform their tasks.

Aprons should be designed large enough for the design aircraft with a corresponding bearing strength.

5 Land Use

5.1. Current Development

Hangar development in the past has evolved without the guidance of a high level airport planning strategy. This has resulted in a relatively inefficient use of land and inconsistency in hangar design and standards.

Since 2007, the Council, with the Airfield Advisory Group assisting in the process, has now identified and planned two areas of development within the airports bounds. The first area lies to the east of the main airport buildings and contains 18 lots, out of which 12 will be developed in the near future. The second area to the west of the existing buildings contains 49 lots. These areas are highlighted in Figure 5-1.

These developments will bring the total number of lots on the airport from the current number of 40 to 107.

5.2. Land Purchase Options

In the previous Rangiora Airport Strategic Planning study, the limited amount of land available for expansion on Rangiora Airport meant that the purchasing of surrounding blocks of land was deemed to be essential for the continuation of growth at the airport and to accommodate forecast demands.

Four land purchase options were considered in the previous study. It was recognised that for reasons of operational flows and security, together with ready access to refuelling, maintenance and Aeroclub facilities, the preference would be to have all hangars on the one side of the main runway. It was also recognised that the only available option to achieve this would have been to relocate the whole of the main runway south, the cost of which would be in the region of $1.5m. For this reason the only options considered feasible involved the compromise of splitting hangar locations on both sides of the runway. Hence, the airport configurations proposed in this report address the developments on the southern side of the main runway and show future hangars and commercial developments being located on both sides of the runway.

Since the previous study in 2007, WDC has purchased three Lots (Lot 2, 3 and 4) to the south of the Airport and is contemplating the possibility of purchasing Lot 1 which is southwest and parallel to Merton Road. These Lots are shown below in Figure 5-2. One of the outcomes of this report is to advise the District Council whether or not purchasing Lot 1 is necessary.

5.3. Control of Land

In some critical areas, Rangiora Airport should maintain control of land through exclusivity of supply and management. These areas include:

- Airside movement areas, including runways, taxiways and aircraft parking aprons
- All operations straddling the airside boundary e.g. general aviation, organisations with airside access,
- Roads and access

An important philosophy for leasing land is that land adjacent to runways and taxiways and close to apron areas is strategic and should be leased for shorter periods rather than extended periods.

Lease durations in the order of 20 years for more strategic land parcels would be appropriate. Less strategic land parcels could be leased for longer periods in a layered fashion appropriate to their reducing strategic value, i.e. 30, 40, 50 years.

5.4. Ground Lease vs. Building Lease

Ground lease is a simple option whereby the District Council leases only a piece of land and the lessees develop their own facilities on the leased land. This option would most likely result in lessees developing facilities in a more sporadic way, with greater variation in design and construction standards.

Building development and lease is an option where the District Council would design and build purpose-made facilities and lease these to users. In this approach the Airport has better control of design standards. However WDC also needs to consider the following important questions when considering the Building Lease option:

- Is development capital available to WDC?
- Are development skills available to WDC?
- Does WDC have an appetite for risk i.e. what's the Council's policies for development and ownership?
- Will the District Council's offers (such as land/rental charges) be attractive enough for the lessees?

5.5. Land Use Compatibility

Land leased to commercial/industrial users will experience a variety of uses. It is important that these uses are compatible with both neighbouring aeronautical activities, and neighbouring commercial/industrial activities.

Prospective users of land must be made aware of conditions that are usually present at airfields.

Wording similar to that below may be used in a commercial agreement.

Compatibility of Activity

The lessee acknowledges the requirement for compatibility with aviation activities within the environment of an airport. The lessee further acknowledges that the following conditions are normally present at Rangiora Airport. Land use activities sensitive to the following conditions will not be permitted:

- Noise (in excess of the appropriate guidelines referred to in NZ Standard 6805:1992 or any other levels deemed appropriate by the airport)
- Odour (fumes)
- Smoke
- Dust
- Light
- Aircraft and vehicular traffic
- Public thoroughfare and road traffic
- Security areas
- Clearance limitations (height restrictions on buildings, aerials, poles, flags, fences, etc.)
- Electrical or frequency interference
- Other conditions associated with aviation activities that may arise from time to time

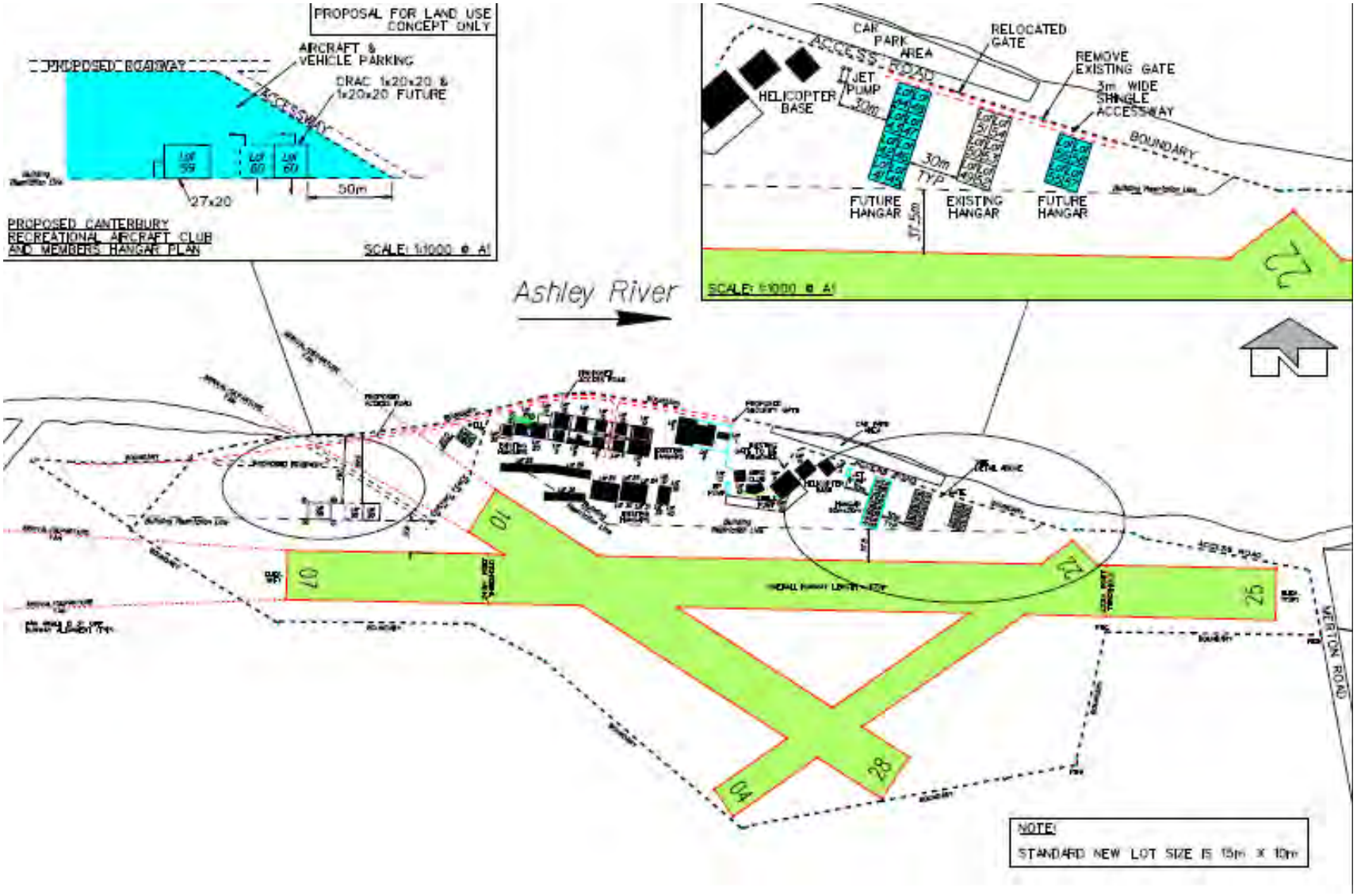


FIGURE 5-1 RANGIORA AIRFIELD – CURRENT ACQUIRED LOTS

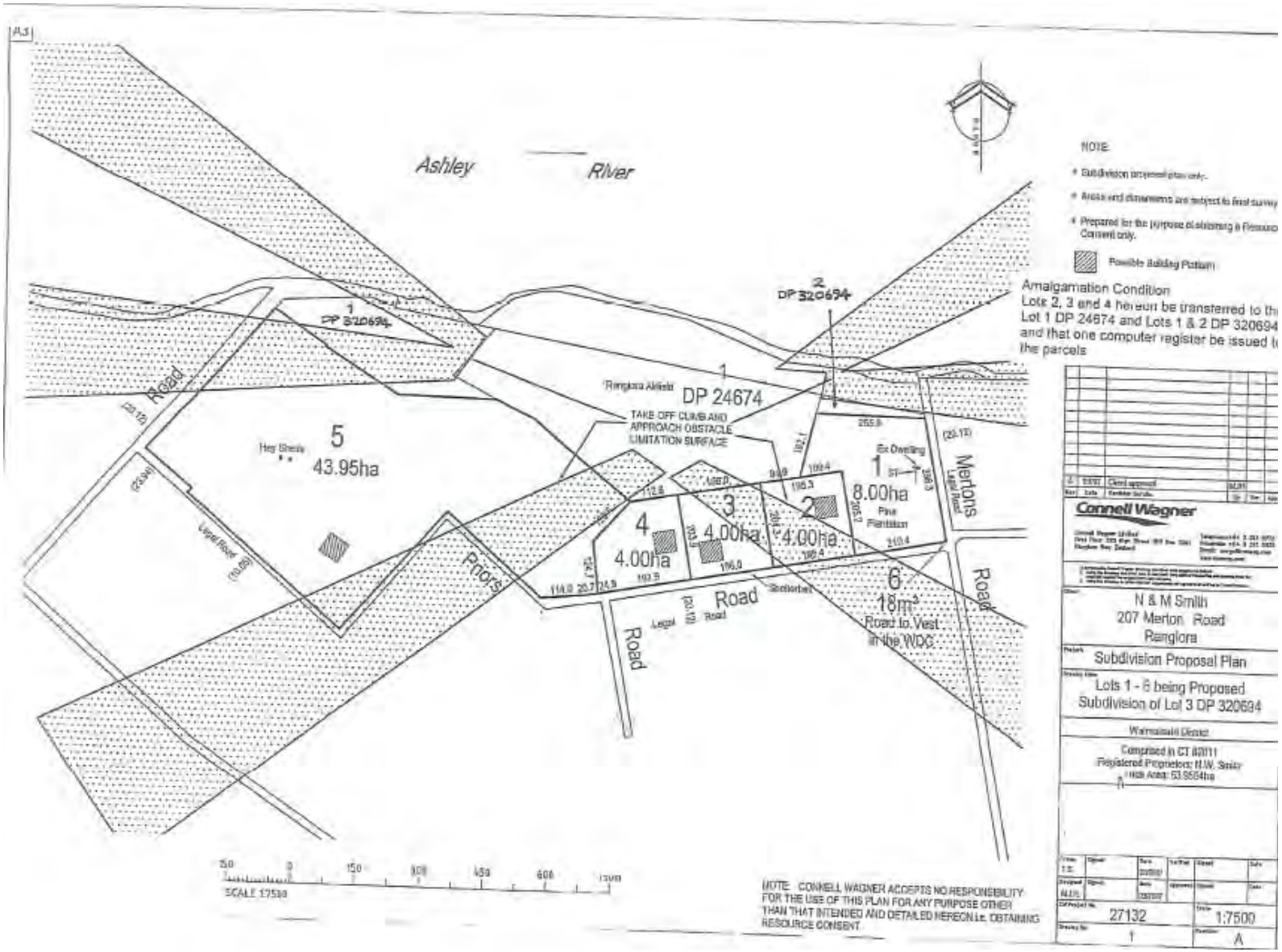


FIGURE 5-2 NEWLY ACQUIRED LOTS (LOT 2, 3 AND 4)

6 Future Airfield Configuration

6.1. Introduction

The acquired Lots enable the possibility of re-aligning current Runway 10/28 as new Runway 11/29; and with the closure of Runway 04/22 a big parcel of existing land can be combined with the balance of the new acquired land to create a very flexible aviation commercial development area.

Two indicative options – Option 1 and Option 2 – for future airfield configurations are proposed allowing for aviation and commercial development south of the main runway on the newly acquired land. See Figures 6-1 and 6-2.

These options are indicative because there would be many variations of layouts possible. However, the key planning recommended to be followed are:

1. Taxiways parallel to 07/25 and 11/29 to provide flexible access, assist runway capacity and support safe ground taxiing operations
2. Strategic land facing the 07/25 taxiway and runway should be for aviation uses. In option 2, an example of how frontage at the southern end of 11/29 can be considered strategic is also shown. See Figure 6-2.
3. The remaining land areas that do not have airside frontage chould be used for non-aviation commercial activities.

6.2. Key Planning Parameters

The runway and taxiway configurations in both options are essentially the same, except for difference in taxiway access from proposed commercial areas to the proposed new cross runway 11/29.

Both plans keep the main runway but formalise a parallel taxiway and clearances for Code B types. Also both plans propose realigning, reconstructing and extending cross runway 11/29 and closing of Runway 04/22 as described previously in Section 3.8.

Key planning dimensions for future runway developments are depicted in Table 6-1.

6.3. Future Runway Developments (07/25)

The main runway strip width is currently 60m. Future planning for the runway strip, allowing for possible future night operations, means that the strip should be widened from 60m to 80m so as to be in accordance with the prescribed widths noted in the CAA Advisory Circular.

In its current position the runway cannot go wider to the north as it would conflict with clearances to existing buildings. Therefore, it is recommended that runway centreline is moved to the south by 6.4m. This way the runway strip can extend wider from 60m to 80m without interfering with the current buildings and hangars on the northern side of the Airport while still providing for a parallel taxiway on the northern side.

The width of the runway itself is currently 23m and does not require widening.

6.4. Future Runway Developments (11/29)

The proposed new Runway 11/29 is intended to serve Code A aircraft (including microlights). However, re-aligning this runway i.e. it having it sit parallel to the airport boundary on the southwest, allows the possibility of having a runway which is slightly longer and wider than what was originally planned in the previous Rangiora Airport Strategic Planning report; and also allows having a long term view of possibly serving Code B aircraft as well and not just Code A aircraft.

With this runway re-aligned by approximately 8 degrees clockwise from its original position, it is recommended that the runway is also extended by 100m bringing its new length to be approximately 683m and to have its width reduced from 60m to 40m, leaving a 10m gap between the runway strip and the boundary.

The runway length extension would also allow easy access to any potential developments (such as helicopter) that could take place in the isolated parcel of land on the southwest side. This area could be utilised effectively by providing a helicopter training base and 20mx120m helicopter hangar facility close to the southern boundary of the Airport.

It is recommended that the Runway 11 end be surveyed as the OLS from this end might be obstructed by the access road at the northwest boundary, possibly requiring shortening of that end of the runway by approximately 7m.

6.5. Taxiway Developments

6.5.1. Runway 07/25

Taxiways are proposed parallel to the north of Runway 07/25 and parallel to the south of Runway 07/25. To north of this runway, up to three link taxiways could be provided to provide better access to the existing aprons and hangar facilities on the northern side of the Airport.

On the southern taxiway three links are proposed that would allow aircraft easy and efficient access to the hangars and maintenance developments proposed on the southern purchased Lots.

6.5.2. Runway 11/29

A taxiway for this runway is proposed which is a continuation from the southern 07/25 taxiway. The Runway 11/29 taxiway is configured so that it also allows easy connection to the northern Runway 07/25 taxiway via Runway 07/25.

6.6. Precinct Planning Parameters

6.6.1. Future Hangar Developments

More formally planned hangar developments, compared to the existing hangar layout on northern side of the Airport, are proposed on the southern side of the main runway.

These possible hangar arrangements have used the facility design layouts and planning parameters set out in sections 5 and 6 of this report.

Possible examples of developments shown in the proposed layouts include:

- An aircraft maintenance hangar and a fixed wing GA hangar. These two bases are of 20mx120m dimension catering for the largest aircraft type for this study i.e. the Cessna Grand Caravan. These large bases could be broken into 6 sections each of 20x20 dimensions.
- Large communal hangar facility and fuelling facilities area.
- A helicopter hangar and a helipad.

6.7. Future Commercial Developments

A Commercial Park is proposed to the south of the proposed hangars and maintenance base. This Commercial Park extends to the south and southeast boundaries of the Airport and has a potential area of 5.2 ha.

Further zone of commercial development could be provided (1 Ha) to the northwest of the Airport adjacent to the corner of Runway 07 and to the west of the proposed microlight area.

In Option 2, the southern Commercial Park has a reduced area of 3.6 ha as a result of a possible hangar development facing on to Runway 11/29.

These Commercial Parks should provide enough combined area for future leases and tenancies that the District Council opts for.

6.8. Access Roads

Keeping future hangar and commercial developments in mind, an access road to the southern side of the Airport is proposed. This road turns west running parallel to the commercial developments. This road provides access to all the proposed hangars, aprons and commercial development.

The new access road would also be extended towards a possible helicopter maintenance base which could be between the Airport boundary and corner of Runway 29 (including the future 100m extension).

Runway		Approach	Code Number	Code Letter	Day / Night	Runway Width (m)	Runway Strip Length (m)	Strip Width (m)	Side Transition Slope	Approach and Departure Slope	Runway Centreline to Object (m) (2)	Runway to Taxiway (m)	Taxiway to Object (m)
07-25	Provided	Non-instrument runway	2	A	Day	23	1180(1)	60	1:4	1:20	37.5	n/a	n/a
	Required	Non-instrument runway	2	B	Night	23	1180	80	1:5	1:30	70	52	21.5
11-29	Provided (10-28)	Non-instrument runway	1	A	Day	18	583	60	1:4	1:20	54	n/a	n/a
	Required	Non-instrument runway	1	A	Day	18	683	40 (3)	1:4	1:20	39	n/a	n/a

TABLE 6-1 RUNWAY CHARACTERISTICS

Note:

(1) Not including displaced thresholds

(2) Based on 6m building/object height

(3) $2^{1/2}$ time the wing span of the aeroplane to be operated, or 30m whichever is greater

FIGURE 6-1 AIRFIELD CONFIGURATION – OPTION 1

FIGURE 6-2 AIRFIELD CONFIGURATION – OPTION 2

7 Recommendations

7.1. Airfield

Based on the wind and runway usability analysis, it is recommended that Runway 04/22 could be closed, leaving the main Runway 07/25 on its current alignment and realigning and reconstructing Runway 10/28 by approximately 8 degrees clockwise to become 11/29.

The opportunity should also be taken to lengthen new Runway 11/29 to its maximum possible length of approximately 683m.

The proposed layouts would allow WDC the opportunity to develop more hangars on the land freed up and the recently acquired land. Other revenue generating properties such as commercial complexes also have the potential to be developed on these Lots which is currently partly occupied by Runway 04/22 but would be available for further development with the closure of this runway.

The types of opportunities presented to the Airport with this recommended airfield layout include:

- Rangiora Airport emerging as a prominent GA / recreational airport facility within the South Island
- Relocating over time of GA, flight training and helicopter operations from Christchurch Airport to Rangiora
- Rangiora Airport obtaining a sizeable share of GA operators that will be relocated from Wigram Airport over the coming 3 years
- Further development of airframe maintenance facilities
- Start up of an avionics maintenance facility
- The airport strengthening its position as the number one microlight facility within the South Island
- Development of charter operations
- Arrangements with local accommodation outlets

7.2. Commercial Development

Two indicative configurations for aviation and commercial development south of the main runway have been developed.

Both airfield configuration options provide the Airport enough area for future commercial developments. Option 1 provides a total of 6.9 ha of commercial land and Option 2 provides a total of 5.3 ha of land at the Airport.

7.3. Purchase of Lot 1

The proposed airfield configurations demonstrate that the purchase of Lot 1 is not essential and would be surplus to the Airport's requirement because the three purchased Lots provide enough space for further future developments that are proposed in the future airfield configurations.

It is suggested that the purchase of this Lot should be contemplated in the long term only if the proposed configurations fall short of providing enough room for growth of the Airport and aviation activities in the future.

RANGIORA AIRFIELD REVIEW OF DEVELOPMENT PLANS

May 2022

AVSAFE CONSULTANTS

*Photo Credit on the Front Cover: Waimakariri District Council

‘Rangiora Airfield will develop and be recognised as a prominent airfield for general aviation and associated businesses in the South Island’[1]

[1] Airport Vision: Rangiora Airport Strategic Planning August 2007-Airbiz

TABLE OF CONTENTS

1.0 Executive Summary

Review of the Rangiora Airfield Plans for Consideration by the Waimakariri District Council

This is a review of the present and future state of the Rangiora Airfield, commissioned by the Waimakariri District Council (WDC), for consideration to the Airfield Master Plan.

The brief is to look at the following factors:

1. The current physical characteristics of the Airfield.
2. Consider the Developers plan and how that would affect the current airfield dynamics.
3. Look into the regulatory considerations and the affect that they may have on the development.
4. Look at the long-term requirements and wishes of the WDC.
5. Offer alternative options to the proposed Developers plan to protect the WDC.

Plans and Documents supplied for review are:

1. Proposed and Existing Hangar Positions – Date 18th August 2010.
2. WDC Noise Contour Plan – Dated 25th August 2020.
3. Outline Development Plan – DM and AD Smith Investments Ltd.
4. Private Plan Change 45 and Notice of Requirement Decision – Dated September 2020.
5. Northwest Rangiora Water and Wastewater Servicing Memo – Date 28th September 2021.
6. Airbiz Commercial Master Plan – Dated 22nd January 2009.

This review has been triggered by a proposal from DM & AD Smith Investments Ltd (Developer) to subdivide land, which they own, and to create an Airpark, situated on the southern side of the Rangiora Airfield, and to be able to access the Rangiora Airfield.

It is proposed that the Airpark, would have a mix of residential dwellings along with hangars and commercial activities on individual sites.

The Developer proposes to have access to the Rangiora Airfield by four taxiways.

The Developer, also proposes, southern extensions to the two cross runways, being runways 10/28 and 22/04.

Under the Developer's plan, some 9.5 Hectares of land on the southern and eastern sides of the airfield, currently owned by the WDC, is to be acquired by the Developer, to become a part of the Airpark.

In return the Developer is offering the WDC some 9 Hectares on the western end of the airfield. This would allow an extension, of the main runway, sometime in the future This area includes 1 hectare on the eastern end of the Main Runway.

It is proposed that there would be a land swap between the Developer and the WDC. The difference in area being around 0.5 hectare in favour of the Developer.

Discussions have been held with the WDC Staff, Councilors, Rangiora Airfield Advisory Group (RAAG), other users of the Rangiora Airfield and the Developer. These parties have several differing views as to how the Rangiora Airfield should look going forward into the future.

Some of these suggestions are listed below:

1. Become the "Ardmore aerodrome" of the South Island.
2. Become a major General Aviation Centre.
3. Need more hangar space.
4. Encourage flying schools.
5. Need more aircraft parking areas and better ground movement areas.
6. Lengthen the main runway to accommodate larger aircraft -
    a. ATR 72
    b. Business Jets
    c. Charter operators
7. Instrument Approaches for the main runway.
8. Protect the airspace around the airfield.
9. Better Taxiways.
10. Retain the two cross runways for safety reasons.
11. Seal the main runway
12. Install lights for night flying.
13. Have aircraft maintenance bases and associated businesses.
14. Fuel Pumps on both sides of the airfield.
15. Helicopter and Drone Corridors

As you can see the suggestions of those interested in the Rangiora Airfield vary considerably. In general, the consensus envisaged that the airfield would grow into one which the town and region can benefit from.

The Developer's plan, as proposed, has initial advantages for the Rangiora Airfield and region by encouraging and offering more activity on the airfield.

This would generate extra income for the airfield and the town; however, the plan does have some drawbacks.

The main drawback is, that the airfield would effectively become land locked. The airfield cannot expand to the north because of the Ashley River. The eastern and western ends are constrained by Priors and Merton Roads. The whole of the southern boundary would be owned and controlled by the Developer.

These constraints would certainly reduce the opportunity for airfield expansion by the WDC.

Other constraints to be considered in the overall future of the Rangiora Airfield are regulatory ones.

The Civil Aviation Authority of New Zealand (CAA NZ) rule *Part 139*[2] *– Aerodromes Certification, Operations and Use*, set out the parameters of aerodrome design.

[2] https://www.aviation.govt.nz/rules/rule-part/show/139

Currently, the Rangiora Airfield, is *non certificated,* with only light aircraft of below 7500Kgs MCTOW (Maximum Certificated Take Off Weight) operating from it.

The CAA NZ rules pertaining to the airfield, are not as comprehensive or restrictive as if the aircraft using it were above 7500Kgs MCTOW.

Albeit, if the Rangiora Airfield was required by the Director of Civil Aviation, to become a Qualifying Certificated Airfield, then compliance with CAA NZ Rule Part 139 becomes mandatory. The airfield is then required to meet certain standards prior to certification and will be audited by the Civil Aviation Authority of New Zealand at regular intervals to ensure that the compliance with the CAA NZ rule and that the WDC operations procedures are being met.

An example of the regulations showing the different rules for different classes of aircraft is stated below.

Scenario 1

Code A and B Aircraft (current situation)

The main runway at Rangiora is currently 1180m long and 60m wide. The 60m wide runway, refers to the runway strip width, not to the runway itself. The runway is situated in the middle of that runway strip.

For a day Visual Flight Rules (VFR) runway, the runway should be twice as wide as the outer main gear wheel span of the largest aeroplane to be operated.

The runway strip width for a day VFR runway should be two and a half times the wingspan of the largest aeroplane to be operated, or 30 m, whichever is the greater.

The PAC Cresco Agricultural aircraft (Code A) is possibly the largest aircraft regularly using the airfield. This has a wheel span of 3.71m and a wingspan of 12.8m.

Therefore, the runway section of the strip is only required to be 7.5m wide, and the runway strip only needs to be 25.6m wide, or 30m for a bit of extra margin. Half what it is now.

Presently, the runway width and strip are more than adequate for the aircraft currently using it.

Scenario 2

ATR 72 (Code C)

Because this aircraft is above 7500kgs MCTOW, the runway this aircraft can operate from comes under a different set of parameters than Scenario 1.

Although the aircraft can take off within 1156m, the runway length required under the rules must be at least 1344m long, the runway width (the sealed section) must be at least 30m wide and the runway strip width must be 150m wide.

This means that there is currently not enough land owned by the WDC available for the runway to accommodate the ATR 72.

The WDC would need to acquire a considerable amount of land from the neighbors to the south and west to be able to fit a runway capable of handling an aircraft of the ATR 72 size.

With reference to business jets, the Falcon 50, of which there are at least 3 operating in New Zealand now, and the Challenger 604 of which there are 2, are all Code C aircraft and would require the same runway as an ATR.

The purpose of the Master Plan is to identify current and potential land use, for the expansion of the airfield, its facilities and to safeguard the airfield from urban sprawl.

The Rangiora Airfield must be carefully planned and protected to realise the continual development and environmental considerations of the WDC, allowing the airfield to remain a general aviation airfield available to the public, and to meet the needs of the Rangiora District.

Previously, two Master Plans were commissioned by the WDC, these were completed by Airbiz:

- Rangiora Airport Strategic Planning August 2007
- Rangiora Commercial Master Plan 22 January 2009

These plans were accepted by the WDC; however, they were not implemented in their entirety. The WDC did acquire some additional land to protect the airfield boundaries, and the future development of the airfield as suggested in the Airbiz report.

Developing the airfield will encourage more aviation activity, and by lengthening two of the runways would allow larger aircraft to use the airfield and offers a safer option for aircraft currently using the airfield in variable windy conditions.

The increases in the number of aircraft movements, would contribute to an increase in the landing fee revenue.

This report outlines four options:

Option One – Status Quo

Option Two – Airpark Development (DM and AD Smith Investments Ltd)

Option Three – WDC Use of Airfield Land and Airpark Development

Option Four – Code C Runway

The recommendation is that the WDC considers Option Three.

2.0 Introduction

The purpose of this Rangiora Airfield Review is to determine the best use of land available at the Rangiora Airfield for future developments. These developments could involve the purchase of additional land and/or a land swap with a Commercial Developer who presently owns land on the airport boundaries.

This report will also look at the affects that any proposed development on or around the Rangiora Airfield will have on the airfield and its environs.

3.0 Background

The Waimakariri County Council was originally gifted the land to develop as an airfield. The airfield was opened in October 1958. From that time the Rangiora Airfield has been owned and operated by the WDC, previously the Waimakariri County Council.

Rangiora Airfield is 4.75 kms from central Rangiora township, which is a major town for the Waimakariri District Council. Evidence of rapid growth and positive projections for the future of Rangiora is positive:

- Rangiora Town population of 20,280 growing to a projected 22,100 by 2023
- Seen as local service centre by 60% of district population; by 2031, could be providing goods and services for about 50,000 people
- Demand for additional 20,000m² retail and 20,000m² office floorspace by 2031 to meet growth
- Business numbers increased by 27% in last 10 years and number of employees by 35%
- Dramatic increase in spending immediately following February 2011 earthquake (up 33%). As of December 2018, spending was still growing 5.3% annually.
- Catchment stretches north to Kaikoura and Hurunui District, south to Christchurch and Selwyn District
- Most Rangiora employees work in retail/wholesale sector; highest number of business units represent the finance/professional services sector.[3]

The Rangiora airfield is an important asset to the Region, and accommodates recreational, agricultural and flight training operations and includes patient transfers from smaller centres to centralised health facilities.

In December 2020, the process for designating Rangiora as an airfield through the district plan was completed. With this process complete and the future of the airfield secured within the district, focus is on the development of the airfield.[4]

[3] ENC Enterprise North Canterbury
[4] Activity Management Plan 2021 Community and Recreation

Rangiora Airfield is approximately 50.7 hectares and is bounded by reserve land adjoining the Ashley/Rakahuri River to the North, Merton Road to the east and rural farmland to the south and west. Privately owned farmland on Priors Road borders the airfield. The Council owns land to the southeast on Priors Road, and on Merton Road with a small road frontage.

The Council purchased a lifestyle block on Merton Road at the eastern end of the airfield. This was purchased to eliminate the potential of reverse sensitivity issues regarding noise and airfield operations.

The Rangiora Airfield is operated as a Recreational and General Aviation Airfield with no regular transport service.

The airfield is 22 air kms from Christchurch International Airport, which is the main airport for domestic and international travellers, including general aviation, flight training both helicopters and fixed wing, Air Ambulance Services, and maintenance bases.

The airspace around Christchurch Airport is changing due to an increase in domestic and international airline traffic, limiting both general aviation and flight training activities.

The potential for an increase in activity at the Rangiora Airfield is almost certain due to these constraints, with general aviation looking for alternative facilities from which to operate.

There are several small privately owned airfields in the Rangiora area which complement the Rangiora Airfield.

There are other airfields within the South Island with similar activities these include:

- **West Melton Airfield**, operated by the Canterbury Aero Club, and located 24 air kms south of Rangiora. General aviation and flight training are the main activities.
- **Ashburton Airfield**, 90 air kms from Rangiora Airfield. Activities at Ashburton include flight training, general aviation, and parachuting. This airfield has four grass runways, runway lighting and navigational aids.
- **Kaikoura Airfield**, 129 air kms from Rangiora, operates as a general aviation airfield along with Commercial Whale Watch Flights, both fixed wing and helicopters activities.
- **Omaka Aerodrome**, 225 air kms from the Rangiora Airfield is privately owned by the Marlborough Aero Club. It is a busy aerodrome used for flight training, general aviation, and vintage aircraft flights, with the Omaka Heritage Centre based on the airfield.
- **Timaru Airport**, 154 Air kms from the Rangiora Airfield, airfield activities include general aviation, flight training and scheduled passenger services

4.0 Airfield Overview

Management

The Rangiora Airfield is a non-certificated aerodrome, it is managed and operated by the Waimakariri District Council, with the assistance of the Rangiora Airfield Advisory Group (RAAG).

The Green Space Manager, a Council employee, oversees the day-to-day management of the airfield.

As the owners of the Rangiora Airfield, the WDC is responsible for ensuring the airfield is operated and maintained in accordance with the applicable CAA NZ rules.

The WDC is the 'person conducting a business undertaking' (PCBU) and has responsibilities under the Health and Safety at Work Act 2015.

Rangiora airfield is not security designated, however Work Safe requires procedures in place for public protection.

The airfield procedures and safety policies required for the safe and effective management of the Rangiora Airfield for all users, are outlined in the Rangiora Airfield Safety Manual.[5]

Aeronautical Information Publication (AIPNZ)

Information for pilots on the Rangiora Airfield is published in the Aeronautical Information Publication New Zealand (AIPNZ) as Rangiora Aerodrome, designated as NZRT, Elevation 180[6]

Rangiora Airfield comprises three grass runways with six vectors and a helicopter hover/auto rotation training area.

Standard overhead join procedure is recommended, for aircraft joining the circuit at Rangiora.

Helicopters may join and depart at low level but must come to a stationary hover to check for traffic prior to crossing an active vector.

Rangiora operates as a general aviation airfield and has a large microlight base, possibly the largest in New Zealand. There are no scheduled passenger or freight services. Parachute operations are not permitted. Drones (remotely controlled aircraft) are not allowed to be flown at the Rangiora Airfield or within 4kms of the airfield without prior permission of the aerodrome operator.

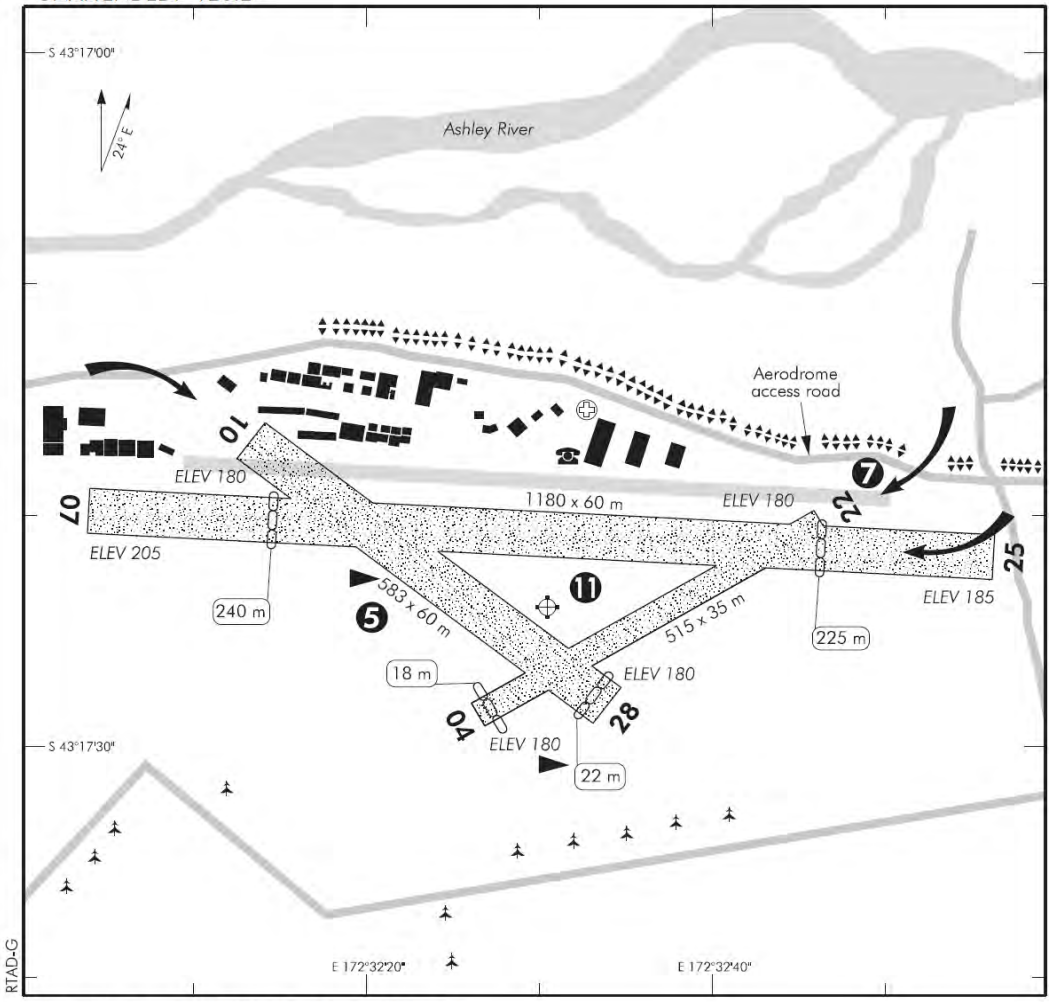
Rangiora Airfield has several different organisations who are based on the airfield they include:

- Rangiora based general aviation enthusiasts including microlight organisations
- Itinerant general aviation aircraft
- Flight Training organisations- fixed wing and helicopter
- Agricultural operators - helicopter and fixed wing
- Maintenance facilities
- Air Training Corps
- Civil Defence or Medivac activity as required

[5] Rangiora Information/WDC
[6] AIP New Zealand NZRT AD2-51.1

ELEV 180
NZRT NON-CERTIFICATED
UNATTENDED: 120.2

RANGIORA AERODROME



1. Circuit: RWY 04, 07, 28 — Left hand
   RWY 10, 22, 25 — Right hand
2. **CAUTION:** Helicopter 180° and straight-in autorotations.
3. Vacate runways via the most expeditious route.
4. Some patches of loose stones on movement areas.

❺ Helicopter hover training area.

6. Standard overhead join recommended.

❼ RWY 04/22 not available when road traffic is using aerodrome access road.

8. **CAUTION:** Two private airfields in close proximity 1.8 NM SW, Fernside Fields (circuits to the north), Barradale (circuits to the south).
9. Helicopters may join and depart at low level but must come to a stationary hover to check for traffic prior to crossing active vector.
10. Make radio call on final approach advising intended runway.

⓫ Triangular area between runways reserved for helicopter auto-rotation training. Keep clear.

12. No parachute operations permitted.

*S 43 17 24 E 172 32 30**

Effective: 22 APR 21

RANGIORA AERODROME

NZRT AD 2 - 52.1 AIP New Zealand

Non-Certificated Aerodrome 3 NM WNW of Rangiora

RANGIORA

NZRT

OPERATIONAL DATA

RWY

RWY	SFC	Strength	Gp	Slope	ASDA	Take-off distance 1:20	1:30	1:40	LDG DIST
04 22	Gr	ESWL 820	4	Nil		515 497			497 515
07 25	Gr	ESWL 820	8	0.52D 0.52U		955 940			940 955
10 28	Gr	ESWL 820	5	Nil		561 583			583 561

LIGHTING

Nil

FACILITIES

Fuel: BP Jet A1, Avgas 100, Swipecard.

Z Energy Avgas 100, access via Z card.

Limited repairs.

SUPPLEMENTARY

Operator: Waimakariri District Council, Private Bag 1005, Rangiora.
Tel (03) 313 6136 Fax (03) 313 4432

Available for general use without the permission of the operator.

Landing fees: Payable for all aircraft.

An automatic recording system for monitoring landings is installed.

Airfield Communications

Rangiora is an uncontrolled airfield within a Mandatory Broadcast Zone B876 (MBZ), which requires pilots, flying within the MBZ, to broadcast a radio call every five minutes stating their intentions.

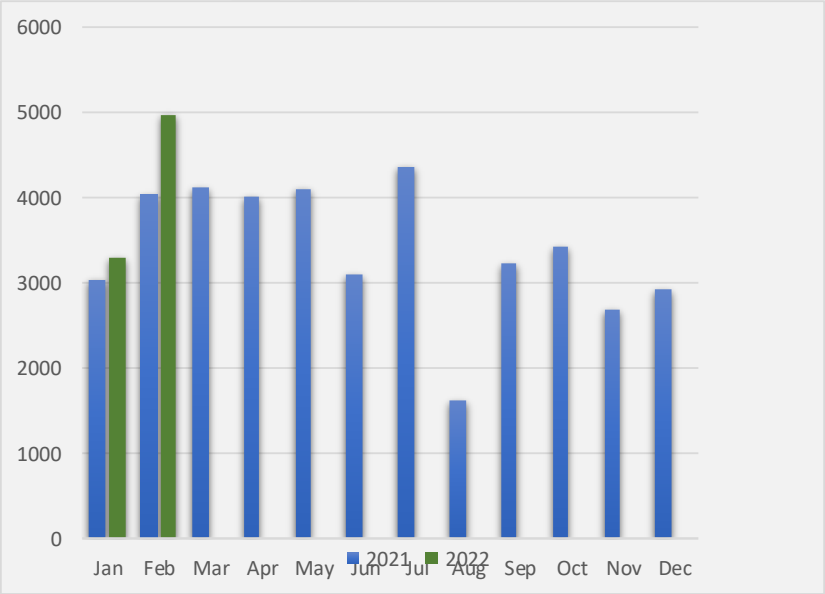
Pilots are advised as per the NZAIP to make a radio call on final approach, advising the intended runway to be used. The local broadcast frequency is 120.2Mhz as advertised in the NZAIP.

Aimm Movement Monitoring (Automated Intelligent Movement Management)

The WDC has invested in Aimm, a radio-based aircraft identification and monitoring system which records aircraft arrivals and departures. This monitoring process allows the WDC to record and collate accurately aircraft movements, and to invoice the operator accordingly.[7]

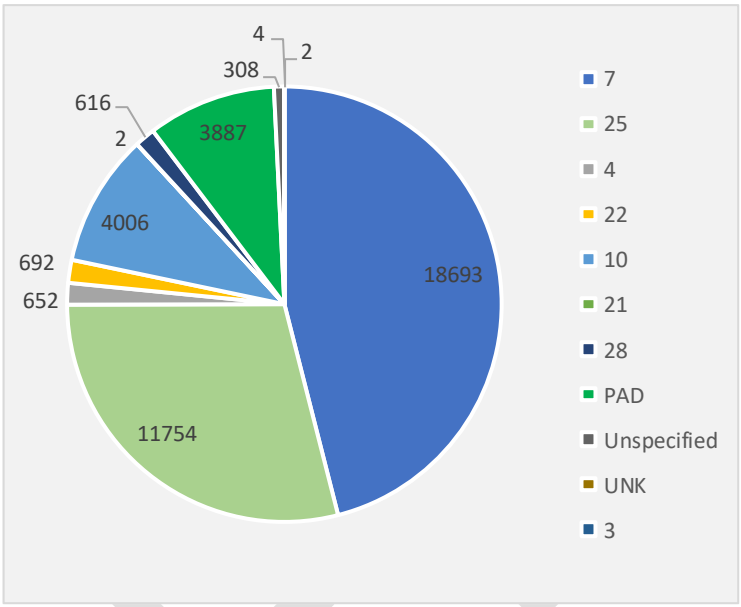
In operation for 16 months Aimm, provides Data relating to- runway use, aircraft type and time of activity. Evidence of this information is displayed with the following graphs:

Aircraft Movements Monthly January 2021- February 2022	
Months	**Movements**
January	3028
February	4042
March	4118
April	4006
May	4097
June	3085
July	4362
August	1608
September	3228
October	3421
November	2691
December	2930
January 22	3283
February 22	4968

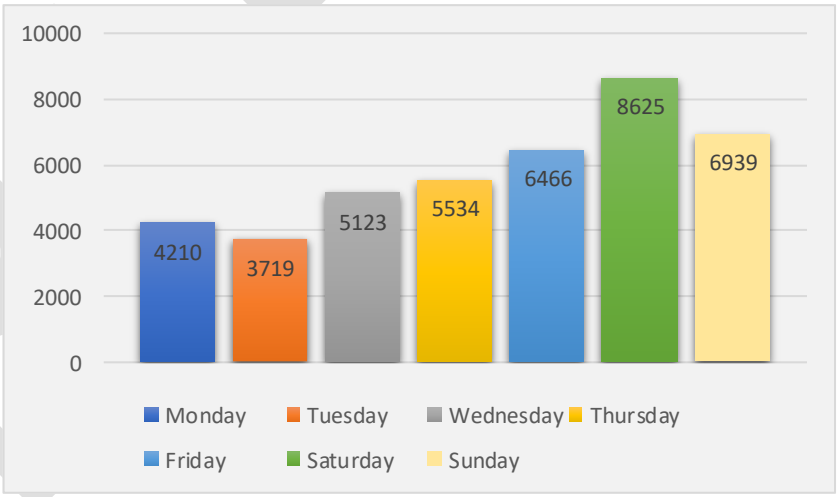


[7] Activity Management Plan 2021 Community and Recreation

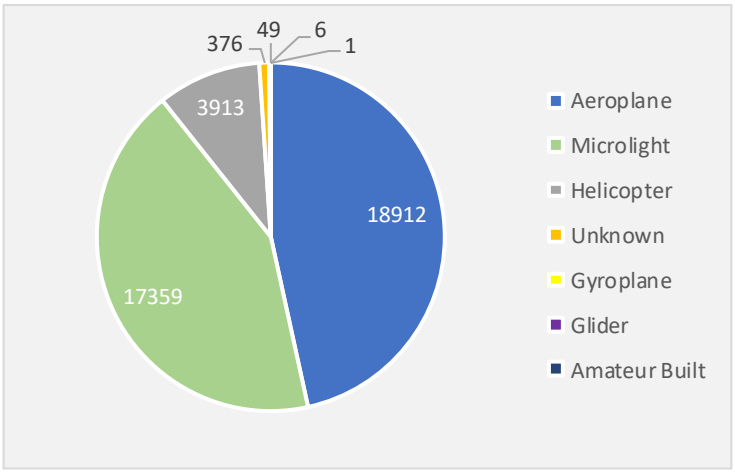
Runway Use Summary 2021		
Runway	**Movements**	**%**
07	18693	46%
25	11754	29%
PAD(Heli)	3887	10%
10	4006	10%
28	616	2%
22	692	2%
03	2	0%
04	652	2%
21	2	0%
Unknown(UNK)	4	0%
Unspecified	308	1%



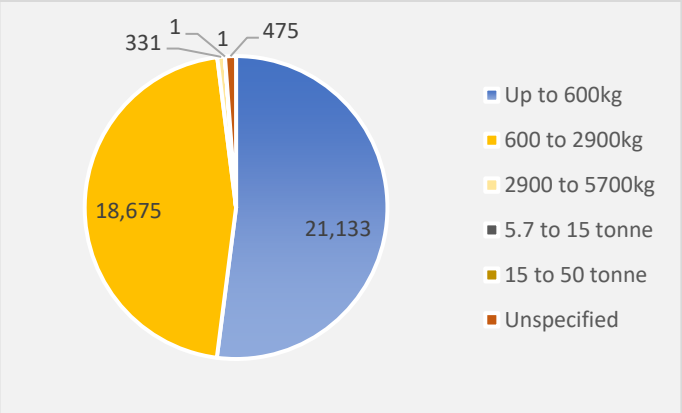
Movements - Days of the Week 2021	
Weekday	**Movements**
Monday	4210
Tuesday	3719
Wednesday	5123
Thursday	5534
Friday	6466
Saturday	8625
Sunday	6939



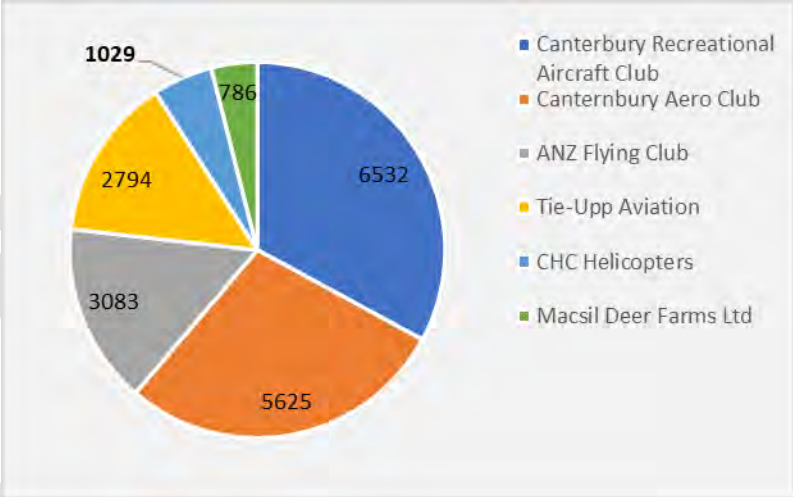
Aircraft Type Summary 2021	
Type	**Movements**
Aeroplane	18912
Microlight	17359
Helicopters	3913
Unknown	376
Gyroplane	49
Glider	6
Amateur Built	1



Aircraft Weight Summary 2021	
Weight	**Movements**
Up to 600kg	21,133
600 to 2900kg	18,675
2900 to 5700kg	331
5.7 to 15 tonne	1
15 to 50 tonne	1
Unspecified	475



6 Most Active Operators 2021	
Operator	**Movements**
Canterbury Recreational Aircraft Club	6532
Canterbury Aero Club	5625
Air New Zealand Flying Club	3083
Tie-Upp Aviation	2794
CHC Helicopters	1029
Macsil Deer Farms	786
Total 6 Most Active Operators 19,849 49%	
Other Operators 20,767 51%	
Total Movements 40,616	



Incidents and Occurrences

Incidents are recorded, and where applicable under CAA NZ Rule Part 12, are reported to the CAA NZ on the appropriate form. The acting Safety Manager follows up with the pilot concerned to discuss further actions or recommendations.

It is noted that in January 2022, there were six known incidents of which three related directly to activities on the Rangiora Airfield, and the other three, were not directly related to activities on the Rangiora Airfield.

Airfield Access

The airfield can be accessed from the east via Merton Road, onto a private road running parallel to the airfield. There is a boundary post and wire fence on the riverside of the road, but the barrier on the airfield side of this road is posts only and unwired, this offers no protection from visitors or animals wandering onto the airfield.

There are twenty-three entrance ways onto the airfield from the airfield road, these are either chained or gated.

Parking for visitors or employees of aviation businesses, is on the grass on the river side of the road.

The aircraft or hangar owners can enter through any entrance way and proceed to their hangar and park outside or inside their hangar.

Current Airfield Facilities Available

- All three runways are grassed and well maintained by the WDC, with re-grassing programs in place when required.
- All Private Hangars are owned and maintained by the individual owners, each with a lease agreement with the WDC.
- Canterbury Aero Club, Air Cadet Training and Microlight Club buildings are owned by the individual clubs.
- Fuel Facilities - BP Jet A1 and Avgas 100 access by Swipe Card.
- Fuel facilities - Z Energy Avgas 100 access via Z Card.
- Helicopter Training Area.
- Two sets of public toilets.

Airfield Utility Services

- Electricity is available to everyone on the airfield from the northern side only.
- Water is presently supplied by a pumping station on the airfield and held in two 30,000 litre tanks. The water is reticulated down the northern side of the airfield, however if there is a power outage, supply is at risk. It is planned that the water supply and wastewater will be upgraded by the WDC.
- The two public toilet blocks on the airfield are serviced by the WDC. These are situated adjacent to the Canterbury Aero Club rooms and at the west end in front of the public car park. Some hangers on the airfield have their own septic tank systems.

5.0 Environmental

The main environmental concern on the airfield is noise from aircraft activities. These activities are protected by noise contours shown in the map below (Noise Contours).

However, the Ashley River is home to several rare nesting birds on the riverbank. These include the wrybill, black billed gull, black-fronted tern, black stilt, banded dotterel, pied stilt, and South Island pied oyster catcher.

The black billed gulls' nest in the proximity of the airfield boundary between March and August/ September. A message is sent from the Microlight Club to its members, as a reminder to those microlight pilots landing on the riverbed to be aware of the black billed gulls nesting on the riverbed.

Map 1: Noise Contours

Airfield Building Restrictions as per District Plan[8]

As per the District Plan there were four conditions proposed for the designation.

Confirmation of the Notice of Requirement for the Rangiora Airfield are as per Appendix 35.8:

Conditions

1. All buildings shall be setback 100 metres from the centreline of the stop bank of the Ashley River/Rakahuri.
2. All buildings shall be setback 10 metres from the road boundary.
3. All buildings shall be setback 3 metres from an internal boundary.
4. There shall be no embedded runway lighting.

[8] WDC District Plan Rangiora Airfield Decision September 2020

6.0 Regulatory Process and Civil Aviation Rule Part 139

Rangiora Airfield is a non-certificated and uncontrolled aerodrome under the CAA NZ rules.

The Civil Aviation Authority of New Zealand

Due to the number of aircraft movements (more than 40,000 per annum) and several reported incidents, the CAA NZ have requested that an Aeronautical Study be undertaken by the WDC of the Rangiora Airfield.

The Aeronautical Study will allow CAA NZ to determine the amount of risk that a proposed increase in aircraft movements and activity at Rangiora Airfield may generate.

Depending on the level of risk, the Director may determine that the Rangiora Airfield becomes a qualifying certificated airfield. This means that the airfield must meet CAA NZ Rule Part 139.

Time frame for CAA NZ reconnecting with the WDC to discuss further, is June 2022.

The Study will cover areas such as the existing infrastructure, proposed changes and the impacts, safety issues and risks.

CAR Part 139 prescribes the requirements for aerodromes used on Air Transport operations in accordance with ICAO Annex 14- Aerodromes[9]. The Advisory Circulars associated with CAR Part 139 provide detailed standards and operating procedures as a means of rule compliance for the future operations.

The relevant regulations in New Zealand are found in the Civil Aviation Rules (CARS)[10] and associated Advisory Circulars.

Aerodrome Reference Code System

There is no Aerodrome Reference Code for Rangiora, as all the aircraft using the airfield are light aircraft and must be operated within the ESWL (Equivalent Single Wheel Loading) rating as per the Table below.

ESWL- equivalent single wheel loading classification, is the surface bearing strength of an unpaved maneuvering areas. Undercarriage loads more than the ESWL value may damage the surface, aircraft weights must be limited to ensure that the EWSL for the aircraft do not exceed that specified for the runway.

Aircraft weight code is Code B, e.g. a Cessna Grand Caravan Single Turbo Prop, Beechcraft King Air

Both these aircraft fall into the Code B category due to their larger wingspan.

ESWL- equivalent single wheel loading classification, is the surface bearing strength of an unpaved maneuvering areas. Undercarriage loads more than the ESWL value may damage the surface, aircraft weights must be limited to ensure that the EWSL for the aircraft do not exceed that specified for the runway.

[9] https://store.icao.int/en/annex-14-aerodromes
[10] https://www.aviation.govt.nz/rules/rule-part/show/139

Rangiora Grass Runways

RWY Runway	Surface	*Strength	*GP Aircraft Weight Category	Slope	Take Off Distance 1:20	1:30	1:40	Landing Distance
04 22	GRASS	ESWL 820	4	Nil	515 497			497 515
07 25	GRASS	ESWL 820	8	0.52D	955 940			940 955
10 28	GRASS	ESWL 820	5	Nil	561 583			583 561

* EWSL – Equivalent Single Wheel Loading
*NB Aircraft take-off weight category, cannot be below the number

Aircraft Design

Aircraft	Aircraft Type	Wingspan (m)	Length (m)	Tail Height (m)	Typical PAX Nos	Take-off Runway Length (m)	Landing Field Length (m)
CODE A = WINGSPAN < 15M							
Brittin Norman Islander2	Twin Piston	14.9	10.9	4.2	9	480	400
Piper Navajo PA31	Twin Piston	12.4	10.0	4.0	8	314	584
Piper Comanche PA24	Single Piston	10.9	7.6	2.3	4	430	370
Piper Cherokee PA28	Single Piston	10.6	7.3	2.2	4	502	564
Piper Tomahawk PA38	Single Piston	10.3	7.0	2.7	2	450	471
Beechcraft Barron B58	Twin Piston	11.6	9.1	2.9	6	451	448
Beechcraft Bonanza B58	Single Piston	10.9	8.2	2.7	4	244	189
Cessna C152	Single Piston	10.2	7.2	2.6	2	422	328
Cessna C172	Single Piston	10.2	8.4	2.6	4	347	256
Microlights	Single Engine	Various	Various	Various	2	Various	Various
CODE B = WINGSPAN 15M TO 24M							
Beechcraft 1900D	Twin Turboprop	17.7	17.7	4.6	19	1,163	854
Metro 23	Twin Turboprop	17.4	18.1	5.1	19	1615	850
Jetstream 32P	Twin Turboprop	15.9	14.4	5.4	19	1384	1242
SAAB 340B	Twin Turboprop	21.5	19.8	7.0	37	1290	1035
Beechcraft King Air B200	Twin Turboprop	16.6	13.4	4.6	15	592	536
Cessna Grand Caravan	Single Turboprop	15.9	12.7	4.7	13	737	547
Pilatus PC12	Single Turboprop	16	14.4	4.2	9	793	661
Source 1. Website specific to aircraft manufactures specifications 2. AIRBIZ Commercial Master Plan 2009							

Rangiora Airfield Swot Analysis

Strengths and Advantages	Weaknesses and Constraints
• Rangiora Airfield is an asset to the region • Airfield development will create employment and spend for businesses in Rangiora • Three Runways are all in serviceable condition • Great airfield for stop overs for itinerant aviators • Strong, supportive advisory group- Rangiora Airfield Advisory Group (RAAG) • Aimm recording system introduced to record, monitor flights and on charge the client • Available for Medivac transfers and Civil Defence Emergencies • Location ideal for flight training • Out of the Christchurch Airport air traffic control zone • Revenue earning ground leases are realistic • Noise contours in place in conjunction with the District Plan • Airfield now designated for airport purposes.	• Certain wind conditions limit the use of some runways • Availability of funding for future development • Lack of planning for future development • Lack of security with limited fencing airside • No runway lighting (Council made the decision to not have runway lighting)[11] • No sealed runways limits aircraft type • Lack of available land for further expansion.
Opportunities & Prospects	**Threats and Risks**
• Relocating other aviation businesses such as maintenance, aircraft upholstery, paint facilities to grow a maintenance precinct • Relocating flight training organisations to set up a permanent base, could be fixed wing, helicopter, or microlights • Marketing Rangiora Airfield as the 'place to be' for all recreational activity with access to maintenance facilities • Develop a relationship with private investors regarding land use such as an Airpark providing hangar and accommodation with private access to the airfield • Ensure that the airfield is fully fenced with limited security entrances for hangar owners and operators. • Land purchase to ensure that runways can be successfully lengthened for safer operations. • Safety Management Systems in place in conjunction with Certification and Part 100[12]	• Private investor does not proceed with proposed development • Land swap in present form would land lock the airfield with only one entrance way via Merton Road. • WDC not securing additional land

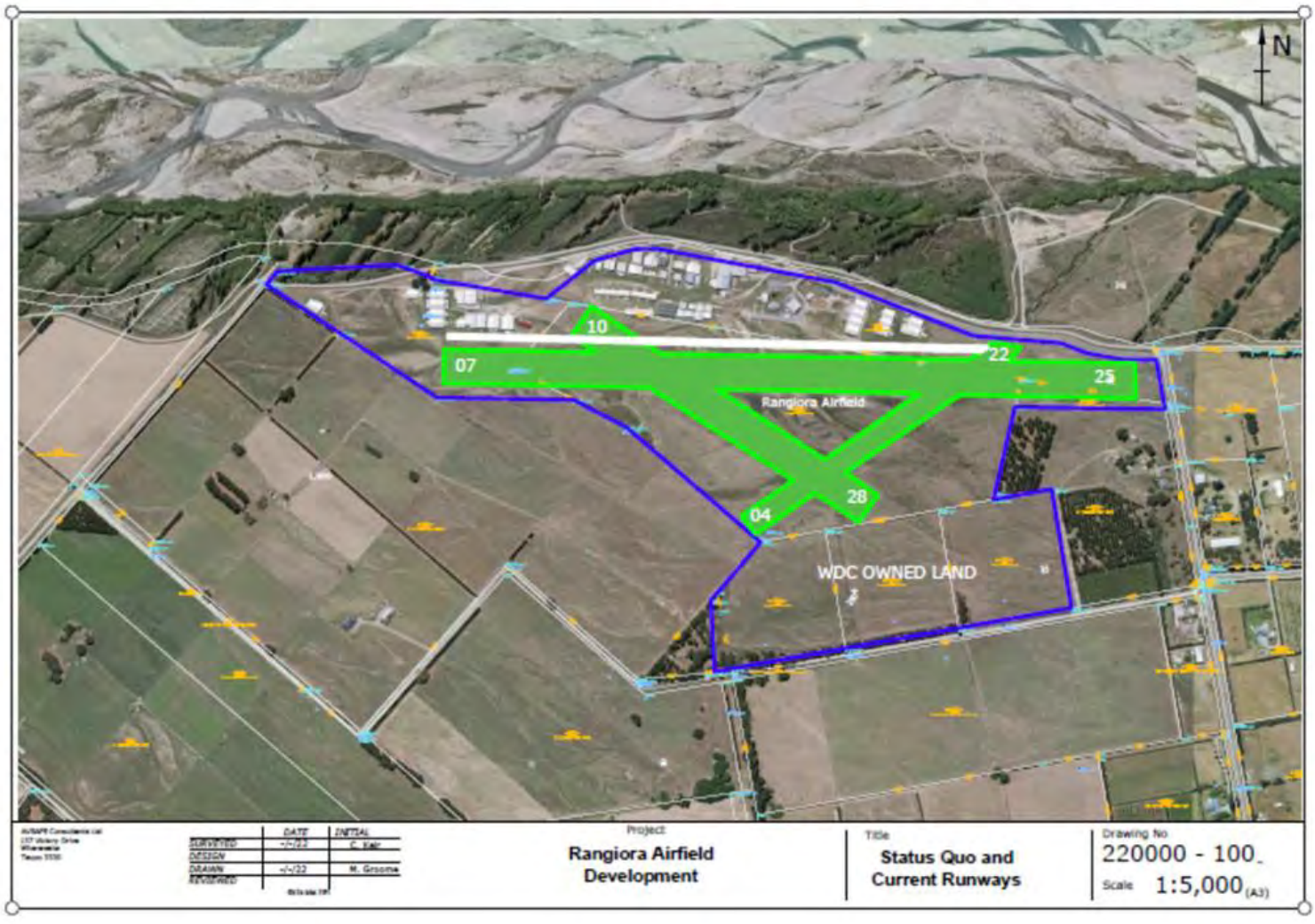
[11] WDC District Plan
[12]https://www.aviation.govt.nz/rules/rule-part/show/100/1

7.0 Rangiora Airfield Masterplan Review – Option One

The Status Quo

This is an observation of current infrastructure, aircraft activity and land use and potential.

Map 2: Rangiora Airfield Boundary Including WDC Land



Effect on Airfield Operations

The Status Quo is an assessment of the current activities, including land use and infrastructure and the effect of remaining the same.

Status Quo Activity/ Land Use/ Infrastructure	Effect on Airfield Operations and Expansion
Airfield Zone	Following a Plan Change in 2020, the Rangiora Airfield and surrounding area within the Noise Contour is now zoned for "Airfield Purposes". Safeguards aviation activities on the airfield.
Activity	The Rangiora Airfield would arguably be one of the busiest regional airfields in New Zealand, with aircraft movement exceeding 40,000 per year. The activity comes mainly from light aircraft used for training and recreational purposes. A small number of the agricultural aviation business, both helicopters and fixed wing aircraft also based at Rangiora.
Airfield Planning	Past planning for any expansion for hangar and lease sites has been on an ad hoc basis. When a site was required, it appears that the site was positioned to suit the aircraft operator, with little consideration for further development. In the past, there would not have been the demand nor the level of aircraft activity that there is today, and at the time it appeared that there was more than enough land available to cater for future demand. This ad hoc planning has created now issues for aircraft accessing the runway from hangars, with no defined taxiways. This has created congestion and pinch points for aircraft maneuvering between hangars. In later years, there has been a better and more coordinated approach to site planning, with the size and standard of hangar constructed being of a more uniform standard. There is insufficient land available for hangar expansion or development.
Runways	The Rangiora Airfield is unique in New Zealand, as it has available to pilots, the privilege of three runways and six vectors. This allows aircraft to take off and land safely in almost any wind direction and condition. Most aircraft based on the airfield are microlights, which have a very low tolerance for landing and taking off in windy cross wind conditions, making

multiple runways a great benefit allowing aircraft to use the most appropriate into wind runway.

With the multiple runway's aircraft can take off and land safely on the runway which suits the aircraft performance parameters.

Main Runway 07/25

This runway has a grass surface and is 1180 metres long by 60 metres wide.

Although 1180 metres long, the operational length is constrained by obstacles in the form of trees on neighbouring properties, which infringe the Obstacle Limitation Surface on the approach and landing paths to the ends of the runway.

Due to the obstacles, landing and take-off distances get reduced to 940 metres and 955 metres respectively, depending on which end of the runway the landing or take-off is being conducted.

The reduced length of the runway therefore could exclude some aircraft from operating to and from it, as per CAA NZ rules:

CAA NZ Advisory Circular AC119-3 Sub Part D Performance.

CAA NZ Rule Part 139.209 Take-off Distance

CAA NZ Rule Part 135.211 Runway Surface and Slope Correction Factors.

The width of the runway is more than adequate for the type and size of aircraft currently using the runway.

The runway meets the CAA NZ Code B requirements, which allows slightly larger aircraft than currently use the runway, to operate from this runway, so long as they meet the CAA NZ requirements mentioned above.

The runway width of 60 metres, is also an asset in terms of runway maintenance. The runway width can legally be reduced by half, for periods of time, allowing for the rejuvenation of the grass surface due to wear and tear from continual use.

If land on the western end of the runway out to Priors Road, was acquired, this would enable the runway to be lengthened allowing aircraft which would currently be restricted, due to the lack of available operational length to operate. E.g., Pilatus PC12.

Cross Runway 10/28

This runway has a grass surface and a length of 583 metres and has a width of 60 metres.

The runway vector 10 is used when there is a strong south easterly wind blowing.

The opposite vector, 28, is used more often due to the strong nor westerly winds that can prevail at Rangiora.

	Again, this runway has constraints due to obstacles at the northern end, being trees on the riverbank. This reduces the runway length available from 583 metres to 561 metres. This limitation does preclude some training and general aviation aircraft based at Rangiora from using vector 28, due to the reduced length as the aircraft operating limitations would be exceeded. _____ **Cross Runway 22/04** This runway has a grass surface and a length of 515 metres and a width of 35 metres. Again, there are limitations on the operational length due to trees on the riverbank to the north. Taking off on the vector 04 to the north, the effective length of the runway reduces from 515 metres 497 metres. This runway is predominantly used by microlights in strong south easterly wind conditions The length of this runway is quite adequate and does not need extending. Vehicles using the airfield road need to be aware of the low flying aircraft approaching from the northeast.
Taxiways	There are no defined or formalised taxiways on the Rangiora airfield, even though the NZAIP shows a taxiway on the northern side of the main runway. This taxiway is not delineated by markers on the ground. The separation distances between the centre line of the area used as a taxiway and the centre line of the runway, just meets the CAA NZ requirement. Care needs to be taken by pilots taxiing aircraft on this 'taxiway' as they may stray slightly toward the runway and become an obstacle for aircraft on the runway, or about to land. There are no designated holding points where the taxiway crosses the thresholds of runways 10 or 22. There is considerable wear to the grass surface where the aircraft taxi which will cause dry areas and dust in the summer months. In other areas where aircraft taxi, the ground is quite uneven and rough which is why the aircraft operators have developed their own ways of getting to the runway and this causes the wear on the grass surface in other areas.

Infrastructure	**WDC Owned Infrastructure** Apart from the land itself the WDC owns very little infrastructure on the Rangiora airfield. There is a gravel airfield road from Merton Road, which services the lessees and operators on the airfield. This road has a security gate at the entrance to the airfield that is closed at night and can be accessed by authorised persons holding the gate keypad code. The airfield road is the only service access to the airfield. The WDC does also own two public toilet blocks, and a small water storage system via storage tanks. These systems are not adequate for the continual growth in airfield patronage. **Hangars** There are more than 90 hangars and buildings on the airfield which are used for a variety of purposes from Aero Club offices, housing of aircraft, aviation supply companies, aircraft engineering and repair facilities. These buildings are all owned by the tenant who lease the site from the WDC for a 10-year term at a rate of $9.50 per sqm per year. The newest hangars have been built with a more consistent plan in place to group them together. Unfortunately, they have been built in some cases with little room between them for aircraft to manoeuvre. This is fine for a small microlight aircraft but not for a general aviation type such as a Cessna 172 or larger. **Fuel Supply** Two fuel companies supply aviation fuel to the airfield. This fuel is available to both resident users and itinerant aircraft to the airfield. One company has two sites and supplies both Avgas and JetA1 fuel while the other has one site and only supplies Avgas. These facilities are located near the Way to Go Helicopters and the Canterbury Aero Club sites.
Expansion	Expansion of the airfield for extra hangars and buildings or for runway extensions is limited. There is little land available for hangar sites let alone the space around them for the aircraft to be safely manoeuvred. The main runway 07/25 cannot be extended due to the airfield boundaries at each end. If the 8 hectares to the west was to be purchased, then this would provide a buffer for the future.

	The runway 10/28 could be extended if the land owned by the WDC, on Priors Road, was made available to the airfield. The WDC land on Priors Road could also be developed for hangars or commercial use.

Summary Option One

The Civil Aviation Authority

With more than 40,000 aircraft movements per year the Rangiora airfield is just meeting the demands of its aircraft users.

Due to the number of movements, and the supposed complexity of the of operations, plus a proposed development near the airfield, the CAA NZ are asking that an Aeronautical Study be conducted.

The purpose of the Aeronautical Study is to assess the risks associated with operations on and around the Rangiora Airfield. On receipt of the Aeronautical Study, the Director of Civil Aviation may require the Rangiora Airfield to become a 'Qualifying Certificated Aerodrome.'

This would require the Airfield to meet certain criteria under the CAA NZ rules, with them having oversight of the airfield and its activities.

Some of the requirements to be met include:

- Providing Senior Persons to manage the airfield
- Aerodrome Limitations
- Public protection
- Notification of aerodrome data
- Implementing a Safety Management System
- Movement Data Reporting
- Providing the CAA NZ with an Aerodrome Exposition describing the organisation and demonstrating its means and methods for ensuring ongoing compliance with the rules.

Airfield Activity

Most of the aircraft activity on the Rangiora airfield is from recreational aviation.

A small amount of commercial activity is derived from both helicopter and fixed wing agricultural operators based on the airfield, along with the Canterbury Aero Club Commercial Pilot Training School.

There are approximately 100 aircraft based on the airfield, the exact number is not known, which are housed in hangars.

There is considerable demand for more sites on which to build hangars, but there is limited land on which to do so.

All hangars are privately owned, on land leased from the WDC.

Runways

The three runways are suitable for the types of operations currently using the airfield, but the main runway would be limited if a commercial charter operation was to start.

Ideally the purchase of approximately 8 hectares of land to the west would enable the extension of the main runway sometime in the future, to cater for a commercial charter operation.

If the WDC land on Priors Road was made available to the Airfield, there would be ample land to develop, and be available to extend the runway 10/28 in the future. The runway extension is not urgent, but if completed, would allow aircraft, currently unable to take off on this runway due to performance limitations, the ability to do so.

The taxiways need to be defined and marked with holding points where the taxiway crosses a runway. There is room to create a full-length taxiway, on the southern side of runway 10/28. This would negate the need to backtrack on this runway as happens now.

The surface of the runways and surrounding areas, being grass, are easily maintained by mowing, with additional reseeding when required.

Infrastructure

With estimated future growth, the infrastructure of the Rangiora Airfield needs to be upgraded.

It is understood that the WDC are to upgrade the water and sewerage to the airfield in the 2023/24 year.

The airfield road could be sealed to stop the dust problem that occurs.

Fencing the area between landside and airside is a priority, as a matter of public protection. The current arrangement of free-standing posts with chain gates is not acceptable.

The number of gates needs to be reduced to stop the risk of unauthorised entry, or leaving the chain or gate unlocked.

Airfield Expansion

Land within the airfield boundary is limited for expansion.

There is a small amount of land available on the northern side of the main runway for hangar sites, but careful planning would be required to get the best use of this land, without restricting other users and their activities.

There is land on the southern side of the main runway but currently there is no access to it from the northern side, therefore limiting its availability for development.

WDC land to the south, on Priors Road, if available to the airfield, would allow access to the land mentioned above at the same time providing considerable land for hangar or commercial development.

This WDC land would also allow an extension to runway 10/28 if required in the future.

To extend the main runway 07/25 by 120 metres to 1300 metres would require the purchase of approximately 4 hectares from the neighbour on the western end of the runway, next to Priors Road.

The purchase of this land would also make available approximately 0.5 hectare for development in the northwest corner of the airfield.

Recommendations
For the Rangiora Airfield to remain as one of the premier recreational airfields in New Zealand: **1. The WDC needs to secure land around the airfield for future development.** **1.1. Acquire the land immediately adjacent to the western end of runway 07/25, to allow for an extension to this runway in the future.** **1.2. Allow the airfield to use the three lots owned by the WDC bounding Priors Road.** **2. Start considering what would be required to upgrade any infrastructure to meet the CAA NZ requirements for a 'Qualifying Certificated Aerodrome'.** **3. Allocate funding for fencing to meet the requirements for 'Public Protection.'** **4. Upgrade the water supply and sewerage collection for the airfield.**

8.0 Rangiora Airfield Masterplan Review – Option Two

Airpark Development

The Waimakariri District Council has been approached by a local Developer, to develop an Airpark on land the Developer owns surrounding the Rangiora Airfield.

The Airpark concept is not new, and there are examples already in New Zealand, with all having different set ups, none have the density of development proposed at Rangiora, so close to the airfield.

Within this Airpark, there are planned some 20 sites for private aircraft owners, and some 37 sites for commercial users with aviation related businesses.

The Concept

The Developer envisages private aircraft owners either leasing or buying these sites which are to be situated on the southern side of the Rangiora Airfield, with the commercial operators, such as aircraft maintenance and support facilities, taking up the sites on the eastern end near Merton Road.

The proposed sites range in area from 2710 sqm to 2.29 Hectares. Much smaller than the 4-hectare limit in the current district plan.

It is proposed this Airpark is to have access from the Airpark to the Rangiora Airfield via taxiways adjoining the airfield. Those sites on the southern and eastern side, by direct access to the airfield from the Airpark commercial sites.

The concept also shows extensions to the two cross runways on the southern side, 10/28 and 22/04.

The proposed 10/28 extension would extend onto land already owned by the WDC, and the 22/04 extension would require acquiring land owned by the Developer. This land would not be a part of the land swap.

Land Swap

To achieve the aspirations of the Developer, they have proposed a land swap to accommodate their needs, and the perceived needs of the WDC.

This land swap is depicted on the plan. Map 3: (Land Swap Plan)

Areas A and B, as shown on the plan are owned by the Developer, and would be swapped for the areas C, D and E, owned by the WDC.

In return for approximately 9.1 hectares of land owned by the Developer, the WDC forfeits some 9.2 hectares on the southern and eastern sides along Priors Road, plus a smaller area on the southern sides of the main runway and the cross runway to the Developer.

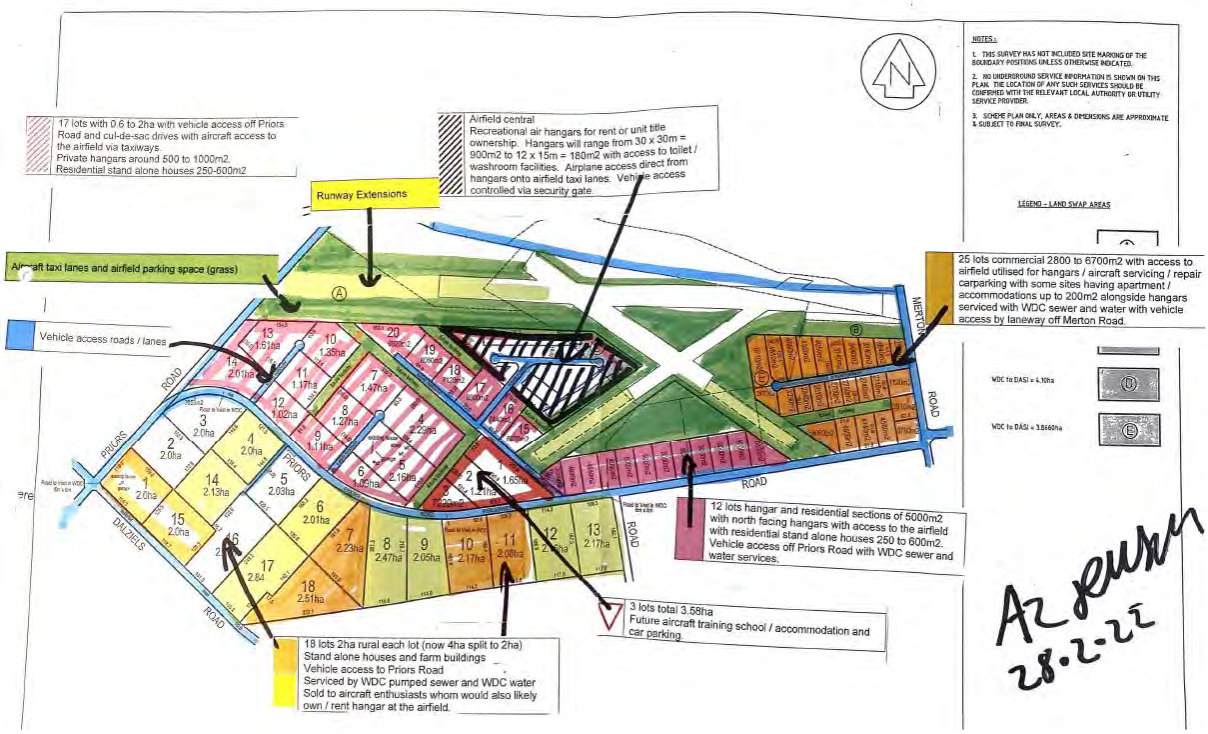
The difference in land area is approximately 0.5 hectares in favour of the Developer.

Through the land swap, the WDC would acquire extra land on the western side at the end of the main runway. This land would be available for an extension to the main runway, 07/25.

However, the WDC would lose access to the airfield on the southern side along Priors Road, thus losing the opportunity to generate income, due to this land being a part of the Developer's commercial development.

Map 3: Land Swap Plan

Map 4: Developers Plan



Effect on Airfield Operations and the Waimakariri District Council.

This is an assessment of the impact that the proposed Airpark would have on the Rangiora Airfield.

Airpark Proposal Activity/ Land Use/ Infrastructure	Effect of the Airfield and Expansion
Airpark Proposal	Within this Airpark, there are planned some 57 sites. 20 of these sites range in size from 7120 sqm up to 2.29 hectares, and are on the southwestern side of the airfield, with the balance of 37 sites ranging from 2530 sqm to 5000 sqm on the southern and eastern sides. The proposed land swap would mean that the Rangiora Airfield becomes completely land locked, by the Ashley River to the north and the Developer's property to the south, with Priors and Merton Roads to the east and west. Other than the present access to the airfield road via Merton Road, there would be no access to the airfield on WDC controlled land, from Priors Road. The proposal further reduces the area available to the WDC to pursue future development for airfield purposes, as suggested in the Scenario One, Status Quo.
Airfield Access and Security	Aircraft access to the Rangiora Airfield from the Airpark would be via 5 taxiways, 4 on the western side and one on the Merton Road end. There is no mention of how the access to the airfield from the Airpark taxiways would be controlled. One option maybe via radio-controlled gates, operated by the pilot of the aircraft. Most of the sites on the Merton Road end, along with those proposed on the current WDC land on Priors Road, are shown on the plan as having direct access to the airfield from their site. This is not ideal, as controls would need to be put in place to stop unauthorised access to the airfield The plan does not show how aircraft from those hangars, with direct access would be controlled.
WDC Lost Opportunity	If the land swap was to proceed, the WDC would lose the ability to

	develop approximately 12.5 hectares of land on Priors Road. The proposed extension to the cross runway 10/22 is not included in this area If the proposed runway extension was not to go ahead, this would add another 2.8 hectares of available land to the WDC for development. Also, an area of approximately 1.4 hectares in the centre of the airfield would be lost to the Developer. This a piece of land is used as a training area for helicopter pilots and currently has no ground access to it.
Aircraft Activity	There would certainly be an increase in aircraft activity on the Rangiora Airfield, due to the activity from residents of the Airpark. If each of those 20 sites housed an aircraft, which was flown on 2 days of a week, these aircraft would generate, at the present landing fee rate of $10.00 per aircraft per day, an extra $20,800.00 per year in landing fees.
Runways	The Developers plan shows extensions to the two cross runways. The necessity to extend them both is debatable. During strong Norwest winds it would be an advantage to have extra length in runway 10/28 to give aircraft, other than microlights, the ability to use this runway to meet the aircraft performance parameters. This land, if required for the extension, is already owned by the WDC. For runway 04/22, there is presently no need to extend this runway. If this was to happen, the WDC would need to acquire the land for the extension from the Developer.
Financial Considerations	The land swap is not equal in terms of area. The WDC would have to purchase the small area in difference, to make up the swap, or this may be offset by valuations of the different land parcels. The land in question is bare land. The area gained by the WDC could only be used for the extension of the main runway, therefore its potential to generate income for

	the Developer is low, as it is restricted in its use by the Obstacle Limitation Surface above it. The land which the WDC would forfeit, is land which has a value to the WDC for future development. This land is not required for direct airfield operations (runways, taxiways), but has a much higher value due to the locality, access, and the ability to use it for airfield and commercial development (hangars, commercial activities). The net result is that if the WDC were to enter into a Land Swap agreement as shown on the Developer's plan, the WDC would be losing the opportunity of future income, from the land adjacent to Priors Road.

Recommendations
That the WDC does not enter a land swap arrangement with the Developer, based on the plan submitted, shown in plan Map 3 'Land Swap Plan', due to: **1. The loss to the WDC of valuable land for development and expansion** **2. The loss to the WDC of access from Priors Road.** **3. The uncertainty of security and unauthorised access from the Airpark to the airfield.**

9.0 Rangiora Airfield Masterplan Review - Option Three

WDC Use of Airfield Land and Airpark Development

Option Three is a variation of Option Two, with the WDC retaining all the land it owns, within and surrounding the airfield and the Developer continuing to develop an Airpark on the land which the Developer owns on the southern side of the Rangiora Airfield.

There are two variations to the Developer's original proposed plan under Option Three:

1. The WDC purchases land marked (A) as per Map 9. This land is on the western end of the main runway 07/25 and would allow for the main runway to be extended.

2. The WDC retains all the land marked (C), (D), and (E) which is owned by the WDC and includes this land within the airfield boundary. This comprises an area of 12 hectares of land on Priors Road, plus the land on the south side of runway 10/28, which is a further 1.5 hectares.

This variation allows the Developer to continue with the proposed Airpark, but with a reduced number of sites, due to land owned by the WDC being retained by the WDC.

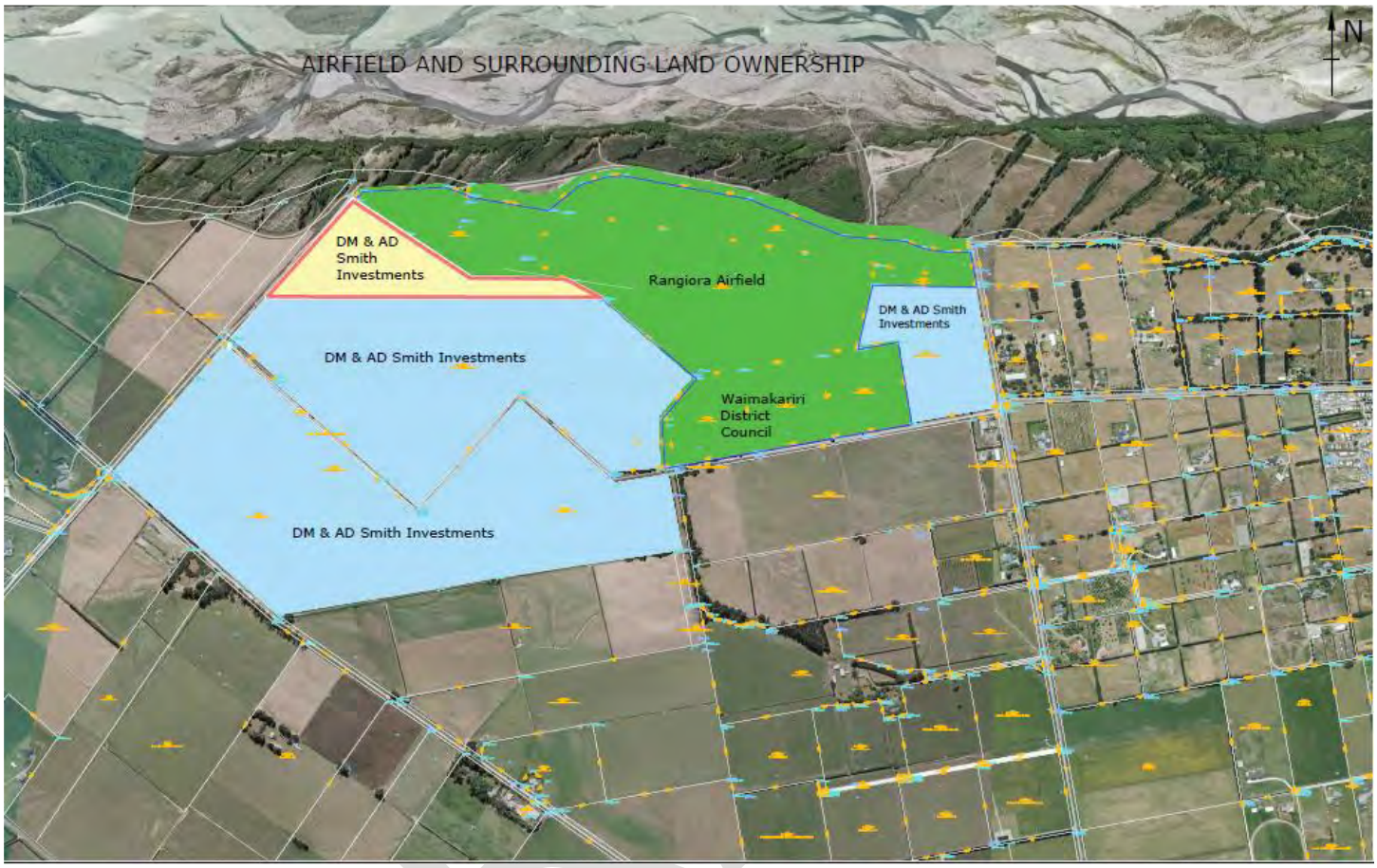
The Airpark is designed for those aviators who own an aircraft and require a lifestyle living close to and having easy access to the airfield.

The extra aviation activity from the Airpark will continue and benefit the airfield.

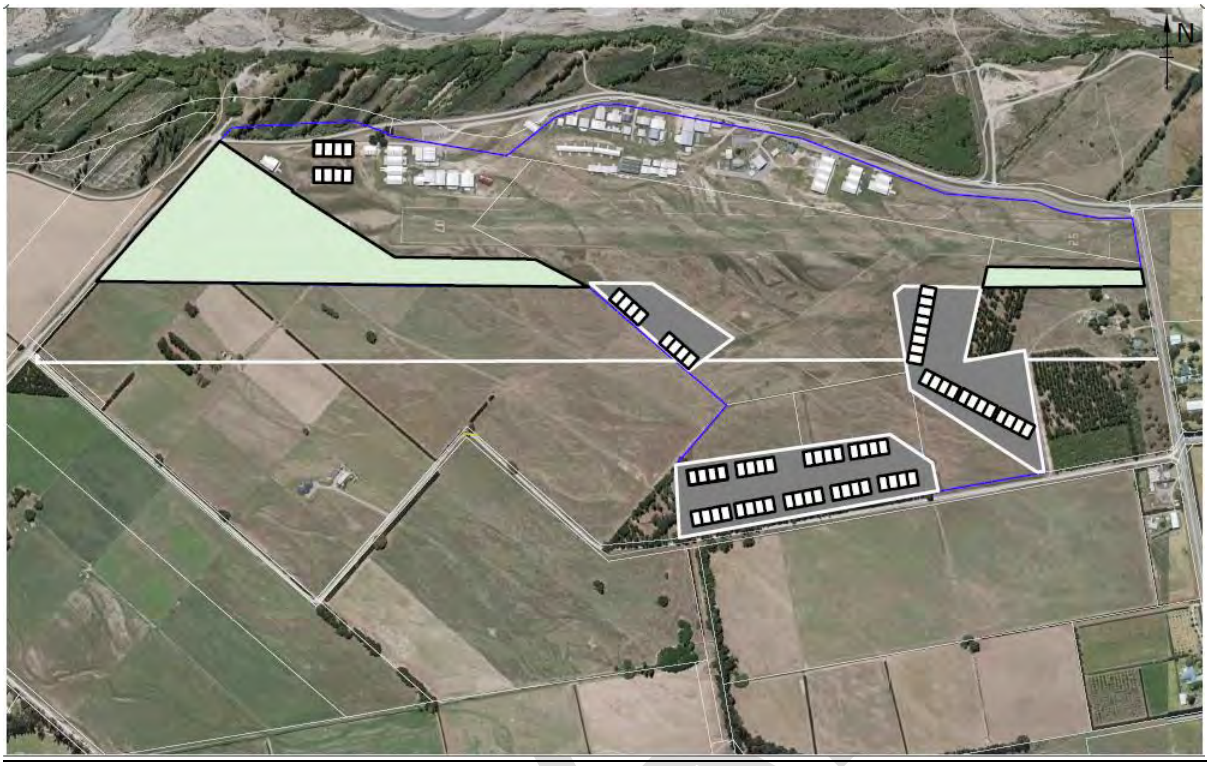
This option allows the land presently owned by the WDC, to be considered and available for potential commercial or hangar development.

The option removes some pressure to find hangar space on the northern side of the airfield where the existing hangars are situated and with limited space, and then allows for better planning of the available land.

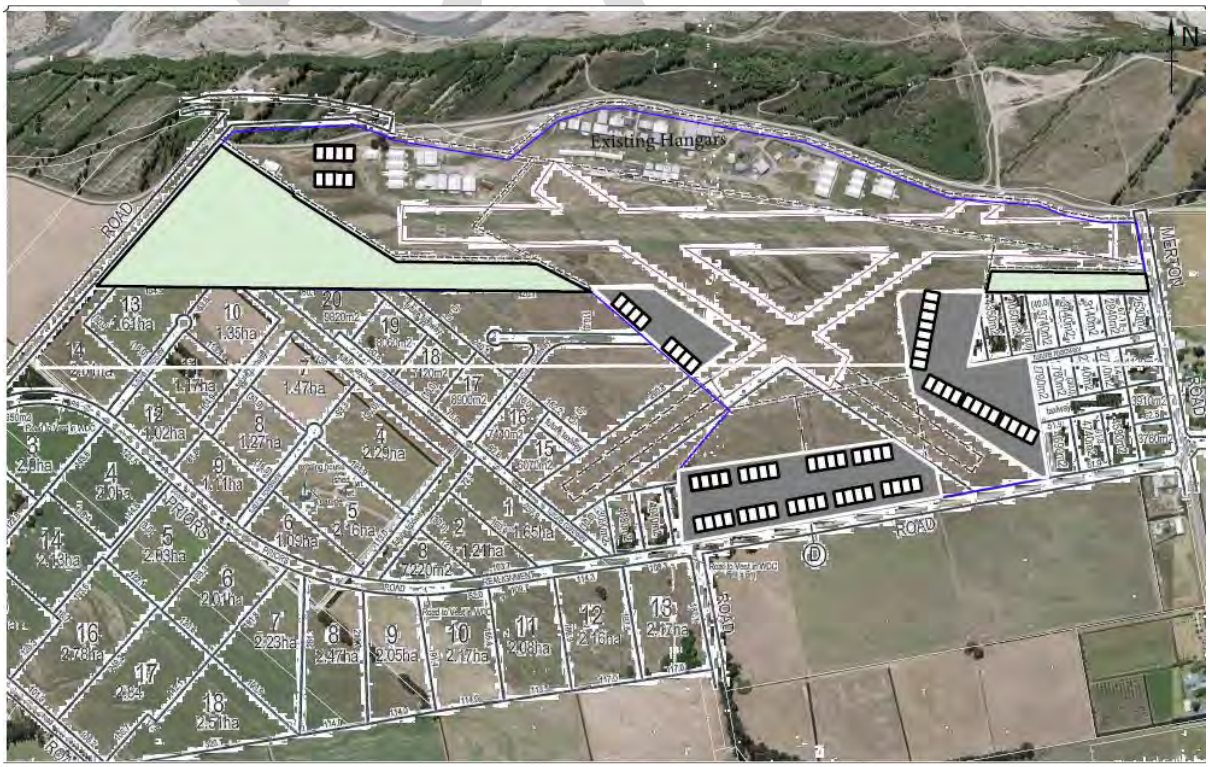
Map 5: Land Ownership



Map 6: WDC Retained Land and Proposed Land Acquisition



Map 7: WDC Retained Land and Developer Plan



Map 8: Developer's Proposal

WDC Use of Airfield Land and Airpark Development

Effect on Airfield Operations and Expansion	
Airfield Zone	The Rangiora Airfield and surrounding area within the Noise Contour is zoned for 'Airfield Purposes'. The re-zoning of the airfield for 'Airfield Purposes' gives surety to potential operators wishing to relocate to Rangiora that the airfield will remain as an airfield for the future.
Activity	The Rangiora Airfield would be one of the busiest airfields in New Zealand, with aircraft movement exceeding 40,000 per year. This activity would grow due to the increase from the Airpark and other associated business's which may set up on the airfield. With the proposed increase in the number of aircraft based on the Airfield, and within the Airpark, there becomes the opportunity for aviation related business's to be set up to service these aircraft. Examples: 1. Aircraft airframe repairs 2. Engine repairs and overhauls 3. Avionics specialists 4. Upholsterers 5. Paint shops All these are necessary support services for an aircraft owner. If these types of services were to set up at Rangiora, then they would also attract customers from other parts of New Zealand, increasing the airfield activity even further.
Airfield Planning	This option allows the WDC to retain land for the development and expansion of the Airfield, at the same time allowing for an Airpark to be developed on the southern boundary. This option also requires the WDC to purchase the land to the west of the main runway, to allow for future extensions to the main runway. With more land available this allows better and more sustainable planning for the future.
Runways	The runway layout under this option would remain as it is now with the three runways.

	Main Runway 07/25 Serious consideration should be given to the purchase of land to the west, allowing for the extension of the main runway to cater for larger aircraft in the future. The runway does have some limitations due to trees off airfield, infringing the Obstacle Limitation Surfaces (OLS) With the new airfield zoning the WDC can put restrictions on buildings and trees underneath the OLS. Unfortunately, trees obstructing the OLS at the time of the rezoning can stay, which is where the runway operation restriction occurs. The WDC can negotiate with the owners of the trees to have them removed. _____ **Cross Runway 10/28** This runway, due to the reduced length, does have limitations, which precludes some training and general aviation aircraft from using Vector 28, as the aircraft operating limitations would be exceeded. Again, the limitations are due to trees on the riverbank. Within this option this runway could be extended to the southeast onto WDC land to meet the operational requirements of the aircraft which are currently limited. _____ **Cross Runway 22/04** As outlined in Option One, the length of this runway is quite adequate for the foreseeable future, and therefore does not need extending.
Taxiways	There are no defined or formalised taxiways on the Rangiora airfield, even though the NZAIP shows a taxiway on the northern side of the main runway. This taxiway is not delineated by markers on the ground. Defined taxiways need to be marked to give certainty as to where aircraft are required to be when taxiing near to the runways. The separation distances between the center line of the area used as a taxiway and the center line of the runway, just meets the CAA NZ requirement. Care needs to be taken by pilots taxiing aircraft on this 'taxiway', as they may stray slightly toward the runway and infringe the runway side clearances for aircraft about to land or take-off.

Infrastructure Upgrade and Expansion	**WDC Owned Land** This option allows the WDC to retain land already owned, that would be lost under the Option 2 land swap plan. This allows the WDC to develop the available land as it wishes, and at the same time allowing access to the southern side of the airfield without restriction from the Airpark. The original Airpark proposal landlocks the airfield on the southern and eastern ends. Apart from the land itself, the WDC owns very little infrastructure on the Rangiora airfield. The runways are deemed infrastructure, but due to the surface being grass there is no subbase or asphalt surface which can be registered as an asset for depreciation purposes. The airfield road, which is an extension from Merton Road, requires upgrading to stop the dust and to cater for a proposed increase in traffic. Parking areas could be designated for those that do not require a vehicle to be airside. Fencing and airfield access from the landside needs to be addressed to meet the CAA NZ and H&S requirements for public protection. An upgrade of the water and sewerage reticulation is required. There is certainly not enough water available at present for fire fight purposes. **Hangars** Land would need to be levelled to accommodate hangar sites and provide a smooth surface for aircraft to maneuver over. The land on the Priors Road could be made available for this expansion. **Fuel Supply** At present the two fuel companies which supply aviation fuel to the airfield have their facilities situated on the northern side. Installing a fuel pump on the southern side to accommodate aircraft from the Airpark, is not an option. It is foreseen that the aircraft resident in the Airpark would be mainly microlight or light aircraft. Many microlights run on motor spirits as used in a car.

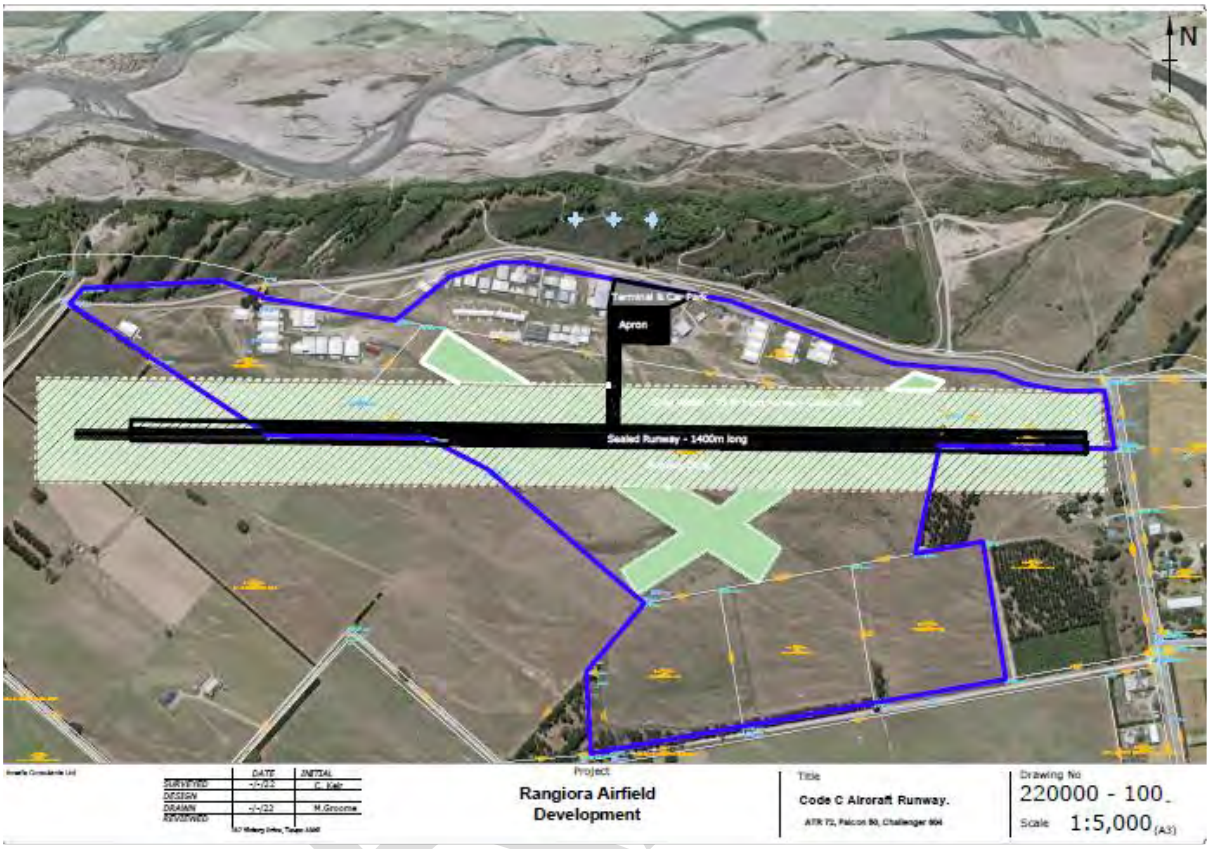
	Fuel companies will not install a fuel tank and pump to supply motor spirits for aviation purposes. Plus, there would not be the volume of aviation fuel put through a pump, in addition to the existing pumps, to warrant the cost of putting in the installation.

Recommendations
1. That the WDC retains all the land marked C, D, and E as shown on Map 3, the Developer's plan. **2. This land to be used for development of commercial or hangar sites along with a proposed future extension to runway 10/28.** **3. Without the retention of this land, the WDC would be put into a situation where the airfield could not expand and would become land locked.** **4. All airfields require more land than they currently occupy, the retention of this land allows a buffer to offset reverse sensitivity issues, that may arise from legitimate airfield activities. Without this buffer the airfield may become constrained in its expansion, or from the types of aircraft that may be able to operate from the airfield.** **5. It is recommended that the WDC negotiates with the Developer the purchase of land shown as A and B on Map 3: Developers Plan. This would then allow for any future extension to the main runway to allow for larger aircraft use.** **6. The retention of the land shown as D could be available for commercial development with good road frontage along Priors Road.** **7. The retention of the area shown as E could be available for hangar sites with access from a road to be formed in from Priors Road.** **8. The area between D and E would be left vacant to allow for an extension to runway 10/28.** **9. The rental from this area could amount to a considerable increase in revenue for the airfield.**

10.0 Rangiora Airfield Masterplan Review – Option Four

Code C Runway

Map 9: Code C Runway – Required Land



Several users of the Rangiora Airfield, as well as the Developer, have indicated that they would like to see the airfield developed to allow for much larger aircraft.

These aircraft included the ATR72 airliner, currently operated by Air New Zealand and Air Chatham's, as well as corporate jets such as the Challenger 604 and Falcon 50, of which there are a number operating within New Zealand.

All these aircraft require a runway, designed to meet the Code C requirements, as per *CAA NZ Rule Part 139, and Advisory Circular 139-6.*

It is highly unlikely that a major airline would operate a service out of Rangiora, when one of New Zealand's major airport hubs, Christchurch International Airport, is only 32km and less than half an hour's drive away along the new motorway.

Even at around 63,000 people, there is not the population base in the Waimakariri Region to support this scale of regular airline operation.

It is more likely that a smaller third tier airline, such as Sounds Air, may wish to operate from Rangiora.

The question is, from Rangiora to which destination. This destination would possibly be one which Air New Zealand does not operate a direct service from Christchurch to or from i.e., the West Coast of the South Island.

The aircraft operating a scheduled service to and from Rangiora, needs to have at least 60% of the seats occupied each time it departs to make it a viable sector.

This is not easy to achieve, and even airports such as Taupo and Westport, which have a Sounds Air service to and from Wellington, have their District Councils underwriting the service.

The corporate jet market is totally different to Regular Passenger Transport (RPT).

This market caters for those customers who wish to use an aircraft on demand, with no schedule, any time of the day or night.

As explained earlier the Rangiora airfield just meets the Code B runway requirements, which would be required for aircraft like those operated by Sounds Air, but certainly does not meet the standard for a Code 3 aircraft mentioned above.

- The airfield would need to be Fully Certificated as per *CAA NZ Rule Part 139.*
- Currently the WDC does not own enough land to allow for a Code C Runway to be built. Approximately 20 hectares of land would need to be purchased on the Western, Eastern and Southern sides of the current airfield.
- Land would also need to be made available within the airfield, for sealed runways, taxiways and apron areas, plus an area for a terminal building and car parks.
- The runway layout must be designed as per *CAA NZ Advisory Circular AC139-6*
    - *Aerodrome Design Requirements*
    - *All Aeroplanes Conducting Air Transport Operations*
    - *All Aircraft above 5700kg MCTOW.*
- To comply with the above CAA NZ rules, means that the Main runway would need to be 1300m in length, 30m wide and be contained within a runway strip width of 150 meters (75m each side of the runway centerline).
- Due to the strip width increasing from the present 60m to 150m the Obstacle Limitation Surface fans also change from a gradient of 1:20 to a gradient of 1:40 and extend beyond the current distance of 3000m to 15,000m.
- The runway would also need to be sealed to a standard to withstand the weight of the Code C aircraft using it. An ATR 72 maximum take-off weight is 23,000 Kgs.
- If night operations are to be conducted, then runway lights and approach aids would need to be installed. (The current District Plan does not allow embedded lighting.)
- RNAV (Global Positioning System) navigation approach and departure procedures would have to be designed and approved by the CAA NZ, before any of the Code C aircraft could use the runway, even in daylight operations.

Approximate Cost of Developing a Code 3 Runway

Land Acquisition	**Approximate Cost**
Approx. 20 Hectares of land to be acquired	$3,500,000
Runway	
Sealed Runway (Chip Seal)	$ 5,000,000 +
Taxiway and Apron	$ 1,000,000 +
Runway Lighting	$ 2,000,000
Navigation Aids	$ 2,000,000
Terminal Building	$2,000,000
	$15,500,000+
Ongoing Maintenance Costs on the Runway	
Runway Marking (5 Yearly)	$50,000
Bitumen Surface Treatment (5 Yearly)	$500,000
Reseal (15-20 Years)	$1,000,000

Recommendations
1. **This option is not viable in the short term, as this would require a large capital investment in land, design, and infrastructure.** 2. **A cost benefit study would also be required, to ascertain if the level of interest from potential users of the upgraded infrastructure, warrants the investment, and would this activity be sustainable.** 3. **This is not to say that it cannot be put into the long-term plan, but consideration would have to be made to acquire land at an early stage so that over time the planning of this can be considered.** 4. **If this option was to be considered, then discussions would be required with the Developer of the Airpark, as the land required for this Code C runway project belongs to DM and AD Smith Investments Ltd.**

11.0 Landing Fees

Landing fees along with any ground rental for hangars or aircraft parking, is an important part of generating income to allow the airfield to be maintained to a good standard for the benefit of all users.

In many instances throughout New Zealand, landing fees and ground rentals are the only source of income the airfield has.

From this income the following operational expenses needs to be met:

1. Insurance
2. Airfield Mowing
3. Runway maintenance
4. Electricity
5. Water
6. Sewerage
7. Telephones
8. General Expenses
9. Health and Safety Compliance

You can see that there are many more expenses than just wear and tear on the runway.

The structure for setting fees which the WDC has in place generates around $60,000.00 in landing fees and $114,000.00 in ground rentals per year.

The ground rental is relatively static, as the rents are set at the beginning of the rent period and are altered at the renewal date.

The landing fees are very much a moving target, as there is no way to determine exactly the number of aircraft that are going to land at Rangiora each year. With around 40,000 movements a year, it can be assumed in broad terms that there are 20,000 landings per year.

This number of landings equates to around $3.00 per landing if every landing was charged for, which is low compared to the national average of similar sized airfields.

At Rangiora, the system for charging is based on a daily charge of $10.00 per day, and covers all aircraft, and does not consider the aircraft weight break.

Nearly all airfields in New Zealand, that allow public access for aircraft, charge for the privilege of landing an aircraft on the airfield.

There is a myriad of differing systems for charging for the privilege of landing at these airfields.

Some fees are charged on a flat rate per day, as is the case at Rangiora, some are on a flat rate per each landing regardless of aircraft type or weight, and others the charge is determined by the weight of the aircraft. The last method is by far the most common.

To increase the landing fee revenue for Rangiora Airfield, the system for charging needs to be reviewed.

It is accepted that there will be an increase in movements but not enough under the present charging system to make any significant gains in revenue.

Without complicating the system with weight breaks, we have defined the three categories which are currently used, Aeroplanes, Microlights and Helicopters, with no separate weight breaks.

We suggest that rather than a daily rate, a rate per actual landing be charged.

For aircraft carrying out circuit training, only the first landing would be charged for. For example, the aircraft carries out four "touch and go" circuits, only the first landing is charged for. This allows for aircraft that may visit the airfield from another location, carry out the four "touch and go" landings and then returns to its home base, without stopping at Rangiora. They would be charged for the first landing only.

The rate also needs to be increased to reflect the wear and tear on the runways generated by the increase in activity which is occurring.

The table below shows the movements and landings for the year 2021 and how an increase in fees and based on a per landing would alter the revenue generated.

The fee is calculated is larger for aeroplanes which have a greater weight than a microlight which is classified as being up to 600Kgs.

The table below is based on actual aircraft movements for the year 2021.

Aircraft Movements for 2021

Aircraft	Movements	Landings	Fee	Income
Aeroplane	18912	9456	$ 7.00	$ 66,192.00
Microlight	17791	8896	$ 5.00	$ 44,477.50
Helicopter	3913	1957	$ 7.00	$ 13,695.50
	40616	20308		$ 124,365.00

Below are comparisons from other airfields around New Zealand

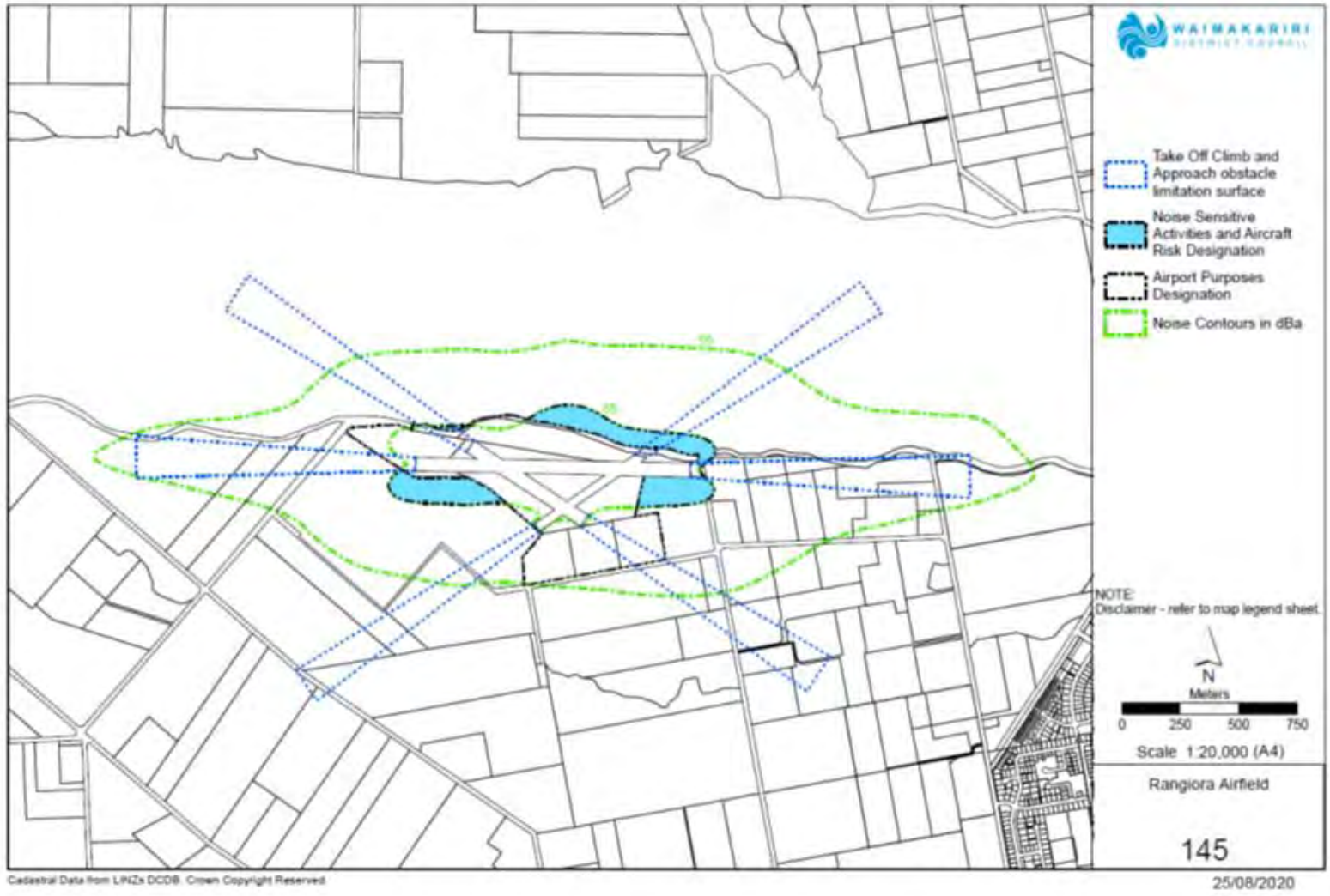
Airport Landing Charges based on Weight Breaks					
Weight Breaks	**Airfield**				
	***Rangiora** Per Day	***Taupo** Per Landing	***Motueka** Per Landing	***Matamata** *Per Landing/ Movement- Direct Credit	***Matamata** *Per Landing/ Movement- Invoice Sent
Microlights & aircraft up to 600 kilograms	$10.00	$5.50	$10.00	$10.00	Max/Day $40.00
601-1,200 kilograms	$10.00	$8.00	$10.00	$10.00	Max/Day $40.00
1,201-2,200 kilograms	$10.00	$10.00	$10.00	$10.00	Max/Day $40.00
2,201-3,000 kilograms	$10.00	$15.00	$10.00	$10.00	Max/Day $40.00
3,001-4,999 kilograms	$10.00	$20.00	$10.00	$10.00	Max/Day $40.00
5,000-5,999 kilograms	$10.00	$35.00	$10.00	$10.00	Max/Day $40.00
Helicopters	$10.00	$11.50	$10.00		
Annual Fee			$200.00	$130.00	$130.00

Weight Break	**Airfield**
	***Masterton** Daily charge for 5 or less landings within a day
0-600 kilograms	$5.00
601-1,500 kilograms	$10.00
1,501-3,000 kilograms	$15.00
3,001-4,500 kilograms	$20.00
4,501-5,200 kilograms	$25.00
5,201-5,999 kilograms	$65.00
Helicopters	$5.00
Annual Fee-Helicopters & Microlights	$80.00
Annual Fee- Individuals & Non-Commercials	$160.00

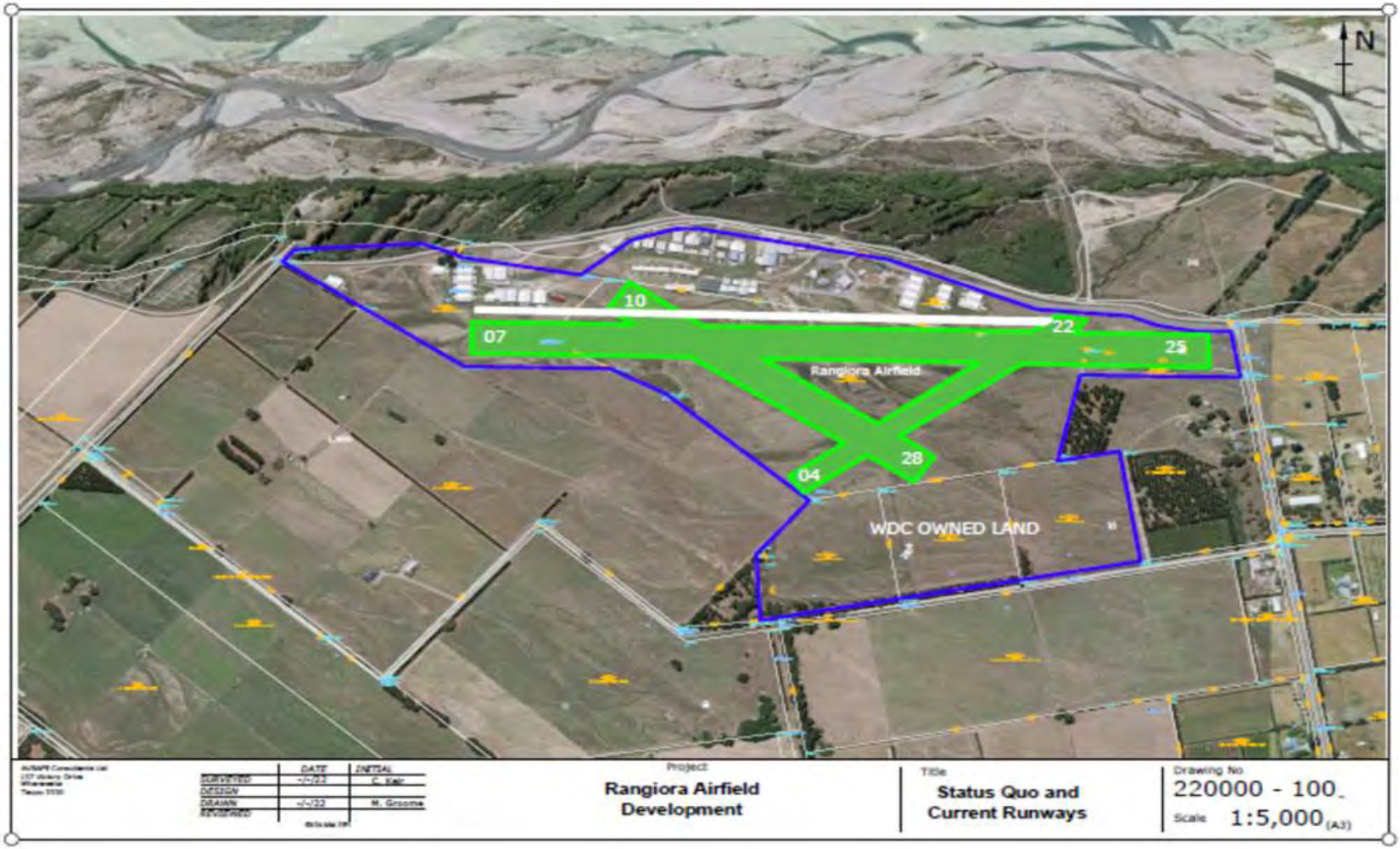
Weight Break	Airfield
	***Timaru**
Up to 701 kilograms	$10.00
701-2,000 kilograms	$10.00
2,001-3,500 kilograms	$30.00
3,501-5000 kilograms	$35.00
5,001-10,000 kilograms	$45.00
Helicopters	
Annual Fee	
Weight Break	**Airfield**
	***Ashburton** Per Landing/Casual Fee
Microlights	$8.00
601-1,500 kilograms	$10.00
Over 1,500 kilograms	$15.00
Helicopter	$10.00
Annual Fee	$115.00

12.0 MAPS

MAP 1: NOISE CONTOURS.

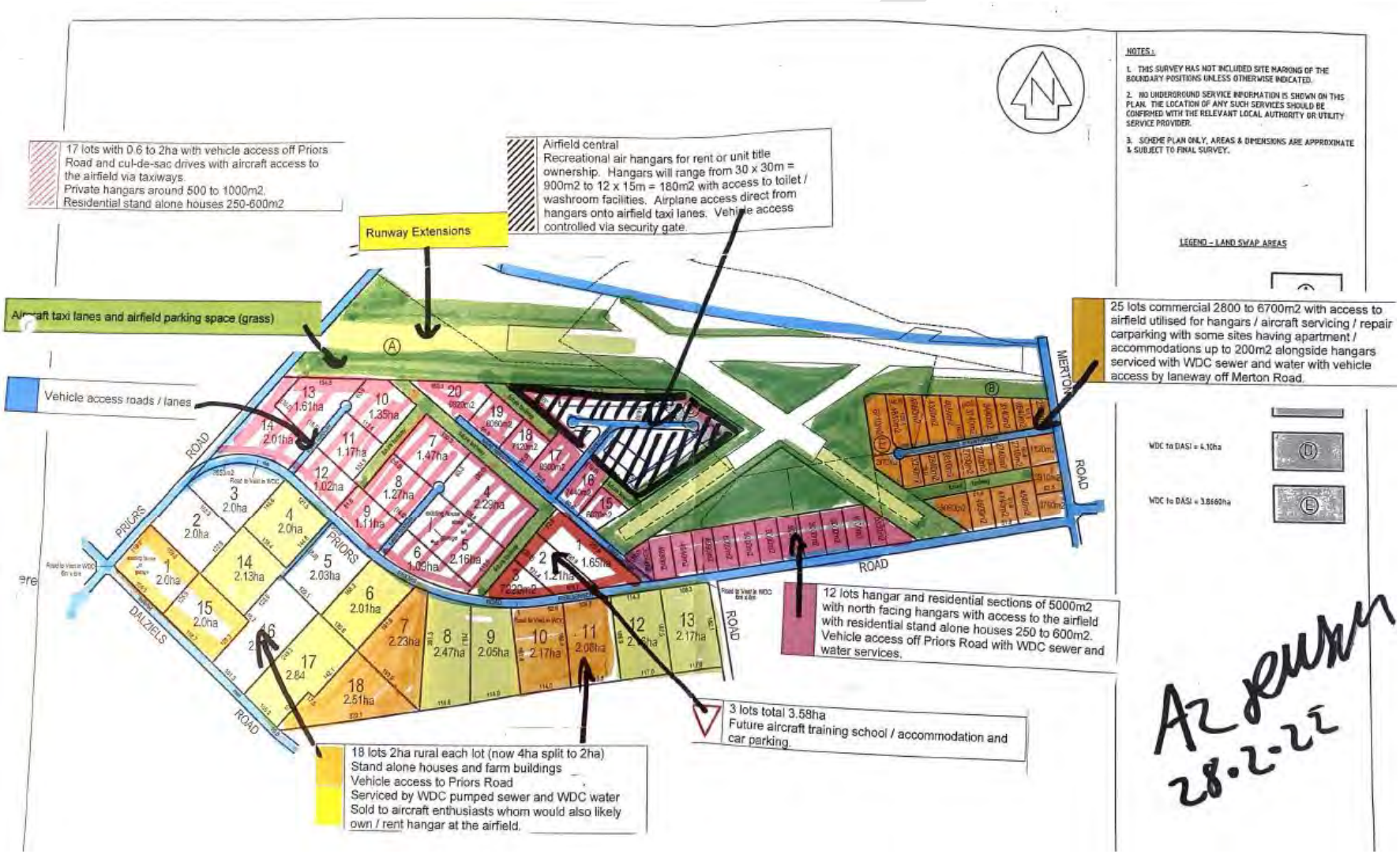


MAP 2: RANGIORA AIRFIELD BOUNDARIES.

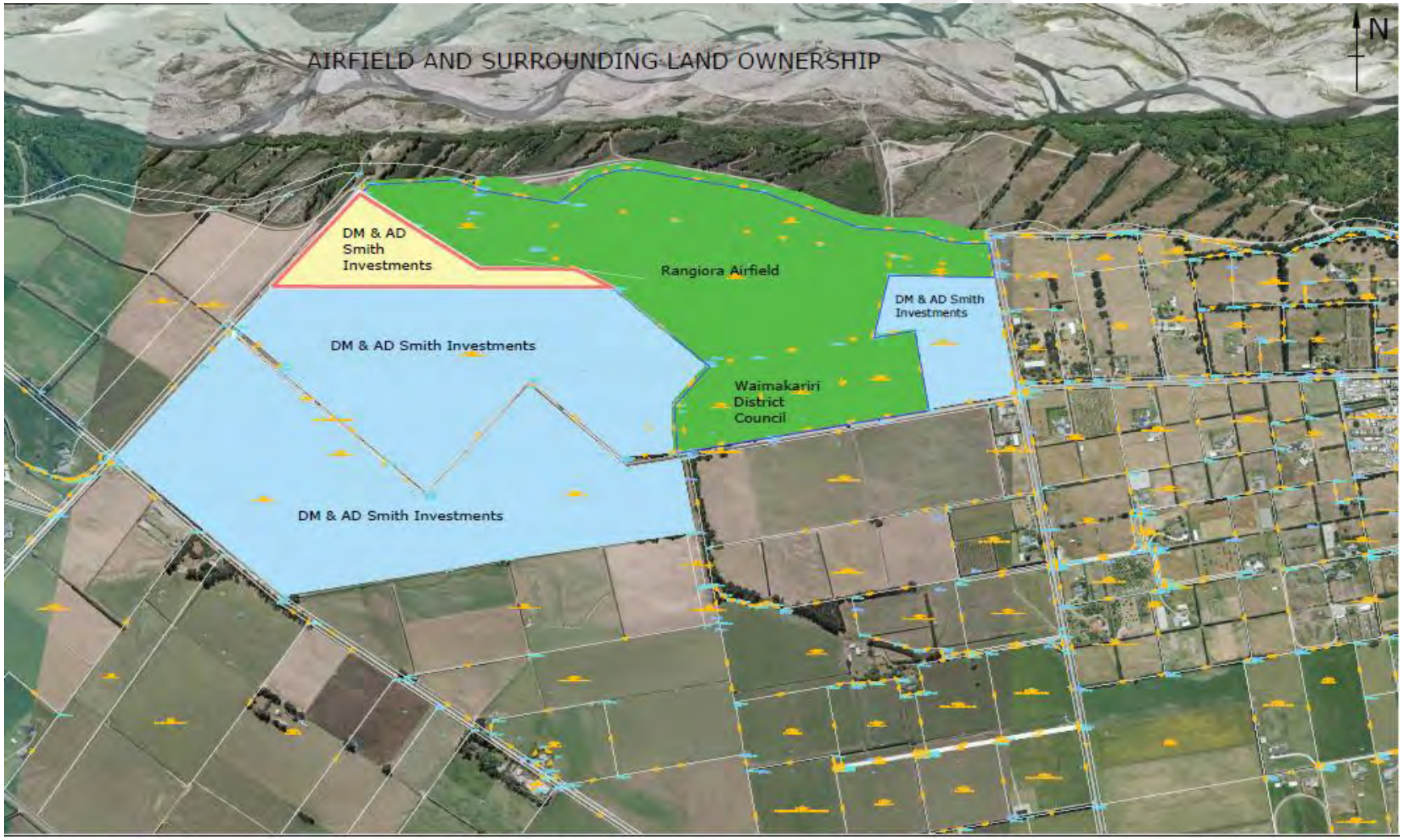


MAP 3: LAND SWAP PLAN.

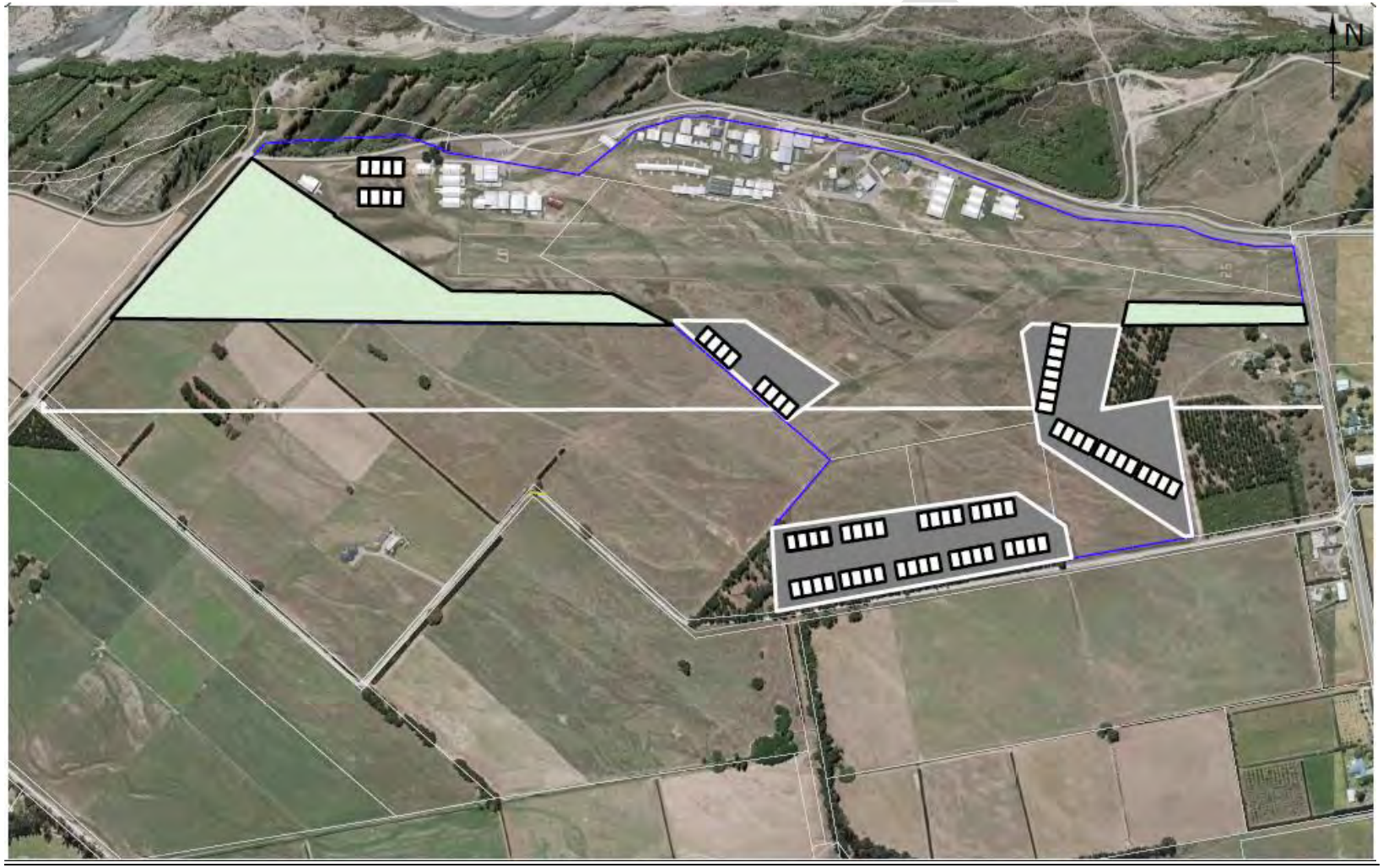
MAP 4: DEVELOPERS PLAN.



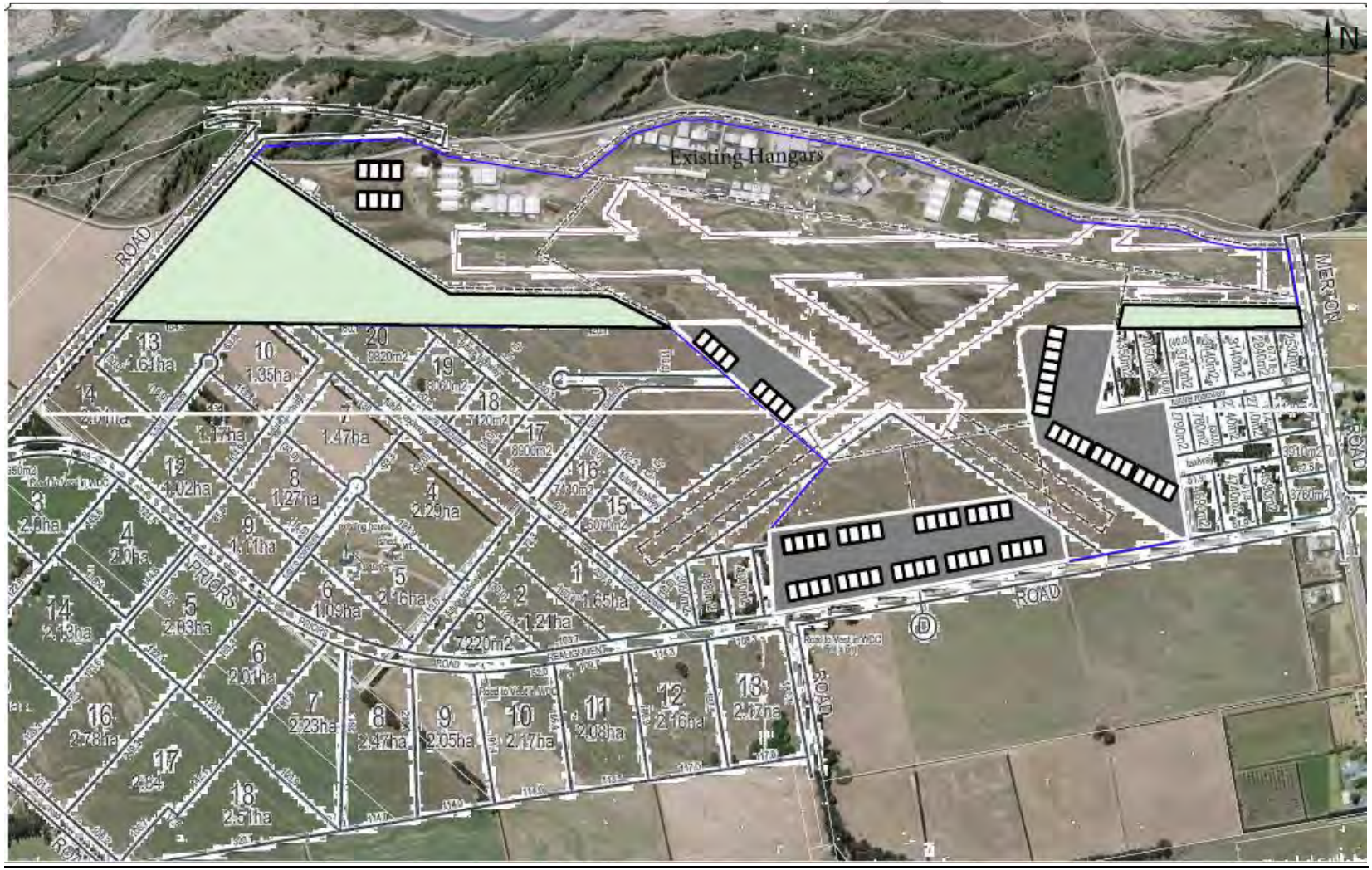
MAP 5: LAND OWNERSHIP.



MAP 6: WDC LAND TO RETAIN AND PROPOSED LAND ACQUISITION

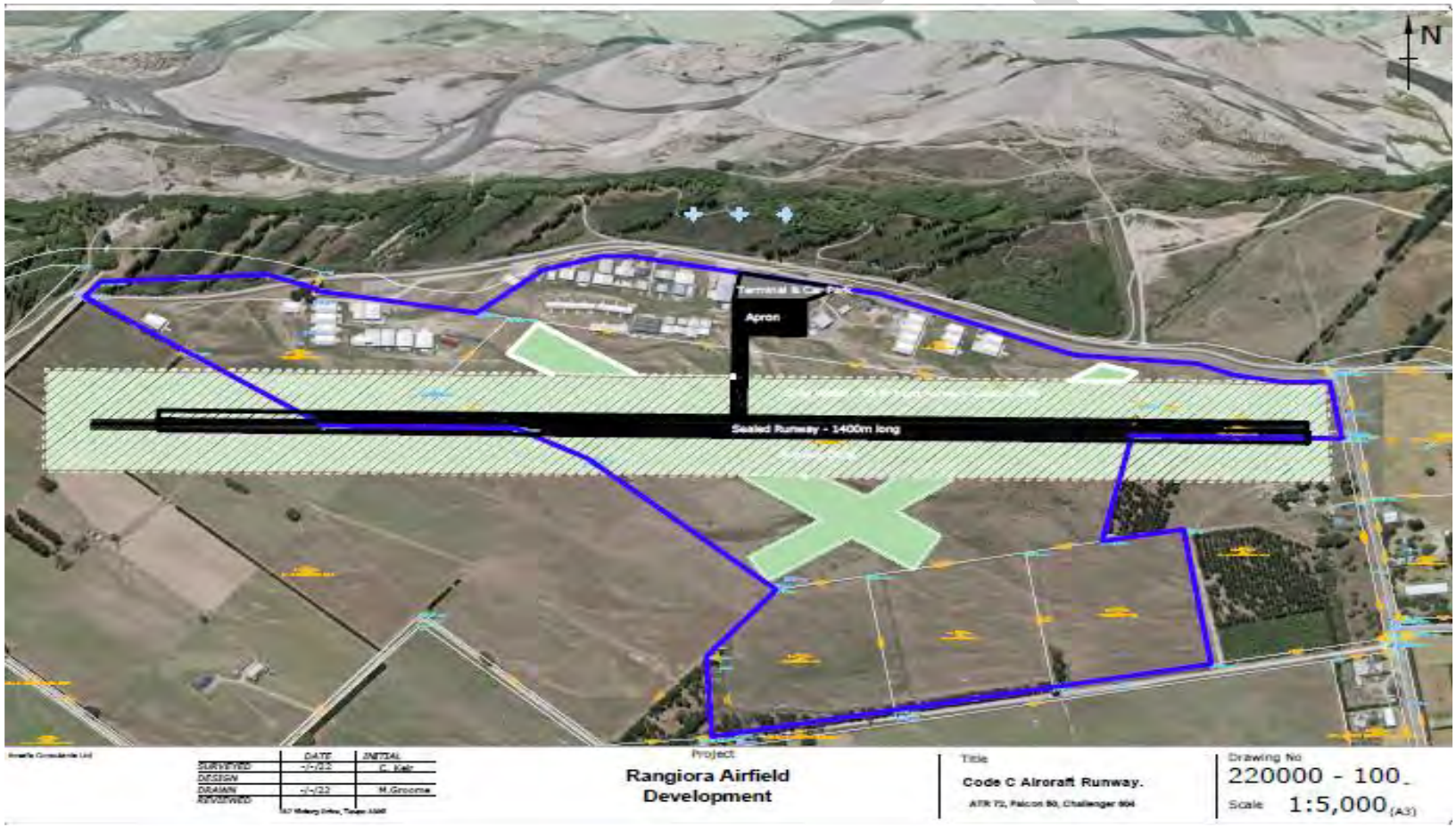


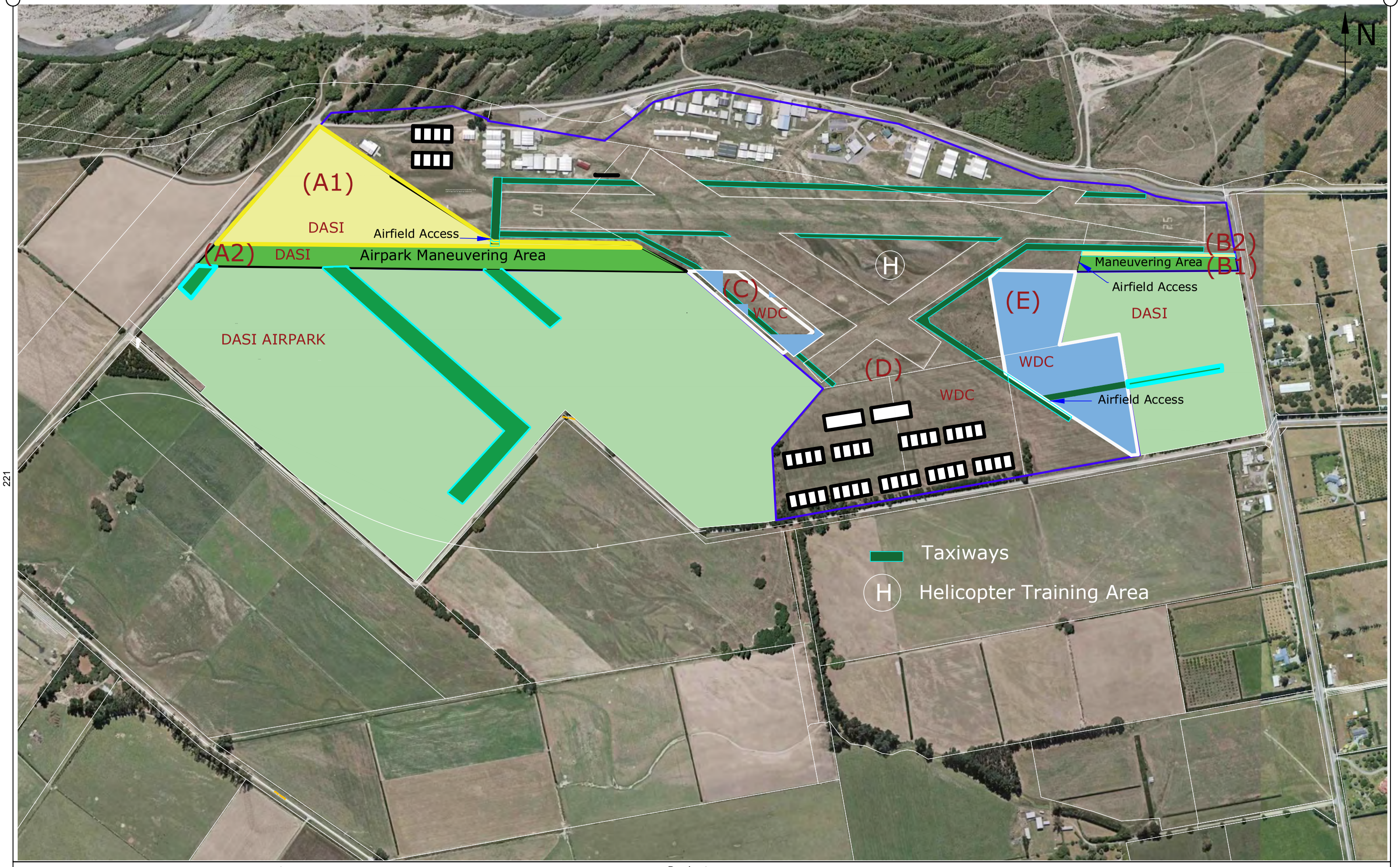
MAP 7: WDC RETAINED LAND INCLUDING DEVELOPERS PLAN.



MAP 8: DEVELOPERS PROPOSAL.

MAP 9: CODE C RUNWAY. LAND REQUIREMENTS.





221

	DATE	INITIAL
SURVEYED	-/-/22	C. Keir
DESIGN		
DRAWN	-/-/22	Mike Groome
REVIEWED		

Avsafe Consultants Ltd
137 Victory Drive, Taupo

Project

Rangiora Airfield Development Project

Title

Option Three Plan Variation 1

Drawing No

220000 - 100_

Scale 1:5,000 (A3)

RANGIORA AIRFIELD VARIATION OF OPTION THREE OF THE DEVELOPMENT PLAN

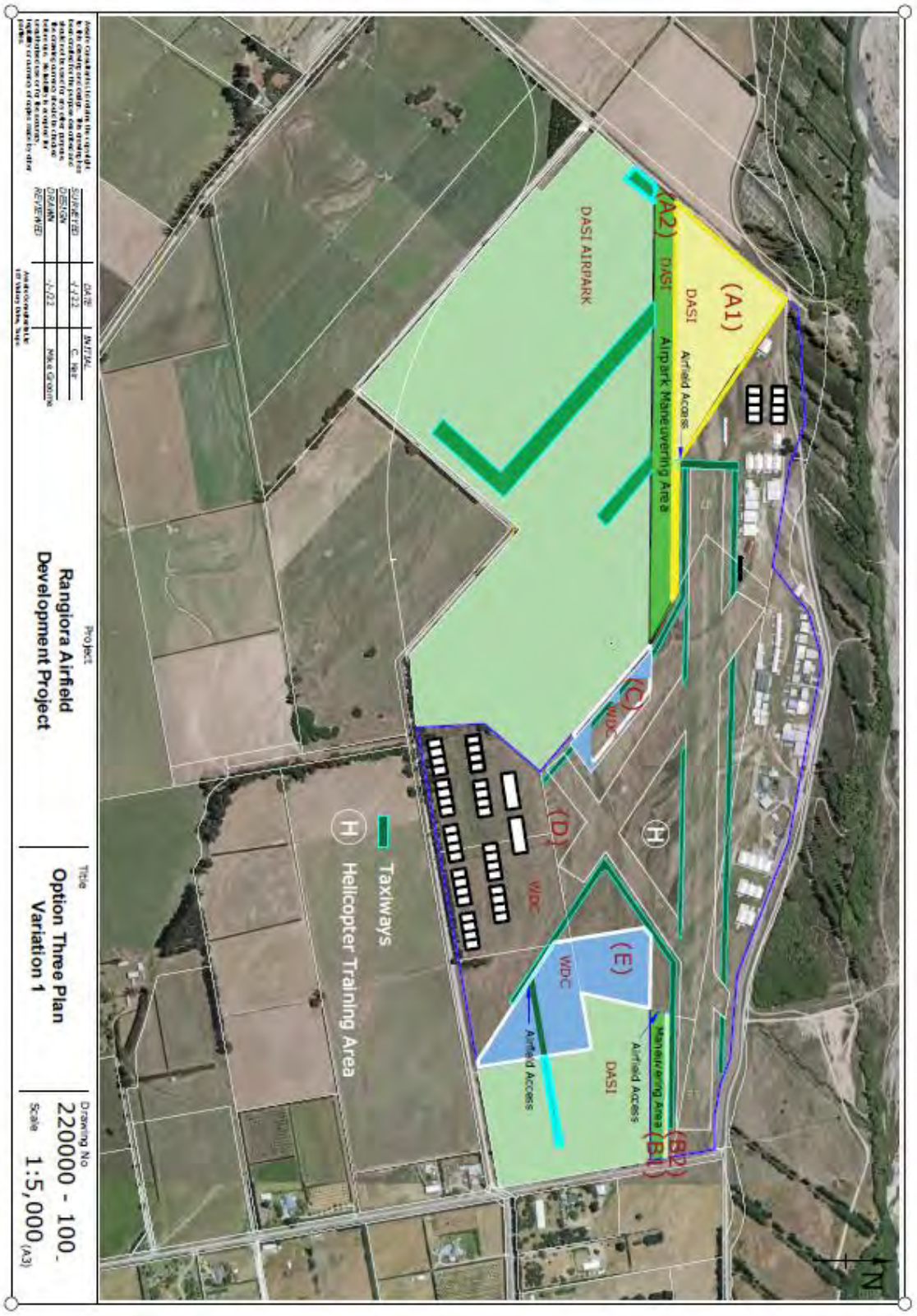
27 May 2022

Prepared by Mike Groome

AVSAFE CONSULTANTS

*Photo Credit on the Front Cover: Waimakariri District Council

TABLE OF CONTENTS


(A1)
DASI
Airfield Access
(A2)
DASI
Airpark Maneuvering Area
DASI AIRPARK
(C)
WDC
(D)
WDC
(E)
WDC
Airfield Access
DASI
Maneuvering Area (B1)
(B2)
Taxiways
Helicopter Training Area
N
Project
Rangiora Airfield
Development Project
Title
Option Three Plan
Variation 1
Drawing No
220000 - 100
Scale
1:5,000 (A3)

.8

1.0 Rangiora Airfield Variation of Option Three of the Development Plan

This is a variation of Option Three as presented to the Waimakariri District Council (WDC).

I believe that the WDC needs to retain as much land as they can to protect the airfield from reverse sensitivity issues, and to allow a planned expansion within the airfield boundary to benefit the airfield users and the WDC.

Along with the WDC plan, to work with D M & A D Smith Investments Ltd (DASI) to formulate a plan which will be beneficial to both parties.

This variation is considering the requirements of the WDC as well as allowing DASI to move forward with the development of an airpark, which includes the swapping of designated land to meet those requirements.

Airfield design parameters, as required by the CAA, for certification as a Qualifying Certificated Aerodrome, have been included in this variation with taxiways meeting the required clearance distances from runway edges and fixed objects. This requires adjustment to small parcels of land between WDC and DASI.

2.0 Variation. (As per attached map)

1. **Area (A)** which is owned by DASI and covers approximately 7.6 hectares be subdivided into two Areas, (A1) and (A2).

   Area (A1)

   a. Area (A1) following the subdivision would make up an area of approximately 4.9 hectares.
   b. This Area would be the larger of the two Areas is triangular and is situated to the west of the main runway with a narrow strip to the south of the main runway.
   c. Area (A1) could be become a part of a land swap with area (E).
   d. Area (A1) if acquired by the WDC would then allow for a future extension to the main runway, but more importantly would allow for a taxiway to be created on the southern side of the runway for aircraft to use when requiring access to Area (D) or the threshold of runway 28.
   e. The narrow strip on the southern side of the main runway would be wide enough to allow the creation of a taxiway which meets the CAA requirements for clearances from the runway and any fixed objects.
   f. In northern most corner of area (B1) there is the possibility to build a small number hangars.

   Area (A2)

   a. Area (A2) following the subdivision, would make up an area of approximately 2.7 hectares.
   b. This Area would be a long rectangular Area running along the northern boundary of the DASI Airpark.
   c. This area would become a manoeuvring area for aircraft from the airpark prior to entering the WDC owned airfield.

d. This manoeuvring area would have a fenced northern boundary with only one accessway onto the airfield from the airpark, meeting up with new taxiways. Having one accessway onto the airfield reduces the risk of multiple aircraft accessing the airfield from different points in the same area.
e. The three taxiways shown on the DASI airpark plan would have direct access to this manoeuvring area to travel to the one exit point onto the airfield.

2. **Area (B)** which is owned by DASI and covers approximately 0.8 hectares to be subdivided into two Areas, (B1) and (B2).

Area (B1)

a. Area (B1) following the subdivision, would make up an area of approximately 0.6 hectares.
b. This Area runs along the north side of the DASI Area on Merton Road.
c. This Area (B1) would become a manoeuvring area just like (A2) with one access point from the DASI land onto the airfield.
d. This area allows adequate room for aircraft to manoeuvre to and from the commercial sites if required.

Area (B2)

a. Area (B2) following subdivision would make up an area of approximately 0.2 hectares.
b. This strip is on the northern side of the Area (B1) between the DASI commercial land and the main runway.
c. This land is required to meet CAA requirements allowing a taxiway to be created to cater for aircraft to get to the threshold of runway 25 from the DASI land and the WDC land on the Priors Road. Currently there is not enough width between the runway and the DASI boundary.

3. **Area (C)** be retained in its entirety by the WDC.
   a. This area to be retained by the WDC, which will allow room for a taxiway from the Priors Road end of the airfield to the northern side of the main runway.
   b. Keeping this area free from building allows the pilots of aircraft using the taxiway from the south greater visibility of aircraft using the main runways, and in particular the threshold of runway 07, avoiding any conflict between aircraft using different runways.

4. **Area (D)** be retained in its entirety by the WDC,
   a. To reduce the impact of restricting available area for the airfield from outside sources.
   b. For future expansion of hangars and or a commercial precinct.
   c. To allow access from Priors Road onto the airfield for those buildings there.

5. **Area (E)** be relinquished to DASI in in a proposed Land Swap.
   a. Area (E) covers an area of approximately 4 hectares and is a part of the DASI commercial development proposal.
   b. Area (E) could be included in a land swap between the WDC and DASI.
   c. This area would have one accessway onto the airfield from a taxiway on the southern end of the precinct.

3.0 Land Swap

This variation to Option Three allows for both parties to be able to accommodate some of each other's requirements.

Land to be Swapped

DASI	Area (A1)	4.9 hectares
DASI	Area (B2)	0.2 hectares
DASI	**DASI TOTAL**	**5.1 Hectares**
WDC (Area E)	**LESS**	**4.0 Hectares**
	DIFFERENCE	**1.1 Hectares in Favour of DASI**

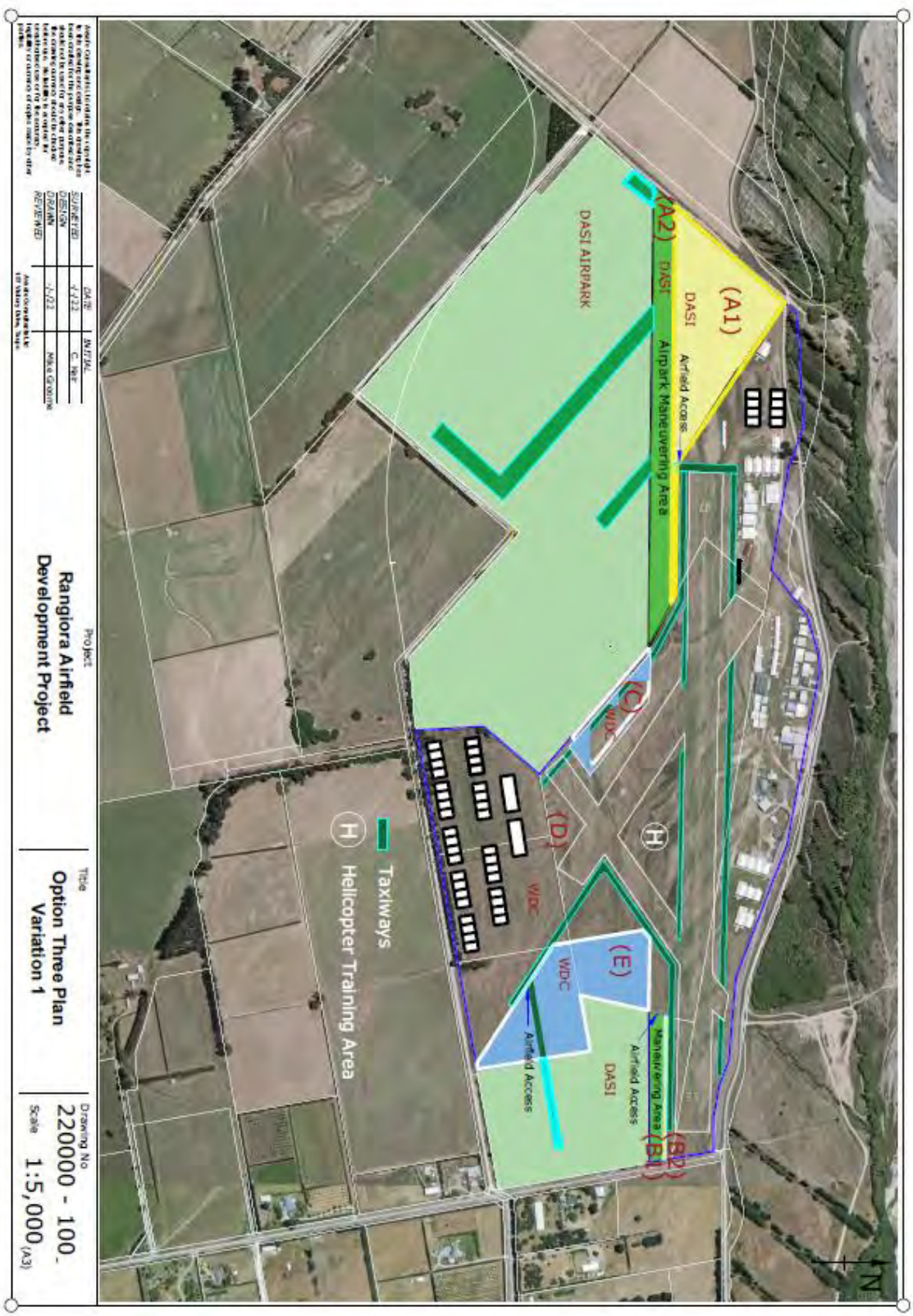
This variation allows for access to the airfield from the airpark by three entry points which meet up with taxiways allowing aircraft to travel to other parts on the airfield.

4.0 Pro's and Con's

Pro's	Con's
Area A	
Allows the WDC to retain nearly all the land as suggested in the Option Three.	
The land swap would allow WDC and DASI to gain land which could become critical to their respective operations.	The land swap is not a clean swap as the WDC would need to purchase approximately 1.1 hectares from DASI.
WDC swaps Area (E) for Area (A1) and (B2)	Area (A1) is some 2.7 hectares which reduces the area which DASI can swap from the original DASI plan.
Having (A2) as an Airpark manoeuvring area allows only one entry point from the Airpark to the airfield rather than three, which increases the security for and the control of the airfield.	Not having the manoeuvring area and single access would allow aircraft from the airpark to travel at will anywhere within the Area (A), which is not a part of the airfield, and may become a hazard and distraction to aircraft landing and taking off on the main runway.
If acquired by WDC, Area (A1) would be able to be used as an extension of the main runway as well as making available a small area in the northern corner for some hangar development. This would be outside the Obstacle Limitation Surface	DASI cannot build any structures on Area (A1) which can penetrate the 1:20 gradient obstacle limitation surface.

Area B	
A small strip of land beside the main runway at the eastern end, belonging to DASI.	There is not enough space to allow a taxiway between the edge of the runway and the DASI boundary.
The subdivision of Area (B) into one larger parcel of land, (B1) and a smaller one (B2). The small parcel of land, (B2) included in the land swap, would then allow a taxiway to parallel the main runway with adequate clearance from boundaries and obstacles.	
The remaining parcel of land being (B1), would become a DASI manoeuvring area similar to (A2), with one entry point onto the airfield.	
Area C	
This area to be retained by the WDC. Allows a taxiway to be created from the main runway down to Area D where hangars and commercial opportunities may happen.	
By retaining this area with no building s on it, pilots at the thresholds of runway 28 and 04 cans see the threshold of runway 07 and vice versa. This then mitigates any potential for a conflict between aircraft using different runways.	This area would remain vacant.
Area D	
Area D to be retained in its entirety to be used for hangar and commercial development.	Not included in the land swap.
Gives access to the southern side of the airfield from Priors Road.	
Stops the airfield becoming land locked with no room for expansion.	
Area E	
Area E to be relinquished to DASI via land swap with (A1).	WDC loses some 4 hectares but will gain this via (A1) if the swap is to go ahead.
Allows DASI to continue with the commercial development as planned.	Would have been difficult for the WDC to manage the access to the airfield for this area.

5.0 Variation Map



CavellLeitch LIMITED

2 November 2022

Waimakariri District Council

Attention: Grant MacLeod

By email: grant.macleod @wmk.govt.nz

Dear Grant

Advice as to planning options at Rangiora Airfield

1. You have asked for our advice as to the possible options for enabling the rezoning of land in the vicinity of Rangiora Airfield (**Airfield**) for commercial and residential purposes or, alternatively, for enabling those uses under the current zoning.

2. Based on the discussion below, our opinion is as follows:

   2.1. Given that there appears to be a benefit to the community from progressing a plan change, the Council is justified seeking some form of agreement (or memorandum of understanding) with the landowner:

   2.2. But the Council need to be careful to keep (and be seen to keep) its roles in this process separate:

   2.3. The fact that decisions on any plan change request must be made as part of a quasi-judicial process, means that there is limited ability to 'guarantee' outcomes, and:

   2.4. The nature of the process and the circumstances indicate to us that the Council should not 'drive' the process by instigating the plan change, but that there may be a need for, and a benefit from, the Council adopting the plan change in due course.

3. Accordingly, we recommend that, on the basis of a successful negotiation to reach a mutually beneficial position on the outcomes to follow as a consequence of a successful plan change (including an understanding as to an apportionment of costs) , that the landowner be asked to prepare and make the request for a plan change. That request should be made with a further request that the plan change be adopted by the Council prior to notification.

[redacted]

Background

4. The Waimakariri District Council (**Council**) administers the Airfield, along with some of the surrounding land on Priors and Mertons Roads, which is also the subject of a designation under the Waimakariri District Plan (D097) (**District Plan**).

5. The Airfield designation is for "Airfield Purposes" which is not otherwise defined in the plan. The term Aircraft operations is defined, as follows:

> **Aircraft Operations**
>
> Aircraft operations means:
>
> a. The landing and take-off of aircraft (including helicopters) at Rangiora Airfield.
>
> b. Aircraft flying along any flight path associated with a landing or take off at Rangiora Airfield.

6. The designation does include conditions relating to setbacks for buildings at the airfield: 100m from the Ashley River Rakahuri stopbank, 10m from a road boundary, and 3m from an internal boundary. Also, internal lighting in the Airfield runway is prohibited.

7. A second designation (D098) relating to the Airfield applies to surrounding land – whether or not it is owned by the Council – and imposes a:

> Restriction to avoid noise sensitive activities, and manage activities which pose a risk to aircraft movements.

8. The designation is shown on the planning maps (#145) as applying within the 65dBA noise contour that was identified around the airfield. District Planning map 145 also identifies the 55dBA noise contour surrounding the Airfield. An excerpt/snip from the online District Plan, showing the airfield and its noise contours is attached, marked **'A'**.

9. The restriction in D098 is implemented via rules in the District Plan. This includes:

9.1. 31.12.1.4

> Within the 55dBA Ldn noise contour shown on District Plan Maps 138 and 145, any proposed dwellinghouse, or any building or part of a building described in Table 31.2, shall be insulated from aircraft noise to ensure that indoor sound levels stated in that table are not exceeded.

9.2. 31.12.1.5

> Within the 55dBA Ldn noise contour shown on District Plan Maps 138 and 145, any additions to existing dwellinghouses, or to any buildings or parts of a building described in Table 31.2 shall be insulated from aircraft noise to ensure that indoor sound levels stated in that table are not exceeded.

9.3. **31.14 Non Complying**

31.14.1

Any noise sensitive activity or proposed dwellinghouse or addition to any dwellinghouse that does not meet the requirements of rules 31.12.1.4 and 31.12.1.5 within the 55dBA Ldn noise contour shown on District Plan Map and 145 is a non-complying activity.

9.4. **31.15 Prohibited Activity**

31.15.1

Any residential dwellinghouse or noise sensitive activity within the 65 dBA Ldn noise contour shown on District Plan 145 is a prohibited activity and no resource consent will be granted.

10. The Council has had discussions with a landowner whose land is adjacent to the airfield and included areas within the 55 and 65dBA contours (see **attached** plan marked **'B'**). The landowner would like the District Plan rules that apply to the affected parts of their land modified to enable a wider variety of activities, including some accommodation/residential and commercial activities. This would also require a change in zoning from the current rural general zone to a new urban zoning that enables the activities that are proposed .

11. Those activities include residential activities

12. To achieve this outcome, changes to the District Plan (and subsequently the Proposed District Plan) will be needed, or a resource consent will need to be obtained, though this cannot be an option for sensitive activities under the 65dBA contour, which are currently prohibited.

13. One beneficial outcome of enabling the additional uses on the landowner's land is that the landowner is willing, assumedly on the basis of success in obtaining the outcome that they desire, to transfer to the Council land that it needs to extend the Airfield runways and increase the capabilities of the airfield.

14. Any such extension would also necessitate amendments to the noise contours to reflect the changed circumstance. It may be that such amendments would be best identified at the time of any other changes to the District Plan, in support of the landowner's preferred outcome. This further reduces the potential of a resource consent to provide a comprehensive outcome.

15. The reason that this legal opinion is being sought is because the nature of the zoning change in the vicinity of the Airfield has not been previously signalled by the Council's own planning department or during the Proposed District Plan (**PDP**) process, which sees the current designation and rules for the airfield carried over. It has, however, featured in the Council's Greenspace Unit's master planning process for the District.

16. The landowner preference[1] is for the Council to lead the process to achieve the required plan changes. That would also have other implications[2]. It also raises an internal issue for the Council, specifically, can (or should) a department of the Council be the applicant for a plan change[3] that is, or may not be, fully supported by another department, that is the Council's own planning officers? In addition, when there is a Plan Review process underway, and a Proposed District Plan (**PDP**) has been notified, should the changes be made through a variation to the PDP rather than a change to the current operative District Plan?

17. Accordingly, this advice focuses on the decision-making processes that need to be followed, if such changes to the District Plan are to be entertained, as opposed to the substance and merits of the change itself. In any event the details of the proposals have evolved through discussions and could change again in any plan change request.

18. This also means that other issues such as potential benefits stemming from the plan changes, and which may influence the Council view on its apparent merit, such as the transfer of land, are to be looked at through this lens. In other words, are such benefits a legitimate consideration for the Council in deciding to promulgate, adopt or support, such plan changes, and do such benefits impact on the 'correct' way to proceed?

Legal framework

19. The legal framework depends to an extent on the option chosen to advance the preferred outcome. However, in this case given the restrictions imposed by the existing designation and the need to factor potential changes to that designation into the process, it seems that the use of resource consents, under existing settings, to achieve the outcomes sought would be less desirable of even unworkable. Therefore, we do not consider the resource consent option further.

20. For completeness, the resource consent option is excluded because a resource consent:

    20.1. cannot change the underlying planning/zoning framework (they provide for exceptions to it):

    20.2. cannot amend the Airport designation:

    20.3. cannot reposition the noise contours (if that is needed):

    20.4. is not an option for any sensitive activity within the 65 dBA contour, which is prohibited, and:

    20.5. would be harder to justify if it were to be "Council led".

[1] The landowner alleges that the recent Council submission on a plan change at Ohoka is the cause for their concern in this regard, though the nature and context of the two plan changes appears significantly different.
[2] Such as who bears the cost of the process?
[3] Which would presumably make it a Council proposed plan change under 21, with the implications that follow.

21. Looking, therefore, at the planning options, we start by noting that regardless of the means that are chosen to advance the proposal – should the decision to advance it be made – any plan change request will need to follow a notified process. Such a process will involve calling for submissions, and given the Council's involvement and the benefit that could accrue, it will need to be determined by an Independent Commissioner or hearing panel.

22. Such a process will also proceed parallel to (if it is not part of) the PDP process.

23. The PDP has been notified and submissions have been lodged. We understand[4] that the landowner has made a very general submission (described as a "one liner") regarding development in the vicinity of the Airport. Therefore, it is not clear whether the current proposal, to the detail that has been discussed, can be considered through that process. In any event the PDP process is subject to additional delays due to the advent of the medium density residential standards (**MDRS**) that were mandated by the Government[5]. These have been incorporated in the PDP under Variation 1, for which submissions closed on 9 September 2022. A final decision on Variation 1 needs to be made by 20 August 2023.

24. It seems unlikely that the MDRS will impact the current proposal. While it involves a rezoning to an urban zone and as such the MDRS could apply, given the size of the proposed lots, which appear to be "large lot residential" or commercial, and their proximity to the airport, which as important infrastructure may act as a qualifying matter, the MRDS should not apply. That position would have to be confirmed, and documented (if a qualifying matter needed to be relied on).

25. Plan changes are made in accordance with the process described in Schedule 1, Part 2 of the RMA. Clause 21 provides (relevantly):

> **21 Requests**
> (1) Any person may request a change to a district plan…
> …
> (4) Where a local authority proposes to… change its… plan, the provisions of this Part shall not apply and the procedure set out in Part 1, 4, or 5 applies.
> …

26. In effect, there are three possible avenues to promote plan changes.

    26.1. The first is that the Council applies to change its own plan. This requires the same process that the Council must follow for promulgating the plan originally, as indicated above.

    26.2. The second is a private plan change that the Council adopts after receiving and considering the application[6].

[4] The PDP summary of submissions document is not yet available.
[5] Under the Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021.
[6] Clause 25(2)(a), Schedule 1, RMA.

26.3. The third is a private plan change that the Council accepts, but does not adopt[7].

27. All plan change options generally require public notification. However, limited notification[8] can be considered in circumstances where the local authority is able to identify all the persons directly affected by the proposed plan change. In addition, there are other parties who must be provided a copy[9], specifically (and relevantly):

27.1. The Minister for the Environment:

27.2. The regional council and adjacent local authorities, and:

27.3. The tangata whenua of the area through iwi authorities.

Whether limited notification would be recommended (if possible) in the context of the present proposal is discussed below.

28. But before notification the request is subject to requirements. It must[10] (underlining added):

28.1. be in writing and explain the purpose of, and reasons for, the plan change[11]:

28.2. contain an evaluation report prepared in accordance with s.32 of the RMA[12], and:

28.3. if environmental effects are anticipated, those effects must be described in such detail as the scale and significance of the actual and potential effects om the environment that are anticipated[13].

29. Where the Council is not the author of the request, it may require that further information be provided[14] in order to better understand:

29.1. the nature of the request in respects of its actual or potential effects:

29.2. any proposed mitigation of adverse effects;

29.3. the benefits and costs, and efficiency and effectiveness of the proposal, and any possible alternatives, and:

29.4. any consultation that may have taken place.

[7] Clause 25(2)(b), Schedule 1, RMA.
[8] Clause 5A, Schedule 1 RMA.
[9] Clause 5A(8), Schedule 1, RMA.
[10] Clause 22, Schedule 1, RMA.
[11] Clause 22(1), Schedule 1, RMA.
[12] Ibid.
[13] Clause 22(2), Schedule 1, RMA.
[14] Clause 23, Schedule 1, RMA.

These requirements must take into account the scale and significance of any anticipated effects.

30. The local authority may also commission a report in relation to the request, or ask for one to be commissioned[15]. The reasons for the report need to be specified in writing. The person who makes the plan change request must be notified of any such report and may decline, in writing, to provide the further or the commissioning of a report and require the local authority to make its decision. However, refusal can lead to a ground to decline to accept the plan change for insufficient information.

31. Agreed changes can be made to the request following receipt of the further information[16].

32. The local authority must then decide how the request (if it is not the author) is to be dealt with. Having had regard to the s.32 evaluation report, the local authority may[17] either **adopt** the request, in which case it proceeds (effectively) as if it had been promulgated by the local authority, or **accept** the request and continue to process it as a private plan change.

33. The local authority can also decide at this point to deal with the request as if it were a request for a resource consent[18], though for the reasons outlined above, that would appear an unlikely course in these circumstances.

34. There are also grounds to refuse a request[19] but they do not appear relevant in this case. The request must be declined if it does not incorporate the MDRS when it should.

35. This decision phase is plainly important in these circumstances, if the Council is not prepared to make the plan change request itself, but the landowner still wishes/requires the process to be Council-led, then the only acceptable decision would be to adopt the request. This may also be important in terms of considerations under other instruments (e.g. National Policy Statements), which are discussed further below.

36. It must also not be forgotten that where the role for Iwi in relation to plan changes is specified under a Mana Whakahono a Rohe, that role must be provided for[20].

37. Assuming that the request is to proceed (meaning, it seems, that it has been adopted), then the usual course under Part 1 of Schedule 1 of the RMA, in respect of notification, submissions, further submissions, and consideration at a hearing, a local authority[21]:

    (a) may decline, approve, or approve with modifications the plan or change; and

    (b) must give reasons for its decision.

[15] Clause 23(3), Schedule 1, RMA.
[16] Clause 24, Schedule 1, RMA.
[17] Clause 25(2), Schedule 1, RMA.
[18] Clause 25(3), Schedule 1, RMA. Note: the Council does not become the applicant for the resource consent.
[19] Clause 25(4), Schedule 1, RMA.
[20] Clause 26A, Schedule 1, RMA.
[21] Clause 29(4), Schedule 1, RMA.

38. It is noted that there is an option to apply for the Minister for the Environment[22] to utilise a streamline planning process under Part 5 of Schedule 1 of the RMA. In order to be considered for that process the request would have to satisfy at least one of the criteria set under the Act, namely[23]:

> (a) the proposed instrument will implement a national direction:
>
> (b) as a matter of public policy, the preparation of a planning instrument is urgent:
>
> (c) the proposed planning instrument is required to meet a significant community need:
>
> (d) a plan or policy statement raises an issue that has resulted in unintended consequences:
>
> (e) the proposed planning instrument will combine several policy statements or plans to develop a combined document prepared under section 80:
>
> (f) the expeditious preparation of a planning instrument is required in any circumstances comparable to, or relevant to, those set out in paragraphs (a) to (e).

39. While the present plan change is of importance to the landowner and the Council, and by extension the community, stands to reap some benefit if the plan change were concluded as desired by the landowner, it is difficult to identify the grounds for urgency that would fulfil the criteria in s.80C.

40. It has already noted that the plan change request may be impacted by existing national directions (the MDRS). It may also need to be considered against existing National Policy Statements (**NPS**). The NPS-Urban Development (**NPS-UD**) may be of assistance in enabling this request that, as far as we are aware, has not been previously anticipated or scheduled in the Councils' planning documents, under the requirement to be responsive to certain requests[24]. Those do need to provide for significant housing opportunities and be part of a well-functioning urban environment. However, the relevance of the NPS-UD may be limited if the Council choses to promote the plan change request (by promulgating or adopting the request).

41. In addition, the Government has also recently approved the NPS-Highly Productive Land (**NPS-HPL**). The NPS-HPL takes effect on 17 October 2022 and requires the mapping of highly productive land and the avoidance (in the absence of justification) of urban zoning or subdivision of such land. The reason this may become relevant here is that until the mapping of such land has been carried out the existing classifications (LUC1, 2 and 3 land) apply as the default markers of highly productive land. It appears there is some LUC3 land that would be included in the request.

42. Again however, given the landowners desire for the Council to take the lead with the request, the NPS-HPL would not be an impediment. One of the exceptions to the

[22] Under section 80C, RMA.
[23] Section 80C(2), RMA.
[24] Policy 8 and clause 3.8, NPS-UD May 2020

default classifications being applied is where the rezoning request is made or adopted by a local authority.

43. Finally, under the heading of legal framework, it is important to recognise the means by which the Council will make any formal decisions in respect of any plan change request. Put simply they will need to be made by the Council itself (with recommendations made by relevant Council officers) or by delegated authority under section 36 and 36A of the RMA.

44. This would include the decision:

44.1. to reach any agreement with the landowner on how the Council will proceed:

44.2. required as part of the plan change process:

44.2.1. whether to make the plan change Council initiated:

44.2.2. to otherwise receive the request:

44.2.3. to request further information:

44.2.4. to accept or adopt the request:

44.2.5. to decide whether to apply to streamline the process o limit notification, and:

44.2.6. to consider and decide the request.

44.3. And, finally, the Council would need to formally make the plan change operative under clause 17 of Schedule 1, a decision that cannot be delegated.

Discussion

45. In making any of the above decisions, it is important to remember the power under which the Council can make them. A local authority is a body corporate which has a degree of latitude on the decisions it makes, but such latitude is not boundless. As a creature of statute, any decision-making powers must be exercised in accordance with legislation that grants those powers.

46. In addition, any such powers need to be exercised transparently and independently, having considered all relevant matters (and ignoring irrelevant ones) and for proper purposes.

47. The RMA prescribes the parameters under which a local authority, here a district council, can make decisions on and under its plans. There is some flexibility in some areas, and the need for judgement in others. And while, the Council's role as a landowner or as a corporate body may sit outside this process, when performing its roles under the RMA the Council needs to act and to be seen to be acting in accordance with its prescribed powers.

48. Therefore, in the current circumstances any decision by the Council, which may or may not be able to be made under delegated powers, to engage with and reach an agreement with the landowner at the Airfield, have limited, if any impact on how the Council needs to make any decisions under a request for a plan change, noting again at this point that given the issues involved, a resource consent is unlikely to be a feasible means of proceeding, in order to achieve the outcomes sought (at least by the landowner).

49. This means there are effectively then two components to the Council's role. The first is determining whether the Council wishes to be involved in the development of the request for a plan change. That decision, while being initiated with and conducted by Council officers, still needs the Council's approval after consideration under any applicable Local Government Act 2002 procedures. This would be either on the basis of already approved delegations or as a separate matter that the Council needs to consider on the advice of its officers (and/or any independent consultants).

50. And while this part of the process may be run by a particular Council department, subject to delegations, it seems unlikely they would be able to commit the Council to a particular course, certainly not in terms of instigating or adopting a plan change request.

51. That is also because the Council's second role is quasi-judicial and involves determining the merits of the matters that need to be determined when processing a plan change. And, even if the Council were to decide that it wished to promote the plan change itself (or adopt it), the decisions made as part of its governance role, should not otherwise influence the exercise of the quasi-judicial role. In fact, it may require, depending on the nature of the decision being made, that the Council engage independent decision makers to determine the merits.

52. The above is little more than "local government 101" and will be familiar to you, but it does need to be remembered in cases such as this.

53. Because it does appear that a successful plan change request would result in some benefits to the Council and community. But the extent of those benefits, beyond the access some land for the development of the Airfield, is not entirely clear. There is talk of land swaps and purchases so additional compensation for property that changes hands is likely. That process would presumably follow standard Public Works Act 1981 (**PWA**) processes if full agreement cannot be reached. Clearly, the benefits and costs of the overall process and, therefore, its justification do need to be detailed and satisfy the Council.

54. On that point it is worth mentioning that the PWA does provide an alternative process for acquiring the land needed for works, like those envisaged for the Airfield, that would not require further ancillary agreements with affected landowners. We understand that this option is not currently being considered, but if an agreement cannot be reached with the landowner (under the current proposals or otherwise) there are other potential option for the Council to achieve its goals.

55. However, on the basis that there is no appetite for the embarking on a PWA process to enable the development of the Airfield, and that a mutually beneficial agreement can be reached with the landowner, what would we recommend as the best way to proceed?

56. The landowner has made it clear that he would like the Council to take the lead with any plan change. We note that there may be other reasons why that might be sensible. This includes that the new NPS-HPL might mean a rezoning as proposed would need to be avoided if proposed under a private plan change, in the absence of a previous Council decision to promote development near the Airfield. That direction will not apply if the Council adopts the plan change.

57. A further reason relates to the Airfield designation. It seems likely that this would need to be amended, which only the Council (as the responsible requiring authority) could achieve. If the Council instigates or adopts the plan change request, the additional task of amending the designation could, in principle, be handled in parallel, as part of the same decision-making process. This would provide for a more efficient process.

58. This does not mean that the Council should prepare the plan change request itself, if that was what the landowner has in mind? Given that it is the landowner who will likely determine the final design of the development and take a lion's share of any benefit accruing, it appears equally sensible that the application for the request along with the supporting evidence be provided by the landowner. The Council will still have an evaluation role as part of its further deliberations, or those by the decision makers to whom it delegates the role.

59. The evidence will be critical. An initial view of the plans being discussed does raise some important issues. In addition to noise, there are clearly some safety issues to consider. The encroachment of more intensive development in the vicinity of the Airfield, into what can currently operates as an informal buffer area, does raise safety concerns that need to be assessed and, if necessary avoided or mitigated. This is not to say that such issues are insurmountable but it seems appropriate that the role of allaying such concerns should fall to the landowner who wishes to unlock the development potential of their land.

60. Again, independent decision making on these issues, will be important.

61. What all of the above suggests is that, in terms of finalising the request for a plan change and ensuring that it contains the necessary level of detail, should primarily be the role of the landowner. The Council may still be in a position to assist in some respects with information and expertise but it should not fall to the Council to 'drive' the process.

62. This does not mean that there is nothing to be gained in attempting to agree or come to an understanding with the landowner about what might happen or be more likely, from a Council officers perspective at least, to stand a greater chance of approval provided all the necessary boxes can be ticked.

63. However, if the landowner's expectation is that an agreement or memorandum of understanding with the Council on such matters means that the plan change is guaranteed or that its detail might not change through the plan change process, we do not consider that it would be possible, let alone prudent, for the Council to provide any such 'guarantee'.

64. Accordingly, we are of the view that should the Council be satisfied that the benefits of reaching an agreement with the landowner, that could be recorded in a memorandum of understanding, regarding land-swaps (and any additional acquisitions), and the likely make-up of the development at the Airfield, are worth the effort, then progressing those goals should be pursued.

65. But insofar as that impacts on the actual request for a plan change, we would recommend that the landowner be advised that they will need to drive the request and apply for the plan change under cl.21. The Council can then review the request in the usual way, but with there being a likelihood that, for the request to be able to proceed, the Council will need to adopt it prior to notification.

66. Again, however, that is a decision the Council needs to make independently.

67. But, given the potential for the designation to need to be amended – we note that we do not currently have enough information to be certain whether or not that is the case – that process, for which the Council is responsible, could be progressed in parallel.

68. All these steps are subject to timing constraints. They may also be impacted by progress with the PDP, and the question of whether what is proposed can be pursued under that process? There does not, however, seem to be sufficient justification to apply for a streamlined planning process to be initiated. Rather, given that there may need to be parallel irons in the fire (e.g. a zoning plan change and a change to the designation), to truncate the time available may make the whole process unworkable.

69. The same likely goes for limiting notification, which given that the request is unanticipated is most likely to warrant public notification. However, as one of the decisions to be made as part of that process, limited notification could still be considered if all directly affected persons can be identified.

70. One other consideration that should be mentioned is the issue of the costs of this process which do not appear to have been discussed directly, aside from comments by the landowner in respect of costs they've incurred but may, in some circumstances, pass onto the Council depending on how negotiations proceed. The costs of a plan change fall on the applicant. This is a further reason supporting the landowner being required, due them being the primary beneficiary of the plan change, to drive the plan change request, while promoting the option that it be adopted by the Council in due course, for the reasons already discussed. Whether there might be some form of costs sharing, based on the relative benefits of the plan change succeeding, could also be considered as part of any agreement/memorandum of understanding the Council negotiates with the landowner.

71. Finally, we note that this opinion has been prepared on the basis of the information provided which does not include any reports prepared by the Council or any of its officers. Accordingly, we have had to extrapolate some of the detail and the potential courses open based on what the landowner has been proposing through correspondence with the Council. If there are matters that are known which might require a reconsideration of any of our conclusions, we would ask that we be made aware of those and be given an opportunity to amend accordingly.

Conclusions

72. There seem to be some benefits to the community in enabling the development that the landowner wishes to promote. Though the extent of those benefits remains unclear.

73. On the basis that those benefits outweighing any potential costs, and the Council can reach an agreement with the landowner about the consequential outcomes of a successful plan change, the landowner should be encouraged to make the plan change request. That would be on the basis that if the request is otherwise in order, it is probable that the Council will adopt the plan change prior to notification.

74. The Council may wish to consider what it can do to give the landowner confidence that it supports the plan change, to the extent that it can. This might include negotiating to share some of the costs (commensurate with its share of the likely benefits), as well as promoting any necessary amendments to the Airfield designation.

75. However, we would not recommend (unless the benefits are such that it is warranted) that the Council instigate the plan change. In fact, were it possible, we think that endeavouring to incorporate the plan change into the PDP process would be an even better option. Though it may not encourage the landowner to promote the land swap that appears to have been a catalyst for this whole process.

76. We trust that these comments assist. Please advise if you require any clarification or additional advice.

Yours faithfully

[redacted]

AERONAUTICAL STUDY OF THE RANGIORA AIRFIELD

01 FEBRUARY 2023

PREPARED BY MIKE GROOME

AVSAFE CONSULTANTS

*Photo Credit on the Front Cover: Waimakariri District Council

Table of Contents

Abbreviations

ADS-B	Automatic Dependent Surveillance Broadcast:
AGL	Above Ground Level:
Aimm	Automated Intelligent Movement Management:
AIP	Aeronautical Information Publication:
AIPNZ	Aeronautical Information Publication New Zealand:
Airways NZ	Airways New Zealand:
amsl	Above Mean Sea Level:
ARC	Aerodrome reference code:
ASP	Airspace Incident:
AWIB	Aerodrome and Weather Information Broadcast:
CAANZ	Civil Aviation Authority of New Zealand established by section 72A of the Act:
CAR	Civil Aviation Rules:
CFZ	Common Frequency Zone:
Controlled Airspace	Airspace controlled by Airways NZ:
CRAC	Canterbury Recreational Aircraft Club:
dBa	noise level measured in decibels:
ECAN	Environment Canterbury:
GA	General Aviation:
GAA	General Aviation Area:
GPS	Global Positioning System:
IFR	Instrument Flight Rules:
INC	Incidents:
LDA	Landing Distance Available:
LSA	Light Sport Aircraft:
MCTOW	Maximum Certificated Take-off Weight:
MBZ	Mandatory Broadcast Zone:
Movement	A Landing or a Take-off:
NOTAM	Notice to Airmen:

OLS	Obstacle Limitation Surfaces:
PCBU	Person Conducting a Business or Undertaking:
RAAG	Rangiora Airfield Advisory Group:
RESA	Runway End Safety Area:
RNAV	Area Navigation:
RPT	Regular Passenger Transport:
SMS	Safety Management System
UNATTENDED	Not controlled by Airways NZ
VFR	Visual Flight Rules:
WDC	Waimakariri District Council:

Definitions

- **ACCIDENT** means an occurrence that is associated with the operation of an aircraft and takes place between the time any person boards the aircraft with the intention of flight and such time as all such persons have disembarked and the engine or any propellers or rotors come to rest, being an occurrence in which:

(1) a person is fatally or seriously injured as a result of—
(i) being in the aircraft; or
(ii) direct contact with any part of the aircraft, including any part that has become detached from the aircraft; or
(iii) direct exposure to jet blast—
except when the injuries are self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to passengers and crew; or

(2) the aircraft sustains damage or structural failure that—
(i) adversely affects the structural strength, performance, or flight characteristics of the aircraft; and
(ii) would normally require major repair or replacement of the affected component
except engine failure or damage that is limited to the engine, its cowlings, or accessories, or damage limited to propellers, wing tips, antennas, tyres, brakes, fairings, small dents, or puncture holes in the aircraft skin; or

(3) the aircraft is missing or is completely inaccessible:

- **ADS-B OUT** means a function on an aircraft that periodically broadcasts its state vector (identity position and velocity) and other information derived from on-board systems in a format suitable for ADS-B receivers:

- **ADS-B** system means a GNSS position source and a compatible Mode S Extended Squitter 1090Mhz ADS-B OUT transponder, or any other suitable transponder determined by the Director as specified in a notice referred to in rule 91.258(a)(6):

- **AERODROME INCIDENT** means an incident involving an aircraft operation and— Civil Aviation Rules Part 12 CAA Consolidation 1 December 2020 7 CAA of NZ

(1) an obstruction either on the aerodrome operational area or protruding into the aerodrome obstacle limitation surfaces; or
(2) a defective visual aid; or

(3) a defective surface of a manoeuvring area; or
(4) any other defective aerodrome facility:

- **AERODROME (Airfield)**

(1) means any defined area of land or water intended or designed to be used either wholly or partly for the landing, departure, and surface movement of aircraft; and
(2) includes any buildings, installations, and equipment on or adjacent to any such area used in connection with the aerodrome or its administration:

- **AERODROME TRAFFIC** means **—**

(1) all traffic on the manoeuvring area of an aerodrome; and
(2) all aircraft flying in the vicinity of an aerodrome: Aerodrome traffic circuit means the pattern flown by aircraft operating in the vicinity of an aerodrome.

- **AERODROME TRAFFIC CIRCUIT** means the pattern flown by aircraft operating in the vicinity of an aerodrome:

- **AEROPLANE** means a power-driven heavier-than-air aircraft deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight:

- **AEROPLANE MOVEMENT** means an aeroplane take-off or landing:

- **AIR OPERATION** means an air transport operation, a commercial transport operation, or an adventure aviation operation.

- **AIP AERONAUTICAL INFORMATION PUBLICATION NEW ZEALAND** means the AIP for New Zealand published for the Authority by the holder of the AIS certificate for the AIP service: Aeronautical information service means any of the following services that distribute aeronautical information essential for the safety, regularity, and efficiency of air navigation—

(1) AIP service; or
(2) NOTAM service; or
(3) Pre-flight information service:

- **AIR TRANSPORT OPERATION** means an operation for the carriage of passengers or goods by air for hire or reward except—

(1) a commercial transport operation:
(2) an adventure aviation operation: Civil Aviation Rules Part 1 CAA Consolidation

1 December 2021 32 CAA of NZ

(3) a helicopter external load operation under Part 133:

(4) an agricultural aircraft operation under Part 137:

(5) a trial flight.

- **AIRCRAFT INCIDENT** means any incident, not otherwise classified, associated with the operation of an aircraft:

- **AWIB SERVICE** means an automatic broadcast of aerodrome and weather information provided specifically for the facilitation of aviation, and for the avoidance of doubt, an AWIB service is not an air traffic service:

- **AVIATION RELATED CONCERN** is a procedure where anyone can report an 'aviation related concern'. You don't have to be involved in the aviation community to report something you see or hear that you think might harm aviation safety or security, or that might even be breaching Civil Aviation Rules.

- **AIRSPACE INCIDENT** means an incident involving deviation from, or shortcomings of, the procedures or rules for—

(1) avoiding a collision between aircraft; or

(2) avoiding a collision between aircraft and other obstacles when an aircraft is being provided with an Air Traffic Service

- **BIRD INCIDENT** means an incident where—

(1) there is a collision between an aircraft and one or more birds; or

(2) when one or more birds pass sufficiently close to an aircraft in flight to cause alarm to the pilot:

- **CERTIFICATED ORGANISATION** means an organisation issued with a certificate under rules made under the Act:

- **CIVIL AVIATION AUTHORITY OF NEW ZEALAND**

(1) establish and maintain the rules that all pilots, engineers, aircraft operators, airlines and aerodromes follow to keep flying safe

(2) check these rules are being complied with and take action if they find that they are not

(3) monitor the aviation safety performance of each size of aircraft

(4) several safety publications and run safety training courses and seminars.

- **CIVIL AVIATION RULES** means rules made under the Act:

- **CLASS 1 MICROLIGHT AIRCRAFT** means a microlight aircraft other than a Class 2 microlight aircraft:

- **CLASS 2 MICROLIGHT AIRCRAFT** means a microlight aircraft designed and equipped to carry 2 persons:

- **CONTROLLED AERODROME** means an aerodrome at which air traffic control service is provided to aerodrome traffic:

  ***NOTE** — the term 'controlled aerodrome' indicates that air traffic control service is provided to aerodrome traffic but does not necessarily imply that a control zone exists.

- **CONTROLLED AIRSPACE** means an airspace of defined dimensions within which air traffic control service is provided to IFR flights, and to VFR flights, in accordance with the airspace classification:

- **DIRECTOR** means the person who is for the time being the Director of Civil Aviation under section 72I of the Act:

- **GENERAL AVIATION AREA** means an airspace, of defined dimensions, in which intensive VFR activity may occur and the rules of Class G airspace apply:

- **INCIDENT** means any occurrence, other than an accident, that is associated with the operation of an aircraft and affects or could affect the safety of operation:

- **LIGHT SPORT AIRCRAFT** means an aircraft, other than a helicopter, having:

  (1) a maximum take-off weight of—
  (i) 600 kg or less:
  (ii) 650 kg for an operation on water:
  (2) a maximum gross weight of 600 kg or less for a lighter-than- air aircraft:
  (3) if powered, a single, non-turbine engine driving a propeller:
  (4) a maximum stall speed of 45 knots:
  (5) if a glider, a maximum never exceed speed of 135 knots:

(6) if applicable, an unpressurised cabin:

(7) a maximum seating capacity of 2 seats including the pilot seat.

- **MANOEUVRING AREA—**

  (1) means that part of an aerodrome to be used for the take-off and landing of aircraft and for the surface movement of aircraft associated with take-off and landing; but

  (2) does not include areas set aside for loading, unloading, or maintenance of aircraft:

- **MICROLIGHT AIRCRAFT** means a basic low performance aircraft designed to carry not more than 2 persons which meets low momentum parameters that are acceptable to the Director:

- **MICROLIGHT ORGANISATION** means the holder of an aviation recreation organisation certificate issued in accordance with Part 149 that authorises specified privileges associated with the operation of microlight aircraft:

- **MOVEMENT AREA** means that part of an aerodrome intended to be used for the take-off and landing of aircraft and for the surface movement of aircraft, and includes the manoeuvring area, maintenance areas, and aprons:

- **NOTAM** means a notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the Civil Aviation Rules Part 1 CAA Consolidation 1 December 2021 63 CAA of NZ timely knowledge of which is essential to personnel concerned with flight operations:

- **OBSTACLE LIMITATION SURFACES** (OLS) “define the airspace around aerodromes to be maintained free from obstacles so as to permit the intended aeroplane operations at the aerodromes to be conducted safely and to prevent the aerodromes from becoming unusable by the growth of obstacles around the aerodromes.”

- **OCCURRENCE** means an accident or incident:

- **PARAGLIDER** means a hang glider with no rigid primary structure:

- **RUNWAY** means a defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft:

- **RUNWAY END SAFETY AREA (RESA)** means an area symmetrical about the extended centre line of the runway and adjacent to the end of the runway strip primarily intended to reduce the risk of damage to an aeroplane undershooting or over-running the runway:

- **TAKE-OFF DISTANCE** available means the length of the take-off run available plus the length of any clearway:

- **TAKE-OFF RUN** available means the length of the runway declared by the aerodrome operator as available and suitable for the ground run of an aeroplane taking-off:

- **UNICOM SERVICE** means a ground radio communications service in the aeronautical mobile service providing local aerodrome information for the facilitation of aviation, and, for the avoidance of doubt, a UNICOM service is not an air traffic service:

- **VFR FLIGHT** means a flight conducted in accordance with the visual flight rules:

1 Executive Summary

1.1 The Rangiora Airfield as a busy country airfield situated to the northwest of the Christchurch International Airport.

The airfield is just outside of the Christchurch Controlled Airspace but is within both a Mandatory Broadcast Zone (MBZ) and a Common Frequency Zone (CFZ).

1.2 The Rangiora Airfield, owned and operated by the Waimakariri District Council (WDC) is generally well managed, but there is pressure on the infrastructure and services due to the increase in activity on the airfield in recent years.

1.3 The WDC is assisted with operational advice by the Rangiora Airfield Advisory Group (RAAG), to manage the airfield. This group consists of experienced aviation personnel, who give their time on a voluntary basis. The WDC intends to employ a full-time airfield manager in the not-too-distant future.

1.4 The airfield is extremely busy with some 200 General Aviation light aircraft based on the airfield, inclusive of some 130-microlight aircraft, with movements getting close to 50,000 per year.

1.5 The airfield currently has physical constraints, as it is bounded by the Ashley River to the north and private land on the western, eastern, and southern side. There is a proposal before the WDC, from a private developer, to develop land on the southern side of the airfield, into an airpark and aviation service center, with access to the Rangiora Airfield. If, and when this development progresses, there could be an increase in aircraft movements by some estimated 4,000 - 5,000 per year.

1.6 The airfield has three grass runways and six vectors which allows operations in nearly any wind direction. The runways are quite adequate for the aircraft types which are currently using the airfield. Consideration is being given to extending some runways, with the cooperation of the private developer who owns the surrounding property.

1.7 There is only one taxiway which runs down the northern side of the main runway 07/25. This taxiway is not delineated in any way as to its boundaries, and at the northern western end requires considerable maintenance, as the grass is worn away with bare ground and stones on the undulating surface.

1.8 All aircraft on the airfield are housed in hangars on the northern side of the main runway. The positioning of these hangars is not consistent, and are in close proximity with

each other, therefore creating issues for aircraft maneuvering around them. The proximity of some hangars to the runway and taxiway does not allow for further expansion in this area.

1.9 The proposed air park adjacent to the airfield, will alleviate much of the need to try and fit new hangars on the northern side, as owners of the airpark sites will have hangars on their own property. Access to the airfield from the airpark is proposed via one entry and exit point, and one from the commercial area so the activity to the Rangiora Airfield can be controlled by the WDC.

1.10 The airfield caters for several different types of aviation activity. Some of these are aircraft maintenance facilities, agricultural operators, helicopter operations, aero clubs, private operations, and the largest activity being flight training. Rangiora is home to a very large contingent of microlight aircraft, some of which are owned by the Canterbury Recreational Aircraft Club (CRAC), some by other individual flight training organisations.

1.11 Most microlight aircraft are privately owned, with the owners using the training organisations when Biennial Flight Review or Competency assessments are required.

There appears to be a non-standard approach to the level of assessment that is required, particularly when there are differing organisations conducting the assessments.

1.12 Unfortunately, there is a small percentage of pilots who operate from the Rangiora Airfield who are causing undue and significant risk and stress to many users, by not complying with published procedures and processes. These same individuals have no consideration for the other users, nor see that their actions could cause a serious accident and put others at risk.

These same few seem to think they are entitled to flout the rules and have little respect for those trying to manage the airfield as a safe place from which to operate.

There is a thought among some, that the Rangiora Airfield is a recreational airfield, and therefore they can do as they wish without interference from the regulator or owner of the airfield, and that other traffic should fit around them.

The Rangiora Airfield is in fact a General Aviation airfield, with many different types of aircraft and activities operating from it, not just recreational activities. All aircraft must comply with Rule Part 91 and in particular Rule Part 91.229 Right-of-way rules. (Appendix 1).

1.13 Some resident and local pilots have adopted their own procedures for operating in and out of the Rangiora Airfield. These procedures differ from or are variations of what is accepted practice and have become a normalisation of a deviance to the standard rules and procedures.

This is a very worrying trend where the discipline of certain pilots has slipped to the point where it is putting themselves and other users of the airfield at risk of a serious incident or accident.

Several risks to safety have been identified, on and around the Rangiora Airfield. The risks and mitigations are documented in the Risk Assessment Criteria. (See 12.8 Rangiora Airfield Operational Risk Matrix Page 59)

1.14 However, there are some recommendations which have a higher priority and are mentioned below as well as in the Operational Risk Criteria.

Recommendations

(1) The WDC initiates the process for the Rangiora Airfield to become a "Qualifying Certificated Aerodrome" under the CAA Rule Part 139.[1]

Explanation:

The Rangiora Airfield is a very complex busy airfield. By being certificated brings the airfield into the Civil Aviation system whereby the regulator can give support to the WDC while at the same time monitoring the activities of the management and users of the airfield.

Being certificated the WDC, via the Aerodrome Manual[2] and Safety Management Systems will describe the operating procedures, description of the infrastructure, responsibilities of personnel and expectations of the management and airfield users.

Once the certificated standard is met then it is relatively easy to maintain that standard.

When certificated there is no fee from the Civil Aviation Authority (CAANZ) for routine surveillance, but as a non-certificated airfield the CAANZ charge for their time dealing with matters relating to the airfield.

(2) Employ an Airfield Manager

Explanation:

The airfield manager becomes the important link between the WDC and the users of the airfield, with regards to activities on and around the airfield and to monitor the activities on the airfield.

This person becomes the "face" of the WDC and the "go to" person for all airfield related activities.

[1] https://www.aviation.govt.nz/assets/rules/consolidations/Part_139_Consolidation.pdf
[2] https://www.waimakariri.govt.nz/__data/assets/pdf_file/0023/37652/Rangiora-Airfield-Safety-Manual-Issue-2-May-2021.pdf

(3) Initiate monthly meetings between the Chief Flying Instructors, Chief Pilots, and other senior operators on the airfield.

Explanation:

At these meetings any issues that have arisen can be discussed and dealt with early rather than waiting for an incident to happen.

This is a way of all sections of the airfield community being able to share their thoughts and ideas regarding safety initiatives and ways of mitigating any risk.

Keeping the communication open.

(4) Upgrade the northern Taxiway surface and with clear boundaries defined.

Explanation:

Current Taxiway is in poor condition with no boundaries between the taxiway and the runway defined.

By upgrading the taxiway, the risk of an incident happening will be reduced, as there will be designated boundaries to the taxiway.

(5) Install windsocks at the ends of each runway.

Explanation:

The current two windsocks are insufficient to indicate wind conditions on differing parts of the airfield.

By installing extra windsocks, will give the pilot a more accurate indication of the wind at the end of each runway.

(6) Consider installing an Automatic Aerodrome and Weather Broadcast system (AWIB).

Explanation:

- *This is an automated system which gives real time weather and wind conditions and can also broadcast the favoured into wind runway for those conditions.*
- *The airfield manager can also add operational information to be broadcast to pilots using the system.*
- *By installing this system, it will reduce confusion as to which runway is the active runway and give advanced warning of the runway in use for an inbound aircraft.*

- *Pilots arriving from the airfield can tune into the AWIB frequency, and from many miles out will be given the actual weather conditions at Rangiora and can therefore prepare themselves and plan their arrival at the airfield.*

---

(7) Consider changing the circuit direction of runway 10/28 to a northerly direction as are the other two runways.

Explanation:

The reason for the current runway direction is no longer valid, ie because of built up areas.

By changing the direction there is going to be less confusion by pilots as to which direction they are supposed to be going in and will have all traffic going to the north in the same direction.

---

(8) Continue the discussions with the developer around the plans and the WDC requirements for having an airpark next to the airfield.

Explanation:

Without ongoing discussion and consensus between the two parties the project may never happen.

The developer has several ideas and plans as to how his development is to look. This may not always be in the best interests of the Rangiora airfield nor allow the WDC to meet the regulatory requirements of the CAANZ.

The WDC as the operator of the airfield will need to be very clear as to its requirements, access rights and protection of the airfield if it is to stay in community hands.

---

(9) Revise the Part 149[3] and Part 103[4] Rules regarding powered microlight aircraft.

Explanation

This recommendation is not a responsibility of the WDC but of the CAANZ.

The Part 149 rule is the CAANZ rule which sets out that licencing rules for pilots to be able to fly microlight aircraft. Part 103 sets out the operating rules of pilots operating under a licence issued by a Part 149 microlight organisation. (Appendix 2)

[3] https://www.aviation.govt.nz/assets/rules/consolidations/Part_149_Consolidation.pdf
[4] https://www.aviation.govt.nz/assets/rules/consolidations/Part_103_Consolidation.pdf

These rules were set many years ago when powered microlights were of a very simple design, low power, low weight, low inertia, and low speed.

Now the modern microlight aircraft are highly sophisticated machines, made from composite materials and with speeds up to 200knots. These aircraft are much more advanced than most aircraft used today by flying schools and aero clubs.

There should be one standard of licencing for any powered aircraft not two as there is now.

By addressing the recommendations above and addressing the risks identified in the Risk Assessment, these actions will go along way to mitigating many of the major issues that have arisen on the Rangiora Airfield.

2 Introduction

Purpose of the Study

2.1 This Aeronautical Study has been requested by the Waimakariri District Council (WDC), as operators of the Rangiora Airfield, following a letter from the Civil Aviation Authority of New Zealand (CAANZ) date 7th April 2022. (Appendix 3)

2.2 The purpose of this Aeronautical Study of the Rangiora Airfield is to determine the safety risks at, and in the vicinity of the airfield and to identify acceptable means of mitigating those risks.

2.3 The process was to assess the current infrastructure of the airfield, the airspace round it, operations on the airfield and the effects of a proposed private Airpark adjacent to the airfield. The assessment is to identify any risks on or around the airfield which could affect a safe and efficient operation.

Process

2.4 A part of the process was to consult with and get feedback from the stakeholders.

2.5 The Rangiora Airfield is not certificated under the current Civil Aviation Rules. The WDC as the airfield operator is therefore not strictly a “participant” for the purposes of the Civil Aviation Act 1990 and does not have legislated responsibilities relating to the airfield in that regard.

Airfield Operator Responsibility

2.6 Operators of non-certificated airfields are however a part of a system in which all participants have obligations to ensure air operations are conducted safely. These participants include pilots, air operators, flight training providers, maintenance engineers and others.

2.7 Safety management on and in the vicinity of the airfield is therefore a joint and shared responsibility.

2.8 The WDC has a role to play in this collaborative effort which includes operating the airfield in accordance with certificated standards where practicable, maintaining the airfield to an acceptable standard, ensuring that data published in the Aeronautical Information Publication New Zealand (AIPNZ)[5] is correct, and acting on safety issues where appropriate and practicable.

3 Scope and Purpose

Director of Civil Aviation Requirements

3.1 Trigger Factors for an Aeronautical Study.

The aeronautical study is a tool for the aerodrome management to use as part of its operations and strategic planning and is an integral part of the aerodrome's Quality Assurance and Safety Management Systems (SMS). One of the purposes of the aeronautical study is to determine levels of operational safety, service or procedures that should apply at a particular location. The decision to undertake this type of study may be triggered by any one or more of a wide range of factors. These may include changes to:

- *the number of movements*
- *the peak traffic periods.*
- *the ratio of Instrument Flight Rules (IFR) to Visual Flight Rules (VFR) traffic*
- *the type of operations - scheduled, General Aviation (GA), training, etc.*
- *the types, and variety of types, of aircraft using the aerodrome (jet, turbo-prop, rotary, etc)*
- *aerodrome layout*

[5] https://www.aviation.govt.nz/airspace-and-aerodromes/air-navigation/aip/

- *aerodrome management structure*
- *runway or taxiway and associated manoeuvring areas.*
- *operations of a neighbouring aerodrome or adjacent airspace.*

Feedback about any changes should be sought from aviation stakeholders including pilots, individuals, and other representative groups as part of the study.[6]

Due to the number of movements, and the supposed complexity of the operations, plus a proposed development near the airfield, CAANZ are asking that an Aeronautical Study of the Rangiora Airfield be conducted.

The purpose of the Aeronautical Study is to assess the risks associated with operations on and around the Rangiora Airfield, including the impact that a proposed airpark development on the boundary of, and with access to the airfield may have on the airfield operations.

3.2 The Rangiora Airfield is a non-certified and unattended airfield.

With more than 47,000 aircraft movements for the year ending December 2022, the Rangiora airfield is one of the busiest unattended airfields in New Zealand.

On receipt of the Aeronautical Study, the Director of Civil Aviation may require the Rangiora Airfield to become a 'Qualifying Certificated Aerodrome.' [7]

This would require the Airfield to meet certain criteria under the CAANZ rules, with the CAANZ having oversight of the airfield management and activities.

Some of the requirements to be met include:

- Providing suitable Senior Persons to become the Chief Executive of the airfield.
- Providing the CAANZ with an Aerodrome Exposition describing the organisation and demonstrating its means and methods for ensuring ongoing compliance with the rules.
- Implementing a Safety Management System
- Setting Aerodrome Limitations
- Notification of aerodrome data
- Movement Data Reporting
- Public protection and security

[6] CAANZ NZ Advisory Circular AC139-15
[7] Part 139.21 Subpart AA Determination of a Qualifying Aerodrome

3.3 Airfield Overview

- The Waimakariri County Council was originally gifted the land to develop as an airfield. The airfield was opened in October 1958. From that time the Rangiora Airfield has been owned and operated by the WDC, previously the Waimakariri County Council.
- Rangiora Airfield is 3nm to the west of the central Rangiora township, which is a major town for the WDC. Evidence of rapid growth and positive projections for the future of Rangiora is positive.
- The Rangiora airfield is an important asset to the Region, and accommodates recreational, agricultural and flight training operations and includes patient transfers from smaller centres to centralised health facilities.
- In December 2020, the process for designating Rangiora, as an airfield, through the district plan was completed. With this process complete and the future of the airfield secured within the district, focus is on the development of the airfield.[8]
- Rangiora Airfield is approximately 50.7 hectares in area and is bounded by reserve land adjoining the Ashley/Rakahuri River to the North, Merton Road to the east and rural farmland to the south and west. Privately owned farmland on Priors Road borders the airfield. The WDC owns land to the southeast on Priors Road, and on Merton Road with a small road frontage.
- The WDC purchased a lifestyle block on Merton Road at the eastern end of the airfield some years ago. This was purchased to eliminate the potential of reverse sensitivity issues regarding noise and airfield operations.
- The Rangiora Airfield is operated as a General Aviation Airfield with no Regular Passenger Transport service (RPT).
- The airfield is 11.5 NM from Christchurch International Airport, which is the main airport for domestic and international travellers, including general aviation, flight training both helicopters and fixed wing, Air Ambulance Services, and maintenance bases.
- The airspace around Christchurch Airport is changing due to an increase in domestic and international airline traffic, limiting both general aviation and flight training activities.
- The potential for an increase in activity at the Rangiora Airfield is almost certain due to these constraints, with general aviation looking for alternative facilities from which to operate.
- There are several small privately owned and recognised airfields in the Rangiora area.

[8] Activity Management Plan 2021 Community and Recreation

- *Fernside Fields*
- *Loburn Abbey*
- *Forest Field*

All the above airfields are within the Rangiora CFZ and just outside the Rangiora MBZ.

There are other airfields within the South Island with similar activities these include:

- *West Melton Airfield*- operated by the Canterbury Aero Club and located 13 NM south of Rangiora. General aviation and flight training are the main activities.
- *Ashburton Airfield*- 50 nm from Rangiora Airfield. Activities at Ashburton include flight training, general aviation, and parachuting. This airfield has four grass runways, runway lighting and navigational aids.
- *Kaikoura Airfield*- 71 NM from Rangiora operates as a general aviation airfield along with Commercial Whale Watch Flights, both fixed wing and helicopters activities.
- *Omaka Aerodrome*- 125 NM from the Rangiora Airfield is privately owned by the Marlborough Aero Club. It is a busy aerodrome used for flight training, general aviation, and vintage aircraft flights, with the Omaka Heritage Centre based on the airfield.
- *Timaru Airport*- 85 NM from the Rangiora Airfield, airfield activities include general aviation, flight training and scheduled passenger services.

4 Airfield

4.1 Airfield Management

- The Rangiora Airfield is a non- certificated airfield managed and operated by the WDC, with the assistance of RAAG.
- RAAG is made up of operators,' resident on the airfield, all of whom give their service free of charge.
- The WDC is responsible for ensuring that the airfield is operated and maintained in accordance with any applicable Civil Aviation Rules.
- Although there is no formal management structure, the Green Space Manager, a Council employee, oversees the day-to-day management of the airfield.
- The WDC is the 'person conducting a business undertaking' (PCBU) and has responsibilities under the Health and Safety at Work Act 2015.[9]

[9] https://www.legislation.govt.nz/act/public/2015/0070/latest/versions.aspx

- Rangiora Airfield is not security designated, however Work Safe requires procedures in place for public protection.
- The airfield procedures and safety policies required for the safe and effective management of the Rangiora Airfield for all users, are outlined in the Rangiora Airfield Safety Manual.

Comment
➢ The Rangiora Airfield Safety Manual has an effective date of 1st June 2021. ➢ This is a good start to developing manuals for the airfield. ➢ There is currently no Safety Manager, so this role has been taken up by the Chair of RAAG. ➢ The role of Airfield Manager and Safety Officer was advertised some months ago, and a person is about to be confirmed for the role.

4.2 Airfield Infrastructure

- The three grass runways make up most of the infrastructure on the airfield.
- Apart from the land itself the WDC owns very little infrastructure on the Rangiora airfield.
- There is a gravel airfield road from Merton Road, which services the lessees and operators on the airfield. This road has a security gate at the entrance to the airfield that is closed at night and can be accessed by authorised persons holding the gate keypad code. This gate has not always been serviceable.
- The airfield road is the only service access to the airfield.
- The WDC also owns two public toilet blocks, and a small water storage system via storage tanks.
- These systems are not adequate for the continual growth in airfield patronage.

4.3 Hangars

- There are more than 90 hangars and buildings on the airfield which are used for a variety of purposes from the aero clubs, offices, housing of aircraft, aviation supply companies, aircraft engineering and repair facilities.
- These buildings are all owned by the tenant who lease the site from the WDC for a 10-year term at a current rate of $9.50 per sqm per year.
- The newest hangars have been built with a more consistent plan in place to group them together. Unfortunately, they have been built in some cases with little room

between them for aircraft to maneuver. This is fine for a small microlight aircraft but not for a general aviation type aircraft such as a Cessna 172 or larger.

4.4 Fuel Supplies

Two fuel companies supply aviation fuel to the airfield. This fuel is available to both resident users and itinerant aircraft to the airfield.

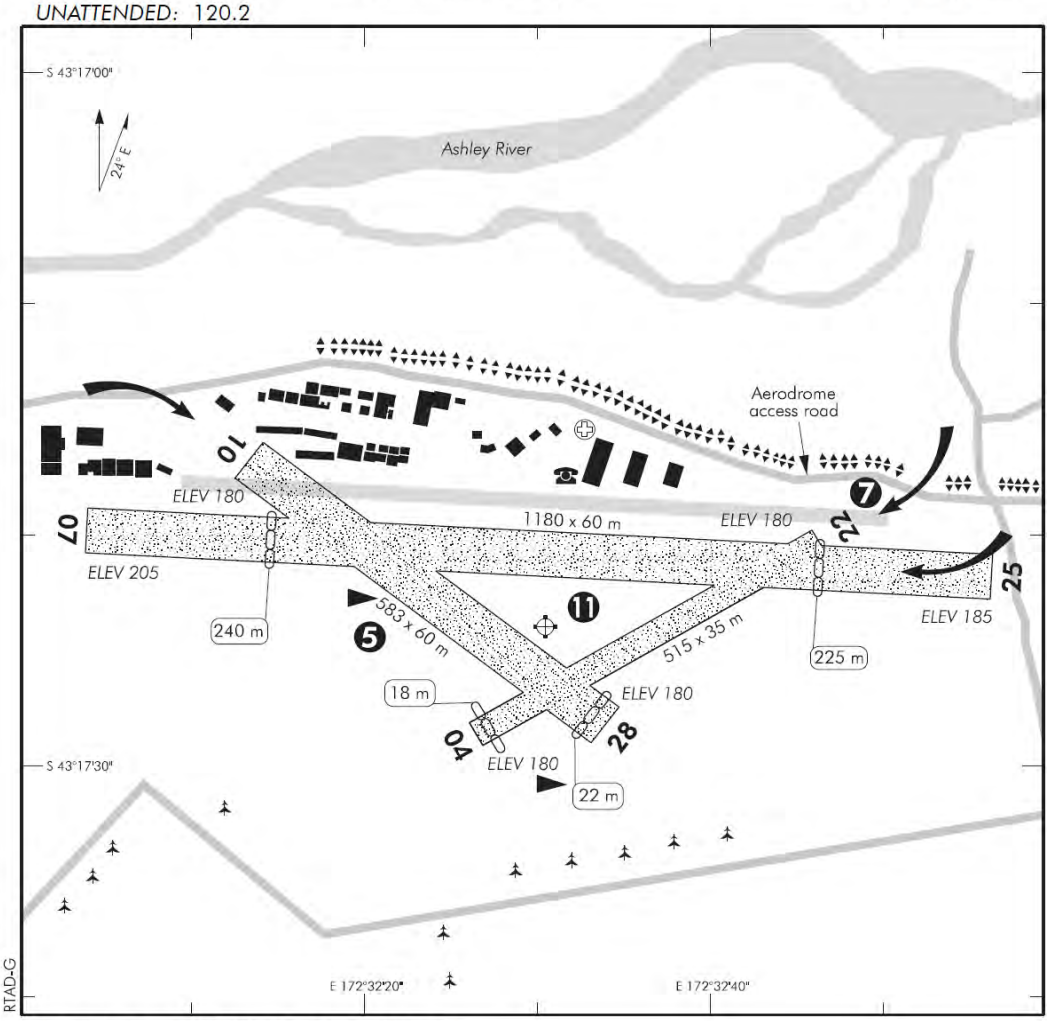
- One company has two sites and supplies both Avgas and JetA1 fuel while the other has one site and only supplies Avgas.
- These facilities are located near the Way to Go Helicopters and the Canterbury Aero Club sites.
- Motor Spirits (MoGas) is not supplied to the airfield.

Map 1: Aerodrome Layout[10]

AIP New Zealand NZRT AD 2 - 51.1

ELEV 180
NZRT NON-CERTIFICATED
UNATTENDED: 120.2

RANGIORA AERODROME



1. Circuit: RWY 04, 07, 28 — Left hand
   RWY 10, 22, 25 — Right hand
2. **CAUTION:** Helicopter 180° and straight-in autorotations.
3. Vacate runways via the most expeditious route.
4. Some patches of loose stones on movement areas.

❺ Helicopter hover training area.

6. Standard overhead join recommended.

❼ RWY 04/22 not available when road traffic is using aerodrome access road.

8. **CAUTION:** Two private airfields in close proximity 1.8 NM SW, Fernside Fields (circuits to the north), Barradale (circuits to the south).
9. Helicopters may join and depart at low level but must come to a stationary hover to check for traffic prior to crossing active vector.
10. Make radio call on final approach advising intended runway.

⓫ Triangular area between runways reserved for helicopter auto-rotation training. Keep clear.

12. No parachute operations permitted.

*S 43 17 24 E 172 32 30**

Effective: 22 APR 21

RANGIORA AERODROME

[10] https://www.aip.net.nz/assets/AIP/Aerodrome-Charts/Rangiora-NZRT/NZRT_51.1_52.1.pdf

RANGIORA
OPERATIONAL DATA

RWY

RWY	SFC	Strength	Gp	Slope	ASDA	Take-off distance 1:20	Take-off distance 1:30	Take-off distance 1:40	LDG DIST
04 22	Gr	ESWL 820	4	Nil		515 497			497 515
07 25	Gr	ESWL 820	8	0.52D 0.52U		955 940			940 955
10 28	Gr	ESWL 820	5	Nil		561 583			583 561

LIGHTING

Nil

FACILITIES

Fuel: BP Jet A1, Avgas 100, Swipecard.

Z Energy Avgas 100, access via Z card.

Limited repairs.

SUPPLEMENTARY

Operator: Waimakariri District Council, Private Bag 1005, Rangiora.
Tel (03) 313 6136 Fax (03) 313 4432

Available for general use without the permission of the operator.

Landing fees: Payable for all aircraft.

An automatic recording system for monitoring landings is installed.

4.5 Airfield Operations and Expansion

Activity/ Land Use/ Infrastructure	Airfield Operations and Expansion
A. **Airfield Zone**	Following a Plan Change in 2020, the Rangiora Airfield and surrounding area within the Noise Contour is now zoned for “Airfield Purposes”. Safeguards aviation activities on the airfield.
B. **Activity**	The Rangiora Airfield would arguably be one of the busiest regional airfields in New Zealand, with aircraft movement exceeding 40,000 per year meeting the trigger point for the CAANZ to monitor the activity. The activity comes mainly from light aircraft used for training and recreational purposes. A small number of the agricultural aviation business, both helicopters and fixed wing aircraft are also based at Rangiora.
C. **Airfield Planning**	Past planning for any expansion for hangar and lease sites has been on an ad hoc basis. When a site was required, it appears that the site was positioned to suit the aircraft operator, with little consideration for further development. In the past, there would not have been the demand, nor the level of aircraft activity that there is today, and at the time it appeared that there was more than enough land available to cater for future demand. This ad hoc planning has created issues for aircraft accessing the runway from hangars, with no defined taxiways. This has created congestion and pinch points for aircraft maneuvering between hangars. In later years, there has been a better and more coordinated approach to site planning, with the size and standard of hangar constructed being of a more uniform standard. There is insufficient land available for hangar expansion or development on the northern side of the airfield. An airfield Master Plan is being considered by the WDC in conjunction with a private developer on the southern side of the airfield.
D. **Runways**	The Rangiora Airfield is unique in New Zealand, as it has available to pilots, the privilege of three runways and six vectors. This allows aircraft to take off and land safely in almost any wind direction and condition.

	Most aircraft based on the airfield are microlights, which have a very low tolerance for landing and taking off in windy cross wind conditions, making multiple runways a great benefit allowing aircraft to use the most appropriate into wind runway. With the multiple runway's aircraft can take off and land safely on the runway which suits the aircraft performance parameters. **Main Runway 07/25** This runway has a grass surface and is 1180 m long by 60 m wide. Although 1180 m long, the operational length is constrained by obstacles in the form of trees on neighboring properties. Due to the obstacles, the thresholds are displaced with landing and take-off distances being reduced to 940 m and 955 m respectively, depending on which end of the runway the landing or take-off is being conducted. The reduced length of the runway therefore could exclude some aircraft from operating to and from it, as per CAANZ rules and Advisory Circulars: *CAANZ Advisory Circular AC119-3 Sub Part D Performance*[11]. *CAANZ Rule Part 135.209 Take-off Distance*[12] *CAANZ Rule Part 135.211 Runway Surface and Slope Correction Factors.*[13] The width of the runway is more than adequate for the type and size of aircraft currently using the runway. The runway meets the CAANZ Code B requirements, which allows slightly larger aircraft than currently use the runway, to operate from this runway, so long as they meet the CAANZ requirements mentioned above. The runway width of 60 m is also an asset in terms of runway maintenance. The runway width can legally be reduced by half, for periods of time, allowing for the rejuvenation of the grass surface due to wear and tear from continual use. If land on the western end of the runway out to Priors Road, was acquired, this would enable the runway to be lengthened allowing aircraft which would currently be restricted, due to the lack of available operational length to operate. E.g., Pilatus PC12. There is no intention currently, nor is there a need to operate a Regular Passenger Transport Service (RPT) from Rangiora. Runway End Safety Areas (RESA) are currently not required nor likely to be in the short to medium timeframe. A RESA is required if there is a regular passenger transport service with an aircraft of 30 seats and above. --- **Cross Runway 10/28** This runway has a grass surface and a length of 583 m and has a width of 60 m.

[11] https://www.aviation.govt.nz/assets/rules/advisory-circulars/ac119-3.pdf
[12] Part 135-209 Take Off Distance- Subpart D Performance
[13] Part 135-211 Runway Surface and Slope Correction Factors-SubPart D Performance

	The runway vector 10 is used when there is a strong south easterly wind blowing. The opposite vector, 28, is used more often due to the strong nor westerly winds that can prevail at Rangiora. Again, this runway has constraints due to obstacles at the northern end, being trees on the riverbank. This reduces the runway length available from 583 m to 561 m. This limitation does preclude some training and general aviation aircraft based at Rangiora from using vector 28, due to the reduced length as the aircraft operating limitations would be exceeded. **Cross Runway 22/04** This runway has a grass surface and a length of 515 m and a width of 35 m. Again, there are limitations on the operational length due to trees on the riverbank to the north. Taking off on the vector 04 to the north, the effective length of the runway reduces from 515 m 497 m. This runway is predominantly used by microlights in strong south westerly wind conditions. The length of this runway is quite adequate and does not need extending, but for aircraft other than microlights and those with a short landing and takeoff performance, an extension to the runway could be advantageous. Negotiation with the neighbor would be required to acquire the land for an extension. Vehicles using the airfield road need to be aware of the low flying aircraft approaching from the northeast.
E. **Taxiways**	There are no defined or formalised taxiways on the Rangiora Airfield, even though the NZAIP shows a taxiway on the northern side of the main runway. This taxiway is not delineated by markers on the ground. The separation distances between the center line of the area used as a taxiway and the center line of the runway, just meets the CAANZ requirement. Care needs to be taken by pilots taxiing aircraft on this ‘taxiway’ as they may stray slightly toward the runway and become an obstacle for aircraft on the runway, or about to land or takeoff. There are no designated holding points where the taxiway crosses the thresholds of runways 10 or 22. There is considerable wear to the taxiway surface where the aircraft taxi which will need to be addressed, to mitigate any risk of aircraft damage. In other areas where aircraft taxi, the ground is quite uneven and rough which is why the aircraft operators have developed their own ways of getting to the runway and this causes the wear on the grass surface in other areas. Due to the rough and uneven surface of the taxiway, pilots are often back tracking on the main runway rather than using the taxiway. Back tracking would only be an option if there was little or no traffic using the main runway.

	If the airpark is to proceed, then extra taxiways will need to be considered.
F. **Windsocks**	There are only two windsocks on the airfield. One at the intersection of runways 10 and 07 and the other in the triangle on the southern sides of runways 04 and 28. These are not adequate to give actual wind direction at the ends apof all runways.
G. **Signage**	There is little signage on the airfield. There are however signs at the end of the taxiway stating that the “taxiway ends here”, which are large bold signs so that pilots can see them. There is a limited amount of signage on fences stating where the operational areas are. Not all fences have this signage where there is likely to be public nearby.
H. **Security**	The fencing on the airfield is not consistent. On the southern side of the airfield the fences are a standard 7 or 8 wire and batten farm fence which keeps livestock off the airfield. The fences on the northern side aligning the road into the airfield and to the hangars, is of a varied type and style, from three and four wire fences, post and wooden rail fences to just posts in the ground with no barrier between them. This is not acceptable. The gates onto the operational area generally have a padlock on them to restrict vehicle access.
I. **Obstacle Limitation Surfaces (OLS)**	The airfield Obstacle Limitation Surfaces (OLS) are to provide protection from obstacles to aircraft using the airfield. With current runways an obstacle limitation gradient of 1:20 is required for all runways. There are several hedges and trees around the fringes of the airfield which require the thresholds on some runways to be displaced. The runway thresholds have been displaced on runways 07, 25, 04, 28 to meet the 1:20 gradient. The OLS needs to be reviewed at regular intervals to makes sure the take-off, transitional and approach surfaces provide protection from any obstacles.
J. **Expansion**	Expansion of the airfield for extra hangars and buildings or for runway extensions is limited. There is little land available for hangar sites, let alone the space around them for the aircraft to be safely maneuvered. The main runway 07/25 cannot be extended due to the current airfield boundaries at each end. If the 8 hectares to the west was to be purchased, then this would provide a buffer for the future. The runway 10/28 could be extended if the land owned by the WDC, on Priors Road, was made available to the airfield. The WDC land on Priors Road could also be developed for hangars or commercial use.

4.6 Airfield Operational Data[14]

RWY Runway	Surface	*Strength	*GP Aircraft Weight Category	Slope	Take Off Distance 1:20	1:30	1:40	Landing Distance
04 22	GRASS	ESWL 820	4	Nil	515 497			497 515
07 25	GRASS	ESWL 820	8	0.52D	955 940			940 955
10 28	GRASS	ESWL 820	5	Nil	561 583			583 561

4.6 Air Traffic Service

- The Rangiora Airfield is an unattended airfield, with the airspace above 2500 feet amsl controlled by Airways NZ.
- The airfield operates an Aircraft Movement Monitoring System (Aimm) for reporting and recording takeoffs and landings at Rangiora, and aircraft movements within the CFZ.

5 Airspace

- The airspace around Rangiora Airfield, at lower altitudes is uncontrolled. This airspace can become a very busy, with aircraft operating to and from Rangiora, and other airfields within proximity to Rangiora Airfield.
- A Complexity and Density assessment of the airspace around Rangiora airfield, using the CAANZ New Southern Sky (Appendix 5) table shows that the airspace around the Rangiora Airfield as being complex with a high density of traffic.[15]
- The airspace in the greater Christchurch area is complex for the average General Aviation pilot, with a varied mix of unattended and controlled airspace, all within proximity to each other and a large international airport at Christchurch only 11 nautical miles to the southeast.

[14] https://www.aip.net.nz/assets/AIP/Aerodrome-Charts/Rangiora-NZRT/NZRT_51.1_52.1.pdf
[15] Guidance for Complexity and Density Considerations – in the New Zealand Flight Information Region – New Southern Sky Version 1 - 14th February 2018

5.1 Unattended Airspace

- The Rangiora Airfield is situated in unattended airspace, but within a MBZ and CFZ.
- Below 1500 ft the airspace is deemed to be Class G airspace, and unattended. Airways NZ provide traffic information, but do not provide separation between aircraft.
- For the VFR pilot it becomes a case of see and be seen.

5.2 Controlled Airspace

The Rangiora Airfield is situated under and outside the Class C airspace.

The lower level of the Controlled Airspace varies within this Class C airspace.

- Most of the controlled airspace within this Class C airspace, and in the vicinity of the Rangiora Airfield has a lower limit of 2500 ft, but there is a sector to the south and east of the Rangiora airfield which the lower limit is reduced to 1500 ft. The boundary between the two levels cuts through the Rangiora MBZ to the southeast of the airfield.
- Generally, from 1500 ft amsl and above, the airspace in the wider Christchurch area is controlled by Airways NZ. This is Class C airspace where permission from Airways NZ is required for an aircraft to enter. Within Class C airspace both traffic information and aircraft separation are provided by Airways NZ.
- All aircraft require an ATC clearance to operate in Class C airspace.
- To the south of Rangiora there is a VFR transit lane, daytime only, through the western side of the controlled West Sector of the Christchurch Control Zone. The upper limit of this transit lane is 1000 ft. This allows VFR aircraft to transit to the north or south through the Christchurch Control Zone as if the airspace was unattended.

5.3 Mandatory Broadcast Zone (MBZ)

- The Rangiora Airfield also has an MBZ around it. This MBZ extends in a radius of approximately 3 nm from the center of the airfield.
- The upper level of the MBZ is the lower level of the Controlled Airspace which is 2500 ft amsl and the lower level is the surface of the ground.
- The Rangiora MBZ requires radio calls by aircraft within the MBZ to be made every 5 minutes on 120.2 Mhz stating their position, altitude, and intentions.

**A Mandatory Broadcast zone is an area normally established at a busy unattended aerodrome, or airspace that has intensive tourist operations. An MBZ requires a pilot to broadcast position, altitude, and intentions reports on a specified frequency on entry, when*

joining an aerodrome traffic circuit, prior to entering a runway, and at specified regular intervals when operating within the MBZ. As an extra safety measure, landing or anti-collision lights must be switched on, if fitted. Radio frequencies are on the appropriate charts. Aircraft without an operable radio must not enter an MBZ unless another accompanying aircraft in formation can broadcast the required reports on their behalf. If the aircraft is entering an MBZ for the purpose of radio repairs, then another party such as a UNICOM unit may make the 'broadcasts on behalf'. Parachute dropping aircraft must broadcast on the MBZ frequency regarding parachuting when the landing area is within an MBZ.[16]

5.4 Common Frequency Zone (CFZ)

- There is a CFZ for the greater Rangiora area. The nearest outer boundary of the CFZ to Rangiora is approximately 9 nm to the south of the Rangiora airfield and is the boundary with the Christchurch Airport Instrument Sector boundary.
- The lower level of this Instrument Sector is the surface of the ground with an upper limit being 1500 ft amsl.
- The CFZ frequency of 120.2Mhz frequency is used by all the local airfields noted below.

**In certain areas of New Zealand, common frequency zones have been established. These areas are not designated airspace, but they are where voluntary common frequencies have been established in order to enhance safety. CFZ's signify areas of concentrated aviation activity, generally recreational aviation.*

It is not mandatory to use a radio on the specified frequency within a CFZ, but it would be very poor airmanship not to use the published frequency and not to comply with expected local radio procedures when radio equipped. As a minimum, pilots should broadcast their position and intentions on entry and exit from a CFZ. Use of landing and/or anti-collision lights is also a recommended practice within a CFZ. [17]

5.5 Local Airfields Around Rangiora

Along with the Rangiora Airfield there are two other registered airfields and several private airstrips near the Rangiora Airfield.

- *Loburn Abbey Airfield* is situated 3.8 nm to the northwest of the Rangiora Airfield from which the circuit direction is to the north of the airfield.

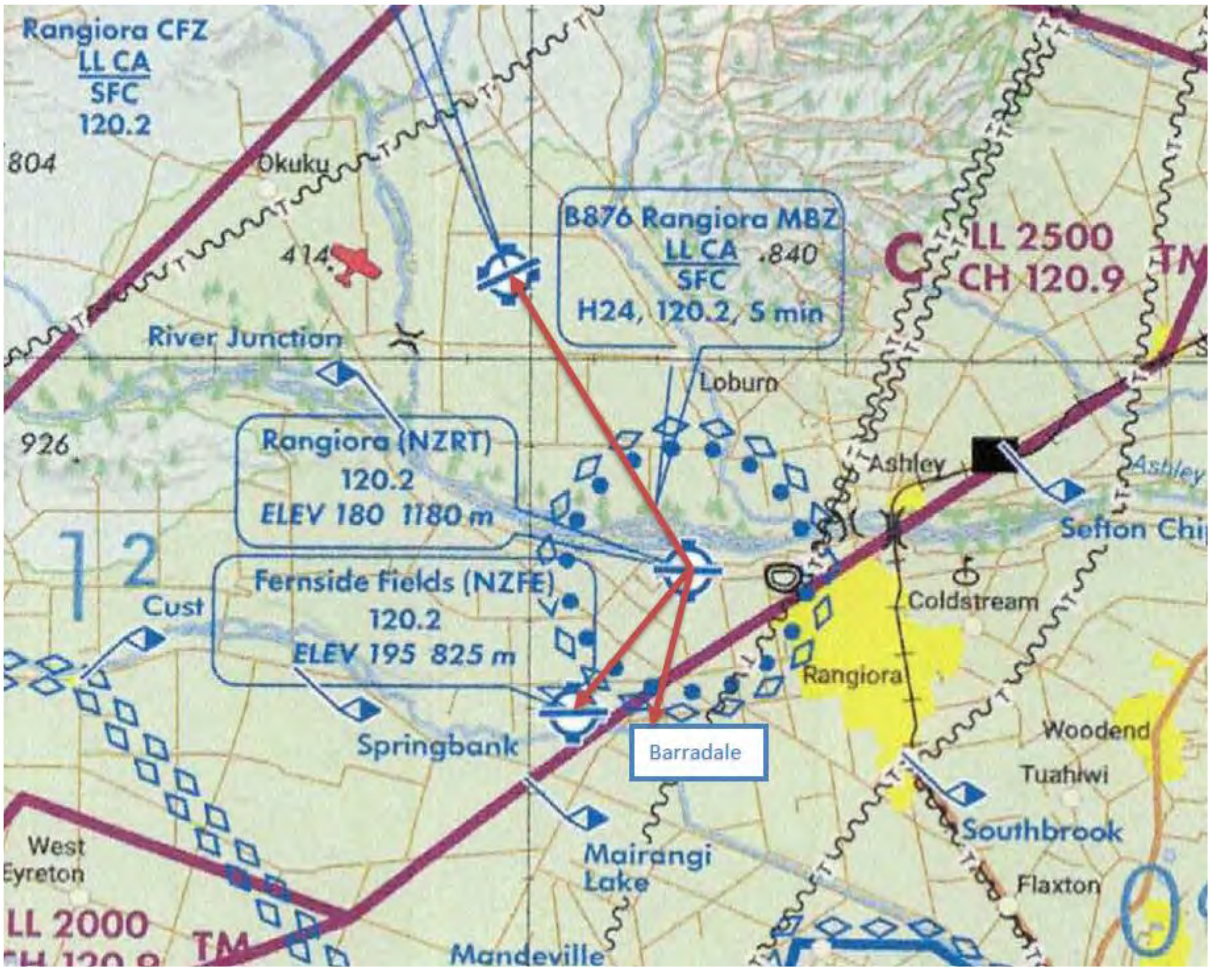
[16] CAANZ Gap Booklet "New Zealand Airspace".
[17] CAANZ Gap Booklet "New Zealand Airspace".

- *Fernside Fields* is a small airfield situated 2.2 nm to the southwest of the Rangiora Airfield with the circuit direction to the north of the airfield toward Rangiora Airfield.
- *Barradale Airfield* is a small nonregistered airfield approximately 1.9 nm to the south of the Rangiora Airfield with a circuit direction to the north of the airfield.

Rangiora Airfield, and the three mentioned airfields above are all within the Rangiora CFZ and use same radio frequency, 120.2Mhz, but outside of the MBZ.

Although it appears that these airfields are some distance apart, depending on the size of the circuit flown, aircraft from these airfields could in fact be very close to each other in opposing circuits, particularly when aircraft are joining for the Rangiora Airfield from the South.

Map 2: Local Airfields Around Rangiora - Scale 1:250,000



6 Circuit

6.1 Airfield Circuit

- As the Rangiora Airfield is unattended, the standard join procedure, as shown below on Map 3: Standard Overhead Join (Page 40), must be used by aircraft arriving at the airfield.
- Pilots must also be aware that the Rangiora circuit direction varies.
- At most airfields the circuit direction is to the left, but at Rangiora there is a mix of left- and right-hand circuits.
- Runways 04, 07 and 28 are left hand, whereas runways 10, 22 and 25 are right hand circuits.
- The normal left hand circuit direction is required when using runways 04, 07 and 28 with right hand circuits for runways 10, 22 and 25.
- This can become confusing to pilots who have not thoroughly briefed themselves on the procedures at Rangiora, before arriving there.
- The airfield is also within the MBZ, and a radio call must be made at least every 5 minutes stating the aircraft registration, its altitude, position, and intentions. Landing lights should also be turned on when inside the MBZ to increase aircraft visibility.
- The circuit direction varies between left hand and right-hand circuits depending on which runway is being used.
- The circuit area around an airfield generally covers an area with a radius of 2 nm from the airfield for light general aviation aircraft. This will depend on the size and speed of the aircraft within the circuit. A large or fast aircraft may take up considerably more airspace than a slower aircraft.
- Pilots of aircraft operating within the Rangiora circuit must make themselves aware of other aircraft within the vicinity of the Rangiora Airfield which may be operating from the other nearby airfields, which are at or close to 2 nm from Rangiora Airfield.[18]

6.2 Multiple Runways

Having multiple runways is an advantage for pilots of light aircraft, allowing the pilot to select a runway which is most into the prevailing wind.

[18] AIP New Zealand GEN 2.2 - 40 Vicinity of an aerodrome

This however can cause confusion, particularly if there are many aircraft operating within the circuit.

For example:

- If the wind was from a southerly direction, aircraft number one, a microlight aircraft may wish to use runway 22 as the direction of that runway is most into wind and it has enough length for the microlight to operate from. To use another runway 25, the crosswind component may exceed that of the microlight aircraft or the pilot experience.
- Aircraft number 2 elects to use runway 25, as runway 22 is not long enough for it to use. This aircraft can handle a stronger crosswind component hence using runway 25.
- Both aircraft are on training flights and are remaining in the circuit.
- Therefore, two separate circuit pattens are in use causing confusion and the risk of conflict between the two aircraft and other aircraft determining the active runway.
- This is a common scenario at the Rangiora airfield.
- Confusion for some itinerant pilots is that runway 01/28 uses a different circuit direction. This was probably initiated a number of years ago to keep aircraft away from the built-up area.
- Now the area is predominantly lifestyle small blocks there is no benefit in having this circuit direction differing from the rest.
- By making the runway 28 right hand and the runway 10 left hand there should be no confusion with all traffic going in the same direction, to the north.

6.3 Aerodrome Operations

Unfortunately, some local based operators do not seem to understand the rules regarding joining or operating within the traffic circuit. These same operators are putting themselves and others at risk of a serious incident between themselves and other aircraft which could have disastrous results.

1.1 General

1.1.1 This section details procedures for operations on and in the vicinity of aerodromes.

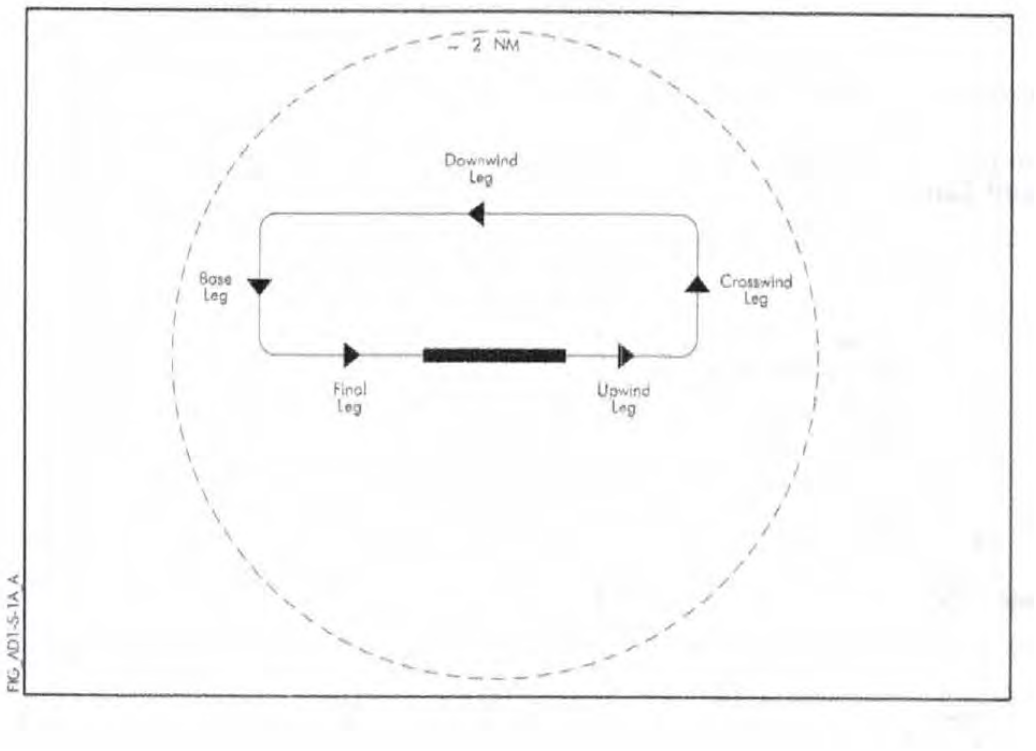
1.1.2 The layout of the circuit is depicted in Figure AD 1.6-1A.

1.1.3 The tracks to be flown when joining are depicted in Figures AD 1.6-1B and AD 1.6-1C.

1.1.4 Both the traffic and non-traffic sides should be identified to avoid should be identified to avoid descending into aircraft already in the circuit.

Aerodrome Traffic Circuit

Figure AD 1.6-1A
Aerodrome Traffic Circuit



Direct-joining the Circuit

Figure AD 1.6-1B
Direct-joining the Circuit

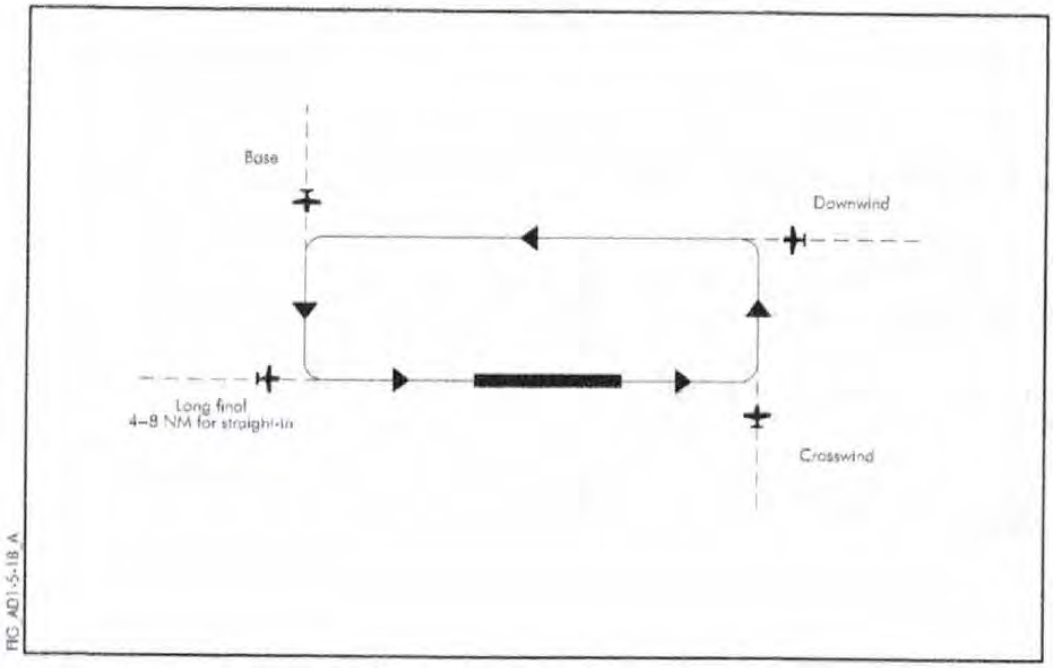
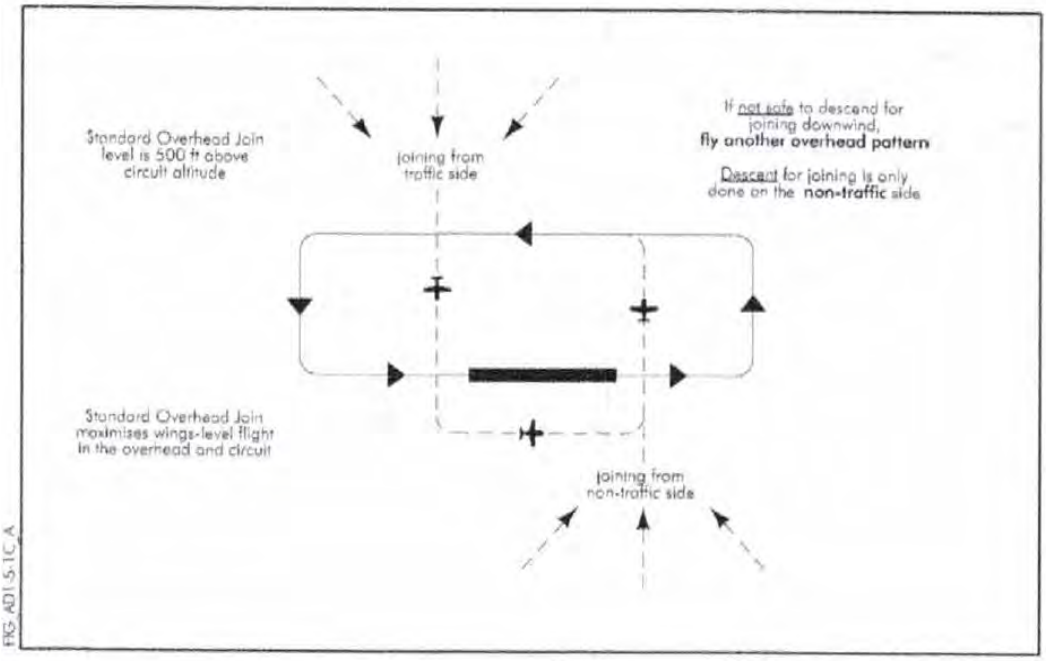


Figure AD 1.6-1C
Standard Overhead Join



2.1 Joining Procedures

2.1.1 The pilot of an aircraft intending to land at an unattended aerodrome, or one where aerodrome flight information service is being provided, may join the circuit via a standard overhead circuit joining procedure as outlined in Figure AD 1.6-1C, or direct into downwind, base leg, or long final as outlined in Figure AD 1.6-1B provided that:

(a) joining intentions are advised to aerodrome traffic or AFIS if the aircraft is RTF equipped; and

(b) the runway-in-use and aerodrome traffic are properly ascertained (be aware that some aerodromes have alternate circuit patterns for approved aviation activity); and

(c) when making a straight-in approach, or joining crosswind, downwind or base leg, the aircraft is sequenced without causing conflict in such a way as to give priority to aircraft already established in the circuit or established in the standard overhead circuit joining pattern; and (d) when entering or flying within the circuit, all turns are made in the direction appropriate to the runway-in-use.

2.1.2 VFR traffic in the circuit should be aware that IFR aircraft conducting instrument approach procedures may join long final. Circuit traffic retains right of way unless weather conditions dictate priority to IFR aircraft on the instrument approach procedure, or if the IFR aircraft is in the final stages of an approach to land. (In all these circumstances additional reporting by the IFR traffic of their position is advised, to ensure the VFR circuit traffic is situationally aware and can also safely sequence with the IFR traffic as it enters the aerodrome traffic circuit on final approach).

2.1.3 The principles of see and be seen apply at all times, and pilots are ultimately responsible for achieving and maintaining safe separation whilst joining and operating in an unattended aerodrome circuit.

2.1.4 Regardless of whether the flight is performed under IFR or under VFR, pilots must maintain a visual lookout so as to see and avoid other aircraft whilst joining and operating within an unattended aerodrome circuit.

5.1 Standard Overhead Join Procedure

5.1.1 The standard overhead joining procedure, which is depicted in Figure AD 1.6-1C, should be followed at unattended aerodromes (where no aerodrome control or AFIS is provided) and at other aerodromes when a pilot is unfamiliar with the aerodrome or is uncertain of circuit traffic. The standard overhead joining procedure is a means of compliance with CAR 91.223(a)(2), which requires a pilot to conform with or avoid the aerodrome traffic circuit

formed by other aircraft. This procedure is used to determine the runway-in-use and the position of traffic in order to sequence safely. It does not presume a right of way over existing circuit activity.

5.1.2 The following procedures should be followed by pilots:

(a) If the aircraft is RTF equipped, advise aerodrome traffic of joining intentions.

(b) Approach the aerodrome by descending or climbing to 1500 ft or above aerodrome elevation. If a circuit height other than 1000 ft is specified on the aerodrome chart, join at not less than 500 ft above circuit height, or if applicable, the specified joining altitude.

(c) (c) Pass over the aerodrome (keeping it on your left) in order to observe wind, circuit traffic and any ground signals displayed in order to establish the runway-in-use and sequence safely; if these cannot be fully ascertained, continue (wings level) to a point beyond the circuit area (approx. 2 NM) and turn left to return to the aerodrome at or above the joining height as specified in (b) to reassess circuit direction.

(d) Once the circuit direction is established, make all subsequent turns in the direction of the traffic circuit.

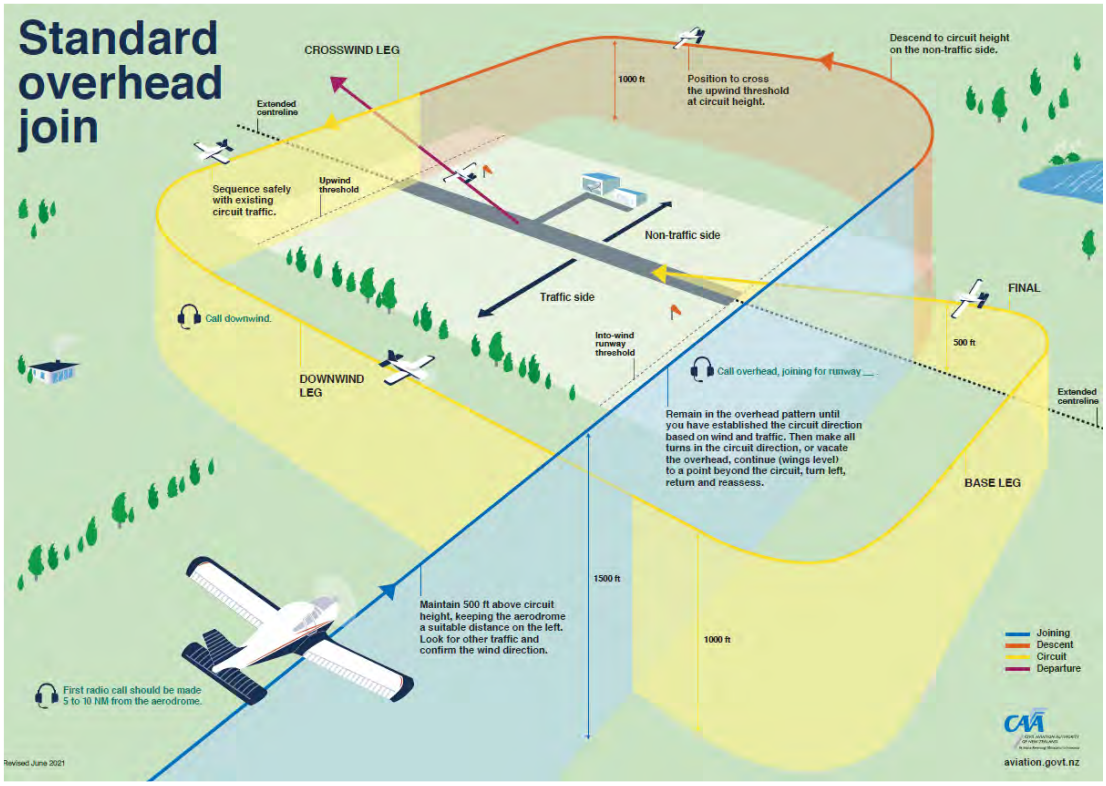
(e) Once the conditions in (c) are ascertained, cross to the non-traffic side, and descend to circuit height.

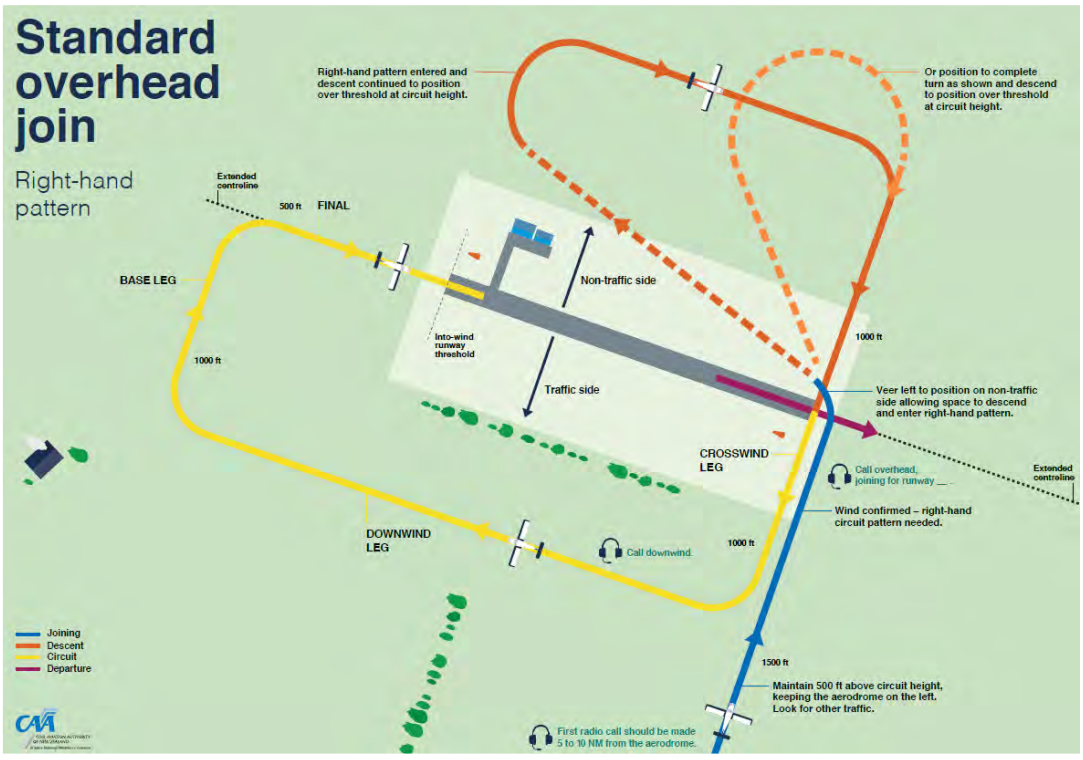
(f) Turn 90° across wind and pass sufficiently close to the upwind end of the runway to ensure that aircraft taking off can pass safely underneath.

(g) Turn to join the downwind leg of the traffic circuit at a point that ensures adequate spacing with any aircraft in the circuit ahead or behind.[19]

[19] https://www.aip.net.nz/assets/AIP/Aerodromes-AD1/AERODROME/HELIPORTS-INTRODUCTION/AD_1.06.pdf

Map 3: Standard Overhead Join





Map 4: Example of Conflict within the Circuit at Rangiora.

7 Users

- The Rangiora Airfield is`

  "Available for general use without prior permission of the operator."[20]
- As such the airfield is used by resident, locally based and itinerant aircraft transiting through the Rangiora area, both fixed wing and rotary wing aircraft.
- The Rangiora Airfield has become a regular refueling and stop off point for aircraft travelling through the region, due to the airfield being outside of controlled airspace and its relatively close proximity to Christchurch City.
- The resident users occupy some 90 hangars on the airfield for which they pay an annual ground rental to the Waimakariri District Council. The total number of aircraft based on the airfield is unknown but is suggested to be more than 200 aircraft.
- A number of these hangars are occupied by aviation related maintenance and supply organisations allowing for aircraft to be maintained and repaired on the airfield.

7.1 Movements

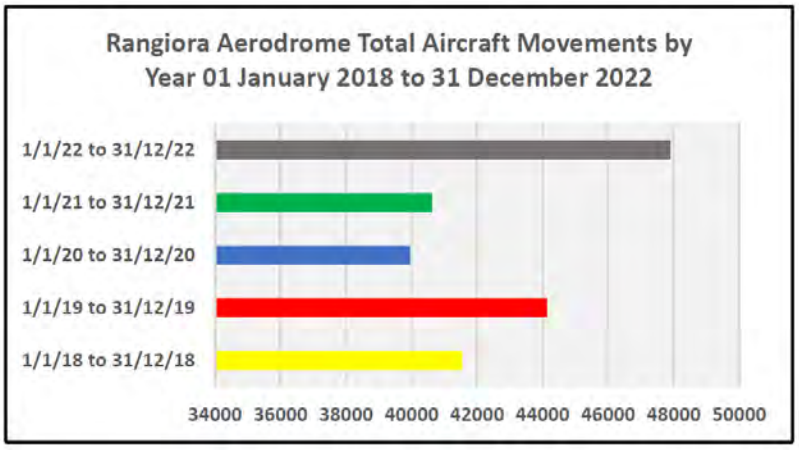
- The number of aircraft movements at the Rangiora Airfield has consistently been over 40,000 movements per year since 2018. These years include the period of the lockdown due to the pandemic.
- With movement numbers in excess of 47,000 for 2022, this number is in excess of the trigger point for the CAANZ to investigate as to whether the Rangiora Airfield becomes certificated under Part 139.
- This makes the Rangiora Airfield extremely busy, without the airpark development that is proposed for the land on the southern side of the airfield.
- If the airpark proposal goes ahead and once completed could effectively increase the number of movements at the Rangiora airfield by another 5,000 movements per year.

7.2 Aimm Movement Monitoring (Automated Intelligent Movement Management

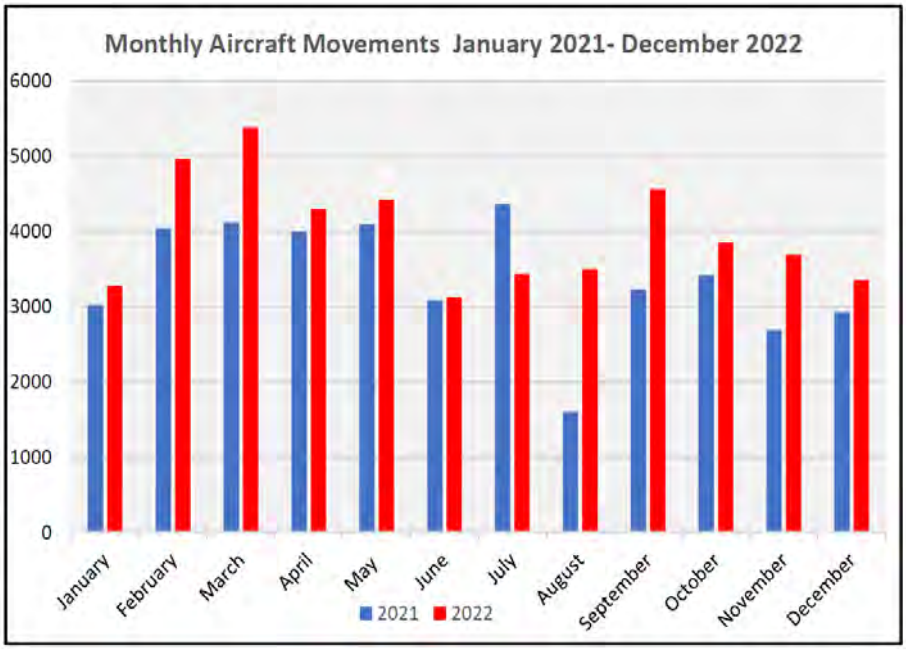
- The WDC has invested in Aimm, a radio-based aircraft identification and monitoring system which records aircraft arrivals and departures, runway use, aircraft type and time of activity. This monitoring process allows the WDC to record and collate accurately aircraft movements and to invoice the operator accordingly.
- Evidence of the Data for the January 2021-December 2022 timeframe is displayed in the following graphs.

[20] AIP New Zealand

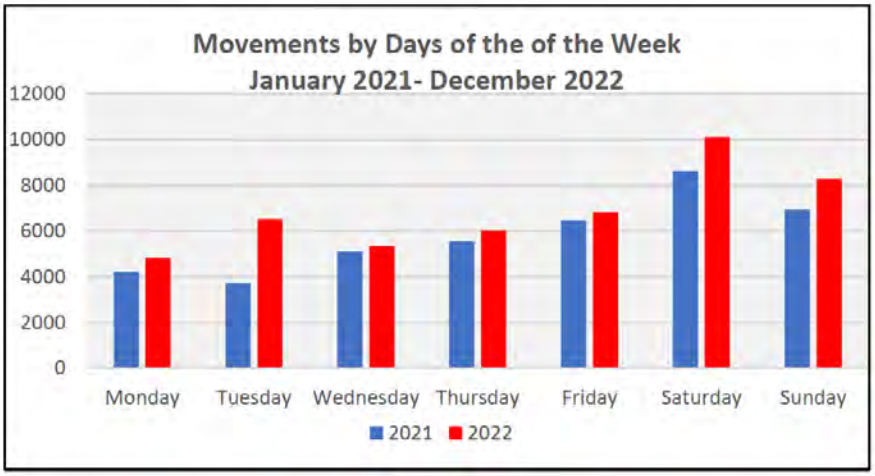
Total Aircraft Movements Over 5 years 01 January 2018 to 31 December 2022	
Date	**Total Movements**
1/1/22 to 31/12/22	47899
1/1/21 to 31/12/21	40616
1/1/20 to 31/12/20	39937
1/1/19 to 31/12/19	44125
1/1/18 to 31/12/18	41540



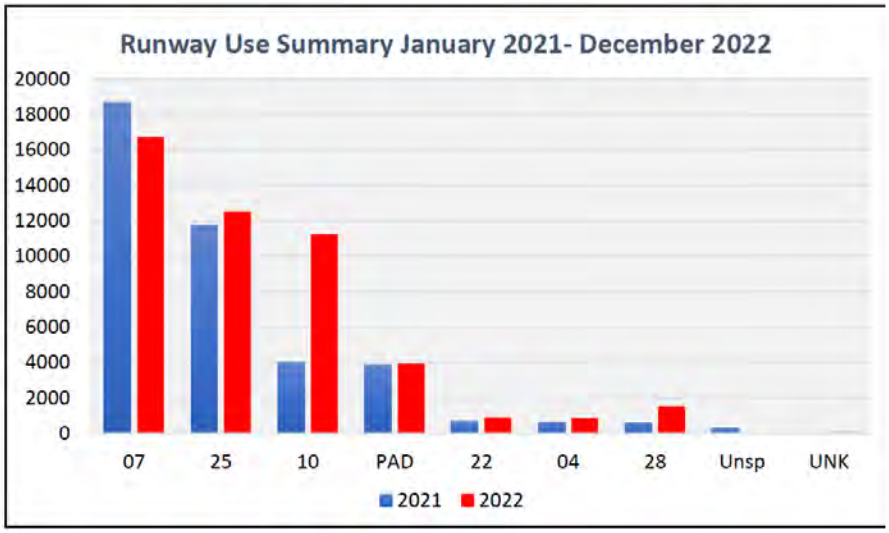
Monthly Aircraft Movements January 2021 to December 2022		
Months	**2021**	**2022**
January	3028	3283
February	4042	4968
March	4118	5382
April	4006	4299
May	4097	4428
June	3085	3129
July	4362	3440
August	1608	3505
September	3228	4564
October	3421	3850
November	2691	3693
December	2930	3358
Annual Total	**40616**	**47889**



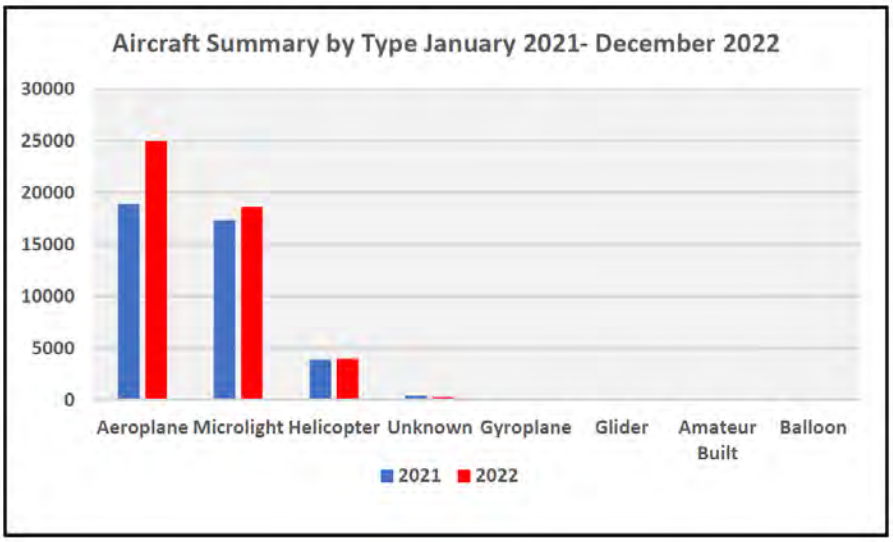
Movements by Days of Week January 2021- December 2022		
Weekday	**2021**	**2022**
Monday	4210	4823
Tuesday	3719	6513
Wednesday	5123	5353
Thursday	5534	6018
Friday	6466	6816
Saturday	8625	10105
Sunday	6939	8271
TOTAL	**40616**	**47899**



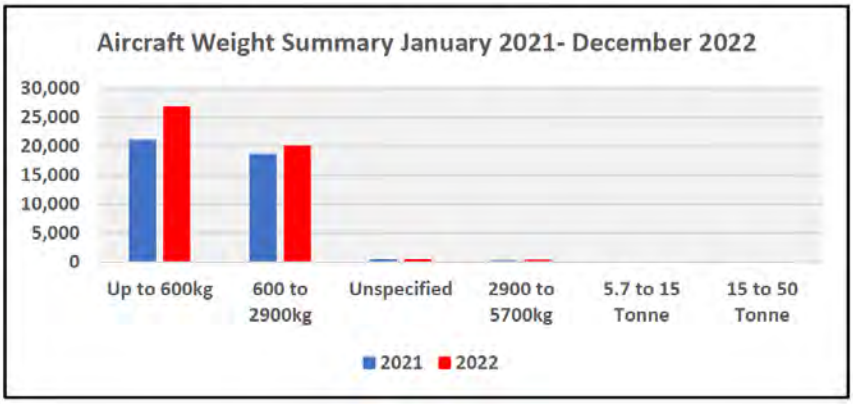
Runway Use Summary January 2021-December 2022		
Runway Nos	**2021**	**2022**
07	18693	16725
25	11754	12538
10	4006	11243
PAD	3887	3945
22	694	888
04	654	918
28	616	1556
Unspecified	308	8
UNK	4	78
TOTAL USE	**40616**	**47899**



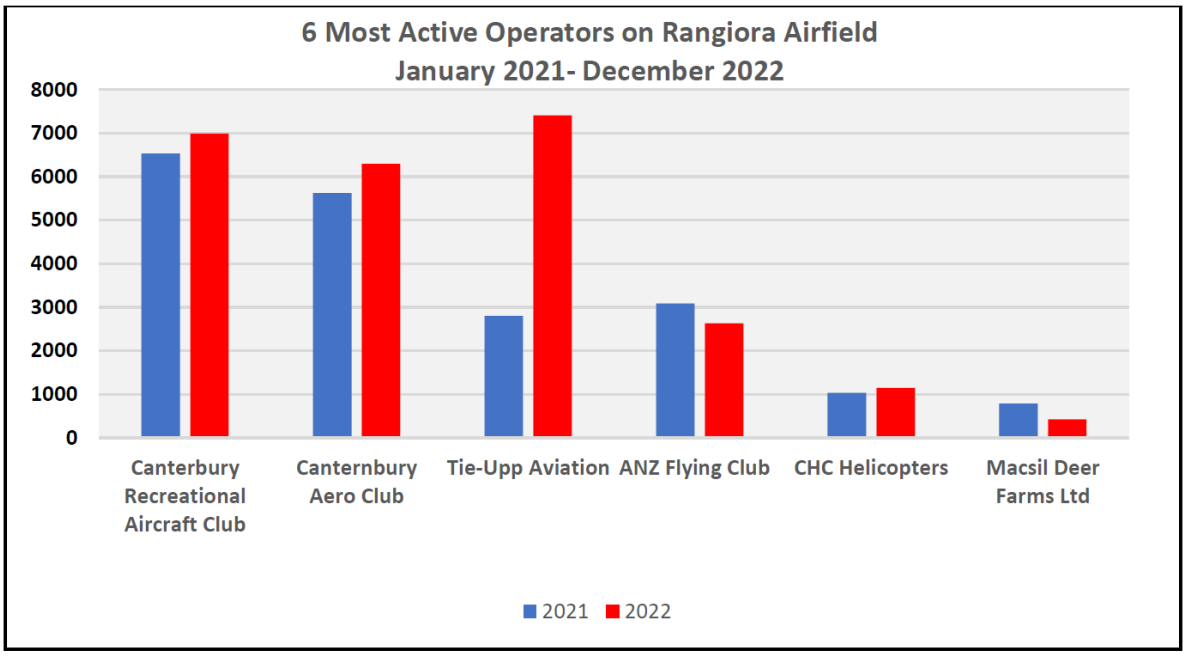
Aircraft Summary by Type January 2021-December 2022		
Aircraft	**2021**	**2022**
Aeroplane	18912	25002
Microlight	17359	18650
Helicopter	3913	3953
Unknown	376	261
Gyroplane	49	7
Glider	6	16
Amateur Built	1	9
Balloon	0	1
TOTAL	**40616**	**47899**



Aircraft Weight Summary January 2021-December 2022		
Weight Range	**2021**	**2022**
Up to 600kg	21,133	26908
600 to 2900kg	18,675	20131
Unspecified	475	462
2900 to 5700kg	331	384
5.7 to 15 Tonne	1	14
15 to 50 Tonne	1	0
Annual Total	40616	47899



6 Most Active Operators January 2021-December 2022			
Operators	**2021**	**2022**	**TOTAL 2 Years**
Canterbury Recreational Aircraft Club	6532	6987	13519
Canterbury Aero Club	5625	6296	11921
Tie-Upp Aviation	2794	7414	10208
ANZ Flying Club	3083	2633	5716
CHC Helicopters	1029	1146	2175
Macsil Deer Farms Ltd	786	422	1208
	19849	24898	44747



7.3 Rangiora Weather

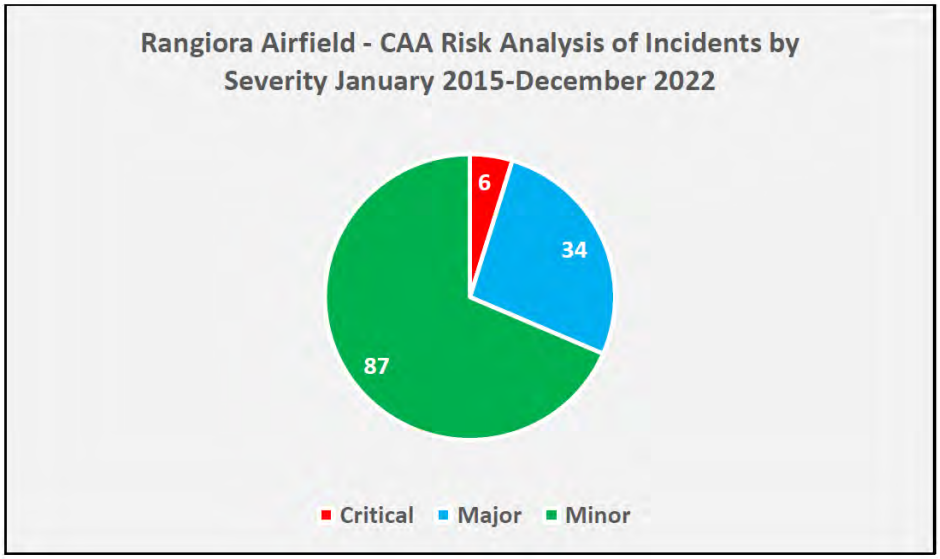
- The weather at Rangiora is influenced by the Southern Alps and the westerly airflow.
- The predominant winds come from the north-west and north-east but can be influenced by sea breezes.
- The temperature ranges from an average 21 degrees in the summer to an average of 11 degrees in the winter.
- With many different types of light aircraft using the Rangiora Airfield, these aircraft all have differing limitations as to how much cross wind they can handle, and this goes hand in hand with the experience level of the pilot.

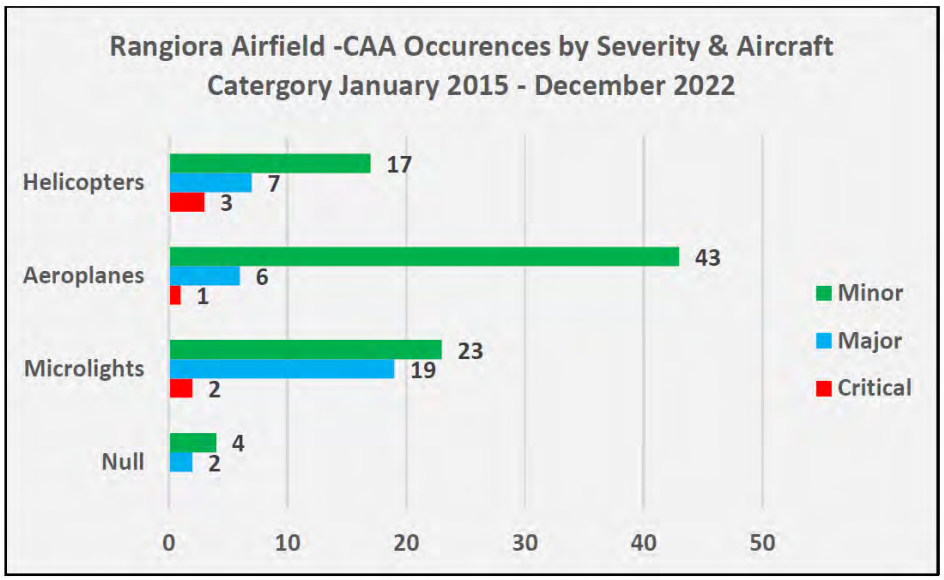
- At different times of the day the wind can swing through many directions, so having multiple runways is of benefit to the pilots of these aircraft who can then select the most into wind runway to take off or land on.
- The only indication of wind direction and speed is via two windsocks. Although accurate at the location of the windsock, the wind may differ at other parts of the airfield.
- Consideration should be given to installing an AWIB. This would then give more certainty as to wind direction, speed and the favoured runway to the pilot using the Rangiora Airfield.

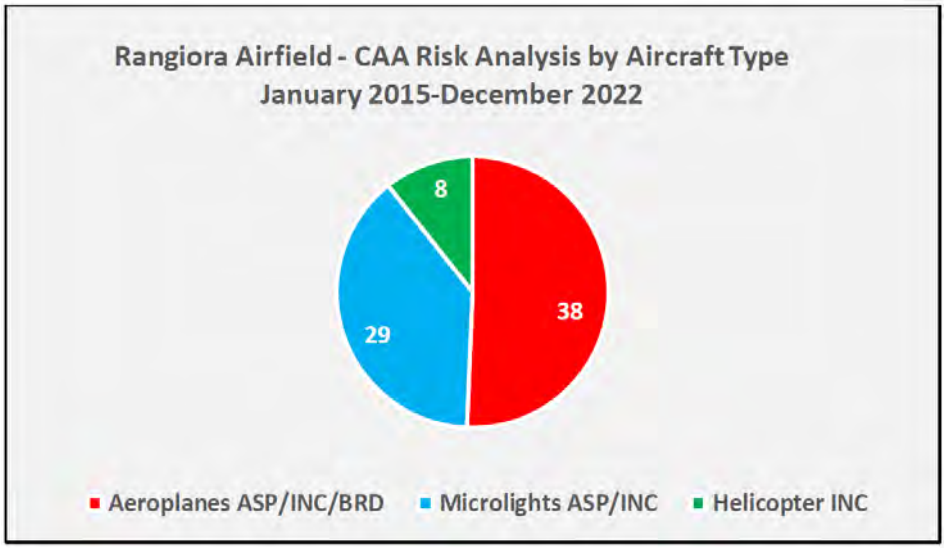
8 Safety

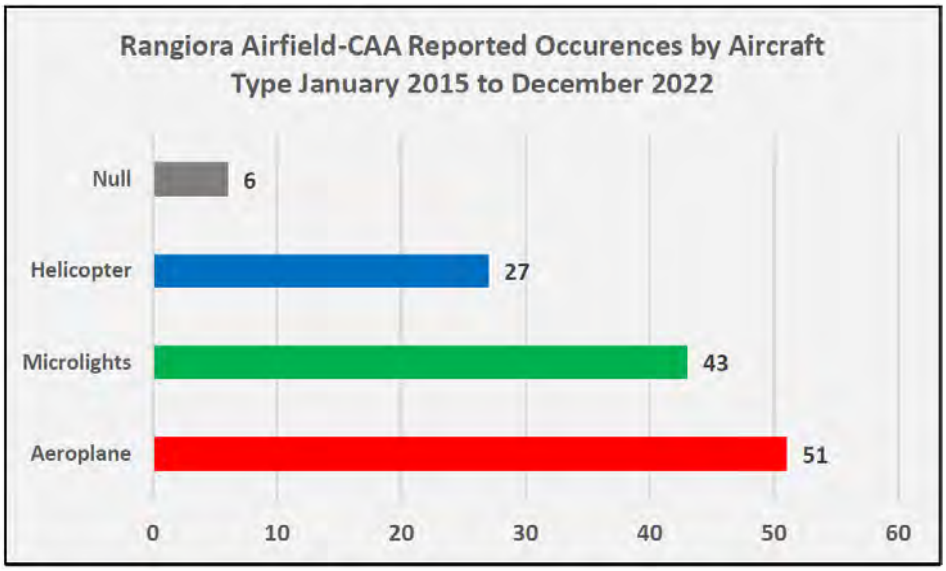
8.1 Accidents and Incidents

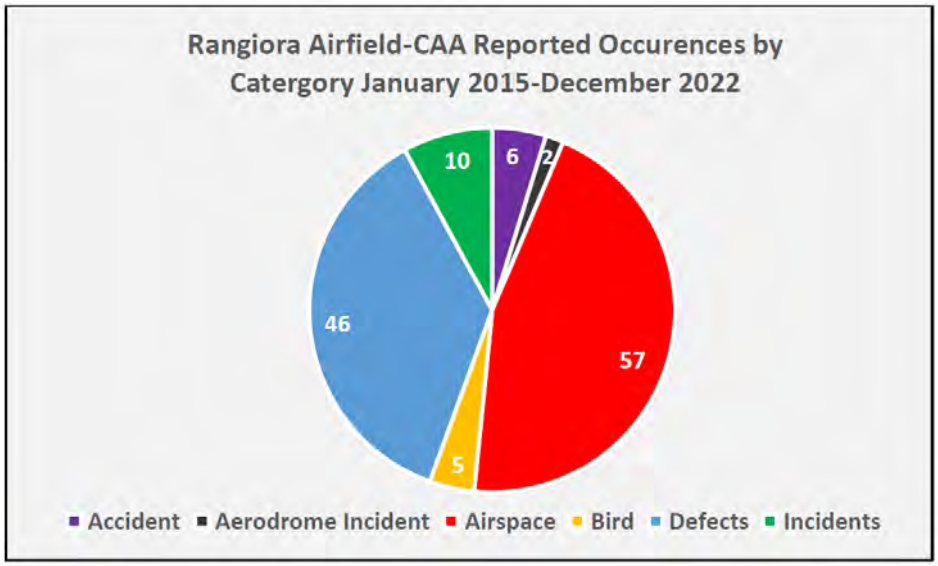
- The following graphs show the number of incidents that have been reported to the CAANZ, as well as known incidents that were not reported to the CAANZ but reported to RAAG.
- There has been some suggestion that there is a certain amount of under reporting, and that the figures shown may not represent the true picture. This is evident in that only three incidents reported to RAANZ in the past two years when the number reported to the CAA by third parties was considerably more than three.
- The reported period covers from 2015 to December 2022 (end of year).
- There have been 122 incidents reported in this period and covers the airfield circuit, airspace, bird strikes, accidents, airfield incidents and aircraft defects.
- We have excluded aircraft defects from the statistics as they are not directly a part of the airfield operations.
- As indicated in the graphs the greatest number of incidents happen within the airfield circuit, with the next highest being in the airspace around the airfield.
- Of the 76 incidents, the following is a breakdown of the categories:
  - *61% Aerodrome circuit*
  - *18% Airspace*
  - *7% Airfield Incidents*
  - *7% Bird strikes*
  - *7% Accidents*
- The severity is calculated as to how the CAANZ view each incident.
- The incidents by aircraft type show the highest proportion being general aviation aircraft followed by microlights and then helicopters.

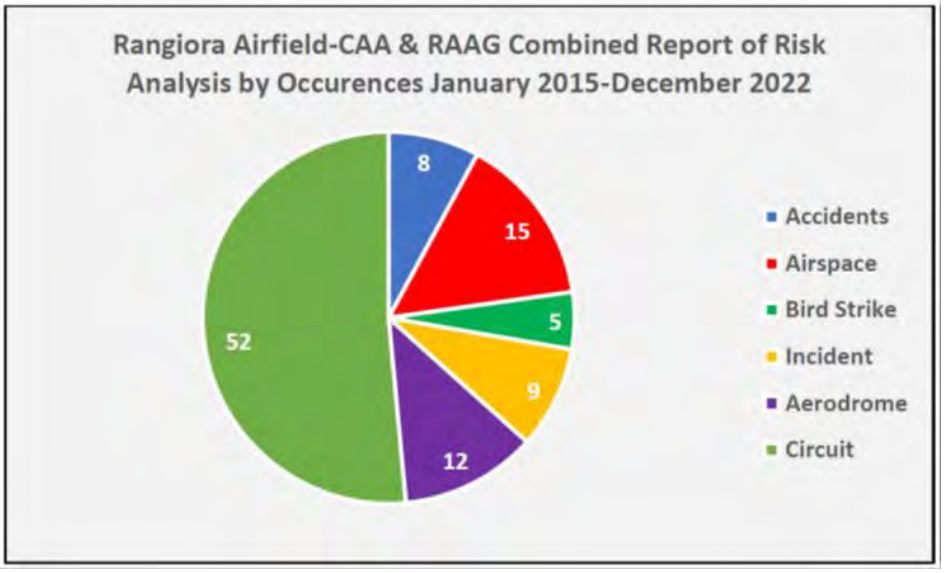

Rangiora Airfield - CAA Risk Analysis of Incidents by Severity January 2015-December 2022
6
34
87
Critical
Major
Minor


Rangiora Airfield -CAA Occurences by Severity & Aircraft Catergory January 2015 - December 2022
Helicopters
17
7
3
Aeroplanes
43
6
1
Microlights
23
19
2
Null
4
2
0
10
20
30
40
50
Minor
Major
Critical


Rangiora Airfield - CAA Risk Analysis by Aircraft Type January 2015-December 2022
8
38
29
Aeroplanes ASP/INC/BRD
Microlights ASP/INC
Helicopter INC

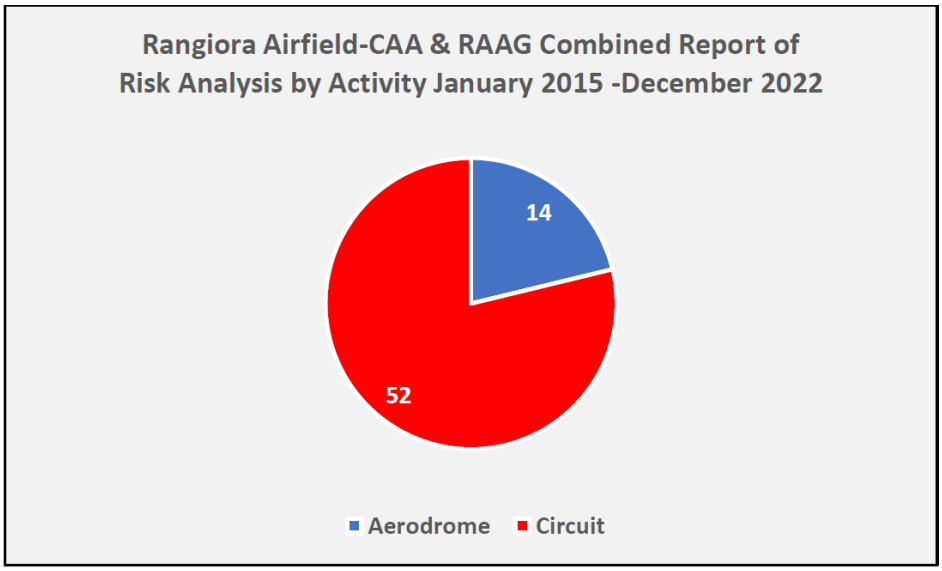

Rangiora Airfield-CAA Reported Occurences by Aircraft Type January 2015 to December 2022
Null
6
Helicopter
27
Microlights
43
Aeroplane
51
0
10
20
30
40
50
60

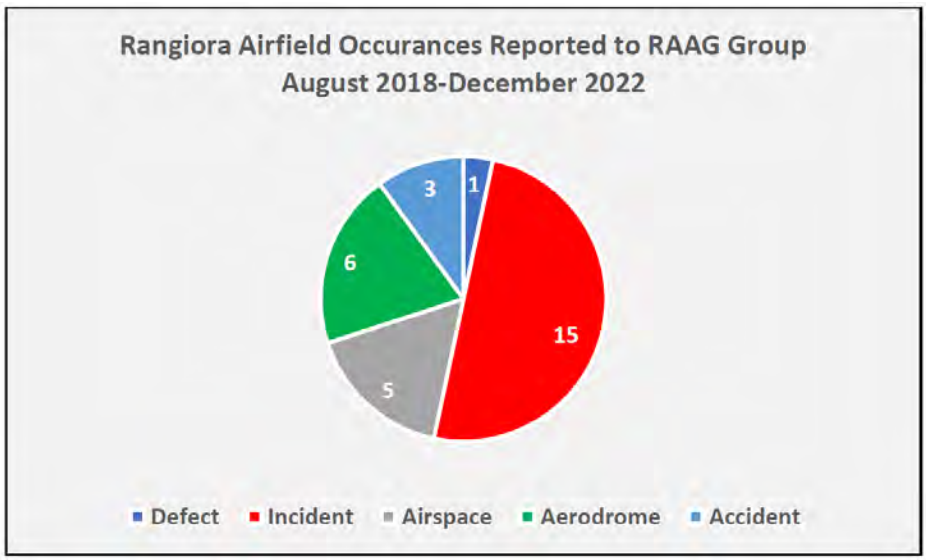

Rangiora Airfield-CAA Reported Occurences by Catergory January 2015-December 2022
10
6
2
46
57
5
Accident
Aerodrome Incident
Airspace
Bird
Defects
Incidents


Rangiora Airfield-CAA & RAAG Combined Report of Risk Analysis by Occurences January 2015-December 2022
8
15
5
9
12
52
Accidents
Airspace
Bird Strike
Incident
Aerodrome
Circuit

8.2 RAAG Incident Reports

- There is no formal system for reporting incidents and occurrences to the airfield operator.
- Incidents are reported to RAAG by someone who has witnessed or has heard about the event, with these incidents reported to the WDC via RAAG at their regular monthly meetings.
- Investigations are carried out by the chair of RAAG and are documented where possible.
- Many incidents which should be reported to the CAANZ by the aircraft operator are not being done so, with RAAG reporting them when they are made aware of them.





9 User and Stakeholder Meetings

- A meeting with Avsafe, WDC Greenspace Manger, CAANZ Aviation Safety Advisor for the South Island and the RAAG Chairman was held prior to the Airfield Users meeting.
- Two meetings were held with users of the Rangiora Airfield. Both meetings were held on the same day, 6th December 2022, with the first being attended by the CRAC and private microlight owners based on the airfield.
- The second meeting was attended by representatives of the mainly General Aviation operators.
- Some 60 airfield users attended each meeting.
- In attendance at both meetings were the WDC Green Space Manager, the CAANZ Aviation Safety Advisor for the South Island and members of RAAG and Councilors from the WDC.
- There was good discussion from the users over a range of topics with one of the main concerns that the users were not fully informed about what was happening on the airfield.
- There was some skepticism on the accuracy of the Aimm reporting system. Avsafe was given a full working demonstration of the Aimm system by another user a few days after the meeting. It is concluded that the information collected from the Rangiora Aimm system is accurate.
- There were many differing views on the “overhead join procedure”, with some pilots not having a clear understanding as to how it worked. The CAANZ Safety Officer clarified some misconceptions. In 2022 CAANZ held virtual Workshops on Overhead Join Procedure, the final one was held at Rangiora.
- Many attending the meetings were surprised by the high number of incidents, and that these were spread over all types of users, not just one particular group.
- Copies of the minutes are found in Appendix 4.
- Emails were also received from other operators who did not attend the meetings.

10 Proposed Airpark

10.1 Development

- There is a proposal before the WDC for an airpark to be developed on the southern side of the Rangiora Airfield, with access to the airfield. The airpark, although in the early stages of design, is proposed to have 20 sites for private aircraft owners and some 37 sites for commercial users with aviation related businesses.
- The sites range in area from approximately 2120 sqm to 1.61 hectares for the private operators and between 3090 sqm and 5080 sqm for the commercial sites.
- Access to the airfield is to be via two single entry points, one at the western end near the residential sites and the other on the eastern end near the commercial sites. These entry points to the Rangiora Airfield are to be controlled via gates with electronic access.
- Consideration will need to be given to developing taxiways on the airfield from the airpark to the runway ends. This is a part of the discussion with the developer, as there may be a land swap between the developer and the WDC.
- The creation of the airpark will have a large impact on the number of aircraft movements. If the 20 private operators fly their aircraft twice a week this would equate to just over 4000 extra movements per year. Add in the commercial activities this could amount to another 4000 movements.
- The type of commercial activities from the airpark may require that the main runway become a sealed runway sometime in the future. A sealed runway would be an attraction for an International Flying School.
- The creation of the airpark allows the airfield activity to increase, but at the same time will put pressure on the current infrastructure of the Rangiora Airfield.
- With careful planning and consultation, with restrictions of access to and from the airfield, the airpark should be successful.

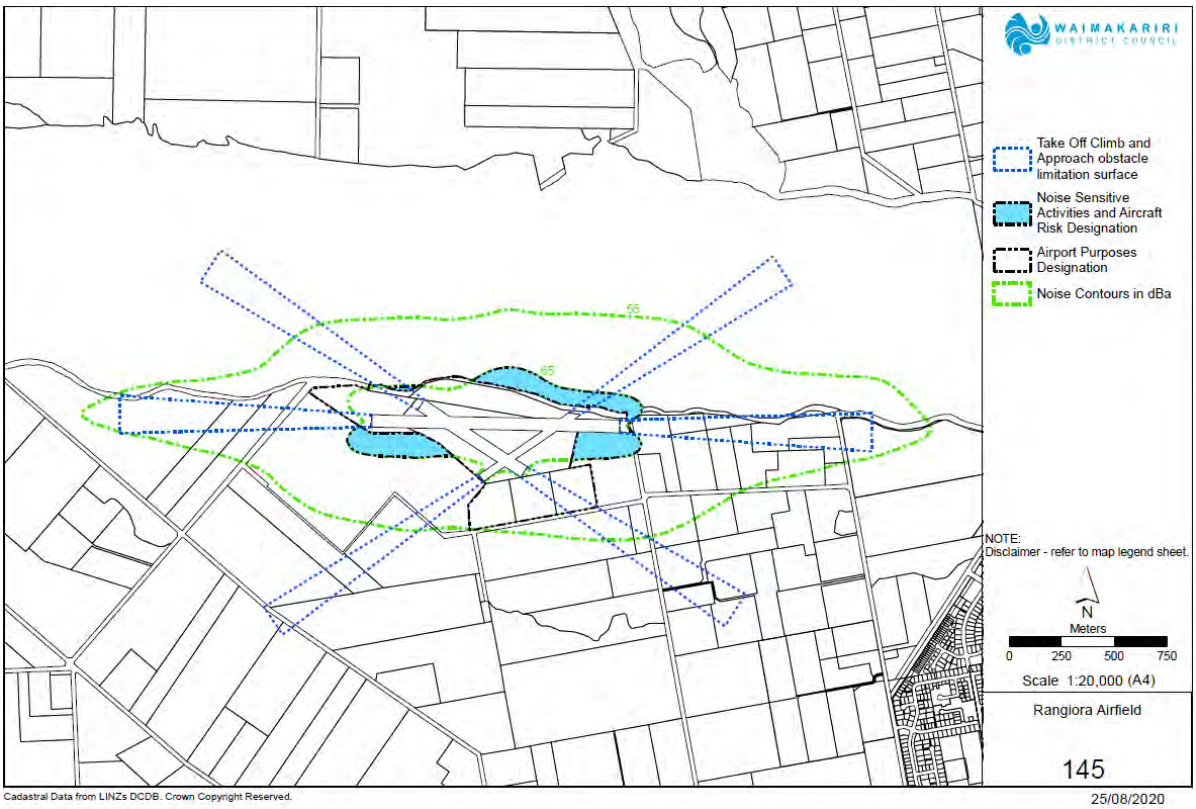
Map 5: Original Development Plan

- Rangiora Airfield Boundary in Red.

10.2 Noise Contours

- Most of the proposed airpark development falls within the outer noise contour of 55 dBa of the Rangiora Airfield, with just a small portion on the southwestern corner being outside the boundary.
- It is understood that the WDC have contacted a noise consultancy firm to reassess these boundaries.

Map 6: Noise Contour Boundaries



11 Fees and Charges

One of the most contentious issues on any airfield are the fees and charges, particularly when the airfield is owned and operated by a local council.

Some recreational pilots do not accept that there should be landing fees at any airfield.

The users, many of whom are ratepayers are of the opinion that the airfield is just like any other park or facility in town and that the cost of running that facility should be carried by the ratepayer not by the user of the facility.

Just like any public amenity the cost of running a council owned facility is generally a lot greater than the user thinks it is.

The apportioning of cost can be weighed up as to whether it is “public good” or “private good”.

In general terms any capital expenditure can be seen as “public good”, as the community as this is benefiting the community as a whole, in this case, the airfield is a strategic asset to the region.

Whereas most of the operational costs of running the airfield would be “private good” and therefore the cost should be passed onto the user.

Apart from the known annual income from land rental, there is a very large variation in income from landing fees at Rangiora.

The $10.00 per day per aircraft fee, currently charged are a long way short of where it needs to be to cover operational costs.

The fee of $10.00 per day per aircraft is substantially lower than comparable airfields around New Zealand. Most airfields charge a similar amount on a per landing basis.

A survey of similar type airfields in the South Island shows that the average landing fee, on a per landing basis, for a microlight aircraft is $9.46.

Assuming that the WDC currently receives $60,000.00 per year for landing fees at the $10.00 per day rate, this equates to $2.50 per landing based on the actual movement statistics for the 2022 year.

If the landings were charges at $10.00 per landing, which is around the average for GA aircraft in New Zealand, then the income would have been $239,440.00, an increase of nearly $180,000.00.

This level of income would go a long way to meeting the operational costs of the Rangiora airfield.

The majority of airfields calculate their charges based on the Maximum Gross Take-off Weight (MCTOW) for any particular aircraft. Microlights being the lightest at up to 600kg MCTOW generally pay less than a General Aviation aircraft of up to 1500kg.

Microlight pilots argue that as their aircraft are light, they cause very little damage to the airfield. At Rangiora it is the volume of traffic is what creates the wear and tear not necessarily the weight.

But the reality is it is not just the wear and tear on the runway, but all the other costs associated with the running of the airfield, i.e.

1. Insurance
2. Airfield Mowing
3. Runway maintenance
4. Electricity
5. Water
6. Sewerage
7. Telephones
8. General Expenses
9. Health and Safety and Compliance

Avsafe Consultants Ltd suggests that the WDC reviews the landing fee structure to bring them up to a level where operational costs are covered or to a level which the council considers appropriate.

Below is a table based on the aircraft movements for 2022 showing the revenue which could be generated using a per landing fee rather than the $10.00 per day per aircraft. This table does not consider a single charge for aircraft carrying out circuits where only one landing is charged.

2022	Movements	Landings	Fee	Income
Aeroplane	25002	12501	$ 7.00	$ 87,507.00
Microlight	18650	9325	$ 5.00	$ 46,625.00
Helicopter	3953	1977	$ 7.00	$ 13,835.50
	47605	23803		$ 147,967.50

12 Risk Management

12.1 Background

The Waimakariri District Council (WDC) has initiated an airfield development study for Rangiora airfield, which due to the airspace complexity, substantial traffic movements and being close to Christchurch International Airport has raised the requirement for an Aeronautical Study to be undertaken.

12.2 Objectives

The objective is to evaluate the airfield expansion proposals, identify the risks associated with a probable increase in traffic movements and the overall impact on airspace and airfield facilities. Specifically, its impact on current aviation activities and airspace safety, conformity to the current WDC District Council plan/policies and to current applicable CAANZ Rules (CAR's) and Advisory Circulars (AC's).

12.3 Purpose

The purpose of this operational risk management plan is to identify the potential risks associated with the proposed development plan and to identify current and future risks, associated with airfield and airspace safety.

12.4 Depth of Analysis

The depth of risk management planning and practice is demonstrated by:

- The risks were assessed against the Avsafe Risk Matrix.

12.5 Risk Decision

The Operational Risk Management plan was developed to evaluate the risks associated with the proposed development and its potential impact on airfield and airspace safety and airfield security.

12.6 Stakeholder Consultation

Name of Stakeholder	Description of their interest or potential involvement	Consultation required Yes/No	Communication required Yes/No
Waimakariri District Council (WDC)	Oversight and Management of Rangiora airfield facilities and activities is the WDC GM Community & Recreation	Yes	Yes
ECAN	As part of the Resource Consent process	No	No
CAANZ	New Zealand Aviation Regulator	Yes	Yes
Rangiora Airfield Advisory Group RAAG	Oversight and advice to WDC of operational and safety at Rangiora Airfield	Yes	Yes
Rangiora Airfield User Group	Users and lessees at Rangiora Airfield	Yes	Yes
Canterbury Recreational Aircraft Club (CRAC)	CRAC represents the microlight aircraft activities at Rangiora Airfield.	Yes	Yes

12.7 Environmental Activity

Key activity in the environment	Significance (Why is this important?)	Identified risks
Increase in aircraft traffic movements within airfield airspace.	Traffic movements could reach a level that requires CAA Part 139 certification. Potential to increase the number of associated airspace and airfield incidents	HIGH
Safety of all persons within the airport environment.	An increase in vehicles and pedestrians within the airport environs could lead to a degradation in the current level of airport safety.	MEDIUM
Higher levels of usage and pressure placed on existing airfield facilities.	Possible increase in both airfield safety and security.	HIGH
Suitability of proposed land use swap and effect on existing airfield infrastructure.	The current proposals could affect traffic flow (aircraft) and potential for effect on current runways and taxiways.	HIGH
Airfield management	Currently this facility lies under the umbrella of the WDC. The expected increase in traffic and regulatory requirements could necessitate the appointment of an airfield manager.	HIGH .
Financial exposure for WDC	Substantial financial contributions by WDC would be required, moderated by having a long-term plan and budgeted accordingly to allow for managed planned growth.	HIGH
Local airspace usage and close proximity to controlled airspace.	The local airspace is already under pressure due to the existing aircraft types and movements, together with the number of incidents generated and the existing different CAR's that traffic operates under.	HIGH
Airfield security	Unauthorised access to the airfield	HIGH

12.8 Rangiora Airfield Operational Risk Matrix

Risk Assessment Criteria **Responsibility for generated risks lies with: Waimakariri District Council, Airfield Users, Pilots, Flight Training Organisations and CAA Safety Advisory Oversight**								
No.	***Risk Area/Statement***	***Impact on ability to deliver objectives***	***Consequences***	***Likelihood***	***Risk level***	***Risk treatment strategy***	***Residual Risk***	***Risk Priority***
1	Airfield Management	The airfield falls under the umbrella of the Greenspace department of the WDC. The Greenspace Manager who is effectively the Airfield Manager, has limited knowledge of aviation and the idiosyncrasies that go with it. The Greenspace Manager has inherited the role as that is where it has sat in the past.	**High**	**Likely**	4 C	The WDC needs to appoint a fulltime Airfield Manager, reporting to the Greenspace Manager. The role is to monitor activities on the airfield, report incidents and occurrences to the appropriate authorities, carryout maintenance and importantly build a relationship and to liaise with all residents and users of the Rangiora Airfield. Recommendation become CAR 139 certified.	**Medium**	**10**
2	Financial Management	Substantial financial contribution input required from WDC.	**Very High**	**Almost Certain**	4 A	Long term development plan required to allow for early adjustments to budgeting requirements. Review of user charges and fees	**Medium**	**9**
3	Airfield Taxiways	The main taxiway along the northern side of runway 07/25 is very close to the runway. Although it does meet the CAA requirements in distance from the centre line of the runway, the boundaries are not delineated in any way, which could cause an aircraft to become an obstacle for an aircraft landing or taking off from the main runway. Rough Surface of the taxiway 07/25 which could damage an aircraft whilst taxiing.	**High**	**Possible**	3 C	Clearly mark the taxiway ends and edges using markers at regular intervals down the length of the taxiway. Resurface with new grass or a surface which is less susceptible to wear and tear.	**Low**	**15**
4	Multiple Runways & Vectors	With pilots not making clear and concise radio calls there is a risk of pilots becoming confused to the actual intentions of the aircraft making the call. Two aircraft operating on two separate vectors at the same time which could cause a conflict	**Very High**	**Possible**	5 B	Pilots to make concise and clear radio calls stating their intentions, IAW CAR's for operating within an MBZ. Pilots to use the most into wind vector at all times. AWIB Installation – Preferred runway.	**High**	**3**

No.	Risk Area/Statement	Impact on ability to deliver objectives	Consequences	Likelihood	Risk level	Risk treatment strategy	Residual Risk	Risk Priority
5	Vehicles on Airfield and Security	Vehicles are being driven around the manoeuvring area coming close to aircraft taxing in the vicinity, together with poor security fencing.	**High**	**Possible**	4 C	Develop and Airside Driving permit allowing only authorised vehicles airside. Improve airfield security fencing. Integral part of CAR 139 Certification	**Low**	**12**
6	Airfield Circuit	Risk of a Mid-Air collision between two aircraft.	**Very High**	**Likely**	5 B	Pilots to be fully brief on the procedures and the layout of the Rangiora Airfield and applicable CAR procedures before arriving or departing. Better training and oversight of recreational users.	**Very High**	**1**
		Aircraft joining the circuit incorrectly or conflict	**Very High**	**Likely**	5 C	Pilots to follow the CAA published Standard Overhead Join Procedure when joining overhead.	**High**	**2**
		Poor radio Communication	**High**	**Likely**	4 B	All pilots to make clear and concise radio calls stating their intentions prior to arriving or departing. All pilots and organisations to ensure that they are trained and aware of CAA CARs published communication procedures for operating in an MBZ.	**High**	**5**
		Lack of knowledge of the CAA rules by some elements on the airfield. Part 91, 149 and Part 103 microlights.	**High**	**Possible**	4 B	Training organisations need to put more emphasis on and application of the CAA Part 91 rules and the applicable rules on or near an airfield.	**High**	**6**
		Certain groups think the rules do not pertain or apply to them. Some private aircraft operators are very lax in following the correct procedures.	**High**	**Possible**	4 C	A change in safety culture amongst those using the airfield, in particular it is a General Aviation airfield in an MBZ.	**High**	**7**
		Two aircraft on the runway at the same time	**High**	**Possible**	4 C	Pilots to be trained and become more situationally aware of airfield traffic, also to follow the correct airfield procedures.	Medium	**8**
		Aircraft cutting in on other aircraft while in the circuit	**Very High**	**Possible**	5 B	Educating pilots in correct published circuit procedures and etiquette. Following CAR requirements for circuit joining and procedures	**High**	**4**
		Erroneous information from ADSB equipment in MBZ	**High**	**Possible**	3 C	Aircraft operating in NZRT airspace and closeness to NZCH airspace to operate only TSO approved ADSB equipment.	**Low**	**13**

No.	Risk Area/Statement	Impact on ability to deliver objectives	Consequences	Likelihood	Risk level	Risk treatment strategy	Residual Risk	Risk Priority
	Airpark Development							
7	Aircraft Activity	Putting pressure on the runways and taxiways due to extra airfield ground movements	**Medium**	**Almost Certain**	3 D	Instigate procedures for utilisation of taxiways and runways by Air Park operators	**Low**	**17**
		Unauthorised access to the airfield, especially airside.	**High**	**Possible**	3 C	Having only one aircraft access point for entry to airfield airside.	**Low**	**16**
		Increase in aircraft movements causing a greater risk in the circuit.	**High**	**Possible**	4 C	Air Park aircraft operators to be fully inducted into the airfield procedures and requirements prior to operating from the airfield.	**Medium**	**11**
8	Access to airfield from Air Park.	Unauthorised access onto airfield airside from Airpark.	**High**	**Possible**	3 C	Good fencing between airfield and Air Park development. Persons to be authorised by WDC. WDC to instigate covenants on the Air Park titles regarding access.	**Low**	**14**
9	Pressure from Developer wanting to move faster than WDC are able to.	Developer pushing his agenda without allowing WDC to go through their regulatory process	**High**	**Almost Certain**	4 C	WDC and developer to fully understand each parties' timeframes and requirements.	**Medium**	**17**

The list below are considered covered or additional identified risks or if instigated would act as part of the risk treatment strategy for one or more of the identified risks:

- Itinerant pilot operation
- Investigate circuit direction for all vectors, with possibility of a change for vectors 10/28.
- Security and access to the CRAC clubrooms as they are deemed to be airside.
- Improve the Part 149 incident reporting process and educate accordingly.
- CAA rules education to improve pilot knowledge and decision making.
- Instigate Just Culture discussions and usage by airfield operators.
- Ensure the Part 91 Right-of-way rules are fully understood to minimise conflict in the circuit.
- Get active participation by all operaors in the principals of Safety Management Systems and the application of Part 100[21]

[21] https://www.aviation.govt.nz/rules/rule-part/show/100

12.9 Determining the Level of Risk

Determining the Level of Risk						
			Consequence Criteria			
			1 – Insignificant	2 – Minor	3 – Moderate	4 – Major	5 – Catastrophic
Likelihood	A -	The consequence is almost certain to occur in most circumstances	Medium (M)	High (H)	High (H)	Very High (VH)	Very High (VH)
	B -	The consequence is likely to occur frequently	Medium (M)	Medium (M)	High (H)	High (H)	Very High (VH)
	C -	Possible and likely for the consequence to occur at some time	Low (L)	Medium (M)	High (H)	High (H)	High (H)
	D -	The consequence is unlikely to occur but could happen	Low (L)	Low (L)	Medium (M)	Medium (M)	High (H)
	E -	The consequence may occur but only in exceptional circumstances	Low (L)	Low (L)	Medium (M)	Medium (M)	High (H)

Matrix* from page 55 of HB 436:2004 issued by Standards Australia to support the Australia / New Zealand Standard for Risk Management (AS/NZS 4360)

NB: The highest consequence tripped for ANYONE "thing you value" sets THE OVERALL CONSEQUENCE (re the Risk Statement under consideration).

Consequence Criteria	**Consequence Thresholds** (Insert your agreed criteria against the things you value below)
Catastrophic	e.g. Descriptors of catastrophic consequences for 1. People; 2. Services; and 3. Reputation
Major	e.g. Descriptors of major consequences for 1. People; 2. Services; and 3. Reputation.
Moderate	e.g. Descriptors of moderate consequences for 1. People; 2. Services; and 3. Reputation.
Minor	e.g. Descriptors of minor consequences for 1. People; 2. Services; and 3. Reputation.
Insignificant	e.g. Descriptors of insignificant consequences for 1. People; 2. Services; and 3. Reputation.

APPENDICES

Appendix 1: Rule Part 91.229 Right-of-way rules

Civil Aviation Rule 91.229 Right-of-way rules

(a) A pilot of an aircraft—

(1) must, when weather conditions permit, regardless of whether the flight is performed under IFR or under VFR, maintain a visual lookout so as to see and avoid other aircraft; and

(2) that has the right of way, must maintain heading and speed, but is not relieved from the responsibility of taking such action, including collision-avoidance manoeuvres based on resolution advisories provided by ACAS, that will best avert collision; and

(3) that is obliged to give way to another aircraft, must avoid passing over, under, or in front of the other aircraft, unless passing well clear of the aircraft, taking into account the effect of wake turbulence.

(b) A pilot of an aircraft must, when approaching another aircraft head on, or nearly so, alter heading to the right.

(c) A pilot of an aircraft that is converging at approximately the same altitude with another aircraft that is to its right, must give way, except that the pilot operating—

(1) a power-driven heavier-than-air aircraft must give way to airships, gliders, and balloons; and
(2) an airship must give way to gliders and balloons; and
(3) a glider must give way to balloons; and
(4) a power-driven aircraft must give way to aircraft that are toother aircraft or objects; and
(5) all aircraft must give way to parachutes.

(d) A pilot of an aircraft that is overtaking another aircraft must, if a turn is necessary to avoid that aircraft, alter heading to the right, until the overtaking aircraft is entirely past and clear of the other aircraft.

(e) For the purpose of paragraph (d), an overtaking aircraft is an aircraft that approaches another from the rear on a line forming less than 70 degrees with the plane of symmetry of the latter.

(f) A pilot of an aircraft in flight or on the surface must—

(1) give way to any aircraft that is in the final stages of an approach to land or is landing; and

(2) when the aircraft is one of 2 or more heavier-than-air aircraft approaching an aerodrome for the purpose of landing, give way to the aircraft at the lower altitude; and

(3) not take advantage of right-of-way under subparagraph (2) to pass in front of another aircraft, which is on final approach to land, or overtake that aircraft.

(g) A pilot of an aircraft must not take off if there is an apparent risk of collision with another aircraft.

(h) A pilot of an aircraft taxiing on the manoeuvring area of an aerodrome must—

(1) give way to aircraft landing, taking off, or about to take off; and

(2) when 2 aircraft are approaching head on, or nearly so, stop or, where practicable, alter course to the right so as to keep well clear of the other aircraft; and

(3) when 2 aircraft are on a converging course, give way to other aircraft on the pilot's right; and

(4) when overtaking another aircraft, give way and keep well clear of the aircraft being overtaken.

(i) A pilot of an aircraft must give way to any aircraft that is in distress.

Appendix 2: Correspondence Avsafe Consultants to CAANZ re pilot licencing and BFR's

Recommendation to Director CAANZ

CAA Rule Part 149

Following the Swedavia McGregor report, the original Part 149 rule was first established in 1990, to cover recreational aviation activities which included the use of Microlight aircraft, Gliding, and Parachute operations and other recreational types of aviation. This covered nearly all aircraft which were not certificated as a general aviation aircraft by the manufacturer.

In those early days the microlight aircraft were generally not, the sophisticated aircraft that are in use today. They were low speed, low inertia aircraft, whereas today they are high speed composite-built aircraft which are considerably more complex and sophisticated than most of the aircraft used for training by aero clubs and flying schools within New Zealand today.

Microlights make up 26% of all powered aircraft flying in New Zealand as of 12th January 2023

Unfortunately, there are several pilots operating aircraft, whom have been issued pilots certificate from a Part 149 organisation, who think that they are exempt from complying with the Civil Aviation Rules. These few people have little respect for the CAA rules or procedures set by the airfields from which they operate. The actions of these few are putting at risk the safety of the other law-abiding users of this same airspace.

The lack of knowledge is evident, by the statements made by some pilots ie.

- *When did that rule come into force? (When the rule has been in place since 1990),*
- *I didn't know that was a rule.*
- *Part 91 does not apply to us.*
- *because we are a slow aircraft, we do not need to follow the circuit procedure as we can cut in on the faster aircraft that are out wider than us.*
- *We can land anywhere we like.*
- *BFR only took 30 minutes.*
- *Don't need to report incidents.*

103.155 Flight criteria

(a) A pilot shall only operate a microlight aircraft—

(1) by day; and

(2) in VFR meteorological minima equal to or better than those prescribed in 91.301.

(b) A pilot of a microlight aircraft shall not operate—

(1) over any congested area of a city, town, or settlement; or

(2) in controlled airspace or within 3 nautical miles (5.5 km) of an aerodrome certificated under Part 139 unless—

(i) the pilot has gained a pass in the air law examination required by 61.153(a)(6)(i) or an equivalent examination; or

(ii) the pilot is under the direct supervision of the holder of a microlight pilot instructor certificate who meets the requirement of paragraph (b)(2)(i)

The above Part 103.155 rule suggests that a microlight pilot does not need to pass a Part 61 air law examination to be able to fly a microlight, only if they wish to fly in controlled airspace or within 3 nm of an aerodrome certified under Part 139.

This I believe is a part of the problem with some microlight pilots in that they have very little knowledge of the rules of the air, and therefore are putting themselves and many other aviators at risk.

I recommend that the CAA reviews the process of issuing microlight pilot certificates to bring it in line with the CAA Part 61 requirements for a Private Pilot's License.

The standard of examinations, flight instruction and flight testing appear to be of a lesser standard from Part 149 organisations than that of the CAA Part 61 requirements.

Suggest that all pilots who intend to fly powered microlight aircraft are

- instructed by a flight instructor who has completed a CAA approved Instructional Techniques Course,
- that they sit the ASL Private Pilots examinations as per a Part 61 licence holder would be required to do,
- and that the Flight Test and BFR be conducted by a CAA approved Flight Examiner or Instructor.

This then makes the standard the same for all pilots flying powered aircraft and would surely lift the standard of knowledge and application of the rules, as they are all flying in the same airspace.

Appendix 3: Request from CAANZ for an Aeronautical Study of Rangiora Airfield

CIVIL AVIATION AUTHORITY OF NEW ZEALAND
Te Mana Rererangi Tūmatanui o Aotearoa

Mr Grant Macleod
Green Space Manager
Community and Recreation
Waimakariri District Council
Private Bag 1005
Rangiora 7440

7th April 2022.

Dear Grant

Requirement to provide an Aeronautical Study - CAR139.21.

In February 2022 the CAA met with representatives from Waimakariri District Council (WDC) and Users of the Rangiora aerodrome. The discussions centred on the airfield being recently designated under the Council District Plan and the short term and long-term plans (LTP) for development of the non-certificated aerodrome operated by WDC.

The Director Civil Aviation (DCA) now considers there are reasonable grounds for a significant change to occur that may affect the operation or use of NZRT. Accordingly, and as per CAR 139.21(a)(1) the DCA is now requiring the Waimakariri District Council (operator of NZRT) to conduct an aeronautical study (*now referred to as the study*). The study must contain sufficient information to enable the DCA to identify and assess the risk to aviation safety of the operation of the aerodrome as per requirements of CAR 139.21(d)(1) &(2). The study scope should be inclusive of, but not limited to:

-an assessment of existing aerodrome infrastructure, and;

-an assessment of all proposed changes to existing aerodrome infrastructure ensuring any new aerodrome infrastructure provides a safe and efficient operational environment for aerodrome users, and;

- consideration of the requirement to provide RESA acceptable to the Director if regular passenger air transport service (RPT) with aircraft having a certificated seating capacity of more than 30 passengers commences, and;

-an assessment of all applicable Civil Aviation Rules to ensure operations at the aerodrome remain compliant throughout, and;

-meaningful consultation with Users and Stakeholders.

The completed study must be provided to the DCA no later than 24 December 2022. After submission of the study the DCA may require further information to be provided before considering if the risk to aviation safety is such that it must be managed under the authority of a qualifying aerodrome operator certificate.

Level 15, 55 Featherston Street, Wellington 6011 – PO Box 3555, Wellington 6140, New Zealand
Tel: +64 4 560 9400, Fax: +64 4 569 2024, Email: info@caa.govt.nz, Web: www.caa.govt.nz

New Zealand Government

Prior to the Determination the DCA will conduct a technical assessment and review of the study as per the requirements of CAR139.23. This is a chargeable activity. If a Determination of qualifying aerodrome is to be advised it will be provided in writing as per the requirement of CAR139.25.

I will be the point of contact for any further queries.

Kind Regards,

Nick Jackson

Nick Jackson
Technical Specialist (Aerodromes) Aeronautical Services Unit

Appendix 4: Meeting Minutes from the Stakeholder Meetings at Rangiora Airfield

Meeting Minutes

Date & Time: Tuesday 6th December 2022 at 4pm

Meeting Type: Presentation

Location: Rangiora Airfield

Attendees: Steve Noad (Chair), Grant MacLeod (WDC), Mike Groome (Avsafe Consultants Ltd), Karen Groome (Avsafe Consultants Ltd), Carlton Campbell (CAA),

Some 60 Airfield Users and Interested Parties

Meeting purpose:

Earlier presentation & consultation meeting (1)

Items:

Steve introduced himself and everyone in the room, then handed over to Grant who advised the purpose of the meeting was CAA requires an aeronautical study to be done due to the number of movements in the airfield, number of incidents reported and the mix of aviation types and runways.

Mike gave an introduction on himself and business and his wife Karen.

Triggers for aeronautical study: number of aircraft moves, types and complexability of movements, general aviation training, helicopters, different variety of aircrafts, aerodrome layout, runways (3), taxiways, operations of neighbouring airfields, number of incidents, aircraft movements and aerodrome structure.

Identify any risks if any and how these can be mitigated.

Current situation, its very congested, the river up here, hangers plotted there, taxiway, out there, there is no markers on where the taxiway is. Lucky being a country airfield, has 3 runways, but this can also create problems of people trying to land.

If you land, just turn right and get off the runway, to allow the person behind you to land, saving them having to go around again.

Standard overhead join is recommended.

Helicopters must stop and have a look both ways before going over the runway.

Make the radio calls on final, one of the big issues is people not making radio calls. When the airspace is busy, tell people where you are, you are required to make a call, this is mandatory.

The runways that are used, 07 is the most used runway, then 25 is the next most used.

3 airfields reasonably close, Loburn, Fernside and Bruce's at Barradale, tracking through there, most of them go to the North (Bruce's one goes to the South, it's not registered on the map. Private runway.)

Shall all be on the same radio frequency, must make the call prior to the entering the NBZ and once you are in it.

Aircraft movements, 2018 just over 41,000, 2019 – 44,000, 2020 – dropped back (Covid), 2021 – 48,000, 2022 – 47,000 (so far), hit 50,000 end of January.

Trigger point for the CAA, is 40,000 movements a year, the director may require the airfield to become certified, doesn't change anything from an operator's point of view, but for management they then have to appoint a CEO, Safety manager, aerodrome manual, Safety management system in place, design of runways.

Allows CAA to have oversite of the airfield in standard audit of the airfields.

130 microlights

Slide showing the top 6 operators, making up 52% of movements.

Incidents around airfield, reported to CAA, not included one's report to Rangiora Advisory Group:

6 accidents reported:

- Aerodrome incidents (running over cones).
- Air space – includes aircraft transiting through.
- Birds
- Defects – aircraft defects – not an airfield issue, aircraft matter only.
- Helicopter and plane near misses
- Not making radio calls
- 8 incidents on the aerodrome, people landing on closed runways.

Some of them are not all Rangiora Airfield, when an incident is reported, they are tagged to the closest airfield.

24 of the incidents are microlights, 38 are airplanes and 8 helicopters.

Rangiora has 2 circuits going one way and another going the other way, for an out of towner it can be quite confusing. People should do a thorough briefing before they come here.

Daniel Smith development, waiting on the Council to give consents, the plan is to turn part of his block into an air park, going to increase the movements 10,000 a year. One access from air park onto airfield, everyone comes out the same way and goes back the same way. It will be good for Rangiora and for this airfield. Mix of activities on the airfield.

Council owns 3 blocks of land; Council can use this land as they wish.

Questions asked:

Council owns airfield and Council & RAAG. team look after it, how do the people see the airfield is managed and are they doing the right thing? Good or bad feedback.

Movement is one landing, touch and go is two movements. Take off is one movement.

Data is from the AIM system the airfield has, category and type of aircraft.

General Aviation is a minor problem with the microlight people,

Runway 10 has the same movements as 25. People believe there is something wrong with the data.

Used to have a take-off fee, they have dropped that, each day you use the airfield is $10, used to fly each day but I can't now because it would cost me $3,650 on landing fees. What about a fee for the year for $600.

This airfield is cheap compared to other airfields around the country. Different systems to everyone around the country, others are doing it at $10 a landing. Client in Taupo complained about their rate, went somewhere else and realised the fees were more expensive, so went back. Queenstown takes airways and airport fee is just under $50 to operate there. Most of the aerodromes are trying to keep it between $10-$15 per landing. If you go away and are less than 20 minutes it's the one charge, if you are longer than 20minutes its another charge.

Incidents and problems in the circuit, any plans that Council are thinking of to fix it. No plans to reduce the vectors, the strip itself is hard up against the boundary, their will need to be a deal done with Daniel Smith to move the strip.

Consideration to an all-weather runway, looking at plans on how to improve the runway and taxiway, may be something simple or might not be. The current runway is 60m wide, a lot wider than that is required (only 30m is required). Re-grassed one side of it and could still use the other side and swapped over.

Use it is getting, why can't it be split into 3 sections, so still using 30m of it, up to Steve etc. on what they wish to do, there is all sorts of ways to do it.

Airspace infringements are just put to Rangiora as the closest airdrome, doesn't look good for Rangiora. 2 of them were helicopters from Christchurch. Study that needs to be done, looks at space around the whole airfield.

Any record of incidents reported to SAC – none reported to SAC. If you have an accident you are obliged to report it.

Displaced thresholds something there will be a recommendation on? It is being looked at right now, trying to get the landing plate updated, will all be to do with the trees/hedge at the end and who can clear it. If there are other obstacles down, there it might go back in. Rules used to say you had to chop it down, these days you need to ask nicely. Most neighbours around airfields are pretty good.

If CAA did dictate to become a certified airfield, what changes would have to happen? It would be security fencing, the airfield itself, the runways would be surveyed to make sure the taxiway is the right distance from runways, there are ongoing costs to it. Under safety management system required for reporting of incidents to owners/operators in this case, Council. Will be to see if there are any trends developing from the airfield. The new manager will take care of this.

Had to deal with the occasional grumpy neighbours, opportunity to introduce covenants should be done, to help protect the airfield, the commercial side of it, that could present a problem for people who are not familiar with Rangiora. Radio calls on a really nice day at the weekend, if increasing the number of airplanes, the radio calls are very busy, how do we deal with that, do we have a separate frequency for the airfield and one for general commentary.

Traffic from Rangiora to Fernside to the transit lane is an issue, has come close to another aircraft when in my circuit, very messy bit of airspace and includes aircraft coming out of Christchurch, a lot of different frequencies, an issue between airways and CAA. Needs to keep everything as simple as possible, don't want to complicate it.

The number of movements recorded, believe there is too many radio calls, when you look at the incidents reported it's due to lack of radio calls.

Would it help if there was an AWIB Automatic weather information broadcast, gives you the weather, runway that's favoured, cloud base, messages on it, put it onto the system, runs 24 hours a day, all by itself. Visitor out of town would know all of the information they required.

Not a control tower, just giving you information.

Cost is about $1,600 a month, an option to think about and money well spent. CAA might say you need a Unicom in here, its $50,000 a year to install and $80,000 to run it. Costs then goes to the pilots and aircraft owners, doesn't give you as much information as the AWIB.

With aerodrome system, will need something to stop the public walking around, if aircrafts have people arriving, they will need to escort them to the hangers. On open days, can have a few thousand people here, but that is an event so would need to let CAA know it's happening, can rope things off, everything can be done, just needs to go through a process.

Meeting closed 5:15pm.

Meeting Minutes

Date & Time: Tuesday 6th December 2022 at 7pm

Meeting Type: Presentation

Location: Rangiora Airfield

Attendees: Steve Noad (chairperson), Grant MacLeod(WDC), Mike Groome (Avsafe Consultants,) Karen Groome (Avsafe Consultants), Paul Williams (WDC) Carlton Campbell (CAA)

Some 60 Airfield Users and Interested Parties

Meeting purpose:

Later presentation & consultation

Items:

Mike information gathering presentation regarding a study.

CAA requires an aeronautical study to be done.

Mike gave an introduction on himself and business and his wife Karen.

Grant advises the letter we received from CAA and why we needed the study to be done, and if Rangiora is to become a certified airfield or not.

Triggers for aeronautical study: number of aircraft movements, types and complexity of aircraft movements, general aviation training, helicopters, different variety of aircrafts, aerodrome layout, runways (3), taxiways, operations of neighbouring airfields, number of incidents, aircraft movements and aerodrome structure.

Structure Airfield owned by WDC, managed by Grant currently, until Airfield Manager employed and started.

For a pilot visiting it can be confusing, left- and right-hand circuits, if briefing done right should be ok.

Not a lot of space here for new hangers, ones that are here, they have just been placed here, not in good locations, made difficult to allow for taxiway, not a lot of room to manoeuvre around.

The runway 60m wide, a lot wider than that is required (only 30m is required).

Standard overhead re-join, should be used all the time. CAA does not allow it to be mandatory, but highly recommended.

Helicopters come and go at low levels, should be stopping and checking the active runway, can't guarantee everyone is listening to the radio calls.

No parachute operations.

Radio calls on final approach, very busy to get the space on the radio but take time and make sure you get the call out.

The data on runways, reporting system airfield users, 07 most active runway, followed by 25.

18,000 odd movements last year, not used as much this year, 40,000 odd movements last year. Up to 48,000 movements so far this year.

Air space around here uncontrolled, air space above Rangiora is controlled. Everyone should be on the same radio frequency.

3 airfields reasonably close, Loburn, Fernside and Bruce's at Barradale, tracking through there, could go right over top of them and not know, if on the radio you should be listening and then you would know.

Aircraft movements, 2018 just over 41,000, 2019 – 44,000, 2020 – dropped back (Covid), 2021 – 48,000, 2022 – 47,000 (so far), hit 50,000 end of January. One of the trigger points because of number of movements.

Certificated, qualifying certificated, certain requirements, slightly lesser than bigger airfield like Christchurch, Timaru etc. Still has to have appointed CEO, Safety manager, aerodrome manual, Safety management system in place, design of runways. Wont effect users of the airfield.

Allows CAA to have oversite of the airfield in standard audit of the airfields.

40,000 movements are well exceeded right now. Movements are jumping up quite a lot this year.

Aiim system records all New Zealand & Australian registered aircraft.

Slide showing the top 6 operators, making up 52% of movements.

Incidents around airfield, reported to CAA, not included one's report to Rangiora Advisory Group:

6 accidents reported:

- Aerodrome incidents (running over cones).
- Air space – includes aircraft transiting through.
- Birds
- Defects – aircraft defects – not an airfield issue, aircraft matter only.
- Helicopter and plane near misses
- Not making radio calls
- 8 incidents on the aerodrome, people landing on closed runways.

24 of the incidents are microlights, 38 are airplanes and 8 helicopters.

Must consider the overhead join.

Very helpful would be an AWIB, gives you the weather, runway that's favoured, cloud base, messages on it, put it onto the system, runs 24 hours a day, all by itself. Visitor out of town would get to know all of the information they required.

Part of the study - needs to consider the risks of runway. Also takes into consideration what Daniel Smith is trying to do to. If and when it goes ahead, it will add approximately another 10,000 movements a year. Would be great for the area but is going to create a lot more movements.

Questions asked:

Council owns airfield and Council & R.A.G. team look after it, how do the people see the airfield, good and well kept? Good or bad feedback.

Doesn't feel as busy as the numbers, got a long way to go to get to that point. Often fly here at 6pm on Sunday night and only 2 planes out. Are you planning on taking 25 runway out (Mike confirmed No intention to take runway out).

Really handy having the extra runways there, in case you need to make an emergency landing.

Mike advised there was discussions about making the main runway longer, determined by the trees and obstacles at the end. Haven't had a good look at it for a while. No requirements to have the runway longer.

Looking at areas proposed by Daniel Smith, has key areas, approach to both of those ways, he is right there, is that really very good for Council to look objectively at it say this is a good idea, no one wants to see it goes bigger than the size it is now. He will just sit there and say, 'how much'. Where is that taxi way going to come out? Would you cross the runways Would need to be taxiways to allow from the air park through there. A whole lot of factors in there, don't know what final plans are going to look like.

Would have to have taxiway right down the end, so not obstructing runway, when plan comes out will need to allow for taxiway.

Have all these hangers here but unable to expand. Waiting list for people to put hangers up.

Movement is one landing, touch and go is two movements. Take off is one movement.

Be good if they could be separated out into another category, look at as a separate issue (training aircraft).

Training touch and goes are high risk, needs to be counted.

Data is from the Aiim system the airfield has, category and type of aircraft.

Community, rural and small airfields spread around the place, opportunity to extend, don't turn it down. Specific aircrafts require sealed runways. Huge cost in putting down sealed runways.

(Carlton) Standard overhead re-joining, CAA reluctant to make it mandatory, why is that? If the data is indicating that already, why not be proactive? 4 options you can do, head down wind, pilot's decision, low cloud base, can't do an overhead joining when low cloud base, doesn't permit a mandate for one or the other, pilot's decisions. At the moment a project with CAA and the plates around the country and aware of the variations and messaging around over head join, parachuting and winching. Individual aerodromes requesting their own texts, need standard texts.

As per the presentations earlier on in the year, if you know the conditions of the runway, wind conditions and know the traffic, you can join on one of the legs, in absence and lack of that knowledge appropriate to do the overhead join, the busier the airfield gets, the more the recommendation the overhead join.

(Christchurch Helicopters), 90% near misses are in the overhead re-join.

(Carlton) Difference between helicopter and airplane is within the rule, everyone who is in the pattern has to conjoin with the left- or right-hand pattern, helicopters can either join the pattern or avoid it.

(Carlton) Always approach the field with the field on the left. Doesn't matter which corner of where you come from, always approach field from the left. If there are 2 aircrafts, it should be a follow the leader type thing.

Runway 10, by the hangers, habit with their syndicate, whether it's tying the plane or taxiing it, taxi around it, a lot of people carry on up the runway. On the days when the wind isn't good, which happens here, it could create an incident, for the sake of cutting the fuel, a lot better to go around it than across it.

Why is it that data on accidents and incidents, didn't reflect the largest user of the airport, because they use a different reporting system. Based on CA005, what about Microlights? They are not required to report incidents. Only data got from CAA. RAANZ people who look after Microlight incidents, their data advises they have 6 incidents reported. Not going through the right channel to get to where it needs to. Not reporting their incidents correctly. Data as of 5pm the night before presentation.

Re-entry process is a nightmare and its to hard, CAA said to us, as a group, don't have data, can't track this stuff, conversation going on right now between CAA and 149's, improving and reporting incidents, determine how stringent their re-entry is and reporting.

(Carlton) Things to be careful about with the CAA 005, people think they have weaponised it, if you don't do what your supposed to do, that's not what the systems it's about, it's about keeping the regulator informed, fault with design of their aircraft, reporting point in wrong place, creating a problem for air space congestion, purpose of CAA 005 is trending information so regulator can take appropriate interventions where it's necessary, not used as a weapon against somebody or an organisation that you have a problem with. Part of the issue for Rangiora, some of the attention that is brought on for this aeronautical study is because of the fact there is a reasonable degree of non-compliance by a small

proportion of the population, really its about the whole aviation community, doing their upmost to lift everybody, risk at the moment, don't look after managing this place safety then the following generations wont be able to enjoy the privileges because the community and regulation will come in with oversite and regulation that they don't want, up to us as the aviation community to pull heads in of those individuals who operate outside the box that we loosely call the system.

If you say and do as many audits or surveys and certify this airfield, how is that going to change and make any difference, all of it comes back to skill base and compliance, none of these rules will make a difference.

Making too many rules doesn't fix the problem, about education, about the standards that our organisations put on to those that are a part of our organisations that our instructors are putting good standards in there as well, so retain the privileges you have at the moment, rather than comprising ourselves because of 1 or 2 people who are a bit selfish because they don't fit the system but we all share the same airspace, so we all need to follow the rules.

How do you fix where people are on the wrong channels or when their BFR comes back or retraining, they have had their licence for a long time.

Part of that should be responsibility of the instructors doing the BFR, to make sure during the BFR experience putting through all the operational activity and looking at persons logbook. Most of the requirements are on the instructors to try and uplift it.

CAA needs to look at Compliance and uplift it, some parts of the country don't need a BFR or done within half an hour. (A lot of people disagreed with this comment).

(Carlton) This upcoming year, what CAA are trying to do, starting with an examiner seminar where examiners are renewing instructor's privileges, work on the problem areas, bringing those back in now, unless we get another disruption.

Automatic frequency, most of the aircrafts have dual frequency or radios, turn it to Rangiora frequency 20 miles away, they come in here, 119.1 primary frequency, they never even made a radio call, actually they did, they made it on 119.1. Short brief tone, if don't get that tone makes them think oh no! They are monitoring the second channel, so making the call on the wrong frequency.

What rules are in place people are still going to make mistakes (human error), about our situational awareness, going to happen as people make mistakes. If someone does make a mistake, just do it as a friendly thing. The way you approach the person that makes the mistake is not about pointing the finger. If someone has done something, because we have such a large variety of aircrafts doing different speeds and circuits, some of the general aviation guys seems to be out quite a far way and smaller aircrafts can turn a lot shorter and tend to cut the aircrafts further out off. Technically in the circuit rules says you shouldn't be passing. Each is doing around a 6-minute circuit.

This meeting is about aeronautical circuit, its about the operators, not the airfield or an airspace problem, it's a pilot ability pilot problem, doesn't matter how many rules you make.

Daniel Smith does have a plan for a helicopter to come and go from his site.

In the bigger picture, helicopters are included.

Education side of things would really help out at the Rangiora Airfield. Instructors need to have experience in driving all types of aircrafts. Training standard, everyone needs to lift their game and stop

making their own rules up. It comes down to what you do every day. Small group of people that are creating a problem, that now and again let the side down, it's a risk with their own lives and people around them. Everyone trying to do the right thing and on the radios are talking to each other, it's the way it should be.

Breaking it down the number of incidents compared to the number of movements, it's not that bad, it's the severity of the incidents. It is over the average of what it should be. Higher than normal. On the data, get the plane rego number, day and time, doesn't include pilot's details.

A big help would be CIF and chief pilots of the organisation get together and have a chat about any problems the other might have.

From an airfield perspective, the approach on the 25, if its bumpy, trees are quite tall and road underneath, planes potentially on the runway waiting on you, can get busy and a number of distractions, can be quite close to an aircraft incident. Regarding tree removal these days you have to ask the neighbours nicely if they can cut the trees down.

Radio calls on finals, sometimes tricky to make them, consideration to change the call out system to what they have in the Mt Cook region, use the last 2 letters of their registration, there's is a very busy airspace, they are mostly experienced operators though.

The major consideration is a training airfield, standards procedures are the only way, the re-join is going to have to be explained a lot more times. New posters from CAA show the right-hand turns.

Blown away with the number of incidents, is this information available, some sort of a briefing. The new airfield manager, part of this role will be to collate this information.

Some of the information is people having to divert to Rangiora due to the weather and they haven't briefed themselves on the information for the airfield.

Working through a master plan exercise, separate to aeronautical study, the master plan has been delayed due to waiting for airfield manager to start, going to be a consultation process, talking with advisory group and users on the airfield.

Meeting closed at 8:30pm.

Appendix 5: New Southern Sky

Guidance for Complexity and Density Considerations - in the New Zealand Flight Information Region (NZZC FIR)

Introduction

1. The Civil Aviation Authority is responsible for enabling a safe airspace environment for all commercial and recreational aviation activity, and protecting the public interest through a reliable and responsive aviation regulatory system.

2. As new technologies are introduced into the aviation sector and commercial and private user demand for airspace grows, the complexity and density of the operating environment will continue to evolve. A balanced view of the whole of system will enable the most efficient use of airspace consistent with the safe operation of aircraft and the expeditious flow of air traffic.

3. This document must not be applied as a stand-alone document, but as guidance material to support the requirements under the Civil Aviation Act, Civil Aviation Rules, National Airspace Policy of New Zealand, National Airspace and Air Navigation Plan, ICAO Annexes and Documents, and relevant Policy material. The principles to follow in decision making on airspace matters are as outlined in the National Airspace Policy of New Zealand.

4. The application of this document to diverse operational environments is to support both business as usual, as well as contributing to potential policy, regulatory, and infrastructure considerations under the umbrella of New Southern Sky (NSS) programme.

Authority

5. The Manager Aeronautical Services Unit is the owner of this document and is responsible for the regular review and maintenance of this document. The information and guidance outline within this document does not override the specific decision making functions, responsibilities and processes of the CAA as independent regulator. It will also adhere to the principles articulated within the Regulatory Operating Model and the requirements for consultation set out in Rule Part 71, which govern the designation of airspace.

6. The Complexity and Density Considerations document will provide visibility of the decision making process that may be required as the aviation system evolves in response to the introduction of new technologies. This includes but is not limited to regulatory decisions relating to:

    a. Airspace design,

    b. Air traffic management,

    c. Aerodrome infrastructure,

    d. Aircraft equipment requirements,

    e. Conventional and Global Navigational Satellite Systems (GNSS) based infrastructure

    f. Security and resilience.

7. In creating visibility of these considerations, it will also provide a platform for future project planning by industry and other government agencies as appropriate. The purpose of this platform is to guide and inform project documentation such as business case proposals and associated safety studies.

8. When industry planning documentation requires regulatory input, the CAA expects that any justification or supporting arguments will take into account the guidance contained within the complexity and density considerations document as the situation dictates. In simpler terms, on a case- by-case basis, some considerations may or may not be applicable dependent on the size and scope of any potential aviation proposal. Moreover, some elements of complexity and density may have more or less significance when considered in different contexts.

Guidance

9. A balanced view of 'whole of system' requires consideration of the various elements that contribute to the complexity and density of a piece of airspace. As each area of airspace is unique in its own right, a one-size fits all approach or a prescribed formula is likely to produce an adverse outcome. This guidance material is a tool to assist decision making in an area in which there is no fixed answer.

10. In considering each of the elements from a complementary perspective, for each unique airspace, it increases the probability of achieving the most appropriate safety outcome, with unacceptable risks reduced to an acceptable level. Using traffic volumes as the sole consideration could result in an adverse outcome. It should also be noted that some elements may not be applicable to a given area. The following high-level principles will assist in assessing complexity and density:

    a. Fit for purpose: what are we trying to achieve?

    b. Appropriate for the airspace: tailored to meet local requirements

    c. Risk-based and safety-focused: decisions are made proportionate to the risk

    d. Equitable: considers all users, including the travelling public

    e. Whole of system: considers wider impacts on the local environment and the aviation system as a whole

    f. Consistent: achieving a consistent level of safety across different environments

11. It is important to use relevant and reliable sources of information to enable the best possible outcome, and this should consider both current and future requirements. The quality of the information is as important as the range of information. This can include, but is not limited to:

    a. Movement data;

    b. ATS records from flight plans and flight progress strips;

    c. Occurrence data;

    d. Previous assessments;

    e. Airspace modelling;

    f. Industry intelligence;

    g. Mapping information including geography, built-up areas, closely located aerodromes and n

    h. Meteorological records;

    i. Network resiliency;

    j. Consultation with stakeholders and airspace users;

    k. Any other relevant information.

12. The use of anecdotal evidence, assumptions or personal judgement must be clearly stated as such, and include an explanation of the logic used.

Initial assessment

13. There are a number of different scenarios that may result in the requirement for an assessment, the most common would be as the result of an aeronautical study. At the completion of an assessment by the CAA, the CAA will determine an initial outcome or outcomes. These outcomes should avoid a fragmented air navigation system and may include the determination of or a change to: the designation or classification of airspace; air, ground or space based communication, navigation or

surveillance requirements; instrument flight procedure and route development; and required services including air traffic control, systems or technology.

14. After the selection of one or more potential solutions, further analysis is required to determine the future impact of any proposed changes on each of the elements including future predicted traffic. This may necessitate further review and may alter outcomes from the initial findings.

15. For example, if an initial assessment suggests a change from controlled airspace to uncontrolled airspace however, the assessed impact of a change to the airspace designation is likely to result in significantly increased VFR traffic numbers, the end conclusion, based on the predicted outcomes, and may determine that the most appropriate outcome is not to change the airspace designation.

Complexity and Density Table

16. The table below provides guidance on elements to consider in the assessment of complexity and density and includes suggestions for classifying an element as less or more complex or dense. The intention is to apply this within the NZZC FIR.

17. For simplicity, a four-scale rating system has been used as a holistic indicator of the level of complexity and density within a specific aviation environment. The suggested classifications for each element range from 0 – 3, with '0' likely to be of little or no consequence and likely to require less examination in the decision-making process and '3' likely to have higher consequence requiring greater examination in the decision-making process. Where, due to differing operations, an element can be classified a number of ways, the assessment should provide the context and how the classification of that element was established.

18. A balanced view of 'whole of system' will form the basis of any assessment which will include an examination of the elements, with those elements deemed likely to have a higher consequence requiring greater examination in the assessment.

19. In most cases, the listed elements do not include specific values such as traffic volumes as this will vary from location to location. For example, a specific volume of traffic may exist in a low complexity environment, that same volume of traffic might be "significant" when considered within the context of a more complex aviation environment.

Unit Procedures and Complexity and Density Considerations

20. Existing unit procedures form part of the internal regulatory function for the determination of aviation requirements, for example, airspace changes and ATS service requirements, amongst other things. In making determinations, the CAA will apply the normal regulatory process and procedures including Aeronautical Services Unit procedures, and as the situation dictates, the principles of complexity and density considerations articulated within this document.

21. Notwithstanding, the CAA will also consider other relevant and appropriate data, analyses and guidance information from domestic and international sources such as ICAO and other foreign regulatory agencies, as well as broader aviation industry experience both foreign and domestic.

	0	*1*	*2*	*3*	*Score's*
IFR - forecast annual traffic volumes	**Nil**	**Low traffic density**	**Medium traffic density**	**High traffic density**	**0**
VFR – forecast annual traffic volumes	**Nil**	**Low traffic density**	**Medium traffic density**	**High traffic density**	**3**
Other – forecast annual traffic volumes (e.g. parachuting, gliding, adventure aviation operations, frequent aerial topdressing, low-flying, UAVs/RPAS, rockets, etc)	**Nil**	**Small variation or low volume of other aviation activities**	**Medium variation or medium volume of other aviation activities**	**Large variation or high volume of other aviation activities**	**3**
Aerodrome traffic density (Annex 14: Note 1: The number of movements in the mean busy hour is the arithmetic mean over the year of the number of movements in the daily busiest hour; Note 2: Either a take- off or landing constitutes a movement)	**Insignificant**	**Light. Where the number of movements in the mean busy hour is not greater than 15 per runway or typically less than 20 total aerodrome movements.**	**Medium. Where the number of movements in the mean busy hour is of the order of 16 to 25 per runway or typically between 20 to 35 total aerodrome movements.**	**Heavy. Where the number of movements in the mean busy hour is of the order of 26 or more per runway or typically more than 35 total aerodrome movements.**	**2**
Peak instantaneous aircraft count, this considers airspace traffic density at peak times	**Nil**	**Low concentration of peak traffic or limited peak traffic periods**	**Medium concentration of peak traffic or some peak traffic periods**	**High concentration of peak traffic or frequent peak traffic periods**	**2**
Variety of performance categories and characteristics	**All aircraft of similar performance**	**Aircraft of same or similar performance, with occasional variation**	**Regular aircraft in one or two performance categories**	**A wide variety of aircraft performance**	**3**
Aircraft navigation performance and predictability	**Aircraft have sophisticated navigation capability, performance and manoeuvrability**	**Low volume of aircraft have limited navigation capability, performance and manoeuvrability**	**Some aircraft with limited navigation capability, performance and manoeuvrability**	**Large number of aircraft with limited navigation capability, performance and manoeuvrability**	**3**
Aircraft navigation and manoeuvrability (for example, an aircraft flying RNP-AR will have limited manoeuvrability)	**Aircraft have sophisticated navigation capability, performance and manoeuvrability**	**Low volume of aircraft have limited navigation capability, performance and manoeuvrability**	**Some aircraft with limited navigation capability, performance and manoeuvrability**	**Large number of aircraft with limited manoeuvrability**	**3**

Neighbouring airspace designation and classification and interaction with area under review	**Nil**	**Small impact of proximity airspace designations/classifications**	**Medium impact of proximity airspace designations/classifications**	**Large impact of proximity airspace designations/classifications**	**3**
Terrain, including its influence on inflight conditions	**Flat terrain**	**Undulating terrain with limited impact on flight conditions**	**Terrain which impacts inflight conditions**	**Mountainous terrain creating significant mountain wave activity or other significant inflight conditions**	**0**

	0	*1*	*2*	*3*	*Score's*
Geographical features affecting navigation, these may impact IFR and VFR flights differently therefore context is required	**Low number of significant geographical features**	**Some navigational limitations as a result of geographical features**	**Navigational limitations as a result of geographical features**	**Geographical features which significantly influence navigation (e.g. mountains affecting flight manoeuvrability)**	**0**
Meteorological conditions	**Insignificant local or regional weather phenomena**	**Some local or regional weather phenomena**	**Significant local or regional weather phenomena**	**Significant and extensive local or regional weather phenomena**	**2**
Availability of meteorological information	**All required meteorological data available**	**Some meteorological data available**	**Limited meteorological data available**	**No meteorological data available**	**3**
Aerodrome	**Non-certificated aerodrome**	**Certificated aerodrome**	**Secondary/Other International aerodrome** **(AIP AD 1.4 – 1: NZDN, NZHN, NZPM, NZRO)**	**Primary/Major International aerodrome** **(AIP AD 1.4 – 1: NZAA, NZCH, NZWN, NZQN)**	**0**
Instrument Runway	**Other runway**	**Non-precision approach runway**	**Precision approach runway, category I**	**Precision approach runway, category II or III**	**0**
Physical aerodrome capacity, (note: this may vary with changing weather conditions)	**Not applicable**	**High capacity compared to forecast volumes**	**Medium capacity compared to forecast volumes**	**Low capacity compared to forecast volumes**	**2**
Aerodrome layout including runway configurations and heliports	**Single runway, low traffic density**	**Multiple runways, including parallel and crossing runways, low traffic density**	**Single runway, high traffic density**	**Multiple runways, including parallel and crossing runways, high traffic density**	**3**
Aerodrome traffic patterns, this includes aerodromes in close proximity and traffic **in the vicinity, aerodrome operator limitations, day/night activity.**	**Insignificant traffic**	**Simple aerodrome traffic patterns**	**Complex aerodrome traffic patterns from a single aerodrome**	**Complex aerodrome traffic patterns from multiple aerodromes**	**3**
The type of air traffic services provided including the separation minima applied	**Class G: no ATS service**	**Class G: FIS**	**Class D: ATC**	**Class A,B,C: ATC**	**0**

Surveillance – type and coverage	**ADS-B surveillance supported by SSR/PSR or equivalent**	**Full surveillance using one technology (e.g. ADS-B or SSR)**	**Limited surveillance coverage**	**No surveillance coverage**	**2**
Type of air-ground communications	**Not applicable**	**Terminal area direct ATS-pilot communications and surveillance**	**En-route direct ATS-pilot communications and surveillance**	**Remote en-route HF or CPDLC outside the coverage of ground-based navigation aids**	**0**

	0	*1*	*2*	*3*	*Score's*
Connectivity of En-route ATS route system: this considers the importance and structure of the ATS routes within the airspace	**No ATS routes**	**Limited ATS route structure**	**ATS routes connecting certificated aerodromes**	**ATS routes connecting international aerodromes**	**0**
The start or end of significant phases of flight (climb, descent, change of direction, etc)	**Nil**	**Limited flight paths with significant phases of flight**	**Some flight paths with significant phases of flight**	**Multiple flight paths with significant phases of flight**	**3**
Impact of noise contours and other environmental considerations	**No concerns**	**Low volume of concerns or complaints**	**High volume of concerns or complaints**	**Environmental or other court ruling**	**1**
Inflight delays	**Nil**	**Minor delays experienced**	**Medium delays experienced**	**Major delays experienced**	**0**
Search and rescue (SAR) capability, this may include access, equipment, etc	**High SAR capability**	**Some SAR capability**	**Limited SAR capability**	**Nil**	**2**
National security and resiliency requirements	**Nil**	**Low significance**	**Medium significance**	**High significance**	**0**
Occurrence data and history	**No occurrences**	**Low risk identified**	**Medium risk identified**	**High risk identified**	**3**
Other hazards and threats deemed relevant to the assessment	**Nil**	**Risk assessment determines low risk**	**Risk assessment determines medium risk**	**Risk assessment determines high risk**	**3**
Ground-based navigation aid coverage	**Full coverage**	**Partial coverage**	**Limited coverage**	**No coverage**	**3**
Availability of conventional ATS routes	**Full coverage of conventional ATS routes**	**Some availability of conventional ATS routes**	**Limited availability of conventional ATS routes**	**No conventional ATS routes**	**3**
Ground-based navigation aid coverage and impact on route operating limitation (ROL) of conventional ATS routes	**Not applicable**	**ROL < 7,000 ft**	**ROL 7,000 ft ≤ 12,000 ft**	**ROL > 12,000 ft**	**0**

TOPIC:	**Rangiora Airfield** **Interest Groups Representation**
TO:	**Waimakiriri District Council** **Grant MacLeod** **Greenspace Manager**
FROM:	**Mike Groome** **Avsafe Consultants Ltd**
DATE	**01 March 2023**

AVSAFE CONSULTANTS

1. Structure of Airfield Governance Group

Under Option 2, Council Controlled Organisation (CCO), the Rangiora Airfield Authority, would become a standing committee of Council and therefore are appointed to look after the Council interests, not those of a particular individual or group interest.

They are no different than a board of directors who have a duty of care to the organisation.

The makeup of the Rangiora Airfield Authority should be a balance of people with governance experience as well as having experience in their area of expertise and interest.

Because there is such a vast array of different groups on the airfield, it is not feasible or prudent to have a representative from each group on the Airfield Authority, as these people generally have a different agenda to what the council may expect. This then turns into a non-productive group who are always pushing their own agenda.

The Rangiora Airfield Authority should be no more than 6 people.

Suggested Rangiora Airfield Authority makeup. This Committee is to look after the WDCs interest in the airfield.

Council calls for nominations for these positions, as for any leadership position within the organisation, and are appointed by Council for the three-year term of the Council.

2. Rangiora Airfield Authority Appointees

a) 2 x Councillors

Appointed by the Mayor.

b) 1 x person with experience in aviation operational and governance roles.

The aviation experts must have demonstrated experience in aviation, whether as a pilot, aircraft operator, management, or compliance.

c) 1 x Member of the Airfield User Group. (RAAG)

This person should have the knowledge and respect of the wide and varied groups on the airfield.

The Airfield User Group can have more than one nominee, but they go through the same process as any other nominee with the WDC for the one position.

d) 1 x External Business Representative

The business representative can come from the wider community, and is someone who has a genuine interest in the airfield and district, but also brings business and governance experience to the committee.

3. Airfield User Group

a) With certification, the Civil Aviation Authority (CAA) strongly suggests that the airfield has a 'User Group', or Safety Committee where recommendations made, and issues raised are seen as the collective voice of persons involved in the operation of the airfield.

b) Rangiora already has a 'User Group/ Safety Committee,' being the Rangiora Airfield Advisory Group (RAAG). RAAG should meet at regular set intervals, so every user of the airfield can discuss any concerns or proposals regarding the airfield.

c) Due to the number of different interest groups on the airfield, RAAG is the best place to have formal representation from these different interest groups.

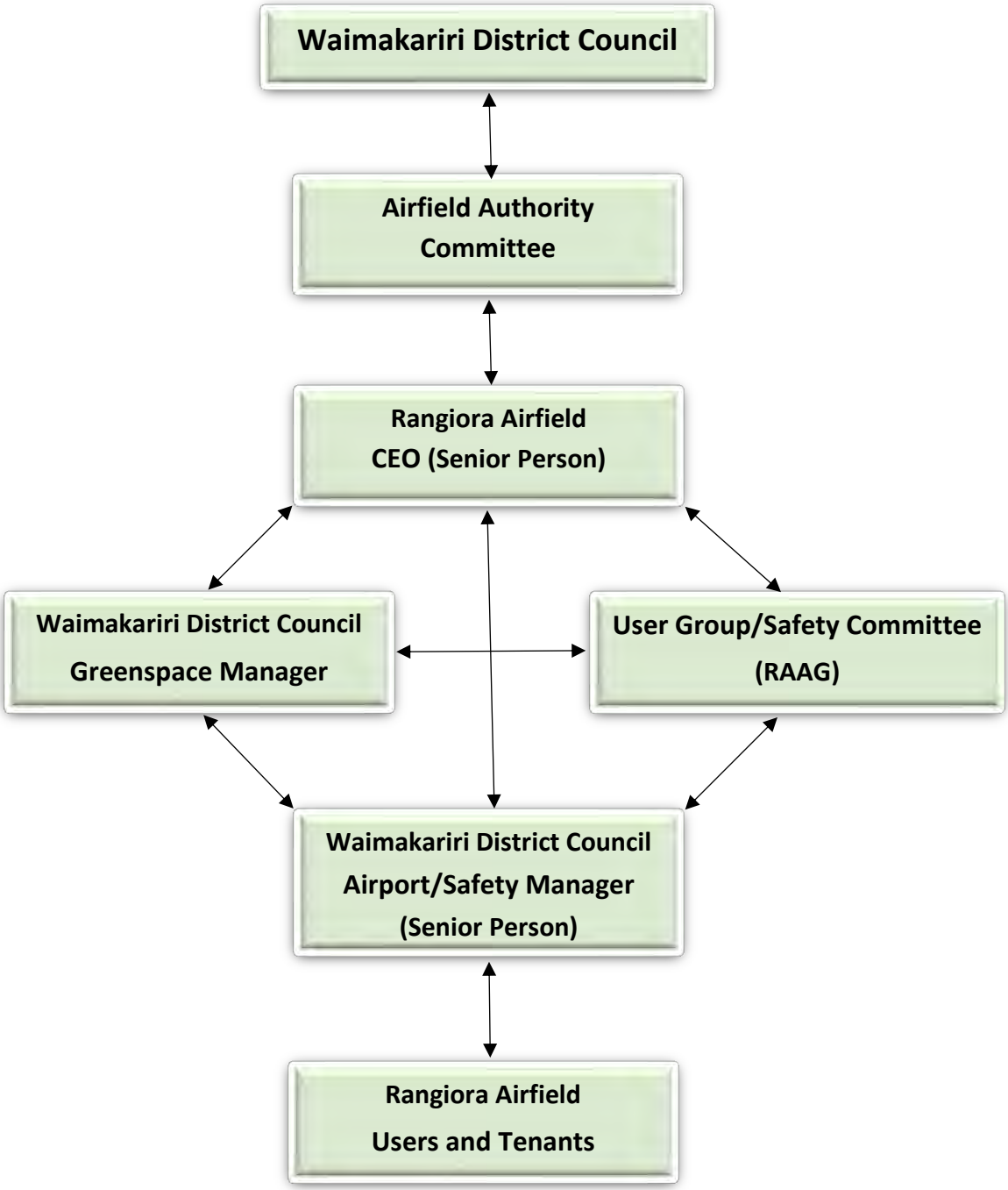
d) RAAG can have an executive with a member of each of the interest groups having a place on that executive.

e) They then have the opportunity through RAAG to advance any thoughts and ideas to the Rangiora Airfield Authority Committee in a formal way.

f) Interest groups could have their own committees within the RAAG to discuss common issues, and then bring the consensus to the Rangiora Airfield Authority Committee via the User Group/ Safety Committee Representative.

g) The User Group/ Safety Committee becomes a very important part of the overall governance and management of the airfield as they are the eyes and ears of the users.

Option 2: Council Controlled Organisation (CCO)



CIVIL AVIATION AUTHORITY
OF NEW ZEALAND
Te Mana Rererangi Tūmatanui o Aotearoa

Mr Grant Macleod
Green Space Manager
Community and Recreation
Waimakariri District Council
Private Bag 1005
Rangiora 7440

7th April 2022.

Dear Grant

Requirement to provide an Aeronautical Study - CAR139.21.

In February 2022 the CAA met with representatives from Waimakariri District Council (WDC) and Users of the Rangiora aerodrome. The discussions centred on the airfield being recently designated under the Council District Plan and the short term and long-term plans (LTP) for development of the non-certificated aerodrome operated by WDC.

The Director Civil Aviation (DCA) now considers there are reasonable grounds for a significant change to occur that may affect the operation or use of NZRT. Accordingly, and as per CAR 139.21(a)(1) the DCA is now requiring the Waimakariri District Council (operator of NZRT) to conduct an aeronautical study (*now referred to as the study*). The study must contain sufficient information to enable the DCA to identify and assess the risk to aviation safety of the operation of the aerodrome as per requirements of CAR 139.21(d)(1) &(2). The study scope should be inclusive of, but not limited to:

-an assessment of existing aerodrome infrastructure, and;

-an assessment of all proposed changes to existing aerodrome infrastructure ensuring any new aerodrome infrastructure provides a safe and efficient operational environment for aerodrome users, and;

- consideration of the requirement to provide RESA acceptable to the Director if regular passenger air transport service (RPT) with aircraft having a certificated seating capacity of more than 30 passengers commences, and;

-an assessment of all applicable Civil Aviation Rules to ensure operations at the aerodrome remain compliant throughout, and;

-meaningful consultation with Users and Stakeholders.

The completed study must be provided to the DCA no later than 24 December 2022. After submission of the study the DCA may require further information to be provided before considering if the risk to aviation safety is such that it must be managed under the authority of a qualifying aerodrome operator certificate.

Prior to the Determination the DCA will conduct a technical assessment and review of the study as per the requirements of CAR139.23. This is a chargeable activity. If a Determination of qualifying aerodrome is to be advised it will be provided in writing as per the requirement of CAR139.25.

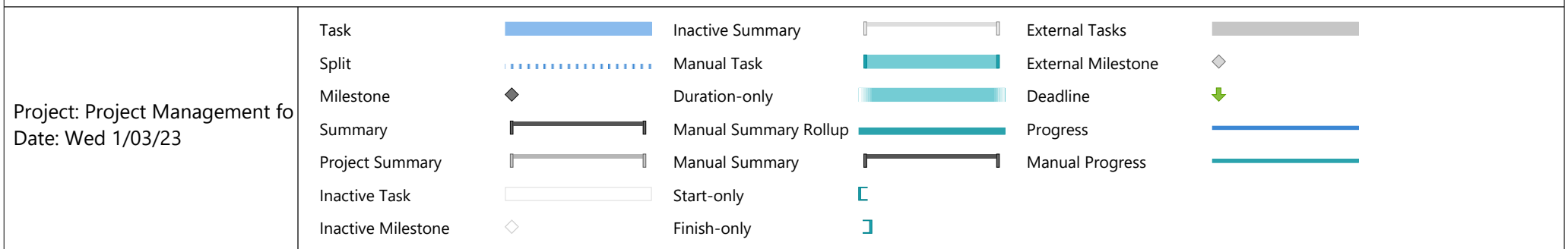
I will be the point of contact for any further queries.

Kind Regards,

Nick Jackson

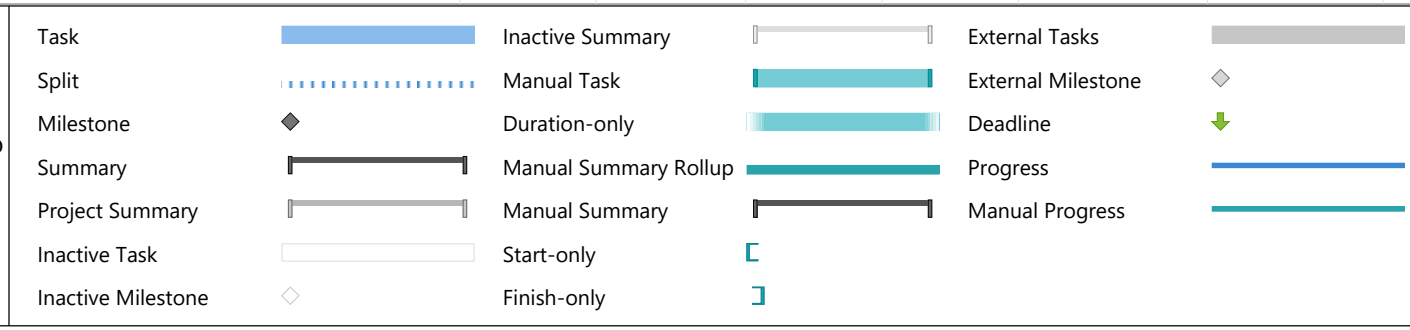
Nick Jackson
Technical Specialist (Aerodromes) Aeronautical Services Unit

ID	Task Name	Fixed Cost	Fixed Cost Accrual	Total Cost	Actual	Budget Cost	Task Allowance	Balance Remaining (Cost2)
0	**Project Management for Rangiora Airfield**	**$0.00**	**Prorated**	**54,266.62**	**54,266.62**	**$860,329.00**	**$0.00**	**$0.00**
1	**1 Initiating**	**$0.00**	**Prorated**	**$38,612.62**	**$38,612.62**		**$25,000.00**	**$0.00**
2	**1.1 Installation of Electronic Gates and Cameras**	**$0.00**	**Prorated**	**$38,612.62**	**$38,612.62**		**$25,000.00**	**$0.00**
3	1.1.1 Quote for Gates	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
4	1.1.2 Report to MTO for sole supplier	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
5	1.1.3 Report Outcome	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
6	1.1.4 Survey of plots for gate positions	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
7	1.1.5 Installation by Vision Systems	$0.00	Prorated	$38,612.62	$38,612.62		$25,000.00	-$13,612.62
8	1.1.6 Communications to airfield users	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
9	**1.2 Section 139 Compliance Implementation**	**$0.00**	**Prorated**	**$0.00**	**$0.00**		**$0.00**	**$0.00**
10	1.2.1 Taxi Ways	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
11	1.2.2 Review of governance structure	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
12	1.2.3 Qualification of Aerodrome	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
13	1.2.4 Operational area plan , internal roads, taxi ways, landing strips	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
14	1.2.5 MORE.. GMAC	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
15	1.2.6 fees review	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
16	**2 Leases**	**$0.00**	**Prorated**	**$0.00**	**$0.00**		**$0.00**	**$0.00**
17	2.1 meeting 24th Feb 4pm, following baseline leases will be finalised	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
18		$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
19		$0.00	Prorated	$0.00	$0.00		$0.00	$0.00



ID	Task Name	Fixed Cost	Fixed Cost Accrual	Total Cost	Actual	Budget Cost	Task Allowance	Balance Remaining (Cost2)
20	**3 Water Connection**	**$0.00**	**Prorated**	**$0.00**	**$0.00**		**$81,400.00**	**$0.00**
21		$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
22		$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
23		$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
24	**4 Sewer Connection**	**$0.00**	**Prorated**	**$0.00**	**$0.00**		**$35,750.00**	**$0.00**
25		$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
26		$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
27	**5 Runway Reseeding/ Surface Treatment**	**$0.00**	**Prorated**	**$15,654.00**	**$15,654.00**		**$60,000.00**	**$0.00**
28	5.1 Reseeding the runway, Fertilise Runway, spray	$0.00	Prorated	$15,654.00	$15,654.00		$60,000.00	$44,346.00
29		$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
30	**6 Develop Procurement Plans**	**$0.00**	**Prorated**	**$0.00**	**$0.00**		**$0.00**	**$0.00**
31		$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
32		$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
33		$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
34		$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
35		$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
36	**6.6 CAC (Canterbury Aircraft Club) Mogas project**	**$0.00**	**Prorated**	**$0.00**	**$0.00**		**$0.00**	**$0.00**
37	6.6.1 Compliance notice	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
38	6.6.2 Lease ground area	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
39	**7 Lease Boundary Mapping**	**$0.00**	**Prorated**	**$0.00**	**$0.00**		**$0.00**	**$0.00**
40	7.1 Planning- Waimapp- GMAC add description	**$0.00**	**Prorated**	**$0.00**	**$0.00**		**$0.00**	**$0.00**
41		$0.00	Prorated	$0.00	$0.00		$0.00	$0.00

Project: Project Management fo
Date: Wed 1/03/23



ID	Task Name	Fixed Cost	Fixed Cost Accrual	Total Cost	Actual	Budget Cost	Task Allowance	Balance Remaining (Cost2)
42		$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
43		$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
44	**8 Level of Service- Operational Maintenance**	**$0.00**	**Prorated**	**$0.00**	**$0.00**		**$0.00**	**$0.00**
45	8.1 Road ways- CORDE various	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
46	8.2 Mowing- Delta contract	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
47	8.3 Edging, line trimming, spraying	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
48	8.4 Camera network- operational plan	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
49	8.5 Gate, fence main- Operational plan	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
50	8.6 Runway checking -list all out- check list, weekly comp. check list- Airfield Manager	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
51	8.7 Tree, hedge maintenance	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
52	8.8 Lease auditing	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
53	8.9 Service request monitoring	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
54	**9 Communications**	**$0.00**	**Prorated**	**$0.00**	**$0.00**		**$0.00**	**$0.00**
55	9.1 Plan- work with coms team	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
56	9.2 Airfield webpage	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
57	9.3 branding pot.	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
58	9.4 Higher level of information- Disseminate- news updates- frequently	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
59	9.5 Regular communications channel - 2 way	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
60	9.6 NOTAM	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
61	9.7 Safety meeting- bi-annual	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00

ID	Task Name	Fixed Cost	Fixed Cost Accrual	Total Cost	Actual	Budget Cost	Task Allowance	Balance Remaining (Cost2)
62	**10 Relationship Management/Culture**	**$0.00**	**Prorated**	**$0.00**	**$0.00**		**$0.00**	**$0.00**
63	10.1 Ongoing relationships between council and governance groups, user/interest groups	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
64	10.2 CAA	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
65	10.3 Post designation community relationship	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
66	**11 Master Plan**	**$0.00**	**Prorated**	**$0.00**	**$0.00**		**$0.00**	**$0.00**
67	11.1 Finalise	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
68	11.2 Complete noise Contour, approach fans	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
69	11.3 Confirm CAC involvement	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
70	11.4 Confirm road alignment	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
71	11.5 DASI lodge	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
72	11.6 Heads of agreement with DASI $$$	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
73	11.7 Council Adopt	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
74	11.8 Planning process- (2 years) own drop down DP	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
75	11.9 Financial implication.	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
76	11.10 Priors RD - develop concept plan	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
77	11.11 <New Task>	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
78	**12 DASI Airfield Access Agreement**	**$0.00**	**Prorated**	**$0.00**	**$0.00**		**$0.00**	**$0.00**
79	12.1 <New Task>	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
80	**13 Water Connection**	**$0.00**	**Prorated**	**$0.00**	**$0.00**		**$0.00**	**$0.00**
81	13.1 <New Task>	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
82	13.2 <New Task>	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00

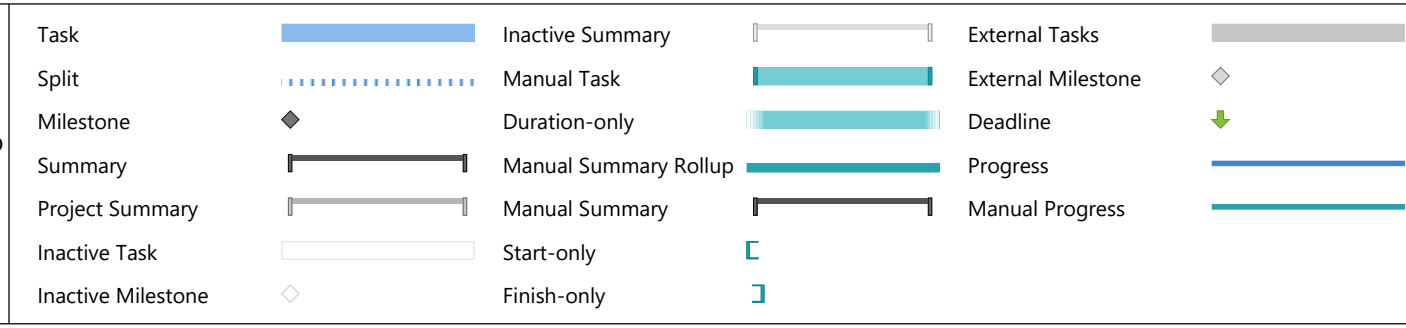
Project: Project Management fo
Date: Wed 1/03/23

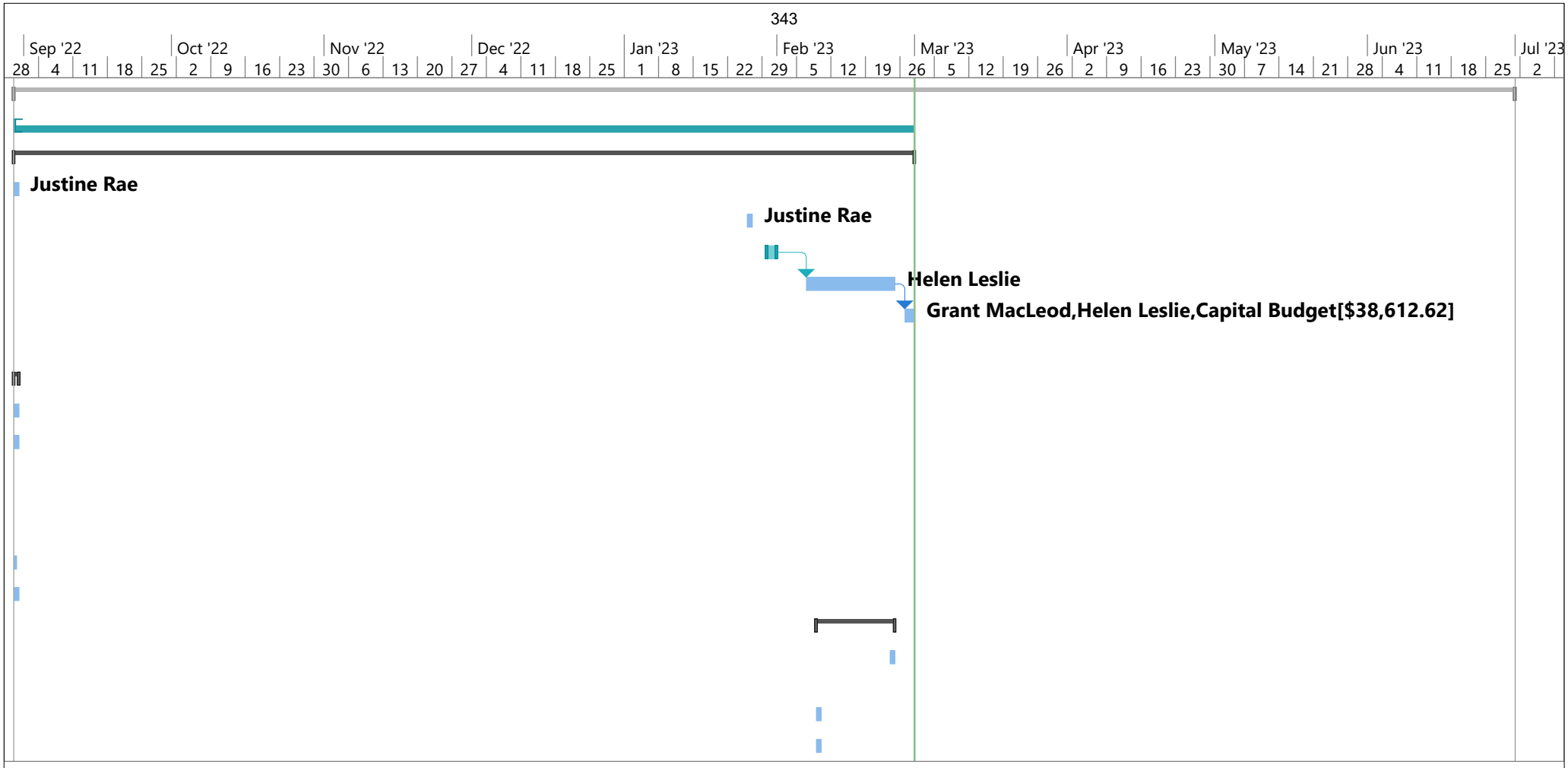
Task	Inactive Summary	External Tasks
Split	Manual Task	External Milestone
Milestone	Duration-only	Deadline
Summary	Manual Summary Rollup	Progress
Project Summary	Manual Summary	Manual Progress
Inactive Task	Start-only	
Inactive Milestone	Finish-only	

ID	Task Name	Fixed Cost	Fixed Cost Accrual	Total Cost	Actual	Budget Cost	Task Allowance	Balance Remaining (Cost2)
83	13.3 <New Task>	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
84	13.4 <New Task>	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
85		$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
86	**14 Closing**	**$0.00**	**Prorated**	**$0.00**	**$0.00**		**$0.00**	**$0.00**
87	**14.1 Close Project**	**$0.00**	**Prorated**	**$0.00**	**$0.00**		**$0.00**	**$0.00**
88	14.1.1 Assess Satisfaction	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
89	14.1.2 Summarize Project Results and Lessons Learned	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
90	14.1.3 Review and Recognize Team Performance	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
91	14.1.4 Close Out the Project Records	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
92	14.1.5 Review and Reconcile Financial Performance	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00
93	**14.2 Contract Closure**	**$0.00**	**Prorated**	**$0.00**	**$0.00**		**$0.00**	**$0.00**
94	14.2.1 Close Contract	$0.00	Prorated	$0.00	$0.00		$0.00	$0.00

14 21

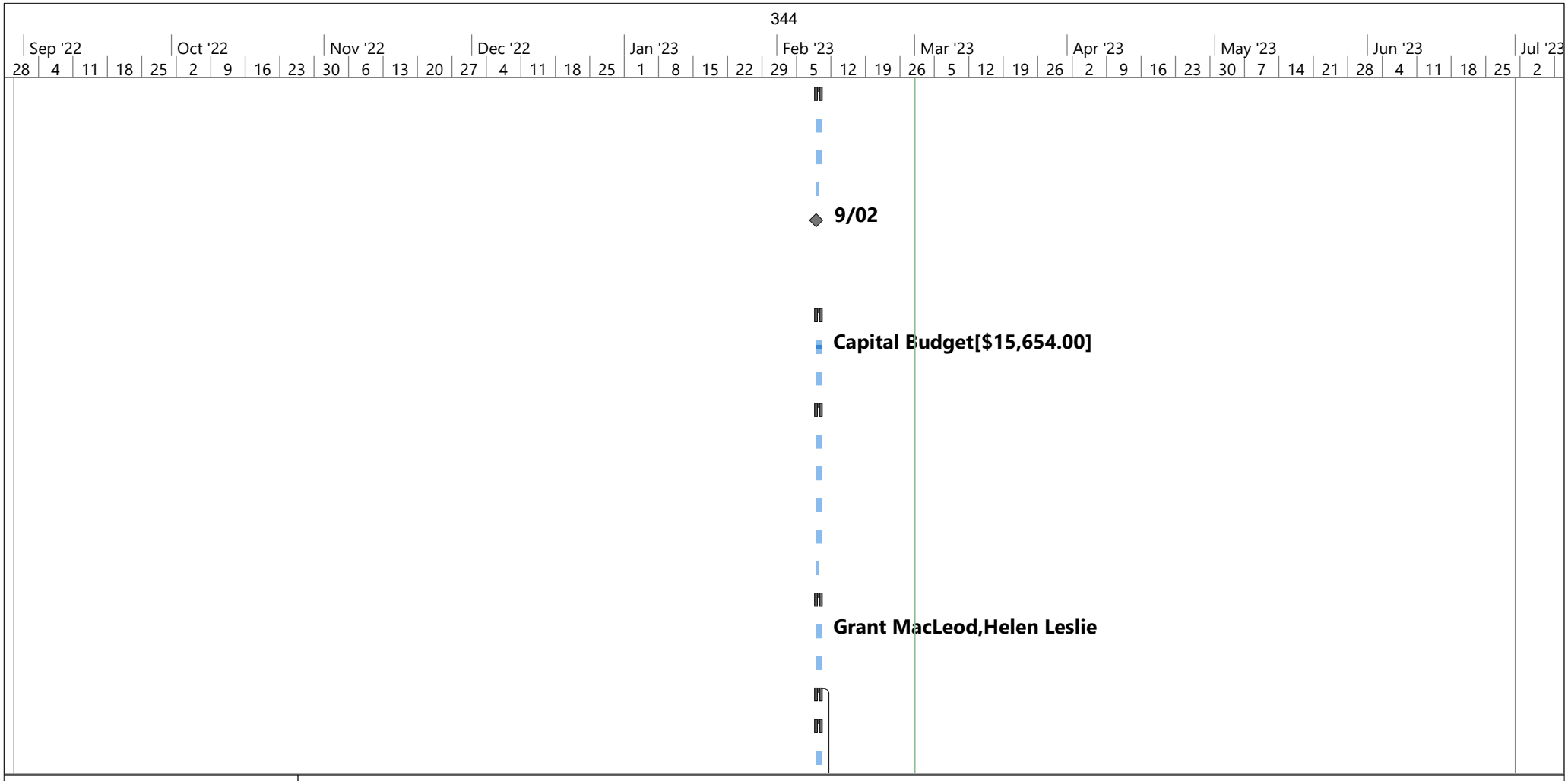
Project: Project Management fo
Date: Wed 1/03/23





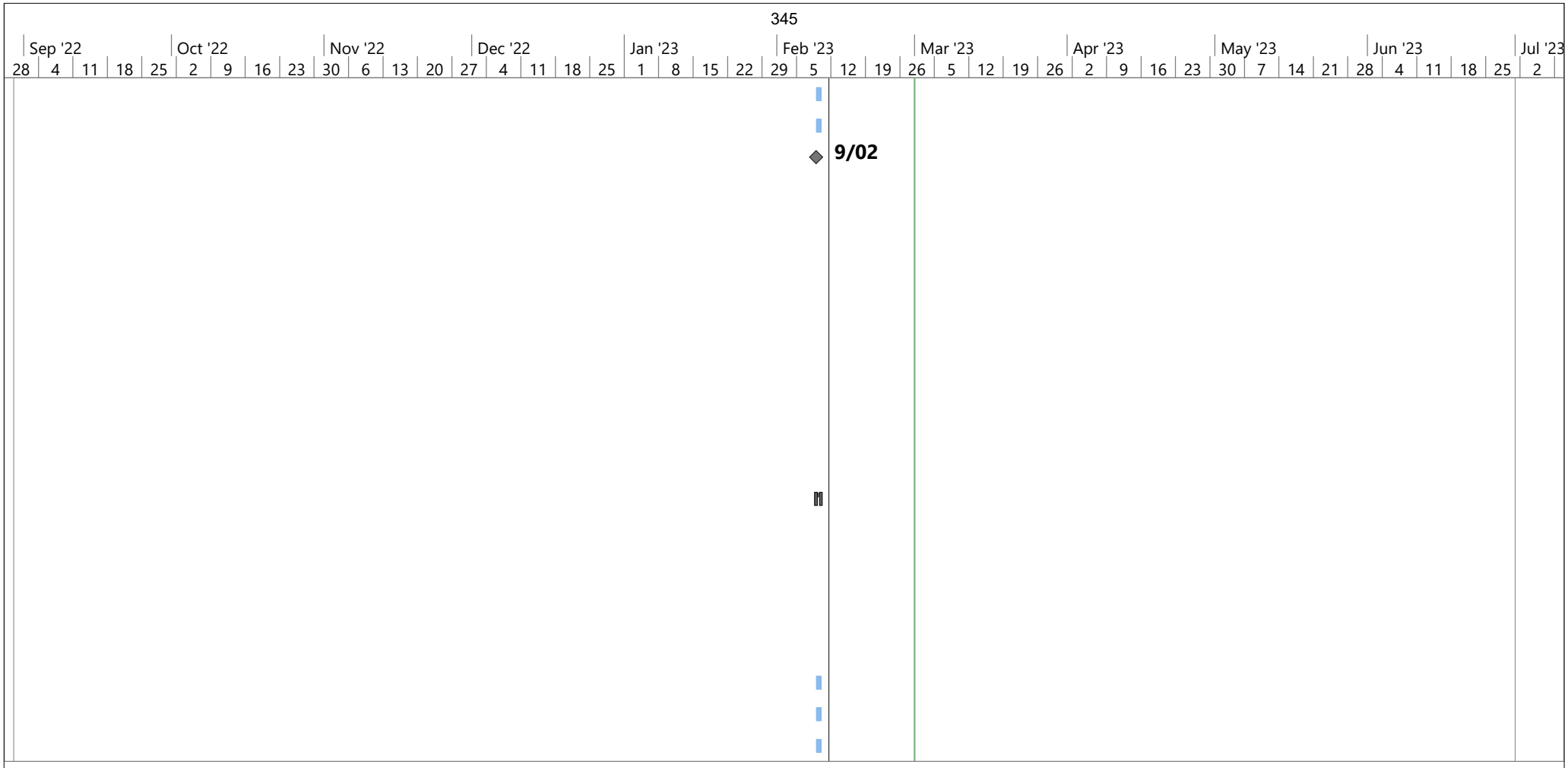
Project: Project Management fo
Date: Wed 1/03/23

Task	Inactive Summary	External Tasks
Split	Manual Task	External Milestone
Milestone	Duration-only	Deadline
Summary	Manual Summary Rollup	Progress
Project Summary	Manual Summary	Manual Progress
Inactive Task	Start-only	
Inactive Milestone	Finish-only	



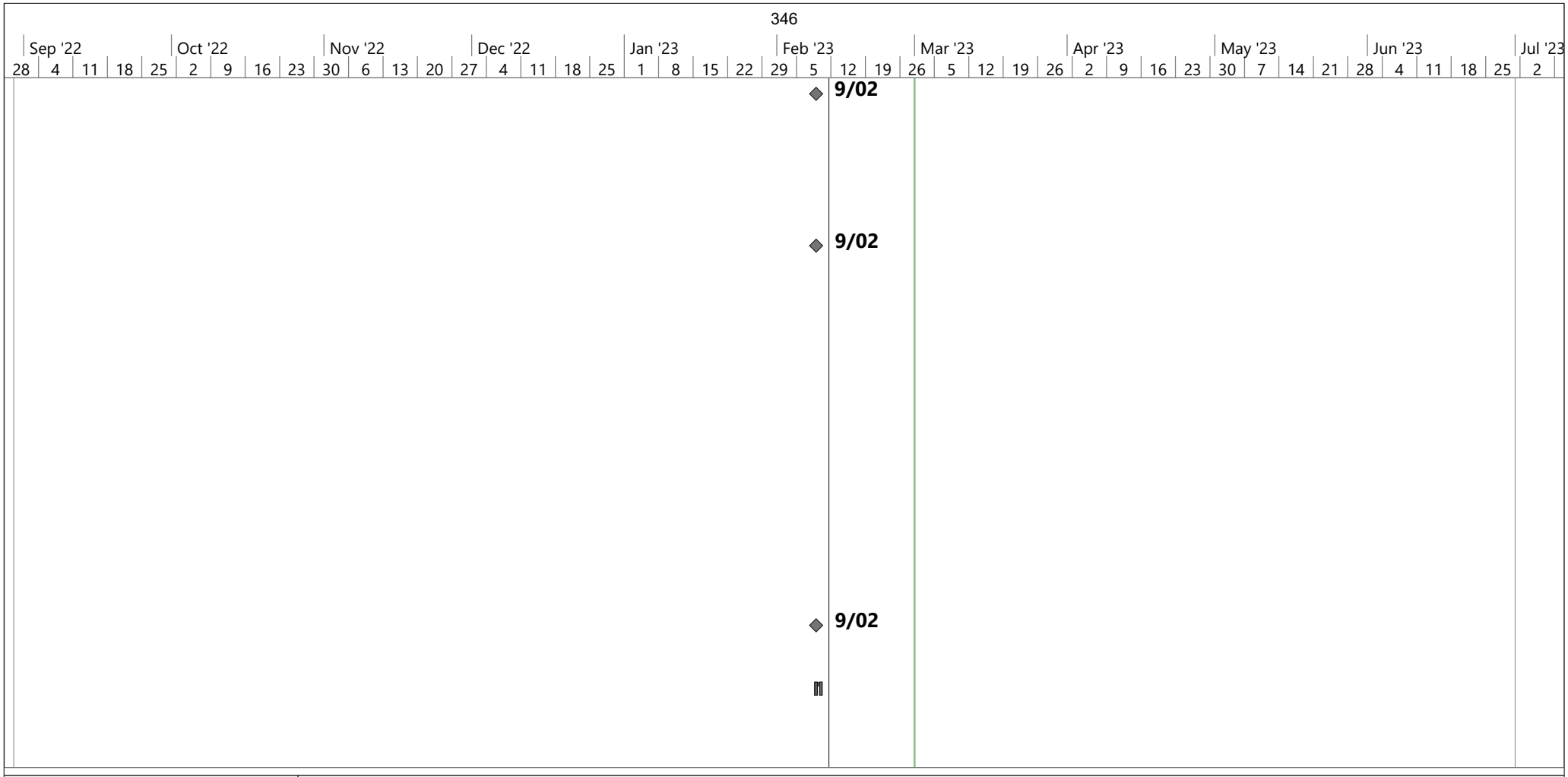
Project: Project Management fo
Date: Wed 1/03/23

Task	Inactive Summary	External Tasks
Split	Manual Task	External Milestone
Milestone	Duration-only	Deadline
Summary	Manual Summary Rollup	Progress
Project Summary	Manual Summary	Manual Progress
Inactive Task	Start-only	
Inactive Milestone	Finish-only	



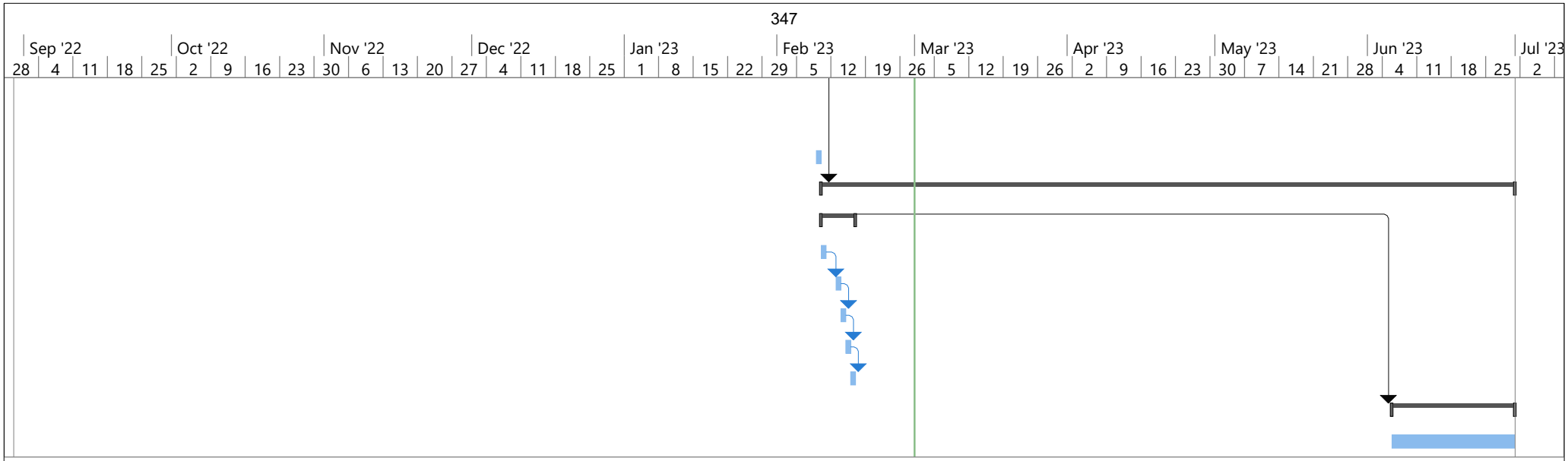
Project: Project Management fo
Date: Wed 1/03/23

Task	Inactive Summary	External Tasks
Split	Manual Task	External Milestone
Milestone	Duration-only	Deadline
Summary	Manual Summary Rollup	Progress
Project Summary	Manual Summary	Manual Progress
Inactive Task	Start-only	
Inactive Milestone	Finish-only	



Project: Project Management fo
Date: Wed 1/03/23

Task	Inactive Summary	External Tasks
Split	Manual Task	External Milestone
Milestone	Duration-only	Deadline
Summary	Manual Summary Rollup	Progress
Project Summary	Manual Summary	Manual Progress
Inactive Task	Start-only	
Inactive Milestone	Finish-only	



Project: Project Management fo
Date: Wed 1/03/23

Task	Inactive Summary	External Tasks
Split	Manual Task	External Milestone
Milestone	Duration-only	Deadline
Summary	Manual Summary Rollup	Progress
Project Summary	Manual Summary	Manual Progress
Inactive Task	Start-only	
Inactive Milestone	Finish-only	