

# Mt Munro Wind Farm

## Radio Compatibility Assessment Report

27 October 2022



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# Table of Contents

1.	Summary .....	4
2.	Radio Compatibility Study .....	5
2.1	Introduction .....	5
2.2	Description of the Wind Farm .....	5
2.3	Scope .....	6
2.4	Accuracy of the Interference Assessment .....	6
3.	Interference Assessment .....	7
3.1	Fixed Radio Linking Services.....	7
3.1.1	Mt Munro Effects Assessment.....	9
3.2	Wide Area Coverage Services.....	10
3.2.1	Broadcast Television and Radio Services.....	10
3.2.2	Unlicensed Wireless Broadband Services .....	10
3.2.3	Assessment of Licensed Services.....	11
3.3	Aeronautical Radio Navigation.....	14
3.3.1	Potential Effects of Wind Farms .....	14
3.3.2	Mt Munro Effects Assessment.....	14
4.	Conclusion.....	15
5.	Appendices.....	16
Appendix A	List of All Licensed Fixed Linking Services within 20 km of the Proposed Mt Munro Wind Farm .....	17
Appendix B	List of All Licensed Wide Area Coverage Transmitters Within 20 km of the Proposed Mt Munro Wind Farm .....	24
Appendix C	List of All Aeronautical Radio Navigation Services within 200 km of the Proposed Mt Munro Wind Farm .....	28



# 1. Summary

Meridian is proposing to build a wind farm known as Mt Munro located approximately 5 kilometres south of Eketahuna in Wairarapa.

The types of radio communication services assessed are licensed fixed radio linking services, wide area coverage services including broadcast digital television and radio, cellular, land mobile radio and aeronautical radio navigation.

The results of the assessment indicate that the proposed Mt Munro Wind Farm is not expected to cause any harmful interference effects to licensed radio communication services operating in the vicinity of the wind farm.

Fixed radio linking services are not expected to be affected by the proposed wind turbine locations. The Fresnel zones for each of the linking paths within the immediate area are located several kilometres from the proposed project envelope, so are sufficiently isolated to rule out any effects.

Viewers of digital television services are not expected to be affected as this area is outside the range of the FreeviewHD service from the Wharite transmitting station. Consequently, viewers will be utilising satellite-based reception, which is not affected by wind turbines.

Kordia recommends contacting any Wireless ISPs (such as Wiz Wireless and Inspire Net) in the area, to advise of the proposed wind farm and to ask if they operate any wireless access stations in the vicinity. These stations are not licensed and are not registered in the MBIE licence database. Due to the robust modulation properties of these services, we believe these types of services will not be affected and will not require any specific mitigation actions. Wiz Wireless has a licence to operate a wireless access station approximately 16 kilometres from the project area, which has their licensed coverage area overlapping with the southern tip of the project envelope. The service is not expected to be affected by the proposed turbines.

Aeronautical RADAR services have been identified at Rangitūmau, Masterton and at Ballance. Any potential effects to these services can be 'filtered' out by the operators. At the stage of the pre-construction report, during the development of the final design, the turbine layout and turbine dimensions should be provided to Airways Corporation of NZ. This allows Airways to undertake their own assessment and update their RADAR signatures if required.

## 2. Radio Compatibility Study

### 2.1 Introduction

Meridian Energy plans to develop a wind farm in an area known as Mt Munro located near the small community of Kaiparoro, approximately 5 kilometres south of Eketahuna. Kordia has been engaged to provide an analysis of any potential radio interference issues for inclusion in the Assessment of Environmental Effects reports as part of the resource consent process.

In this assessment Kordia examined the potential for harmful interference to communication services on the basis of geographical separation of communications infrastructure, radio paths, and coverage zones from the wind turbines. For services identified as potentially impacted, a more detailed investigation would be required.

### 2.2 Description of the Wind Farm

The following summarises the maximum turbine size and geographical extent of the proposed Mt Munro Wind Farm:

- Three blades per turbine.
- Total height up to 160 metres (ground to turbine blade tip).
- Up to 20 wind turbines.

Figure 1 shows the indicative turbine envelope zone of the Mt Munro Wind Farm.

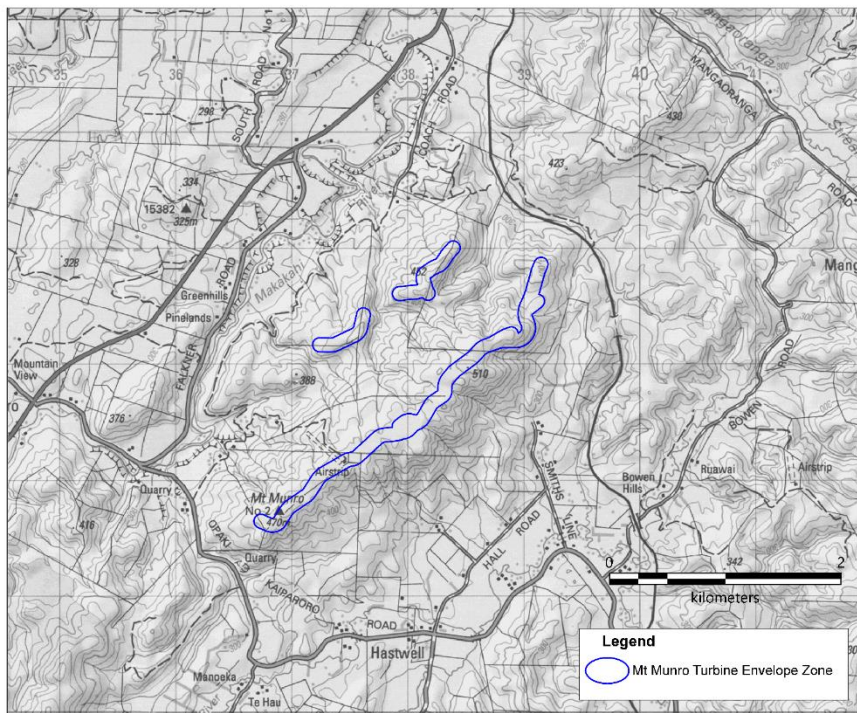


Figure 1 – Mt Munro Wind Farm proposed Turbine Envelope Zone.

## 2.3 Scope

This report focuses on potential interference to fixed radio linking services, aeronautical radio navigation services, and wide area radio coverage services that may occur due to the proposed wind farm. This report will assist Meridian to finalise the turbine layout to satisfy the required resource consent conditions.

Some typical examples of usage for the above radio services are given in Table 1 below.

Radio Service Type	Typical Examples of Use
Fixed Radio Linking Services	Radio links typically used by telecommunication and other private operators to relay data and/or voice between sites located throughout the country. Often from sites situated on hilltops using microwave dishes directed at another site (e.g. linking cellular repeaters together).
Wide Area Coverage Services	Land Mobile Repeaters (handheld walkie-talkie radios), Cellular services and licensed and unlicensed Broadband Wireless Access, such as wireless internet service providers.
Broadcast Digital Television	Free to air terrestrial television FreeviewHD
Aeronautical Radio Navigation	Used by aircraft for safety, navigation, and route tracking. Often situated in the vicinity of airports providing guidance to aircraft.

Table 1 – Examples of radio services assessed.

## 2.4 Accuracy of the Interference Assessment

The interference assessment in this document relies on external data sources that have the following accuracy. These accuracies are disclosed as follows:

1. Ministry of Business Innovation and Employment (MBIE) licence database: Assumed to contain accurate licence information with regard to transmit/receive height and transmit/receive frequency. However, site coordinates are sometimes recorded to the nearest 100 metres and often found to be of lower accuracy. The location of any site coordinates either within the wind farm, or which may provide a service within or near the wind farm has been verified using Google Earth imagery and updated as required. The release date of this licence information was the 6th December 2021. This search included other licences designated as 'confidential'. None of these 'confidential' licences were found to have any potential to be affected by the proposed turbine layouts.
2. The fixed linking analyses are based on a maximum scenario of 20 turbines with ground to blade tip height of 160 metres.

### 3. Interference Assessment

There are four different mechanisms that can cause interference to wireless communications and navigation systems. These are Electromagnetic Interference (EMI) i.e. radio emissions from the turbine generator, antenna near-field effects (turbine towers too close to radio antennas), reflection/scattering of the radio signal, and diffraction loss caused by obstruction of the radio path.

This report looks at diffraction (obstruction) to ensure first Fresnel zone clearance is achieved for fixed linking, and scattering interference to wide area coverage services including aeronautical radio navigation.

For the assessment the concept of the co-ordination zone provides a method to screen out the majority of radio services further consideration. Services located beyond the co-ordination distance from wind turbines are most unlikely to be affected by interference. The co-ordination distance is determined using conservative generalised values for the parameters of the turbines, radio equipment, radio service quality expectations, and radio propagation conditions. Different radio services will require, in general, different co-ordination zones. Detailed interference assessment is required only for those radio services located within the co-ordination zone, where the actual parameter values would be used to assess the interference.

In this report detailed assessment has been deemed necessary only in cases where radio services are likely to be located within the co-ordination zone. Although they are conservative, the following co-ordination zones have been used for this report:

Service Type	Co-ordination Zone
Fixed Linking	Anything intruding into the link's first Fresnel zone is considered
Wide Area Services	Up to 320 metres
Broadcast Television	Up to 3 kilometres and within TV reception area
Aeronautical Radio Navigation	To be determined by Airways New Zealand

Table 2 – Co-ordination zones for different radio services.

#### 3.1 Fixed Radio Linking Services

To investigate the possibility of interference to fixed radio linking in the general vicinity of the proposed wind farm site, a search was performed on the MBIE radio licence database for all fixed linking services (microwave and lower frequencies) within 150 kilometres of the proposed wind farm.

This distance is used because it is a wide enough area to capture any fixed link that may pass close to or through the wind farm site. A total of 5,863 links operating within a 150 kilometres radius of the wind farm were identified. For further assessment, only the links operating within the 20 kilometre radius of the wind farm and those that directly pass through or pass close to the wind farm from a greater distance, were examined. These fixed radio links are listed in Appendix A of the report.

The transmit and receive locations for each link were then mapped. The radio paths of the linking services as specified in the MBIE licence database are shown in Figure 2.

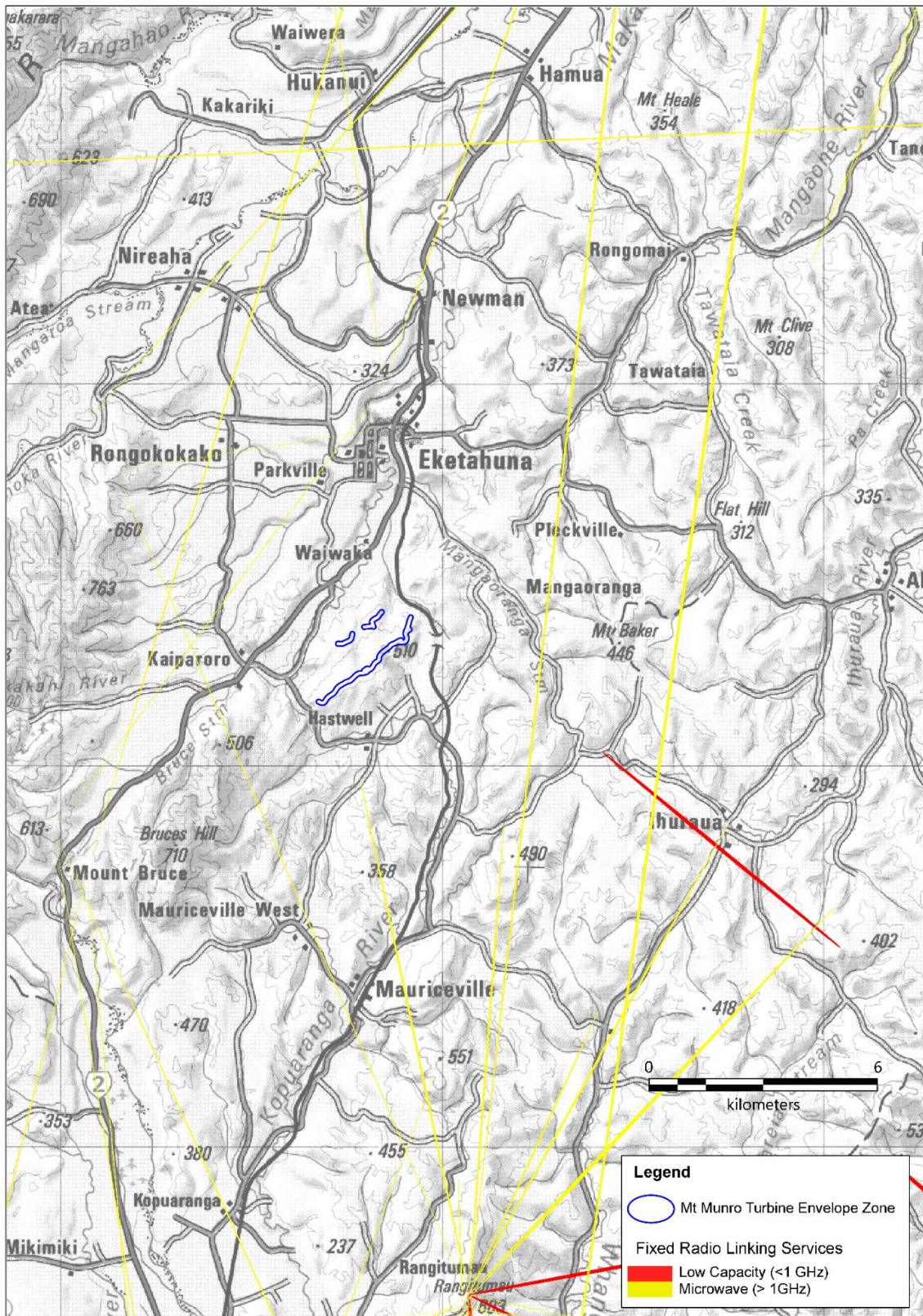


Figure 2 – Fixed radio linking services operating near the proposed wind farm, showing paths which originate near the proposed Turbine Envelope Zone.



### 3.1.1 Mt Munro Effects Assessment

The Fresnel zones of microwave links (>1 GHz) and lower capacity radio links (<1 GHz) are mapped in Figure 2. The Fresnel zone is defined as the area with a radius from the centre of the direct path line within which the majority of the radio energy is considered to be concentrated.

The fixed radio links shown in yellow are deemed high capacity links (microwave links) and it is highly recommended that the first Fresnel zones of these links are kept clear of any obstructions. The fixed radio links shown in red are of a lower frequency and generally not a cause for concern. This is because the Fresnel zone is much larger and can handle a small obstructing object in its path, such as a turbine.

The closest radio link to the wind farm envelope is 2.5 kilometres at North Road south of the proposed turbines. As there are no radio linking services passing through or near the proposed wind farm envelope, there are not expected to be any effects to radio linking services, from scattering, near-field, EMI nor diffraction.

A list of these fixed linking services that propagate within the vicinity of the proposed wind farm can be found in Appendix A. The parameters, such as Tx/Rx location and name are based on the MBIE Licence.

## 3.2 Wide Area Coverage Services

This section assesses the potential impact from the proposed wind farm to wide area coverage services. These services are considered vulnerable since they intentionally transmit and receive signals over a wide area, which is likely to include the direction of the wind turbines. Whilst the majority of the radio services licensed in the area are narrow-beamwidth microwave and low-capacity fixed linking services, there are some services that are licensed to broadcast their power over a wide area – the types of services are listed below:

- Broadcast television & radio (UHF and FM).
- Broadband wireless access services (typically unlicensed).
- VHF and UHF mobile communications.
- Cellular services.

### 3.2.1 Broadcast Television and Radio Services

It is very unlikely that AM or FM modulated radio services will be noticeably affected by reflections from the wind farm. These signal types are considered very tolerant to this type of interference such that no further consideration is required.

In the case of broadcast television the situation can be more complex. A detailed assessment would involve consideration of possible interference to viewers within a conservative 3 kilometre radius of the wind farm. The level of interference would be dependent upon a number of factors including the current signal strengths at receive locations, and the geometry of the paths between transmitter, receiver and wind turbines, as well as any obstructions along these paths.

Fortunately, the proposed wind farm is located beyond the edge of the digital television service area broadcast from the Wharite transmitting station. This station provides the Freeview service to the greater Manawatu, Horowhenua, Southern Hawkes Bay and northern Wairarapa areas, and is located approximately 55 kilometres north from the proposed wind farm site. The next Freeview station is at Popoiti, located 53 kilometres south of the site. This township of Eketahuna is on the edge of service from the Wharite station, with locations south of Eketahuna considered outside of the service area. Popoiti is a lower power station and only serves as far as elevated areas north of Masterton.

As there are no viewers expected to receive the Freeview service from Wharite that are near the proposed wind farm, there are no effects expected to broadcast television services. Furthermore, any viewers at the edge of the television service would be utilising directional antennas, facing away from the wind farm turbines and would further reject any interference effects. Such households in this area will currently be using satellite-based reception such as Freeview and Sky TV, which are not impacted by wind farm turbines.

### 3.2.2 Unlicensed Wireless Broadband Services

Broadband wireless access services are also known to operate in unlicensed bands using standard IEEE 802.11n/ac Wi-Fi equipment. These terrestrial-based transmissions may be operating in rural and remote areas providing households with a wireless broadband internet service. The energy of these emissions is dispersed using spread-spectrum and/or OFDM modulation, which is noise-like and operates across a wide bandwidth. These emission properties make these network types very robust against effects from multipath and signal scattering from wind turbines.

In the unlikely event of interference being caused to such networks after the construction of the wind farm, several mitigation strategies are available depending on the type of interference observed. Some examples are:

- Relocating and/or realigning the household's receiving antenna to a different position on their property.
- Installing a higher gain antenna and/or mast-head amplifier at the household's receiver.
- Relocating the wireless access point or radio site so it is isolated from turbines.

As this type of service is not licensed operating in the "Wi-Fi" bands, they are not listed in the MBIE licence register. However, the wide area licence search has revealed one internet service provider (ISP), Wiz Wireless Limited with a portion of a receive coverage area overlapping with the southern 400 metres section of the project envelope. Details for this licence can be found in Appendix B.

Kordia recommends Meridian provides details of the proposed wind farm to any ISPs known in the area. Keeping the operators informed will allow them to make any minor changes to dwellings to mitigate against potential effects from the wind farm. Wiz Wireless and Inspire Net and are both established ISPs providing broadband services in the wider Wairarapa area.

### 3.2.3 Assessment of Licensed Services

Services in the general vicinity of the proposed wind farm that are to be considered include licensed VHF/UHF mobile radio, cellular services and broadband wireless access services (fixed or mobile).

These services can be assessed by estimating a minimum required separation distance from wind turbines for each service type – locations beyond this distance will have a low likelihood of interference problems and can be ruled out.

The maximum scatter to signal ratios required for each service are estimated below, and include an additional 6 dB factor to ensure that the scattered signal imposes only a 1 dB reduction in fade margin (this is an appropriate criterion chosen to protect data services, but is conservative for voice services). Service operators would be able to provide more accurate values than these:

- VHF and UHF FM land mobile, -26 dB.
- Cellular services, -18 dB.
- Cellular (voice only), -12 dB.
- Broadband wireless access services, -24 dB.

The estimated minimum separation distances (in metres) between a radio service and a wind turbine are given in Table 3 for the maximum typical Radar Cross Section RCS (from multiple hypothetical wind turbines) of 1000 m<sup>2</sup>, neglecting any antenna directivity and obstruction loss to wanted or unwanted signals:

Service	Separation Distance (m)
VHF land mobile, 160 MHz, -26 dB	320
UHF land mobile, 400 MHz, -26 dB	320
Cellular services, 950 MHz, -18 dB	<100
Cellular (voice only), 950 MHz, -12 dB	<100
BWA, 2100 MHz, -24 dB	240

Table 3 - Estimated minimum separation distances for wind farm turbine layout.

Locations of the licensed transmitter sites within 20 kilometres of the proposed wind farm envelope were extracted from the MBIE Licence database, with those in a close proximity to proposed turbines shown in Figure 3. A 320 metre co-ordination contour is plotted around the proposed wind farm envelope.

A list of all licensed wide area coverage services within a 20 kilometre radius of the wind farm can be found in Appendix B.

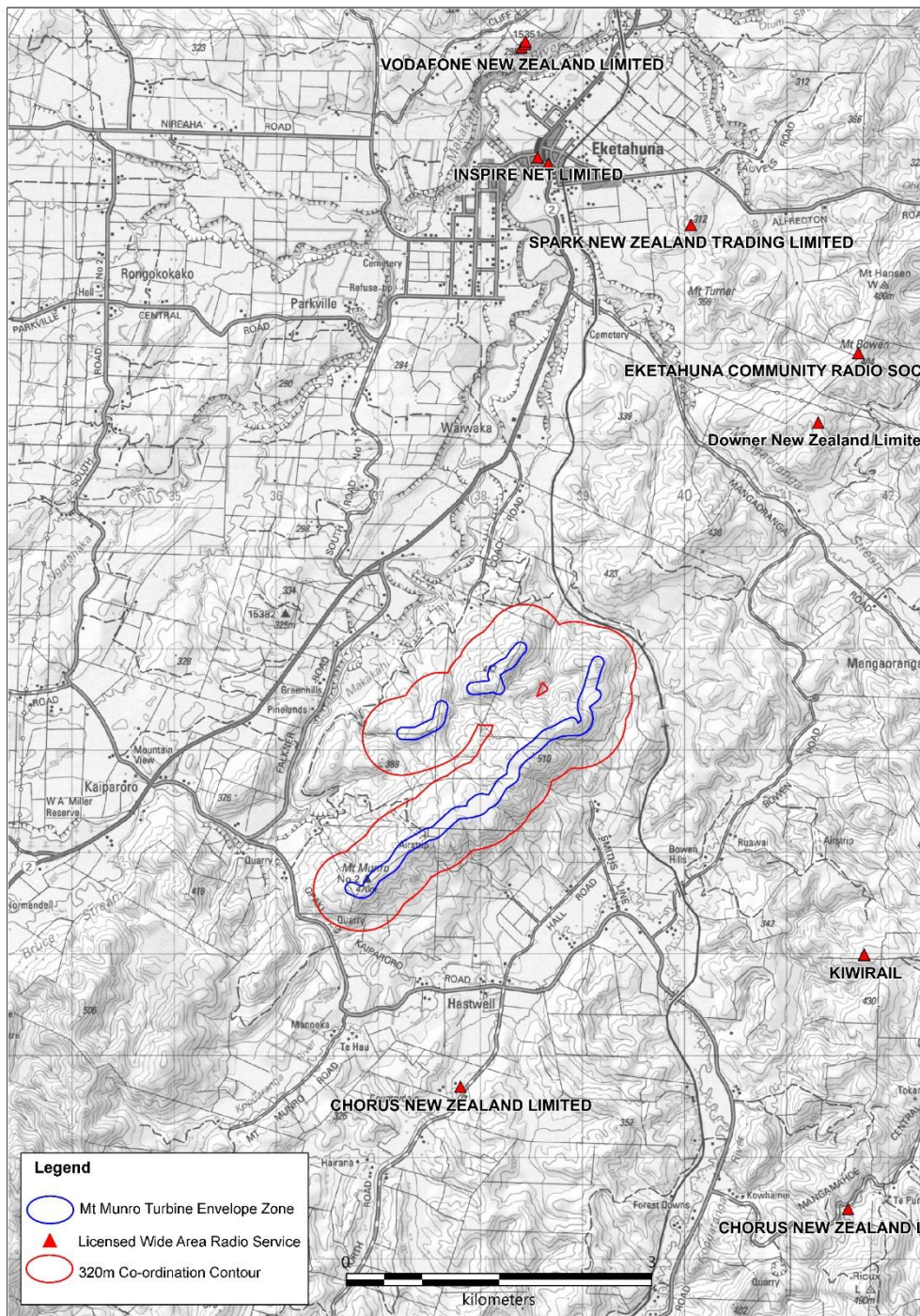


Figure 3 – Licensed wide area coverage sites within a close proximity of the wind farm.

The assessment has found that there are no wide area coverage services operating within the co-ordination contour of the proposed project envelope.

The nearest services are a Chorus NZ operated fixed radio link located approximately 2.5 kilometres south of the proposed project envelope, and a land mobile repeater located approximately 4 kilometres east of the project area, operated by KiwiRail. Due to these distances being outside the co-ordination zone, any effects to these wide area services can be ruled out.

Although no services were found to be operating near the Mt Munro area, a wide area coverage service was identified which has its reception area overlapping with the wind farm envelope up to approximately 400 metres from the southern end. This service is operated by Wiz Wireless and is not expected to be affected in any way by the proposed turbines. The licensed transmitting station is located over 16 kilometres south-east of the proposed project area envelope at Rangitūmau, and there are not likely to be any homes receiving this service that are close to proposed turbines.

Based on the parameters provided in the radio licence (Licence No 240161) this service is likely to be a wireless broadband access service, similar transmission characteristics to the unlicensed broadband access services discussed in section 3.2.2 of this report. The modulation characteristics of these services are typically very robust and tolerant of potential reflections from structures such as turbines.

The MBIE licence register shows that this service is part of a Managed Spectrum Park category of licence and provides a service to households within an area indicated by a polygon attached to their licence. The area of the polygon covers from the south tip of the wind farm envelope then extends to the south below Masterton, to the foothills of the Tararua Range to the west, and past Rangitūmau to the east.

As a courtesy it is recommended that the licence holder Wiz Wireless be contacted to discuss the proposed wind farm and potential to cause interference to their service, if their service is in use and to understand the intended reception range and reliability of their services. Depending on how their service is used and/or their intended coverage area, any degradation is not likely to be expected and may not be noticeable to the end users.

## 3.3 Aeronautical Radio Navigation

### 3.3.1 Potential Effects of Wind Farms

There have been reports of artefacts being generated in RADAR systems due to wind farms. There are two types of artefacts that can appear on RADAR screens. They are either:

- Actual traces but with potentially distorted information about height and location.
- False 'targets'.

Because different manufacturers will use different construction techniques and materials, there will be significant variations in the RADAR reflection characteristics of wind turbines. The shape of the surfaces can be more important than the materials used.

Complete avoidance of a changed RADAR echo characteristic can be difficult or impossible to achieve if the turbines are visible to the RADAR, although the echo characteristics can usually be accounted for in the RADAR software system.

### 3.3.2 Mt Munro Effects Assessment

A search was performed on the MBIE Licence database for all the aeronautical radio and RADAR transmitting services within a 200 kilometre radius of the proposed Mt Munro Wind Farm. Detailed site information of these transmissions is provided in Appendix C.

Inside this radius there are aeronautical RADAR systems operating within this range of the proposed wind farm and are operated by Airways Corporation of New Zealand. The nearest are located at Rangitumau approximately 16 kilometres south-south-west and Ballance approximately 32 kilometres north. Aeronautical VHF communications services operated by Police and Masterton District Council are located at Masterton approximately 26 kilometres away.

The equipment operating at Ballance is used for aircraft tracking, known as Monopulse Secondary Surveillance RADAR (MSSR) and at 32 kilometres away from the nearest turbine, is expected to be a sufficient distance away from the proposed wind farm to be unaffected by its presence. The VHF aeronautical services operating at Rangitumau and Masterton are also located far enough away from the proposed wind farm turbines that it is not likely these services would be affected by the presence of the wind farm.

Since these aeronautical sites are located significant distances away from the proposed wind farm, based on Kordia's experience, we do not believe the proposed Mt Munro Wind Farm will have any effects to these services. However, RADAR is a specialised technology and Kordia is unable to undertake or offer an interference analysis consultancy for RADAR. Previously Meridian contacted Airways in 2010 and received correspondence confirming that the proposed wind farm will not cause any effects to their Instrument Flight Procedures. However, Kordia recommends that Meridian contact Airways Corporation to confirm that is still the case as the proposed turbine parameters have now changed.

## 4. Conclusion

An assessment has been conducted to ascertain the risk of interference to licensed radio services from the proposed Mt Munro Wind Farm.

The results of the assessment indicate that the proposed Mt Munro Wind Farm indicative layout is not expected to cause any harmful interference effects to licensed radio communication services operating in the vicinity of the wind farm.

There is a licenced wide area coverage service located approximately 16 kilometres from the Mt Munro area and has the licensed reception area overlapping with a section of the project envelope. Although no effects are expected to the service, it is recommended that the licence holder, Wiz Wireless Limited, be contacted to discuss the proposed wind farm and potential to cause interference to their service. No broadcast wide area coverage services are expected to be adversely affected.

Kordia recommends contacting any Wireless ISPs (such as Wiz Wireless and Inspire Net) in the area, to advise of the proposed wind farm and to ask if they operate any wireless access stations in the vicinity which are not licensed in the MBIE register.

Fixed linking services are not expected to be affected by the proposed wind turbine locations. The Fresnel zones for each of the linking paths within the immediate area are not impinged, and the nearest turbines are sufficiently isolated to rule out any scattering effects.

At the stage of the pre-construction report, during the development of the final design, the turbine layout and turbine dimensions should be provided to Airways Corporation of NZ. This allows Airways to undertake their own assessment and update their RADAR signatures if required.

## 5. Appendices

Appendix A – List of Fixed Radio Links Analysed within 20 kilometre radius of the proposed Mt Munro Wind Farm

Appendix B – List of all transmitters within a 20 kilometre radius of the proposed Mt Munro Wind Farm

Appendix C – List of all Aeronautical Radio Navigation services within a 200 kilometre radius of the proposed Mt Munro Wind Farm



# Appendix A List of All Licensed Fixed Linking Services within 20 km of the Proposed Mt Munro Wind Farm

Licence No.	Operator	Freq (MHz)	Licence Type	Tx Location	TxE NZMG	TxN NZMG	Rx Location	RxE NZMG	Rx NZMG
252714	CHORUS NEW ZEALAND LIMITED	162.313	Fixed < 1GHz; BW <=12.5kHz (Bi-directional)	BUTE	2761200	6031600	TANGLEWOOD	2751700	6039600
90754	CHORUS NEW ZEALAND LIMITED	420.462	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	DAGGS ROAD	2750400	6045200	MT BAKER	2744200	6050300
233268	CHORUS NEW ZEALAND LIMITED	425.325	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	EARLYHURST	2748300	6037500	RANGITUMAU	2740669	6036080
147509	CHORUS NEW ZEALAND LIMITED	421.462	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	HAUNUI	2767682	6061745	PUKETOI ROAD	2764900	6062074
81359	CHORUS NEW ZEALAND LIMITED	421.163	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	MANGATERERE NO2	2719900	6027800	POPES HILL	2721100	6028700
131000	CHORUS NEW ZEALAND LIMITED	425.475	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	MT BAKER	2744200	6050300	DAGGS ROAD	2750400	6045200
233294	CHORUS NEW ZEALAND LIMITED	425.425	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	MT CLYDE	2753700	6029600	RANGITUMAU	2740669	6036080
81360	CHORUS NEW ZEALAND LIMITED	426.175	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	POPES HILL	2721100	6028700	MANGATERERE NO2	2719900	6027800
166810	CHORUS NEW ZEALAND LIMITED	426.425	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	POPES HILL	2721100	6028700	UPPER WAINGAWA	2720000	6034600
147510	CHORUS NEW ZEALAND LIMITED	426.475	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	PUKETOI ROAD	2764900	6062074	HAUNUI	2767682	6061745
233267	CHORUS NEW ZEALAND LIMITED	420.313	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	RANGITUMAU	2740669	6036080	EARLYHURST	2748300	6037500
233293	CHORUS NEW ZEALAND LIMITED	420.413	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	RANGITUMAU	2740669	6036080	MT CLYDE	2753700	6029600
252713	CHORUS NEW ZEALAND LIMITED	166.912	Fixed < 1GHz; BW <=12.5kHz (Bi-directional)	TANGLEWOOD	2751700	6039600	BUTE	2761200	6031600
166809	CHORUS NEW ZEALAND LIMITED	421.413	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	UPPER WAINGAWA	2720000	6034600	POPES HILL	2721100	6028700
83720	FONFERRA CO-OPERATIVE GROUP	421.413	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Uni-directional)	MANGAMUTU DOMAIN	2748500	6079700	TUI DAIRY FACTORY	2748900	6080700
83721	FONFERRA CO-OPERATIVE GROUP	421.413	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Uni-directional)	TUI DAIRY FACTORY	2748900	6080700	MANGAMUTU DOMAIN	2748500	6079700
205360	JUKEN NEW ZEALAND LTD	422.188	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	CASTLE HILL	2760300	6047700	MAUNGARAKI	2739500	6008700
205359	JUKEN NEW ZEALAND LTD	427.2	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	MAUNGARAKI	2739500	6008700	CASTLE HILL	2760300	6047700
161354	MASTERTON DISTRICT COUNCIL	160.313	Telemetry/Telecommand (Uni-directional)	BOOST PUMP	2725800	6028700	KAITUNA	2725200	6029500
161355	MASTERTON DISTRICT COUNCIL	160.313	Telemetry/Telecommand (Uni-directional)	CHAPEL ST	2733500	6024800	KAITUNA	2725200	6029500
161356	MASTERTON DISTRICT COUNCIL	160.313	Telemetry/Telecommand (Uni-directional)	COLOMBO RD	2734900	6024700	KAITUNA	2725200	6029500
57273	MASTERTON DISTRICT COUNCIL	160.313	Telemetry/Telecommand (Uni-directional)	KAITUNA	2725200	6029500	WAINGAWA	2719900	6035000
57273	MASTERTON DISTRICT COUNCIL	160.313	Telemetry/Telecommand (Uni-directional)	KAITUNA	2725200	6029500	SYPHON	2722700	6032200
57273	MASTERTON DISTRICT COUNCIL	160.313	Telemetry/Telecommand (Uni-directional)	KAITUNA	2725200	6029500	BOOST PUMP	2725800	6028700
57273	MASTERTON DISTRICT COUNCIL	160.313	Telemetry/Telecommand (Uni-directional)	KAITUNA	2725200	6029500	UPPER PLAIN RESERVOIR	2726600	6028300
57273	MASTERTON DISTRICT COUNCIL	160.313	Telemetry/Telecommand (Uni-directional)	KAITUNA	2725200	6029500	CHAPEL ST	2733500	6024800
57273	MASTERTON DISTRICT COUNCIL	160.313	Telemetry/Telecommand (Uni-directional)	KAITUNA	2725200	6029500	COLOMBO RD	2734900	6024700
57273	MASTERTON DISTRICT COUNCIL	160.313	Telemetry/Telecommand (Uni-directional)	KAITUNA	2725200	6029500	LANSDOWNE	2735300	6026800
57273	MASTERTON DISTRICT COUNCIL	160.313	Telemetry/Telecommand (Uni-directional)	KAITUNA	2725200	6029500	TREATMENT PONDS	2735900	6020400
57279	MASTERTON DISTRICT COUNCIL	160.313	Telemetry/Telecommand (Uni-directional)	LANSDOWNE	2735300	6026800	KAITUNA	2725200	6029500
178170	MASTERTON DISTRICT COUNCIL	160.313	Telemetry/Telecommand (Uni-directional)	MANUKA STREET MASTERTON	2736000	6027500	KAITUNA	2725200	6029500
161357	MASTERTON DISTRICT COUNCIL	160.313	Telemetry/Telecommand (Uni-directional)	SYPHON	2722700	6032200	KAITUNA	2725200	6029500
63770	MASTERTON DISTRICT COUNCIL	160.313	Telemetry/Telecommand (Uni-directional)	TREATMENT PONDS	2735900	6020400	KAITUNA	2725200	6029500
161358	MASTERTON DISTRICT COUNCIL	160.313	Telemetry/Telecommand (Uni-directional)	UPPER PLAIN RESERVOIR	2726600	6028300	KAITUNA	2725200	6029500
57277	MASTERTON DISTRICT COUNCIL	160.313	Telemetry/Telecommand (Uni-directional)	WAINGAWA	2719900	6035000	KAITUNA	2725200	6029500
60291	NZME RADIO LIMITED	158.912	Land Simplex	MASTERTON AREA	2734200	6025100	OTAHOUA	2741700	6021900

Licence No.	Operator	Freq (MHz)	Licence Type	Tx Location	TxE NZMG	TxN NZMG	Rx Location	RxE NZMG	Rx NZMG
151409	NZME RADIO LIMITED	404.95	Fixed < 1GHz; BW >50kHz (Uni-directional)	MASTERTON STUDIO	2734100	6025100	OTAHOUA	2741700	6021900
57630	NZME RADIO LIMITED	412.113	Fixed < 1GHz; BW >50kHz (Uni-directional)	MASTERTON STUDIO	2734100	6025100	WAINGAWA	2728500	6023700
223639	NZME RADIO LIMITED	931.25	Fixed < 1GHz; BW >50kHz (Uni-directional)	MASTERTON STUDIO	2734100	6025100	OTAHOUA	2741800	6022000
262504	NZME RADIO LIMITED	932.75	Fixed < 1GHz; BW >50kHz (Uni-directional)	NZME MASTERTON	2733770	6024950	OTAHOUA	2741700	6021900
262397	NZME RADIO LIMITED	444.45	Fixed < 1GHz; BW >50kHz (Uni-directional)	OTAHOUA	2741800	6022000	WAINGAWA	2728000	6023700
246872	SPORTS ENTERTAINMENT NETWORK PTY LTD	932.25	Fixed < 1GHz; BW >50kHz (Uni-directional)	MEDIAWORKS STUDIO MASTERTON	2732900	6024200	OTAHOUA	2741700	6021900
138989	VITAL LIMITED	428.725	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	BUTE	2761200	6031600	OTAHOUA	2741700	6021900
138988	VITAL LIMITED	423.712	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	OTAHOUA	2741700	6021900	BUTE	2761200	6031600
80373	CHORUS NEW ZEALAND LIMITED	1442.5	Fixed Bi-directional Point-to-Multipoint	ANNEDALE	2772100	6048000	BUTE	2761200	6031600
124793	CHORUS NEW ZEALAND LIMITED	21238	Fixed >=14GHz (Bi-directional)	ARAPAEPAE TRIG	2708500	6059100	LEVIN EXCHANGE	2703500	6062800
130486	CHORUS NEW ZEALAND LIMITED	1442.5	Fixed Bi-directional Point-to-Multipoint	AWAROA	2757900	6033600	BUTE	2761200	6031600
236017	CHORUS NEW ZEALAND LIMITED	1444.5	Fixed Bi-directional Point-to-Multipoint	BENMORE	2766391	6055396	MT BUTTERS	2767200	6067400
80370	CHORUS NEW ZEALAND LIMITED	1495	Fixed Bi-directional Point-to-Multipoint	BUTE	2761200	6031600	RANGITUMAU	2740500	6035800
80371	CHORUS NEW ZEALAND LIMITED	1503	Fixed Bi-directional Point-to-Multipoint	BUTE	2761200	6031600	AWAROA	2757900	6033600
80371	CHORUS NEW ZEALAND LIMITED	1503	Fixed Bi-directional Point-to-Multipoint	BUTE	2761200	6031600	MANGAPAKEHA	2763569	6029431
80371	CHORUS NEW ZEALAND LIMITED	1503	Fixed Bi-directional Point-to-Multipoint	BUTE	2761200	6031600	ANNEDALE	2772100	6048000
245010	CHORUS NEW ZEALAND LIMITED	6840	Fixed >=1GHz & <14GHz (Bi-directional)	BUTE	2761200	6031600	RANGITUMAU	2740669	6036080
236024	CHORUS NEW ZEALAND LIMITED	1444.5	Fixed Bi-directional Point-to-Multipoint	CASTLE HILL	2761200	6047800	MT BUTTERS	2767200	6067400
80369	CHORUS NEW ZEALAND LIMITED	1499	Fixed Bi-directional Point-to-Multipoint	DAGGS ROAD	2750300	6046300	RANGITUMAU	2740500	6035800
233527	CHORUS NEW ZEALAND LIMITED	1499	Fixed Bi-directional Point-to-Multipoint	DAGGS ROAD	2750300	6046300	RANGITUMAU	2740669	6036080
233526	CHORUS NEW ZEALAND LIMITED	1499	Fixed Bi-directional Point-to-Multipoint	DREYERS ROCK	2744100	6043600	RANGITUMAU	2740669	6036080
236022	CHORUS NEW ZEALAND LIMITED	1444.5	Fixed Bi-directional Point-to-Multipoint	FLAT BUSH	2755600	6047300	MT BUTTERS	2767200	6067400
175549	CHORUS NEW ZEALAND LIMITED	7680	Fixed >=1GHz & <14GHz (Bi-directional)	GLADSTONE	2732100	6009900	RANGITUMAU	2740669	6036080
175551	CHORUS NEW ZEALAND LIMITED	13027.5	Fixed >=1GHz & <14GHz (Bi-directional)	HAUNUI	2767682	6061745	MT BUTTERS	2767200	6067400
233849	CHORUS NEW ZEALAND LIMITED	1440.5	Fixed Bi-directional Point-to-Multipoint	HOLDSWORTH	2720600	6030600	POPES HILL	2721100	6028700
80368	CHORUS NEW ZEALAND LIMITED	1509	Fixed Bi-directional Point-to-Multipoint	IHURAU	2747500	6048500	RANGITUMAU	2740500	6035800
80219	CHORUS NEW ZEALAND LIMITED	1509	Fixed Bi-directional Point-to-Multipoint	KAKAAMU	2740400	6039100	RANGITUMAU	2740500	6035800
124794	CHORUS NEW ZEALAND LIMITED	22470	Fixed >=14GHz (Bi-directional)	LEVIN EXCHANGE	2703500	6062800	ARAPAEPAE TRIG	2708500	6059100
233529	CHORUS NEW ZEALAND LIMITED	1499	Fixed Bi-directional Point-to-Multipoint	MANGAMAHOE	2741600	6048500	RANGITUMAU	2740669	6036080
80385	CHORUS NEW ZEALAND LIMITED	1442.5	Fixed Bi-directional Point-to-Multipoint	MANGAPAKEHA	2763569	6029431	BUTE	2761200	6031600
233848	CHORUS NEW ZEALAND LIMITED	1440.5	Fixed Bi-directional Point-to-Multipoint	MANGATARERE	2717500	6026800	POPES HILL	2721100	6028700
84218	CHORUS NEW ZEALAND LIMITED	1493	Fixed Bi-directional Point-to-Multipoint	MT BUTTERS	2767200	6067400	NORTH RANGE ROAD	2747200	6093400
236015	CHORUS NEW ZEALAND LIMITED	1505	Fixed Bi-directional Point-to-Multipoint	MT BUTTERS	2767200	6067400	FLAT BUSH	2755600	6047300
236015	CHORUS NEW ZEALAND LIMITED	1505	Fixed Bi-directional Point-to-Multipoint	MT BUTTERS	2767200	6067400	CASTLE HILL	2761200	6047800
236015	CHORUS NEW ZEALAND LIMITED	1505	Fixed Bi-directional Point-to-Multipoint	MT BUTTERS	2767200	6067400	NGARATA	2762000	6052100
236015	CHORUS NEW ZEALAND LIMITED	1505	Fixed Bi-directional Point-to-Multipoint	MT BUTTERS	2767200	6067400	BENMORE	2766391	6055396
200971	CHORUS NEW ZEALAND LIMITED	1512	Fixed Bi-directional Point-to-Multipoint	MT BUTTERS	2767200	6067400	WAITAWHITI	2768300	6049300
200971	CHORUS NEW ZEALAND LIMITED	1512	Fixed Bi-directional Point-to-Multipoint	MT BUTTERS	2767200	6067400	PUKETAWA	2769500	6052800
200971	CHORUS NEW ZEALAND LIMITED	1512	Fixed Bi-directional Point-to-Multipoint	MT BUTTERS	2767200	6067400	TAWHERO	2770900	6050100
200971	CHORUS NEW ZEALAND LIMITED	1512	Fixed Bi-directional Point-to-Multipoint	MT BUTTERS	2767200	6067400	WAIHOKI	2772900	6057500
245183	CHORUS NEW ZEALAND LIMITED	6540	Fixed >=1GHz & <14GHz (Bi-directional)	MT BUTTERS	2767175	6067388	NORTH RANGE ROAD	2747200	6093400
175552	CHORUS NEW ZEALAND LIMITED	12761.5	Fixed >=1GHz & <14GHz (Bi-directional)	MT BUTTERS	2767200	6067400	HAUNUI	2767682	6061745

Licence No.	Operator	Freq (MHz)	Licence Type	Tx Location	TxE NZMG	TxN NZMG	Rx Location	RxE NZMG	Rx NZMG
236021	CHORUS NEW ZEALAND LIMITED	1444.5	Fixed Bi-directional Point-to-Multipoint	NGARATA	2762000	6052100	MT BUTTERS	2767200	6067400
84217	CHORUS NEW ZEALAND LIMITED	1432.5	Fixed Bi-directional Point-to-Multipoint	NORTH RANGE ROAD	2747200	6093400	PORI	2758600	6063500
84217	CHORUS NEW ZEALAND LIMITED	1432.5	Fixed Bi-directional Point-to-Multipoint	NORTH RANGE ROAD	2747200	6093400	MT BUTTERS	2767200	6067400
245184	CHORUS NEW ZEALAND LIMITED	6880	Fixed >=1GHz & <14GHz (Bi-directional)	NORTH RANGE ROAD	2747200	6093400	MT BUTTERS	2767175	6067388
233530	CHORUS NEW ZEALAND LIMITED	1499	Fixed Bi-directional Point-to-Multipoint	NORTH ROAD	2737800	6049700	RANGITUMAU	2740669	6036080
137402	CHORUS NEW ZEALAND LIMITED	21350	Fixed >=14GHz (Bi-directional)	PAHIATUA CELL SITE	2752100	6082800	PAHIATUA EXCHANGE	2750800	6079700
137401	CHORUS NEW ZEALAND LIMITED	22582	Fixed >=14GHz (Bi-directional)	PAHIATUA EXCHANGE	2750800	6079700	PAHIATUA CELL SITE	2752100	6082800
233528	CHORUS NEW ZEALAND LIMITED	1499	Fixed Bi-directional Point-to-Multipoint	PARIWHARIKI	2738900	6007700	RANGITUMAU	2740669	6036080
139384	CHORUS NEW ZEALAND LIMITED	1495	Fixed Bi-directional Point-to-Multipoint	POPES HILL	2721100	6028700	RANGITUMAU	2740500	6035800
233847	CHORUS NEW ZEALAND LIMITED	1501	Fixed Bi-directional Point-to-Multipoint	POPES HILL	2721100	6028700	MANGATARERE	2717500	6026800
233847	CHORUS NEW ZEALAND LIMITED	1501	Fixed Bi-directional Point-to-Multipoint	POPES HILL	2721100	6028700	HOLDSWORTH	2720600	6030600
84222	CHORUS NEW ZEALAND LIMITED	1493	Fixed Bi-directional Point-to-Multipoint	PORI	2758600	6063500	NORTH RANGE ROAD	2747200	6093400
200977	CHORUS NEW ZEALAND LIMITED	1451.5	Fixed Bi-directional Point-to-Multipoint	PUKETAWA	2769500	6052800	MT BUTTERS	2767200	6067400
103682	CHORUS NEW ZEALAND LIMITED	1434.5	Fixed Bi-directional Point-to-Multipoint	RANGITUMAU	2740500	6035800	POPES HILL	2721100	6028700
103682	CHORUS NEW ZEALAND LIMITED	1434.5	Fixed Bi-directional Point-to-Multipoint	RANGITUMAU	2740500	6035800	BUTE	2761200	6031600
233525	CHORUS NEW ZEALAND LIMITED	1438.5	Fixed Bi-directional Point-to-Multipoint	RANGITUMAU	2740669	6036080	NORTH ROAD	2737800	6049700
233525	CHORUS NEW ZEALAND LIMITED	1438.5	Fixed Bi-directional Point-to-Multipoint	RANGITUMAU	2740669	6036080	PARIWHARIKI	2738900	6007700
233525	CHORUS NEW ZEALAND LIMITED	1438.5	Fixed Bi-directional Point-to-Multipoint	RANGITUMAU	2740669	6036080	MANGAMAHOE	2741600	6048500
233525	CHORUS NEW ZEALAND LIMITED	1438.5	Fixed Bi-directional Point-to-Multipoint	RANGITUMAU	2740669	6036080	DREYERS ROCK	2744100	6043600
233525	CHORUS NEW ZEALAND LIMITED	1438.5	Fixed Bi-directional Point-to-Multipoint	RANGITUMAU	2740669	6036080	DAGGS ROAD	2750300	6046300
74198	CHORUS NEW ZEALAND LIMITED	1448.5	Fixed Bi-directional Point-to-Multipoint	RANGITUMAU	2740500	6035800	KAKAAMU	2740400	6039100
74198	CHORUS NEW ZEALAND LIMITED	1448.5	Fixed Bi-directional Point-to-Multipoint	RANGITUMAU	2740500	6035800	IHURAU	2747500	6048500
74198	CHORUS NEW ZEALAND LIMITED	1448.5	Fixed Bi-directional Point-to-Multipoint	RANGITUMAU	2740500	6035800	REWA	2760700	6012300
235869	CHORUS NEW ZEALAND LIMITED	6500	Fixed >=1GHz & <14GHz (Bi-directional)	RANGITUMAU	2740669	6036080	REWA	2760700	6012300
245009	CHORUS NEW ZEALAND LIMITED	6500	Fixed >=1GHz & <14GHz (Bi-directional)	RANGITUMAU	2740669	6036080	BUTE	2761200	6031600
175550	CHORUS NEW ZEALAND LIMITED	7519	Fixed >=1GHz & <14GHz (Bi-directional)	RANGITUMAU	2740669	6036080	GLADSTONE	2732100	6009900
74199	CHORUS NEW ZEALAND LIMITED	1509	Fixed Bi-directional Point-to-Multipoint	REWA	2760700	6012300	RANGITUMAU	2740500	6035800
235870	CHORUS NEW ZEALAND LIMITED	6840	Fixed >=1GHz & <14GHz (Bi-directional)	REWA	2760700	6012300	RANGITUMAU	2740669	6036080
200976	CHORUS NEW ZEALAND LIMITED	1451.5	Fixed Bi-directional Point-to-Multipoint	TAWHERO	2770900	6050100	MT BUTTERS	2767200	6067400
200974	CHORUS NEW ZEALAND LIMITED	1451.5	Fixed Bi-directional Point-to-Multipoint	WAIHOKI	2772900	6057500	MT BUTTERS	2767200	6067400
200975	CHORUS NEW ZEALAND LIMITED	1451.5	Fixed Bi-directional Point-to-Multipoint	WAITAWHITI	2768300	6049300	MT BUTTERS	2767200	6067400
259366	ELECTRA LTD	11325	Fixed >=1GHz & <14GHz (Bi-directional)	FOXTON SUBSTATION	2703656	6078508	TE PAKI	2718561	6065354
256116	ELECTRA LTD	11605	Fixed >=1GHz & <14GHz (Bi-directional)	KAWIU ROAD SUBSTATION LEVIN	2702770	6064874	TE PAKI	2718561	6065354
259365	ELECTRA LTD	10795	Fixed >=1GHz & <14GHz (Bi-directional)	TE PAKI	2718561	6065354	FOXTON SUBSTATION	2703656	6078508
255707	ELECTRA LTD	11075	Fixed >=1GHz & <14GHz (Bi-directional)	TE PAKI	2718561	6065354	KAWIU ROAD SUBSTATION LEVIN	2702770	6064874
260465	ENHANCED SOLUTIONS LIMITED	11325	Fixed >=1GHz & <14GHz (Bi-directional)	MT BUTTERS	2767200	6067400	NORTH RANGE ROAD (AONET)	2741354	6085558
260466	ENHANCED SOLUTIONS LIMITED	10795	Fixed >=1GHz & <14GHz (Bi-directional)	NORTH RANGE ROAD (AONET)	2741354	6085558	MT BUTTERS	2767200	6067400
254087	INSPIRE NET LIMITED	18250	Fixed >=14GHz (Bi-directional)	128 DIXON ST MASTERTON	2733565	6024680	RANGITUMAU (TELETRONICS SOUTH SITE)	2740654	6035873
260012	INSPIRE NET LIMITED	18360	Fixed >=14GHz (Bi-directional)	EKETAHUNA 31 MAIN STREET	2738556	6058821	EKETAHUNA NIREAHA (INSPIRE)	2731419	6057699
280052	INSPIRE NET LIMITED	11525	Fixed >=1GHz & <14GHz (Bi-directional)	EKETAHUNA NIREAHA (INSPIRE)	2731419	6057699	RANGITUMAU	2740616	6036122
260013	INSPIRE NET LIMITED	19370	Fixed >=14GHz (Bi-directional)	EKETAHUNA NIREAHA (INSPIRE)	2731419	6057699	EKETAHUNA 31 MAIN STREET	2738556	6058821
277483	INSPIRE NET LIMITED	11075	Fixed >=1GHz & <14GHz (Bi-directional)	FMG STADIUM PALMERSTON NORTH	2730900	6091100	PURURIRI (INSPIRE)	2722488	6072732

Licence No.	Operator	Freq (MHz)	Licence Type	Tx Location	TxE NZMG	TxN NZMG	Rx Location	RxE NZMG	Rx NZMG
278772	INSPIRE NET LIMITED	19260	Fixed >=14GHz (Bi-directional)	FMG STADIUM PALMERSTON NORTH	2730900	6091100	TE MATA TRIG (INSPIRE)	2730863	6080233
261612	INSPIRE NET LIMITED	19590	Fixed >=14GHz (Bi-directional)	KARAKA ST TOKOMARU	2722331	6077228	PURURIRI (INSPIRE)	2722488	6072732
277482	INSPIRE NET LIMITED	11605	Fixed >=1GHz & <14GHz (Bi-directional)	PURURIRI (INSPIRE)	2722488	6072732	FMG STADIUM PALMERSTON NORTH	2730900	6091100
261611	INSPIRE NET LIMITED	18580	Fixed >=14GHz (Bi-directional)	PURURIRI (INSPIRE)	2722488	6072732	KARAKA ST TOKOMARU	2722331	6077228
280051	INSPIRE NET LIMITED	10995	Fixed >=1GHz & <14GHz (Bi-directional)	RANGITUMAU	2740616	6036122	EKETAHUNA NIREAHA (INSPIRE)	2731419	6057699
254088	INSPIRE NET LIMITED	19260	Fixed >=14GHz (Bi-directional)	RANGITUMAU (TELETRONICS SOUTH SITE)	2740654	6035873	128 DIXON ST MASTERTON	2733565	6024680
278771	INSPIRE NET LIMITED	18250	Fixed >=14GHz (Bi-directional)	TE MATA TRIG (INSPIRE)	2730863	6080233	FMG STADIUM PALMERSTON NORTH	2730900	6091100
281160	INSPIRE NET LIMITED	18360	Fixed >=14GHz (Bi-directional)	TE MATA TRIG (INSPIRE)	2730863	6080233	TOWER NO 52 TE RERE HAU WIND FARM	2741511	6087245
281161	INSPIRE NET LIMITED	19370	Fixed >=14GHz (Bi-directional)	TOWER NO 52 TE RERE HAU WIND FARM	2741511	6087245	TE MATA TRIG (INSPIRE)	2730863	6080233
282260	KIWRAIL	8236.92	Fixed >=1GHz & <14GHz (Bi-directional)	MOUTERE HILL	2699600	6066300	NORTH RANGE ROAD WEST	2746900	6093300
282259	KIWRAIL	7925.6	Fixed >=1GHz & <14GHz (Bi-directional)	NORTH RANGE ROAD WEST	2746900	6093300	MOUTERE HILL	2699600	6066300
263661	KORDIA LIMITED	4730	Fixed >=1GHz & <14GHz (Bi-directional)	OTAHOUA	2741754	6022012	WHARITE	2752900	6101700
263665	KORDIA LIMITED	15159	Fixed >=14GHz (Bi-directional)	OTAHOUA	2741754	6022012	RANGITUMAU	2740669	6036080
263666	KORDIA LIMITED	14515	Fixed >=14GHz (Bi-directional)	RANGITUMAU	2740669	6036080	OTAHOUA	2741754	6022012
263662	KORDIA LIMITED	4430	Fixed >=1GHz & <14GHz (Bi-directional)	WHARITE	2752900	6101700	OTAHOUA	2741754	6022012
265350	POWERCO LIMITED	10855	Fixed >=1GHz & <14GHz (Bi-directional)	BUTE	2761200	6031600	MT BUTTERS (POWERCO)	2767090	6067400
285427	POWERCO LIMITED	8412	Fixed >=1GHz & <14GHz (Bi-directional)	MORRISONS (POWERCO)	2720115	6003047	MT BRUCE (POWERCO)	2730655	6047168
285426	POWERCO LIMITED	8293	Fixed >=1GHz & <14GHz (Bi-directional)	MT BRUCE (POWERCO)	2730655	6047168	MORRISONS (POWERCO)	2720115	6003047
285424	POWERCO LIMITED	8454	Fixed >=1GHz & <14GHz (Bi-directional)	MT BRUCE (POWERCO)	2730655	6047168	TE RERE HAU WIND FARM NORTH RANGE ROAD	2742506	6087285
285422	POWERCO LIMITED	11625	Fixed >=1GHz & <14GHz (Bi-directional)	MT BRUCE (POWERCO)	2730655	6047168	NGAUMUTAWA ROAD, MASTERTON (POWERCO)	2732615	6026013
278719	POWERCO LIMITED	1495	Fixed Bi-directional Point-to-Multipoint	MT BUTTERS (POWERCO)	2767090	6067400	TE RERE HAU WIND FARM NORTH RANGE ROAD	2742506	6087285
265351	POWERCO LIMITED	11385	Fixed >=1GHz & <14GHz (Bi-directional)	MT BUTTERS (POWERCO)	2767090	6067400	BUTE	2761200	6031600
278725	POWERCO LIMITED	11585	Fixed >=1GHz & <14GHz (Bi-directional)	MT BUTTERS (POWERCO)	2767090	6067400	TE PAKI	2718561	6065354
285447	POWERCO LIMITED	11625	Fixed >=1GHz & <14GHz (Bi-directional)	MT BUTTERS (POWERCO)	2767090	6067400	REWA (POWERCO)	2760597	6012292
285423	POWERCO LIMITED	11095	Fixed >=1GHz & <14GHz (Bi-directional)	NGAUMUTAWA ROAD, MASTERTON (POWERCO)	2732615	6026013	MT BRUCE (POWERCO)	2730655	6047168
285446	POWERCO LIMITED	11095	Fixed >=1GHz & <14GHz (Bi-directional)	REWA (POWERCO)	2760597	6012292	MT BUTTERS (POWERCO)	2767090	6067400
278726	POWERCO LIMITED	11055	Fixed >=1GHz & <14GHz (Bi-directional)	TE PAKI	2718561	6065354	MT BUTTERS (POWERCO)	2767090	6067400
285434	POWERCO LIMITED	1434.5	Fixed Bi-directional Point-to-Multipoint	TE RERE HAU WIND FARM NORTH RANGE ROAD	2742506	6087285	MT BUTTERS (POWERCO)	2767090	6067400
285425	POWERCO LIMITED	8335	Fixed >=1GHz & <14GHz (Bi-directional)	TE RERE HAU WIND FARM NORTH RANGE ROAD	2742506	6087285	MT BRUCE (POWERCO)	2730655	6047168
290626	RURAL WIRELESS LIMITED	11325	Fixed >=1GHz & <14GHz (Bi-directional)	20 GREY STREET PALMERSTON NORTH	2731600	6091500	349 HEIGHTS ROAD SHANNON (RURALWIRELESS)	2713252	6066880
290625	RURAL WIRELESS LIMITED	10795	Fixed >=1GHz & <14GHz (Bi-directional)	349 HEIGHTS ROAD SHANNON (RURALWIRELESS)	2713252	6066880	20 GREY STREET PALMERSTON NORTH	2731600	6091500
247801	SPARK NEW ZEALAND TRADING LIMITED	12835	Fixed >=1GHz & <14GHz (Bi-directional)	HEIGHTS ROAD	2713316	6066848	LEVIN EXCHANGE	2703611	6062790
266565	SPARK NEW ZEALAND TRADING LIMITED	12891	Fixed >=1GHz & <14GHz (Bi-directional)	HEIGHTS ROAD	2713316	6066848	LEVIN	2705912	6065118
276968	SPARK NEW ZEALAND TRADING LIMITED	12891	Fixed >=1GHz & <14GHz (Bi-directional)	KAITAWA	2754294	6071320	KAITAWA NORTH	2757385	6080753
276969	SPARK NEW ZEALAND TRADING LIMITED	13157	Fixed >=1GHz & <14GHz (Bi-directional)	KAITAWA NORTH	2757385	6080753	KAITAWA	2754294	6071320
281783	SPARK NEW ZEALAND TRADING LIMITED	13213	Fixed >=1GHz & <14GHz (Bi-directional)	KAITAWA NORTH	2757385	6080753	MANGAONE VALLEY	2749549	6062968
276194	SPARK NEW ZEALAND TRADING LIMITED	12891	Fixed >=1GHz & <14GHz (Bi-directional)	KAITUNA	2722896	6032684	MASTERTON EXCHANGE	2733885	6025265
276963	SPARK NEW ZEALAND TRADING LIMITED	7940.43	Fixed >=1GHz & <14GHz (Bi-directional)	KUMEROA	2761991	6092859	MANGAONE VALLEY	2749549	6062968
266564	SPARK NEW ZEALAND TRADING LIMITED	13157	Fixed >=1GHz & <14GHz (Bi-directional)	LEVIN	2705912	6065118	HEIGHTS ROAD	2713316	6066848

Licence No.	Operator	Freq (MHz)	Licence Type	Tx Location	TxE NZMG	TxN NZMG	Rx Location	RxE NZMG	Rx NZMG
247800	SPARK NEW ZEALAND TRADING LIMITED	13101	Fixed >=1GHz & <14GHz (Bi-directional)	LEVIN EXCHANGE	2703611	6062790	HEIGHTS ROAD	2713316	6066848
276962	SPARK NEW ZEALAND TRADING LIMITED	8251.75	Fixed >=1GHz & <14GHz (Bi-directional)	MANGAONE VALLEY	2749549	6062968	KUMEROA	2761991	6092859
281782	SPARK NEW ZEALAND TRADING LIMITED	12947	Fixed >=1GHz & <14GHz (Bi-directional)	MANGAONE VALLEY	2749549	6062968	KAITAWA NORTH	2757385	6080753
276195	SPARK NEW ZEALAND TRADING LIMITED	13157	Fixed >=1GHz & <14GHz (Bi-directional)	MASTERTON EXCHANGE	2733885	6025265	KAITUNA	2722896	6032684
265458	SPARK NEW ZEALAND TRADING LIMITED	7940.43	Fixed >=1GHz & <14GHz (Bi-directional)	MT BUTTERS	2767175	6067388	PAHIATUA (VF TOWER)	2751957	6082882
265459	SPARK NEW ZEALAND TRADING LIMITED	8251.75	Fixed >=1GHz & <14GHz (Bi-directional)	PAHIATUA (VF TOWER)	2751957	6082882	MT BUTTERS	2767175	6067388
228909	TWO DEGREES NETWORKS LIMITED	13143	Fixed >=1GHz & <14GHz (Bi-directional)	261 OXFORD STREET LEVIN CENTRAL (MNW-042-003-A)	2703430	6062498	LEVIN HIGH (MNW-042-001-B)	2708485	6059214
266441	TWO DEGREES NETWORKS LIMITED	13213	Fixed >=1GHz & <14GHz (Bi-directional)	397 FERGUSON ST PALMERSTON NORTH (MNW-040-004-A)	2732186	6090946	TOKOMARU (MNW-042-002-B)	2725642	6077508
247697	TWO DEGREES NETWORKS LIMITED	15271	Fixed >=14GHz (Bi-directional)	CAMP RD LINTON (MNW-040-009-B)	2729047	6085269	TOKOMARU (MNW-042-002-B)	2725642	6077508
228908	TWO DEGREES NETWORKS LIMITED	12877	Fixed >=1GHz & <14GHz (Bi-directional)	LEVIN HIGH (MNW-042-001-B)	2708485	6059214	261 OXFORD STREET LEVIN CENTRAL (MNW-042-003-A)	2703430	6062498
266440	TWO DEGREES NETWORKS LIMITED	12947	Fixed >=1GHz & <14GHz (Bi-directional)	TOKOMARU (MNW-042-002-B)	2725642	6077508	397 FERGUSON ST PALMERSTON NORTH (MNW-040-004-A)	2732186	6090946
247696	TWO DEGREES NETWORKS LIMITED	14627	Fixed >=14GHz (Bi-directional)	TOKOMARU (MNW-042-002-B)	2725642	6077508	CAMP RD LINTON (MNW-040-009-B)	2729047	6085269
261775	VITAL LIMITED	15215	Fixed >=14GHz (Bi-directional)	ASPIRING DAIRY UNIT	2708099	6073660	TE PAKI	2718561	6065354
268262	VITAL LIMITED	5974.85	Fixed >=1GHz & <14GHz (Bi-directional)	NORTH RANGE ROAD	2747200	6093400	RANGITUMAU	2740669	6036080
261786	VITAL LIMITED	7383.5	Fixed >=1GHz & <14GHz (Bi-directional)	NORTH RANGE ROAD	2747111	6093364	TE PAKI	2718561	6065354
212782	VITAL LIMITED	7491	Fixed >=1GHz & <14GHz (Bi-directional)	NORTH RANGE ROAD	2747200	6093400	TE PAKI	2718500	6065400
268263	VITAL LIMITED	6226.89	Fixed >=1GHz & <14GHz (Bi-directional)	RANGITUMAU	2740669	6036080	NORTH RANGE ROAD	2747200	6093400
261787	VITAL LIMITED	7222.5	Fixed >=1GHz & <14GHz (Bi-directional)	TE PAKI	2718561	6065354	NORTH RANGE ROAD	2747111	6093364
212781	VITAL LIMITED	7652	Fixed >=1GHz & <14GHz (Bi-directional)	TE PAKI	2718500	6065400	NORTH RANGE ROAD	2747200	6093400
261776	VITAL LIMITED	14571	Fixed >=14GHz (Bi-directional)	TE PAKI	2718561	6065354	ASPIRING DAIRY UNIT	2708099	6073660
209927	VODAFONE NEW ZEALAND LIMITED	7747.7	Fixed >=1GHz & <14GHz (Bi-directional)	20 BRUCE ROAD	2701693	6061453	SQUIRE FARM (VF TOKOMARU W3TKU)	2725646	6077508
208116	VODAFONE NEW ZEALAND LIMITED	13227	Fixed >=1GHz & <14GHz (Bi-directional)	20 BRUCE ROAD	2701693	6061453	ARAPAEPAE TRIG	2708500	6059100
216402	VODAFONE NEW ZEALAND LIMITED	6197.24	Fixed >=1GHz & <14GHz (Bi-directional)	253 CLIFF ROAD EKETAHUNA (VF EKETAHUNA W3EKH)	2738431	6059935	WHARITE	2753100	6101800
242059	VODAFONE NEW ZEALAND LIMITED	10735	Fixed >=1GHz & <14GHz (Bi-directional)	253 CLIFF ROAD EKETAHUNA (VF EKETAHUNA W3EKH)	2738431	6059935	TAWERA HILL (VF MT BRUCE W3MBR)	2729806	6048250
277736	VODAFONE NEW ZEALAND LIMITED	10835	Fixed >=1GHz & <14GHz (Bi-directional)	253 CLIFF ROAD EKETAHUNA (VF EKETAHUNA W3EKH)	2738431	6059935	7.1 KM WNW OF MANGAMAI VIA NAENAE ROAD (RCG RMWGA)	2736486	6075215
239513	VODAFONE NEW ZEALAND LIMITED	11405	Fixed >=1GHz & <14GHz (Bi-directional)	398 QUEEN STREET MASTERTON	2733086	6024408	ECHO BANK FARM OFF HURURUA ROAD CARRINGTON (VF CAR)	2720928	6022873
271316	VODAFONE NEW ZEALAND LIMITED	13213	Fixed >=1GHz & <14GHz (Bi-directional)	398 QUEEN STREET MASTERTON	2733086	6024408	BEHIND 795 TE WHITI ROAD TE WHITI (RCG RWLTHW TE WHITI)	2734164	6016107
264534	VODAFONE NEW ZEALAND LIMITED	8073.85	Fixed >=1GHz & <14GHz (Bi-directional)	56 WEST ROAD (MNW-041-005-A)	2751956	6082905	MT BUTTERS (VODAFONE W3BUT)	2767100	6067359
277737	VODAFONE NEW ZEALAND LIMITED	11365	Fixed >=1GHz & <14GHz (Bi-directional)	7.1 KM WNW OF MANGAMAI VIA NAENAE ROAD (RCG RMWGA)	2736486	6075215	253 CLIFF ROAD EKETAHUNA (VF EKETAHUNA W3EKH)	2738431	6059935
208115	VODAFONE NEW ZEALAND LIMITED	12961	Fixed >=1GHz & <14GHz (Bi-directional)	ARAPAEPAE TRIG	2708500	6059100	20 BRUCE ROAD	2701693	6061453
236718	VODAFONE NEW ZEALAND LIMITED	19590	Fixed >=14GHz (Bi-directional)	ARAPAEPAE TRIG	2708500	6059100	LEVIN CENTRAL	2703400	6062500
271315	VODAFONE NEW ZEALAND LIMITED	12947	Fixed >=1GHz & <14GHz (Bi-directional)	BEHIND 795 TE WHITI ROAD TE WHITI (RCG RWLTHW TE WHITI)	2734164	6016107	398 QUEEN STREET MASTERTON	2733086	6024408
242061	VODAFONE NEW ZEALAND LIMITED	10775	Fixed >=1GHz & <14GHz (Bi-directional)	BEHIND 9 AKURA ROAD MASTERTON (VF MASTERTON W3MTN)	2733422	6026205	TAWERA HILL (VF MT BRUCE W3MBR)	2729806	6048250
239185	VODAFONE NEW ZEALAND LIMITED	11285	Fixed >=1GHz & <14GHz (Bi-directional)	CAMP ROAD LINTON (VF W3LNTN LINTON)	2729048	6085266	SQUIRE FARM (VF TOKOMARU W3TKU)	2725646	6077508
293267	VODAFONE NEW ZEALAND LIMITED	22624	Fixed >=14GHz (Bi-directional)	CAMP ROAD LINTON (VF W3LNTN LINTON)	2729048	6085266	COW J15 PUTTICK ROAD LINTON (VF LINTON NZDF COW)	2729464	6085743
279674	VODAFONE NEW ZEALAND LIMITED	22512	Fixed >=14GHz (Bi-directional)	CLINICAL SERVICES AND SUPPORT BUILDING WAIRARAPA	2735009	6025236	DEPARTMENTAL BUILDING 35-37 CHAPEL STREET	2734114	6025286

Licence No.	Operator	Freq (MHz)	Licence Type	Tx Location	TxE NZMG	TxN NZMG	Rx Location	RxE NZMG	Rx NZMG
				HOSPITAL TE ORE ORE ROAD MASTERTON (VF MTHS)			MASTERTON (VF DEPT)		
293266	VODAFONE NEW ZEALAND LIMITED	21392	Fixed >=14GHz (Bi-directional)	COW J15 PUTTICK ROAD LINTON (VF LINTON NZDF COW)	2729464	6085743	CAMP ROAD LINTON (VF W3L3TN LINTON)	2729048	6085266
266519	VODAFONE NEW ZEALAND LIMITED	11305	Fixed >=1GHz & <14GHz (Bi-directional)	COW SOLWAY SHOWGROUNDS JUDDS ROAD MASTERTON WAIRARAPA	2731168	6024418	ECHO BANK FARM OFF HURURUA ROAD CARRINGTON (VF CAR)	2720928	6022873
279673	VODAFONE NEW ZEALAND LIMITED	21280	Fixed >=14GHz (Bi-directional)	DEPARTMENTAL BUILDING 35-37 CHAPEL STREET MASTERTON (VF DEPT)	2734114	6025286	CLINICAL SERVICES AND SUPPORT BUILDING WAIRARAPA HOSPITAL TE ORE ORE ROAD MASTERTON (VF MTHS)	2735009	6025236
170293	VODAFONE NEW ZEALAND LIMITED	22095.5	Fixed >=14GHz (Bi-directional)	DEPT BUILDING 31 CHAPEL STREET MASTERTON	2734125	6025259	UCOL 143 CHAPEL STREET MASTERTON	2733384	6024629
266518	VODAFONE NEW ZEALAND LIMITED	10775	Fixed >=1GHz & <14GHz (Bi-directional)	ECHO BANK FARM OFF HURURUA ROAD CARRINGTON (VF CAR)	2720928	6022873	COW SOLWAY SHOWGROUNDS JUDDS ROAD MASTERTON WAIRARAPA	2731168	6024418
256818	VODAFONE NEW ZEALAND LIMITED	10775	Fixed >=1GHz & <14GHz (Bi-directional)	ECHO BANK FARM OFF HURURUA ROAD CARRINGTON (VF CAR)	2720928	6022873	WINGS OVER WAIRARAPA COW HOOD AERODROME SOUTH ROAD SOLWAY MASTERTON	2731736	6022732
239512	VODAFONE NEW ZEALAND LIMITED	10875	Fixed >=1GHz & <14GHz (Bi-directional)	ECHO BANK FARM OFF HURURUA ROAD CARRINGTON (VF CAR)	2720928	6022873	398 QUEEN STREET MASTERTON	2733086	6024408
277658	VODAFONE NEW ZEALAND LIMITED	11485	Fixed >=1GHz & <14GHz (Bi-directional)	HILL BEHIND 178 UPPER WAINGAWA ROAD KAITUNA (RCG RWLKTU)	2722899	6032685	SOUTHERN RIDGE TIROHANGA HILL NEAR BLUFF RANGITUMAU ROAD MASTERTON (VF W3OPI)	2734702	6033747
279896	VODAFONE NEW ZEALAND LIMITED	7236.5	Fixed >=1GHz & <14GHz (Bi-directional)	HILL SOUTH OF 9 LARSEN ROAD EKETAHUNA (RCG RMWMGV)	2730686	6059029	PUKENIKAU HILL (VF PAHIATUA W3PAI)	2751949	6082884
236717	VODAFONE NEW ZEALAND LIMITED	18580	Fixed >=14GHz (Bi-directional)	LEVIN CENTRAL	2703400	6062500	ARAPAEPAE TRIG	2708500	6059100
210536	VODAFONE NEW ZEALAND LIMITED	11405	Fixed >=1GHz & <14GHz (Bi-directional)	MILSON	2732200	6093500	SQUIRE FARM (VF TOKOMARU W3TKU)	2725646	6077508
264533	VODAFONE NEW ZEALAND LIMITED	7762.52	Fixed >=1GHz & <14GHz (Bi-directional)	MT BUTTERS (VODAFONE W3BUT)	2767100	6067359	56 WEST ROAD (MNNW-041-005-A)	2751956	6082905
208238	VODAFONE NEW ZEALAND LIMITED	7747.7	Fixed >=1GHz & <14GHz (Bi-directional)	OTAHOUA	2741700	6021900	TAWERA HILL (VF MT BRUCE W3MBR)	2729806	6048250
243267	VODAFONE NEW ZEALAND LIMITED	12947	Fixed >=1GHz & <14GHz (Bi-directional)	OTAHOUA	2741700	6021900	SOUTHERN RIDGE TIROHANGA HILL NEAR BLUFF RANGITUMAU ROAD MASTERTON (VF W3OPI)	2734702	6033747
279897	VODAFONE NEW ZEALAND LIMITED	7397.5	Fixed >=1GHz & <14GHz (Bi-directional)	PUKENIKAU HILL (VF PAHIATUA W3PAI)	2751949	6082884	HILL SOUTH OF 9 LARSEN ROAD EKETAHUNA (RCG RMWMGV)	2730686	6059029
277657	VODAFONE NEW ZEALAND LIMITED	10955	Fixed >=1GHz & <14GHz (Bi-directional)	SOUTHERN RIDGE TIROHANGA HILL NEAR BLUFF RANGITUMAU ROAD MASTERTON (VF W3OPI)	2734702	6033747	HILL BEHIND 178 UPPER WAINGAWA ROAD KAITUNA (RCG RWLKTU)	2722899	6032685
243268	VODAFONE NEW ZEALAND LIMITED	13213	Fixed >=1GHz & <14GHz (Bi-directional)	SOUTHERN RIDGE TIROHANGA HILL NEAR BLUFF RANGITUMAU ROAD MASTERTON (VF W3OPI)	2734702	6033747	OTAHOUA	2741700	6021900
210662	VODAFONE NEW ZEALAND LIMITED	8059.02	Fixed >=1GHz & <14GHz (Bi-directional)	SQUIRE FARM (VF TOKOMARU W3TKU)	2725646	6077508	20 BRUCE ROAD	2701693	6061453
239182	VODAFONE NEW ZEALAND LIMITED	10715	Fixed >=1GHz & <14GHz (Bi-directional)	SQUIRE FARM (VF TOKOMARU W3TKU)	2725646	6077508	STATE HWY, 1.5 KM NE OF SHANNON	2715509	6071500
239184	VODAFONE NEW ZEALAND LIMITED	10755	Fixed >=1GHz & <14GHz (Bi-directional)	SQUIRE FARM (VF TOKOMARU W3TKU)	2725646	6077508	CAMP ROAD LINTON (VF W3L3TN LINTON)	2729048	6085266
210535	VODAFONE NEW ZEALAND LIMITED	10875	Fixed >=1GHz & <14GHz (Bi-directional)	SQUIRE FARM (VF TOKOMARU W3TKU)	2725646	6077508	MILSON	2732200	6093500
239183	VODAFONE NEW ZEALAND LIMITED	11245	Fixed >=1GHz & <14GHz (Bi-directional)	STATE HWY, 1.5 KM NE OF SHANNON	2715509	6071500	SQUIRE FARM (VF TOKOMARU W3TKU)	2725646	6077508
208239	VODAFONE NEW ZEALAND LIMITED	8059.02	Fixed >=1GHz & <14GHz (Bi-directional)	TAWERA HILL (VF MT BRUCE W3MBR)	2729806	6048250	OTAHOUA	2741700	6021900
242060	VODAFONE NEW ZEALAND LIMITED	11265	Fixed >=1GHz & <14GHz (Bi-directional)	TAWERA HILL (VF MT BRUCE W3MBR)	2729806	6048250	253 CLIFF ROAD EKETAHUNA (VF EKETAHUNA W3EKH)	2738431	6059935
242062	VODAFONE NEW ZEALAND LIMITED	11305	Fixed >=1GHz & <14GHz (Bi-directional)	TAWERA HILL (VF MT BRUCE W3MBR)	2729806	6048250	BEHIND 9 AKURA ROAD MASTERTON (VF MASTERTON W3MTN)	2733422	6026205
170294	VODAFONE NEW ZEALAND LIMITED	23327.5	Fixed >=14GHz (Bi-directional)	UCOL 143 CHAPEL STREET MASTERTON	2733384	6024629	DEPT BUILDING 31 CHAPEL STREET MASTERTON	2734125	6025259

Licence No.	Operator	Freq (MHz)	Licence Type	Tx Location	TxE NZMG	TxN NZMG	Rx Location	RxE NZMG	Rx NZMG
216401	VODAFONE NEW ZEALAND LIMITED	5945.2	Fixed >=1GHz & <14GHz (Bi-directional)	WHARITE	2753100	6101800	253 CLIFF ROAD EKETAHUNA (VF EKETAHUNA W3EKH)	2738431	6059935
256819	VODAFONE NEW ZEALAND LIMITED	11305	Fixed >=1GHz & <14GHz (Bi-directional)	WINGS OVER WAIRARAPA COW HOOD AERODROME SOUTH ROAD SOLWAY MASTERTON	2731736	6022732	ECHO BANK FARM OFF HURURUA ROAD CARRINGTON (VF CAR)	2720928	6022873
275488	WIZWIRELESS LIMITED	11445	Fixed >=1GHz & <14GHz (Bi-directional)	146 QUEEN STREET MASTERTON (WIZ)	2733968	6025131	TE KOPI (WIZ)	2737891	6013946
265766	WIZWIRELESS LIMITED	11245	Fixed >=1GHz & <14GHz (Bi-directional)	BENNETTS HILL (WIZWIRELESS)	2741673	6022072	BLUFF (WIZWIRELESS)	2759316	6027052
259548	WIZWIRELESS LIMITED	11245	Fixed >=1GHz & <14GHz (Bi-directional)	BENNETTS HILL (WIZWIRELESS)	2741673	6022072	MANGAPURPURU	2760353	6034565
292746	WIZWIRELESS LIMITED	11365	Fixed >=1GHz & <14GHz (Bi-directional)	BENNETTS HILL (WIZWIRELESS)	2741673	6022072	TRANZIT BUILDING MASTERTON (316 QUEEN STREET)	2733510	6024758
292858	WIZWIRELESS LIMITED	11445	Fixed >=1GHz & <14GHz (Bi-directional)	BENNETTS HILL (WIZWIRELESS)	2741673	6022072	RANGITUMAU (WIZWIRELESS)	2740378	6035745
265767	WIZWIRELESS LIMITED	10715	Fixed >=1GHz & <14GHz (Bi-directional)	BLUFF (WIZWIRELESS)	2759316	6027052	BENNETTS HILL (WIZWIRELESS)	2741673	6022072
259547	WIZWIRELESS LIMITED	10715	Fixed >=1GHz & <14GHz (Bi-directional)	MANGAPURPURU	2760353	6034565	BENNETTS HILL (WIZWIRELESS)	2741673	6022072
259276	WIZWIRELESS LIMITED	11365	Fixed >=1GHz & <14GHz (Bi-directional)	NORFOLK (WIZ)	2722901	6032669	TRANZIT BUILDING MASTERTON (316 QUEEN STREET)	2733510	6024758
259843	WIZWIRELESS LIMITED	11405	Fixed >=1GHz & <14GHz (Bi-directional)	NORFOLK (WIZ)	2722901	6032669	RANGITUMAU (WIZWIRELESS)	2740378	6035745
259842	WIZWIRELESS LIMITED	10875	Fixed >=1GHz & <14GHz (Bi-directional)	RANGITUMAU (WIZWIRELESS)	2740378	6035745	NORFOLK (WIZ)	2722901	6032669
292857	WIZWIRELESS LIMITED	10915	Fixed >=1GHz & <14GHz (Bi-directional)	RANGITUMAU (WIZWIRELESS)	2740378	6035745	BENNETTS HILL (WIZWIRELESS)	2741673	6022072
259224	WIZWIRELESS LIMITED	11245	Fixed >=1GHz & <14GHz (Bi-directional)	SNOWDEN	2739884	6042235	TRANZIT BUILDING MASTERTON (316 QUEEN STREET)	2733510	6024758
275487	WIZWIRELESS LIMITED	10915	Fixed >=1GHz & <14GHz (Bi-directional)	TE KOPI (WIZ)	2737891	6013946	146 QUEEN STREET MASTERTON (WIZ)	2733968	6025131
259223	WIZWIRELESS LIMITED	10715	Fixed >=1GHz & <14GHz (Bi-directional)	TRANZIT BUILDING MASTERTON (316 QUEEN STREET)	2733510	6024758	SNOWDEN	2739884	6042235
259277	WIZWIRELESS LIMITED	10835	Fixed >=1GHz & <14GHz (Bi-directional)	TRANZIT BUILDING MASTERTON (316 QUEEN STREET)	2733510	6024758	NORFOLK (WIZ)	2722901	6032669
292745	WIZWIRELESS LIMITED	10835	Fixed >=1GHz & <14GHz (Bi-directional)	TRANZIT BUILDING MASTERTON (316 QUEEN STREET)	2733510	6024758	BENNETTS HILL (WIZWIRELESS)	2741673	6022072

## Appendix B List of All Licensed Wide Area Coverage Transmitters Within 20 km of the Proposed Mt Munro Wind Farm

Licence No	Operator	Licence Type	Freq (MHz)	Location	Easting NZMG	Northing NZMG
200462	AIRTEL LIMITED	Land Repeater >5W; BW <=12.5kHz	163.975	RANGITUMAU	2740640	6035900
75477	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	124.2	RANGITUMAU	2740669	6036080
83929	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Off Route)	126.7	RANGITUMAU	2740700	6036600
292880	AMBULANCE NEW ZEALAND	Land Repeater (Unlimited transmit locations)	141.3375	RANGITUMAU	2740669	6036080
262272	AMBULANCE NEW ZEALAND	Land Repeater (Up to 5 transmit locations)	141.475	TE PAKI	2718561	6065354
130486	CHORUS NEW ZEALAND LIMITED	Fixed Bi-directional Point-to-Multipoint	1442.5	AWAROA	2757900	6033600
80369	CHORUS NEW ZEALAND LIMITED	Fixed Bi-directional Point-to-Multipoint	1499	DAGGS ROAD	2750300	6046300
90754	CHORUS NEW ZEALAND LIMITED	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	420.4625	DAGGS ROAD	2750400	6045200
233527	CHORUS NEW ZEALAND LIMITED	Fixed Bi-directional Point-to-Multipoint	1499	DAGGS ROAD	2750300	6046300
233526	CHORUS NEW ZEALAND LIMITED	Fixed Bi-directional Point-to-Multipoint	1499	DREYERS ROCK	2744100	6043600
233268	CHORUS NEW ZEALAND LIMITED	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	425.325	EARLYHURST	2748300	6037500
236022	CHORUS NEW ZEALAND LIMITED	Fixed Bi-directional Point-to-Multipoint	1444.5	FLAT BUSH	2755600	6047300
80368	CHORUS NEW ZEALAND LIMITED	Fixed Bi-directional Point-to-Multipoint	1509	IHURAU	2747500	6048500
80219	CHORUS NEW ZEALAND LIMITED	Fixed Bi-directional Point-to-Multipoint	1509	KAKAAMU	2740400	6039100
233529	CHORUS NEW ZEALAND LIMITED	Fixed Bi-directional Point-to-Multipoint	1499	MANGAMAHOE	2741600	6048500
131000	CHORUS NEW ZEALAND LIMITED	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	425.475	MT BAKER	2744200	6050300
233530	CHORUS NEW ZEALAND LIMITED	Fixed Bi-directional Point-to-Multipoint	1499	NORTH ROAD	2737800	6049700
103682	CHORUS NEW ZEALAND LIMITED	Fixed Bi-directional Point-to-Multipoint	1434.5	RANGITUMAU	2740500	6035800
74198	CHORUS NEW ZEALAND LIMITED	Fixed Bi-directional Point-to-Multipoint	1448.5	RANGITUMAU	2740500	6035800
56326	CHORUS NEW ZEALAND LIMITED	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	163.1	RANGITUMAU	2740669	6036080
163252	CHORUS NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	7435	RANGITUMAU	2740669	6036080
170860	CHORUS NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	7463	RANGITUMAU	2740669	6036080
175550	CHORUS NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	7519	RANGITUMAU	2740669	6036080
204750	CHORUS NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	7547	RANGITUMAU	2740669	6036080
233267	CHORUS NEW ZEALAND LIMITED	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	420.3125	RANGITUMAU	2740669	6036080
233293	CHORUS NEW ZEALAND LIMITED	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	420.4125	RANGITUMAU	2740669	6036080
233525	CHORUS NEW ZEALAND LIMITED	Fixed Bi-directional Point-to-Multipoint	1438.5	RANGITUMAU	2740669	6036080
235869	CHORUS NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	6500	RANGITUMAU	2740669	6036080
235867	CHORUS NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	6580	RANGITUMAU	2740669	6036080
235865	CHORUS NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	6620	RANGITUMAU	2740669	6036080
235863	CHORUS NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	6660	RANGITUMAU	2740669	6036080
245015	CHORUS NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	6660	RANGITUMAU	2740669	6036080
245017	CHORUS NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	6620	RANGITUMAU	2740669	6036080
245011	CHORUS NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	6580	RANGITUMAU	2740669	6036080
245009	CHORUS NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	6500	RANGITUMAU	2740669	6036080
246125	CHORUS NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	6660	RANGITUMAU	2740669	6036080



Licence No	Operator	Licence Type	Freq (MHz)	Location	Easting NZMG	Northing NZMG
252713	CHORUS NEW ZEALAND LIMITED	Fixed < 1GHz; BW <=12.5kHz (Bi-directional)	166.9125	TANGLEWOOD	2751700	6039600
163882	CHORUS NEW ZEALAND LIMITED	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	429.175	TE PAKI	2718500	6065400
166809	CHORUS NEW ZEALAND LIMITED	Fixed < 1GHz; BW >12.5kHz & <=50kHz (Bi-directional)	421.4125	UPPER WAINGAWA	2720000	6034600
261108	CITY COMMS LIMITED	Land Repeater (Up to 5 transmit locations)	162.875	MT BOWEN	2741700	6056900
228611	DEPARTMENT OF CONSERVATION	Land Repeater (Unlimited transmit locations)	142.5	CATTLE RIDGE TARARUA RANGES	2721773	6049932
279135	Downer New Zealand Limited	Land Repeater >5W; BW <=12.5kHz	153.325	MT BOWEN SW RIDGE, EKETAHUNA	2741308	6056219
292982	Downer New Zealand Limited	Land Repeater >5W; BW <=12.5kHz	153.1125	MT BOWEN SW RIDGE, EKETAHUNA	2741308	6056219
206067	EKETAHUNA COMMUNITY RADIO SOCIETY INCORPORATED	VHF FM >=20 & <30dBW (Spectrum)	106.5	MT BOWEN	2741700	6056900
255707	ELECTRA LTD	Fixed >=1GHz & <14GHz (Bi-directional)	11075	TE PAKI	2718561	6065354
259365	ELECTRA LTD	Fixed >=1GHz & <14GHz (Bi-directional)	10795	TE PAKI	2718561	6065354
270792	ELECTRA LTD	Land Repeater >5W; BW >12.5kHz	456.55	TE PAKI	2718500	6065400
271016	ELECTRA LTD	Land Repeater >5W; BW <=12.5kHz	151.3	TE PAKI	2718500	6065400
290603	ELECTRA LTD	Fixed >=1GHz & <14GHz (Bi-directional)	11035	TE PAKI	2718561	6065354
291757	FIRE AND EMERGENCY NEW ZEALAND	Paging (Unlimited transmit locations)	160.4125	EKETAHUNA FIRE STATION	2738663	6058757
243274	GPS CONTROL SYSTEMS LIMITED	Fixed Uni-directional Point-to-Multipoint	167	RANGITUMAU (GPS CONTROLS SYSTEMS LTD)	2740623	6035814
256853	HATUMA LIME CO LTD	Land Simplex	150.1	LIME WORKS, MAURICEVILLE	2737828	6043974
256853	HATUMA LIME CO LTD	Land Simplex	449.94375	LIME WORKS, MAURICEVILLE	2737828	6043974
256853	HATUMA LIME CO LTD	Land Simplex	153.55625	LIME WORKS, MAURICEVILLE	2737828	6043974
178755	HELICOPTERS OTAGO LTD	Land Repeater (Unlimited transmit locations)	165.2125	TE PAKI	2718500	6065400
261407	Horowhenua District Council	Land Repeater >5W; BW >12.5kHz	456.725	TE PAKI	2718500	6065400
260012	INSPIRE NET LIMITED	Fixed >=14GHz (Bi-directional)	18360	EKETAHUNA 31 MAIN STREET	2738556	6058821
260013	INSPIRE NET LIMITED	Fixed >=14GHz (Bi-directional)	19370	EKETAHUNA NIREAHA (INSPIRE)	2731419	6057699
262408	INSPIRE NET LIMITED	Land Repeater >5W; BW <=12.5kHz	164.725	EKETAHUNA NIREAHA (INSPIRE)	2731419	6057699
280052	INSPIRE NET LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	11525	EKETAHUNA NIREAHA (INSPIRE)	2731419	6057699
280051	INSPIRE NET LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	10995	RANGITUMAU	2740616	6036122
254088	INSPIRE NET LIMITED	Fixed >=14GHz (Bi-directional)	19260	RANGITUMAU (TELETRONICS SOUTH SITE)	2740654	6035873
289201	KIWIRAIL	Land Repeater (Unlimited transmit locations)	152.35	BOWEN HILLS	2741760	6050995
289202	KIWIRAIL	Land Repeater (Unlimited transmit locations)	152.3625	BOWEN HILLS	2741760	6050995
289203	KIWIRAIL	Land Repeater (Unlimited transmit locations)	152.0625	BOWEN HILLS	2741760	6050995
289204	KIWIRAIL	Land Repeater (Unlimited transmit locations)	152.05	BOWEN HILLS	2741760	6050995
289205	KIWIRAIL	Land Repeater (Unlimited transmit locations)	151.95	BOWEN HILLS	2741760	6050995
289206	KIWIRAIL	Land Repeater (Unlimited transmit locations)	152.0375	BOWEN HILLS	2741760	6050995
289228	KIWIRAIL	Land Repeater (Unlimited transmit locations)	161.06875	BOWEN HILLS	2741760	6050995
263666	KORDIA LIMITED	Fixed >=14GHz (Bi-directional)	14515	RANGITUMAU	2740669	6036080
247258	MANAWATU-WANGANUI REGIONAL COUNCIL	Land Repeater >5W; BW <=12.5kHz	151.8125	TE PAKI	2718500	6065400
151524	MANGAHAO JOINT VENTURE, MANGAHAO POWER STATION,	Land Repeater >5W; BW <=12.5kHz	81.325	TE PAKI	2718500	6065400
141903	MANGAHAO JOINT VENTURE, MANGAHAO POWER STATION,	Land Repeater >5W; BW <=12.5kHz	152.0875	TE PAKI	2718500	6065400
161357	MASTERTON DISTRICT COUNCIL	Telemetry/Telecommand (Uni-directional)	160.3125	SYPHON	2722700	6032200
57277	MASTERTON DISTRICT COUNCIL	Telemetry/Telecommand (Uni-directional)	160.3125	WAINGAWA	2719900	6035000
216450	MR Hamish KYLE	Land Repeater >5W; BW <=12.5kHz	165.1	TANGLEWOOD	2751800	6040500
170157	MR S MCKAY	Land Repeater >5W; BW <=12.5kHz	163.575	TINTOCK	2753492	6043484
172277	MR S MCKAY	Land Repeater >5W; BW <=12.5kHz	152.575	WAIRERE	2749600	6044300
264868	POWERCO LIMITED	Land Repeater (Up to 5 transmit locations)	463.15625	MT BRUCE (POWERCO)	2730655	6047168
285426	POWERCO LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	8293	MT BRUCE (POWERCO)	2730655	6047168
285424	POWERCO LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	8454	MT BRUCE (POWERCO)	2730655	6047168
285422	POWERCO LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	11625	MT BRUCE (POWERCO)	2730655	6047168

Licence No	Operator	Licence Type	Freq (MHz)	Location	Easting NZMG	Northing NZMG
291127	POWERCO LIMITED	Land Repeater >5W; BW <=12.5kHz	163.2625	MT BRUCE (POWERCO)	2730655	6047168
291146	POWERCO LIMITED	Land Repeater >5W; BW <=12.5kHz	163.6625	MT BRUCE (POWERCO)	2730655	6047168
291822	POWERCO LIMITED	Land Repeater >5W; BW <=12.5kHz	163.15	MT BRUCE (POWERCO)	2730655	6047168
291512	POWERCO LIMITED	Land Repeater >5W; BW <=12.5kHz	164.3	MT BRUCE (POWERCO)	2730655	6047168
278726	POWERCO LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	11055	TE PAKI	2718561	6065354
282236	POWERCO LIMITED	Land Repeater (Up to 5 transmit locations)	462.88125	TE PAKI	2718561	6065354
285407	POWERCO LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	11135	TE PAKI	2718561	6065354
279357	RURAL CONNECTIVITY GROUP LIMITED	Other >=30dBW (Spectrum)	768	RMWKTW - KAITAWA	2754312	6071313
278430	RURAL CONNECTIVITY GROUP LIMITED	Other >=30dBW (Spectrum)	768	RMWGMV - MANGATAINOKA VALLEY	2730679	6059011
279359	RURAL CONNECTIVITY GROUP LIMITED	Other >=30dBW (Spectrum)	768	RMWMNV - MANGAONE VALLEY	2749549	6062969
277152	RURAL CONNECTIVITY GROUP LIMITED	Other >=30dBW (Spectrum)	785.5	RWLKTU - KAITUNA	2722896	6032684
282001	RURAL CONNECTIVITY GROUP LIMITED	Other >=30dBW (Spectrum)	1867.5	RWLKTU - KAITUNA	2722896	6032684
291348	RURAL CONNECTIVITY GROUP LIMITED	Other >=30dBW (Spectrum)	768	RWLMV - MAURICEVILLE	2738521	6044210
5796	SPARK NEW ZEALAND TRADING LIMITED	Other >=30dBW (Spectrum)	877.5	EKETAHUNA	2740060	6058158
273963	SPARK NEW ZEALAND TRADING LIMITED	Other >=30dBW (Spectrum)	768	EKETAHUNA	2740060	6058158
276968	SPARK NEW ZEALAND TRADING LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	12891	KAITAWA	2754294	6071320
276194	SPARK NEW ZEALAND TRADING LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	12891	KAITUNA	2722896	6032684
276962	SPARK NEW ZEALAND TRADING LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	8251.745	MANGAONE VALLEY	2749549	6062968
281782	SPARK NEW ZEALAND TRADING LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	12947	MANGAONE VALLEY	2749549	6062968
5816	SPARK NEW ZEALAND TRADING LIMITED	Other >=30dBW (Spectrum)	877.5	MT BRUCE	2730285	6047173
273877	SPARK NEW ZEALAND TRADING LIMITED	Other >=30dBW (Spectrum)	768	MT BRUCE	2730285	6047173
207365	SPARK NEW ZEALAND TRADING LIMITED	Other >=30dBW (Spectrum)	877.5	OPAKI	2734700	6033768
273803	SPARK NEW ZEALAND TRADING LIMITED	Other >=30dBW (Spectrum)	768	OPAKI	2734700	6033768
2611	SPARK NEW ZEALAND TRADING LIMITED	Other >=30dBW (Spectrum)	877.5	RANGITUMAU	2740669	6036080
221539	SPARK NEW ZEALAND TRADING LIMITED	Paging (Unlimited transmit locations)	157.9	RANGITUMAU	2740669	6036080
224348	SPARK NEW ZEALAND TRADING LIMITED	Paging (Unlimited transmit locations)	157.925	RANGITUMAU	2740669	6036080
224347	SPARK NEW ZEALAND TRADING LIMITED	Paging (Unlimited transmit locations)	157.95	RANGITUMAU	2740669	6036080
273922	SPARK NEW ZEALAND TRADING LIMITED	Other >=30dBW (Spectrum)	768	RANGITUMAU	2740669	6036080
289018	SPARK NEW ZEALAND TRADING LIMITED	Other >=30dBW (Spectrum)	1845	RANGITUMAU	2740669	6036080
221539	SPARK NEW ZEALAND TRADING LIMITED	Paging (Unlimited transmit locations)	157.9	TE PAKI	2718500	6065400
224348	SPARK NEW ZEALAND TRADING LIMITED	Paging (Unlimited transmit locations)	157.925	TE PAKI	2718500	6065400
224347	SPARK NEW ZEALAND TRADING LIMITED	Paging (Unlimited transmit locations)	157.95	TE PAKI	2718500	6065400
258428	TELETRONICS LIMITED	Land Repeater >5W; BW <=12.5kHz	164.75	MT BRUCE	2732950	6047924
254641	TELETRONICS LIMITED	Land Repeater >5W; BW <=12.5kHz	418.5875	RANGITUMAU (TELETRONICS NORTH SITE)	2740607	6036124
254640	TELETRONICS LIMITED	Land Repeater >5W; BW <=12.5kHz	418.8375	RANGITUMAU (TELETRONICS NORTH SITE)	2740607	6036124
254639	TELETRONICS LIMITED	Land Repeater >5W; BW <=12.5kHz	419.0875	RANGITUMAU (TELETRONICS NORTH SITE)	2740607	6036124
254638	TELETRONICS LIMITED	Land Repeater >5W; BW <=12.5kHz	419.3375	RANGITUMAU (TELETRONICS NORTH SITE)	2740607	6036124
258431	TELETRONICS LIMITED	Land Repeater >5W; BW <=12.5kHz	164.9125	RANGITUMAU (TELETRONICS NORTH SITE)	2740607	6036124
249286	TELETRONICS LIMITED	Land Repeater >5W; BW <=12.5kHz	164.0625	RUATEA	2757272	6061271
253107	TELETRONICS LIMITED	Land Repeater >5W; BW <=12.5kHz	163.125	TINTOCK	2753492	6043484
262870	TELETRONICS LIMITED	Land Repeater >5W; BW <=12.5kHz	165.3125	TINTOCK	2753492	6043484
278578	TWO DEGREES NETWORKS LIMITED	Other >=30dBW (Spectrum)	798	(MNW-041-015-A)[VEKH]_S_EKETAHUNA	2738438	6059961
278622	TWO DEGREES NETWORKS LIMITED	Other >=30dBW (Spectrum)	939.9	(MNW-041-015-A)[VEKH]_S_EKETAHUNA	2738438	6059961
278544	TWO DEGREES NETWORKS LIMITED	Other >=30dBW (Spectrum)	798	(WLG-048-016-A)[VMBR]_S_MT BRUCE	2729807	6048244
278539	TWO DEGREES NETWORKS LIMITED	Other >=30dBW (Spectrum)	939.9	(WLG-048-016-A)[VMBR]_S_MT BRUCE	2729807	6048244

Licence No	Operator	Licence Type	Freq (MHz)	Location	Easting NZMG	Northing NZMG
279397	TWO DEGREES NETWORKS LIMITED	Other >=30dBW (Spectrum)	798	(WLG-048-017-A)[VOPI]_S_OPAKI	2734702	6033748
279453	TWO DEGREES NETWORKS LIMITED	Other >=30dBW (Spectrum)	939.9	(WLG-048-017-A)[VOPI]_S_OPAKI	2734702	6033748
251206	VITAL LIMITED	Land Repeater (Up to 5 transmit locations)	455.91875	RANGITUMAU	2740669	6036080
261429	VITAL LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	8207.27	RANGITUMAU	2740669	6036080
267050	VITAL LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	10602	RANGITUMAU	2740669	6036080
267957	VITAL LIMITED	Land Repeater >5W; BW <=12.5kHz	416.65	RANGITUMAU	2740669	6036080
268261	VITAL LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	6197.24	RANGITUMAU	2740669	6036080
268263	VITAL LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	6226.89	RANGITUMAU	2740669	6036080
270003	VITAL LIMITED	Land Repeater (Up to 5 transmit locations)	416.65	RANGITUMAU	2740669	6036080
274801	VITAL LIMITED	Land Repeater (Up to 5 transmit locations)	415.65	RANGITUMAU	2740669	6036080
212781	VITAL LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	7652	TE PAKI	2718500	6065400
212788	VITAL LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	7708	TE PAKI	2718500	6065400
261787	VITAL LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	7222.5	TE PAKI	2718561	6065354
261776	VITAL LIMITED	Fixed >=14GHz (Bi-directional)	14571	TE PAKI	2718561	6065354
216402	VODAFONE NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	6197.24	253 CLIFF ROAD EKETAHUNA (VF EKETAHUNA W3EKH)	2738431	6059935
216404	VODAFONE NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	6256.54	253 CLIFF ROAD EKETAHUNA (VF EKETAHUNA W3EKH)	2738431	6059935
242059	VODAFONE NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	10735	253 CLIFF ROAD EKETAHUNA (VF EKETAHUNA W3EKH)	2738431	6059935
277736	VODAFONE NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	10835	253 CLIFF ROAD EKETAHUNA (VF EKETAHUNA W3EKH)	2738431	6059935
208865	VODAFONE NEW ZEALAND LIMITED	Other >=30dBW (Spectrum)	952	EKETAHUNA	2738400	6059900
274853	VODAFONE NEW ZEALAND LIMITED	Other >=30dBW (Spectrum)	785.5	EKETAHUNA	2738400	6059900
277658	VODAFONE NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	11485	HILL BEHIND 178 UPPER WAINGAWA ROAD KAITUNA (RCG RWLKTU)	2722899	6032685
279896	VODAFONE NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	7236.5	HILL SOUTH OF 9 LARSEN ROAD EKETAHUNA (RCG RMWGMV)	2730686	6059029
208895	VODAFONE NEW ZEALAND LIMITED	Other >=30dBW (Spectrum)	952	MT BRUCE (VF W3MBR)	2729807	6048243
278186	VODAFONE NEW ZEALAND LIMITED	Other >=30dBW (Spectrum)	785.5	MT BRUCE (VF W3MBR)	2729807	6048243
243570	VODAFONE NEW ZEALAND LIMITED	Other >=30dBW (Spectrum)	951.95	OPAKI (VFNZ)	2734702	6033747
274576	VODAFONE NEW ZEALAND LIMITED	Other >=30dBW (Spectrum)	785.5	OPAKI (VFNZ)	2734702	6033747
283130	VODAFONE NEW ZEALAND LIMITED	Other >=30dBW (Spectrum)	1867.5	OPAKI (VFNZ)	2734702	6033747
243268	VODAFONE NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	13213	SOUTHERN RIDGE TIROHANGA HILL NEAR BLUFF RANGITUMAU ROAD MASTERTON (VF W3OPI)	2734702	6033747
277657	VODAFONE NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	10955	SOUTHERN RIDGE TIROHANGA HILL NEAR BLUFF RANGITUMAU ROAD MASTERTON (VF W3OPI)	2734702	6033747
154102	VODAFONE NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	8236.92	TAWERA HILL (VF MT BRUCE W3MBR)	2729806	6048250
208239	VODAFONE NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	8059.02	TAWERA HILL (VF MT BRUCE W3MBR)	2729806	6048250
208273	VODAFONE NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	8118.32	TAWERA HILL (VF MT BRUCE W3MBR)	2729806	6048250
242060	VODAFONE NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	11265	TAWERA HILL (VF MT BRUCE W3MBR)	2729806	6048250
242062	VODAFONE NEW ZEALAND LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	11305	TAWERA HILL (VF MT BRUCE W3MBR)	2729806	6048250
63842	WAIRARAPA AMATEUR RADIO CLUB INC	Amateur Repeater	146.8	RANGITUMAU	2740700	6036600
245323	WIZWIRELESS LIMITED	Other >=20 & <30dBW (Spectrum)	2607	NORFOLK (WIZ)	2722901	6032669
259276	WIZWIRELESS LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	11365	NORFOLK (WIZ)	2722901	6032669
259843	WIZWIRELESS LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	11405	NORFOLK (WIZ)	2722901	6032669
246044	WIZWIRELESS LIMITED	Other >=20 & <30dBW (Spectrum)	2592	POPOITI HILL SW A1 (WIZ)	2740250	6037850
240161	WIZWIRELESS LIMITED	Other >=20 & <30dBW (Spectrum)	2592	RANGITUMAU (WIZWIRELESS)	2740378	6035745
259842	WIZWIRELESS LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	10875	RANGITUMAU (WIZWIRELESS)	2740378	6035745
292857	WIZWIRELESS LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	10915	RANGITUMAU (WIZWIRELESS)	2740378	6035745
259224	WIZWIRELESS LIMITED	Fixed >=1GHz & <14GHz (Bi-directional)	11245	SNOWDEN	2739884	6042235

## Appendix C List of All Aeronautical Radio Navigation Services within 200 km of the Proposed Mt Munro Wind Farm

Licence No	Operator	Licence Type	Freq (MHz)	Location	Easting NZMG	Northing NZMG
244611	AIR BP INTERNATIONAL	Aero Base (Route)	133.9	WELLINGTON	2661600	5984700
262783	AIR CHATHAMS LTD	Aero Base (Off Route)	133.775	7 AIRPORT ROAD, WANGANUI AIRPORT	2682934	6136310
251422	AIR NEW ZEALAND LTD	Aero Base (Off Route)	130.9	MARLBOROUGH AIRPORT	2582441	5965511
168132	AIR NEW ZEALAND LTD	Aero Base (Off Route)	130.3	NAPIER AIRPORT TERMINAL	2843200	6185800
231395	AIR NEW ZEALAND LTD	Aero Base (Off Route)	133.1	NEW PLYMOUTH AIRPORT	2612300	6243300
168120	AIR NEW ZEALAND LTD	Aero Base (Route)	130.3	PALMERSTON NORTH AIRPORT	2732700	6094700
229575	AIR NEW ZEALAND LTD	Aero Base (Off Route)	131.4	PARAPARAUMU AIRPORT (AIR NEW ZEALAND)	2677168	6032056
246655	AIR NEW ZEALAND LTD	Aero Base (Route)	130.9	WANGANUI AIRPORT	2683000	6136300
246655	AIR NEW ZEALAND LTD	Aero Base (Route)	120.2	WANGANUI AIRPORT	2683000	6136300
168089	AIR NEW ZEALAND LTD	Aero Base (Route)	132.9	WELLINGTON AIRPORT	2661500	5984800
168130	AIR NEW ZEALAND LTD	Aero Base (Off Route)	130.15	WELLINGTON AIRPORT	2661500	5984800
251423	AIR NEW ZEALAND LTD	Aero Base (Route)	131.9	WELLINGTON AIRPORT	2661500	5984700
251475	AIR NEW ZEALAND LTD	Aero Base (Route)	133.1	WELLINGTON AIRPORT	2661500	5984700
251475	AIR NEW ZEALAND LTD	Aero Base (Route)	130.35	WELLINGTON AIRPORT	2661500	5984700
78867	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radio Det - Two frequency	1030	BALLANCE SSR	2741900	6085900
129004	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	120.4	BALLANCE SSR	2741900	6085900
100463	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Off Route)	126.2	BALLANCE SSR	2741900	6085900
102450	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	123.7	BALLANCE SSR	2741900	6085900
125360	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	123.2	BALLANCE SSR	2741900	6085900
125362	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	128.5	BALLANCE SSR	2741900	6085900
203216	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	121.5	BALLANCE SSR	2741900	6085900
238035	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	125.1	BALLANCE SSR	2741900	6085900
112766	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	124.8	BRIDGE PA AERODROME	2833100	6166000
112767	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	129.9	BRIDGE PA AERODROME	2833100	6166000
89431	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	126.9	HAWKINS HILL	2655000	5985400
108053	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	118.8	HAWKINS HILL	2655000	5985400
174594	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	121.5	HAWKINS HILL	2655000	5985400
75703	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radio Det - Other than Met Service	1250	HAWKINS HILL PSR	2654450	5984920
75703	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radio Det - Other than Met Service	1335	HAWKINS HILL PSR	2654450	5984920
75703	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radio Det - Other than Met Service	1255	HAWKINS HILL PSR	2654450	5984920
75703	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radio Det - Other than Met Service	1340	HAWKINS HILL PSR	2654450	5984920
234623	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radio Det - Other than Met Service	1090	HAWKINS HILL PSR	2654450	5984920
78864	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radio Det - Two frequency	1030	HAWKINS HILL SSR	2654450	5984920
254988	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	119.3	HAWKINS HILL VHF NORTH	2654994	5985331
254992	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	122.3	HAWKINS HILL VHF NORTH	2654994	5985331
267369	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	128.35	HAWKINS HILL VHF NORTH	2654994	5985331
254719	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	129.4	HAWKINS HILL VHF SOUTH	2654090	5984643

Licence No	Operator	Licence Type	Freq (MHz)	Location	Easting NZMG	Northing NZMG
254987	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	119.3	HAWKINS HILL VHF SOUTH	2654090	5984643
254989	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	122.3	HAWKINS HILL VHF SOUTH	2654090	5984643
254994	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	121.3	HAWKINS HILL VHF SOUTH	2654090	5984643
260056	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	125.25	HAWKINS HILL VHF SOUTH	2654090	5984643
267365	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	128.35	HAWKINS HILL VHF SOUTH	2654090	5984643
75105	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Radio Beacons (VOR, NDB)	0.35	KAIKOURA	2567200	5865000
75473	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	123.7	MT EGMONT(AERO)	2605399	6210445
134239	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	129.8	MT EGMONT(AERO)	2605399	6210445
147305	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	121.1	MT ROBERTSON	2595500	5983800
147305	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	122.8	MT ROBERTSON	2595500	5983800
78889	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radio Det - Two frequency	1030	MT ROBERTSON SSR	2595600	5983600
173854	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	124.8	NAPIER AIRPORT	2842800	6185400
225069	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Off Route)	126.2	NAPIER AIRPORT	2842800	6185400
118797	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Off Route)	118.1	NAPIER AIRPORT (EAST END OF RUNNWAY)	2841600	6185900
225585	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	128	NAPIER AIRPORT TOWER	2842999	6185774
108030	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Radionav (incl DME)	1172	NAPIER DME	2842800	6187300
108024	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Radio Beacons (VOR, NDB)	113.8	NAPIER(DVOR)	2842882	6187333
105180	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Radionav (incl DME)	1180	NARAWHIA	2624200	6001400
110813	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Radionav (incl DME)	1178	NEW PLYMOUTH	2612200	6243700
110831	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Radio Beacons (VOR, NDB)	114.4	NEW PLYMOUTH	2612200	6243700
203211	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Off Route)	125.4	NEW PLYMOUTH	2612500	6244100
102449	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	124.7	NEW PLYMOUTH AIRPORT	2612400	6243100
207227	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	127.05	NEW PLYMOUTH AIRPORT	2612300	6243300
75112	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Radio Beacons (VOR, NDB)	0.358	NEWLANDS	2663200	5995900
174492	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radio Det - Other than Met Service	1090	OHAKEA CONTROL TOWER	2712560	6108980
174673	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	125.1	OHAKEA CONTROL TOWER	2712560	6108980
174672	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	126.2	OHAKEA CONTROL TOWER	2712560	6108980
174671	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	120.4	OHAKEA CONTROL TOWER	2712560	6108980
174669	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	123.2	OHAKEA CONTROL TOWER	2712560	6108980
177143	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	134.5	OHAKEA CONTROL TOWER	2712560	6108980
177142	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	122.1	OHAKEA CONTROL TOWER	2712560	6108980
74915	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Radio Beacons (VOR, NDB)	112.3	PALMER HEAD	2662100	5983900
74953	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Radionav (incl DME)	1157	PALMER HEAD	2662100	5983900
174231	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radio Det - Other than Met Service	1250	PALMER HEAD	2662100	5983900
174231	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radio Det - Other than Met Service	1335	PALMER HEAD	2662100	5983900
234418	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radio Det - Other than Met Service	1090	PALMER HEAD	2662100	5983900
267368	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	128.35	PALMER HEAD (AIRWAYS)	2661800	5983800
135435	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Off Route)	119.3	PALMER HEAD PSR BEACON	2662000	5983900
135630	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Off Route)	122.3	PALMER HEAD PSR BEACON	2662000	5983900
173852	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	121.9	PALMER HEAD PSR BEACON	2662000	5983900
118804	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Off Route)	121.7	PALMERSTON NORTH AIRPORT	2732160	6094800
77127	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	120.6	PALMERSTON NORTH AIRPORT	2732160	6094800
89421	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	129.7	PALMERSTON NORTH AIRPORT	2732160	6094800
110807	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Radionav (incl DME)	1168	PALMERSTON NORTH AIRPORT(DME)	2734138	6095062
110828	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Radio Beacons (VOR, NDB)	113.4	PALMERSTON NORTH AIRPORT(DME)	2734138	6095062

Licence No	Operator	Licence Type	Freq (MHz)	Location	Easting NZMG	Northing NZMG
75015	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Radionav (incl DME)	1207	PARAPARAUMU AERODROME	2676960	6032175
75063	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Radio Beacons (VOR, NDB)	0.242	PARAPARAUMU AERODROME	2677072	6031835
228136	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	119.75	PARAPARAUMU AERODROME CONTROL TOWER	2677788	6031983
228134	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	118.3	PARAPARAUMU AERODROME CONTROL TOWER	2677788	6031983
75477	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	124.2	RANGITUMAU	2740669	6036080
83929	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Off Route)	126.7	RANGITUMAU	2740700	6036600
75056	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Radio Beacons (VOR, NDB)	1.63	TANGA ROAD TAUMARUNUI	2710679	6251055
75044	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Radio Beacons (VOR, NDB)	0.382	WANGANUI (NDB)	2683100	6136500
74994	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Radionav (incl DME)	1194	WANGANUI AIRPORT	2683100	6136500
272864	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	120.4	WANGANUI AIRPORT NDB-B	2683124	6136555
252660	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	125.1	WANGANUI AIRPORT TERMINAL BUILDING	2682947	6136291
257398	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	120.2	WANGANUI AIRPORT TERMINAL BUILDING	2682947	6136291
282192	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	118.8	WELLINGTON AIRPORT CONTROL TOWER	2660882	5985190
282193	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	121.9	WELLINGTON AIRPORT CONTROL TOWER	2660882	5985190
282194	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	128.2	WELLINGTON AIRPORT CONTROL TOWER	2660882	5985190
74936	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Radionav (incl DME)	997	WELLINGTON(ILS)	2661100	5984500
74938	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Aero ILS	109.9	WELLINGTON(ILS)	2661300	5986200
74946	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Aero ILS	110.3	WELLINGTON(ILS)	2661200	5984100
74948	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Radionav (incl DME)	1001	WELLINGTON(ILS)	2661200	5985700
78968	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Aero ILS	333.8	WELLINGTON(ILS)	2661100	5984500
78973	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Aero ILS	335	WELLINGTON(ILS)	2661200	5985700
125363	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	125.1	WIGHTMAN ROAD ALTERNATIVE VHF	2713700	6110100
125364	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	126.2	WIGHTMAN ROAD ALTERNATIVE VHF	2713700	6110100
204638	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Off Route)	124.5	WIGHTMAN ROAD ALTERNATIVE VHF	2713700	6110100
134926	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	122.8	WOODBOURNE AIRPORT	2582700	5965300
105187	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Radio Beacons (VOR, NDB)	115.6	WOODBOURNE AIRPORT	2582000	5964900
105183	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Radiodet - Radionav (incl DME)	1190	WOODBOURNE AIRPORT	2582000	5964900
75592	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	118.1	WOODBOURNE AIRPORT	2582700	5965300
207226	AIRWAYS CORPORATION OF NEW ZEALAND LIMITED	Aero Base (Route)	126.05	WOODBOURNE AIRPORT TOWER	2582691	5964929
224152	ARINC NEW ZEALAND LIMITED	Aero Base (Off Route)	131.45	WELLINGTON AIRPORT ARINC	2661120	5985250
224152	ARINC NEW ZEALAND LIMITED	Aero Base (Off Route)	136.975	WELLINGTON AIRPORT ARINC	2661120	5985250
224103	BEACH ENERGY RESOURCES NZ (KUPE) LIMITED	Aero Base (Off Route)	133.65	KUPE GAS PLANT	2609600	6180400
224103	BEACH ENERGY RESOURCES NZ (KUPE) LIMITED	Aero Base (Off Route)	131.65	KUPE GAS PLANT	2609600	6180400
224102	BEACH ENERGY RESOURCES NZ (KUPE) LIMITED	Aero Base (Off Route)	131.65	KUPE OFFSHORE PLATFORM	2605800	6149900
224102	BEACH ENERGY RESOURCES NZ (KUPE) LIMITED	Aero Base (Off Route)	133.65	KUPE OFFSHORE PLATFORM	2605800	6149900
133231	CAPITAL COAST HEALTH LTD	Aero Base (Off Route)	133.2	NEWTOWN	2659200	5987000
167749	CAPITAL JET SERVICES LIMITED	Aero Base (Off Route)	131.7	WELLINGTON AIRPORT	2661000	5985100
35353	HAWERA AERO CLUB INC	Aero Base (Off Route)	119.1	HAWERA	2619300	6182700
257720	HAWERA AERO CLUB INC	Aero Base (Off Route)	130.65	HAWERA AERODROME	2619300	6182700
214256	HAWKES BAY & EAST COAST AERO CLUB INC	Aero Base (Off Route)	132.95	BRIDGE PA	2833100	6165900
214256	HAWKES BAY & EAST COAST AERO CLUB INC	Aero Base (Off Route)	119.1	BRIDGE PA	2833100	6165900
214256	HAWKES BAY & EAST COAST AERO CLUB INC	Aero Base (Off Route)	125.8	BRIDGE PA	2833100	6165900
256745	HNZ NEW ZEALAND LIMITED	Aero Base (Off Route)	133.15	NEW PLYMOUTH AIRPORT HELI BASE	2611708	6243050
218209	JETSTAR AIRWAYS PTY LTD	Aero Base (Off Route)	130.85	WELLINGTON AIRPORT	2661500	5984800
228411	KAPITI COAST AIRPORT HOLDINGS LIMITED	Aero Base (Route)	118.3	PARAPARAUMU AIRPORT	2677174	6032081

Licence No	Operator	Licence Type	Freq (MHz)	Location	Easting NZMG	Northing NZMG
230573	MARLBOROUGH AIRPORT LIMITED	Aero Base (Off Route)	118.1	MARLBOROUGH AIRPORT	2582441	5965511
230573	MARLBOROUGH AIRPORT LIMITED	Aero Base (Off Route)	122.8	MARLBOROUGH AIRPORT	2582441	5965511
249712	MASSEY UNIVERSITY SCHOOL OF AVIATION	Aero Base (Route)	133.3	PALMERSTON NORTH AIRPORT	2732400	6094500
235210	MASTERTON DISTRICT COUNCIL	Aero Base (Off Route)	132.8	HOOD AERODROME AIR TERMINAL TX	2731990	6022640
176395	MASTERTON DISTRICT COUNCIL	Aero Base (Off Route)	132.8	HOOD AERODROME MASTERTON	2732090	6022290
126844	MASTERTON DISTRICT COUNCIL	Aero Base (Off Route)	119.1	MASTERTON DIST COUNCIL	2734100	6025400
236474	METEOROLOGICAL SERVICE OF NEW ZEALAND LIMITED	Aero Base (Route)	128.1	HMNZS IRIRANGI	2739598	6190525
218183	METEOROLOGICAL SERVICE OF NEW ZEALAND LIMITED	Meteorological Radar	5605	MAHIA	2932245	6214730
264636	METEOROLOGICAL SERVICE OF NEW ZEALAND LIMITED	Meteorological Radar	5605	NEW PLYMOUTH	2611944	6243130
72284	METEOROLOGICAL SERVICE OF NEW ZEALAND LIMITED	Meteorological Radar	5605	OUTLOOK HILL	2647835	5987090
120788	METEOROLOGICAL SERVICE OF NEW ZEALAND LIMITED	Meteorological Aid	400.5	PARAPARAUMU METEROLOGICAL SERVICE	2677100	6031600
237978	METEOROLOGICAL SERVICE OF NEW ZEALAND LIMITED	Aero Base (Route)	129	WANGANUI AIRPORT	2683000	6136300
57505	MOBIL OIL (NZ) LTD	Aero Base (Route)	133	MIRAMAR	2661400	5985200
92401	NEW ZEALAND POLICE	Aero Base (Off Route)	119	HAWERA POLICE STATION	2620400	6178900
92401	NEW ZEALAND POLICE	Aero Base (Off Route)	118.1	HAWERA POLICE STATION	2620400	6178900
92401	NEW ZEALAND POLICE	Aero Base (Off Route)	131.3	HAWERA POLICE STATION	2620400	6178900
92401	NEW ZEALAND POLICE	Aero Base (Off Route)	119.1	HAWERA POLICE STATION	2620400	6178900
126169	NEW ZEALAND POLICE	Aero Base (Off Route)	119.1	MASTERTON POLICE STATION	2734200	6025040
126169	NEW ZEALAND POLICE	Aero Base (Off Route)	131.3	MASTERTON POLICE STATION	2734200	6025040
126322	NEW ZEALAND POLICE	Aero Base (Off Route)	131.3	MT ERIN	2839100	6155600
126322	NEW ZEALAND POLICE	Aero Base (Off Route)	119.1	MT ERIN	2839100	6155600
92397	NEW ZEALAND POLICE	Aero Base (Off Route)	119	NEW PLYMOUTH POLICE STATION	2602800	6237800
92397	NEW ZEALAND POLICE	Aero Base (Off Route)	131.3	NEW PLYMOUTH POLICE STATION	2602800	6237800
92397	NEW ZEALAND POLICE	Aero Base (Off Route)	119.1	NEW PLYMOUTH POLICE STATION	2602800	6237800
92397	NEW ZEALAND POLICE	Aero Base (Off Route)	118.1	NEW PLYMOUTH POLICE STATION	2602800	6237800
126168	NEW ZEALAND POLICE	Aero Base (Off Route)	131.3	PALMERSTON NORTH POLICE STATION	2732136	6091151
126168	NEW ZEALAND POLICE	Aero Base (Off Route)	119.1	PALMERSTON NORTH POLICE STATION	2732136	6091151
126170	NEW ZEALAND POLICE	Aero Base (Off Route)	131.3	SADDLE HILL(NN)	2546200	5992300
126170	NEW ZEALAND POLICE	Aero Base (Off Route)	119.1	SADDLE HILL(NN)	2546200	5992300
92399	NEW ZEALAND POLICE	Aero Base (Off Route)	119	STRATFORD POLICE STATION	2620584	6206578
92399	NEW ZEALAND POLICE	Aero Base (Off Route)	119.1	STRATFORD POLICE STATION	2620584	6206578
92399	NEW ZEALAND POLICE	Aero Base (Off Route)	131.3	STRATFORD POLICE STATION	2620584	6206578
92399	NEW ZEALAND POLICE	Aero Base (Off Route)	118.1	STRATFORD POLICE STATION	2620584	6206578
126167	NEW ZEALAND POLICE	Aero Base (Off Route)	119.1	TAUAKIRA	2699767	6165747
126167	NEW ZEALAND POLICE	Aero Base (Off Route)	131.3	TAUAKIRA	2699767	6165747
57794	NZME RADIO LIMITED	Aero Base (Off Route)	133.6	CNR DICKENS & DALTON STREETS	2846800	6183000
118043	NZME RADIO LIMITED	Aero Base (Off Route)	133.6	NEW PLYMOUTH	2603100	6237800
57795	NZME RADIO LIMITED	Aero Base (Off Route)	133.5	PALMERSTON NORTH	2731600	6091100
51588	OMV NEW ZEALAND LIMITED	Radiodet - Radio Beacons (VOR, NDB)	0.406	MAUI A PLATFORM	2548617	6183278
51592	OMV NEW ZEALAND LIMITED	Aero Base (Off Route)	119.1	MAUI A PLATFORM	2548617	6183278
51592	OMV NEW ZEALAND LIMITED	Aero Base (Off Route)	133.65	MAUI A PLATFORM	2548617	6183278
95228	OMV NEW ZEALAND LIMITED	Radiodet - Radio Beacons (VOR, NDB)	0.338	OAONUJ	2580300	6200300
51590	OMV NEW ZEALAND LIMITED	Radiodet - Radionav (Incl DME)	1016	OAONUJ	2580300	6200300
51591	OMV NEW ZEALAND LIMITED	Aero Base (Off Route)	119.1	OAONUJ	2580300	6200300
51591	OMV NEW ZEALAND LIMITED	Aero Base (Off Route)	133.65	OAONUJ	2580300	6200300
252984	PLANEBIZ LTD	Aero Base (Off Route)	133.725	WELLINGTON AIRPORT	2661500	5984800

Licence No	Operator	Licence Type	Freq (MHz)	Location	Easting NZMG	Northing NZMG
51306	RAVENSDOWN AEROWORK LIMITED	Aero Base (Off Route)	133.05	MATAROA	2744400	6164100
51303	RAVENSDOWN AEROWORK LIMITED	Aero Base (Off Route)	133.05	WANGANUI AIRPORT	2683100	6136200
254352	ROCKET LAB LIMITED	Meteorological Aid	400.7	2704 MAHIA EAST COAST ROAD NUHAKA MAHIA	2930023	6206082
254352	ROCKET LAB LIMITED	Meteorological Aid	401.6	2704 MAHIA EAST COAST ROAD NUHAKA MAHIA	2930023	6206082
254352	ROCKET LAB LIMITED	Meteorological Aid	400.3	2704 MAHIA EAST COAST ROAD NUHAKA MAHIA	2930023	6206082
254352	ROCKET LAB LIMITED	Meteorological Aid	401.1	2704 MAHIA EAST COAST ROAD NUHAKA MAHIA	2930023	6206082
175107	SITA B.V.	Aero Base (Off Route)	131.55	PALMER HEAD	2662100	5983900
207493	SITA B.V.	Aero Base (Off Route)	131.55	PALMERSTON NORTH AIRPORT	2732160	6094800
281884	SITA B.V.	Aero Base (Off Route)	131.55	WELLINGTON AIRPORT CONTROL TOWER	2660882	5985190
289182	SITA B.V.	Aero Base (Off Route)	136.97 5	WELLINGTON AIRPORT CONTROL TOWER	2660882	5985190
252454	SKYLINE AVIATION LTD	Aero Base (Off Route)	133.25	NAPIER AIRPORT TERMINAL	2843200	6185800
218345	SWISSPORT NEW ZEALAND LIMITED	Aero Base (Off Route)	133.95	WELLINGTON AIRPORT (SKY CARE)	2661511	5984931
203621	VITAL LIMITED	Aero Base (Off Route)	133.65	BLAGDON HILL	2600100	6236700
203620	VITAL LIMITED	Aero Base (Off Route)	133.65	CARRINGTON ROAD	2594400	6220400
203622	VITAL LIMITED	Aero Base (Off Route)	133.65	JACKSONS LOOKOUT	2605100	6209900
247466	WANGANUI DISTRICT COUNCIL	Aero Base (Route)	120.2	WANGANUI AIRPORT	2683000	6136300



## FW: [EXTERNAL] FW: Proposed Windfarm - Aeronautical Radar

Gene Sams <Gene.Sams@MeridianEnergy.co.nz>

Mon 2023-05-22 3:06 PM

To: Tom Anderson <Tom@incite.co.nz>

Cc: Lynley Fletcher <Lynley.Fletcher@MeridianEnergy.co.nz>; Nick Bowmar <Nick.Bowmar@MeridianEnergy.co.nz>

Hi Tom,

Please see below from Airways.

Cheers,  
Gene

---

**From:** Hider, Vaughan <Vaughan.Hider@airways.co.nz>

**Sent:** Monday, 22 May 2023 2:56 pm

**To:** Gene Sams <Gene.Sams@MeridianEnergy.co.nz>

**Cc:** Stewart, Michael <michael.stewart@airways.co.nz>; Nick Bowmar <Nick.Bowmar@MeridianEnergy.co.nz>

**Subject:** RE: [EXTERNAL] FW: Proposed Windfarm - Aeronautical Radar

Hi Gene

We have reviewed your proposal with the relevant subject matter experts within Airways and our conclusion is that it will not impact any Airways services in the area. Therefore we have no objection to it going ahead.

Regards  
Vaughan

**Vaughan Hider**

Senior Communication, Navigation and Surveillance Engineer

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e. [Vaughan.Hider@airways.co.nz](mailto:Vaughan.Hider@airways.co.nz)

w. [www.airways.co.nz](http://www.airways.co.nz)

---

**From:** Gene Sams <[Gene.Sams@MeridianEnergy.co.nz](mailto:Gene.Sams@MeridianEnergy.co.nz)>

**Sent:** Thursday, 18 May 2023 10:49 am

**To:** Hider, Vaughan <[Vaughan.Hider@airways.co.nz](mailto:Vaughan.Hider@airways.co.nz)>

**Cc:** Stewart, Michael <[michael.stewart@airways.co.nz](mailto:michael.stewart@airways.co.nz)>; Nick Bowmar <[Nick.Bowmar@MeridianEnergy.co.nz](mailto:Nick.Bowmar@MeridianEnergy.co.nz)>

**Subject:** RE: [EXTERNAL] FW: Proposed Windfarm - Aeronautical Radar

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Hi Vaughan,

Thank you for the update, we hope to hear from you soon. And just as a friendly heads up, we're not too far from lodging for consent with the four councils soon.

Cheers,  
Gene

---

**From:** Hider, Vaughan <[Vaughan.Hider@airways.co.nz](mailto:Vaughan.Hider@airways.co.nz)>

**Sent:** Wednesday, 10 May 2023 3:25 pm

**To:** Gene Sams <[Gene.Sams@MeridianEnergy.co.nz](mailto:Gene.Sams@MeridianEnergy.co.nz)>

**Cc:** Stewart, Michael <[michael.stewart@airways.co.nz](mailto:michael.stewart@airways.co.nz)>; Nick Bowmar <[Nick.Bowmar@MeridianEnergy.co.nz](mailto:Nick.Bowmar@MeridianEnergy.co.nz)>

**Subject:** RE: [EXTERNAL] FW: Proposed Windfarm - Aeronautical Radar

Hi Gene

Still discussing internally, will let you know how we get on.

Cheers  
Vaughan

---

**From:** Gene Sams <[Gene.Sams@MeridianEnergy.co.nz](mailto:Gene.Sams@MeridianEnergy.co.nz)>

**Sent:** Monday, 8 May 2023 9:13 am

**To:** Hider, Vaughan <[Vaughan.Hider@airways.co.nz](mailto:Vaughan.Hider@airways.co.nz)>

**Cc:** Stewart, Michael <[michael.stewart@airways.co.nz](mailto:michael.stewart@airways.co.nz)>; Nick Bowmar <[Nick.Bowmar@MeridianEnergy.co.nz](mailto:Nick.Bowmar@MeridianEnergy.co.nz)>

**Subject:** RE: [EXTERNAL] FW: Proposed Windfarm - Aeronautical Radar

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Hi Vaughan and Michael, I hope you both had a great weekend.

Just a friendly check-in to see if you've had time to review the email below. Nick and I hope to hear from you soon.

Best regards,  
Gene

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**From:** Gene Sams  
**Sent:** Tuesday, 2 May 2023 9:48 am  
**To:** Hider, Vaughan <[Vaughan.Hider@airways.co.nz](mailto:Vaughan.Hider@airways.co.nz)>  
**Cc:** Stewart, Michael <[michael.stewart@airways.co.nz](mailto:michael.stewart@airways.co.nz)>; Nick Bowmar <[Nick.Bowmar@MeridianEnergy.co.nz](mailto:Nick.Bowmar@MeridianEnergy.co.nz)>  
**Subject:** RE: [EXTERNAL] FW: Proposed Windfarm - Aeronautical Radar

Hi Vaughan,

Thank you for your email below clarifying that you do not have RADAR services at Rangitumau, and I'm sorry about the delay in my response. It's been a hectic few months in preparation for our consent application.

I wondered if there was any more information Meridian/Kordia could provide to you to help with your formal reply to the email below. As mentioned, it would be great if you could please consider sending a letter of support for this project, presuming all effects can be effectively managed.

Please let me know when you get a moment.

Best regards,  
Gene

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**From:** Hider, Vaughan <[Vaughan.Hider@airways.co.nz](mailto:Vaughan.Hider@airways.co.nz)>  
**Sent:** Friday, 10 March 2023 3:08 pm  
**To:** Gene Sams <[Gene.Sams@MeridianEnergy.co.nz](mailto:Gene.Sams@MeridianEnergy.co.nz)>  
**Cc:** Stewart, Michael <[michael.stewart@airways.co.nz](mailto:michael.stewart@airways.co.nz)>; Nick Bowmar <[Nick.Bowmar@MeridianEnergy.co.nz](mailto:Nick.Bowmar@MeridianEnergy.co.nz)>  
**Subject:** RE: [EXTERNAL] FW: Proposed Windfarm - Aeronautical Radar

Hi Gene

Just to clarify, we do not have any radar services at Rangitumau, just two VHF base stations for radio communications. Industry guidance for these is a 2km building restricted zone.

Regards  
Vaughan

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**From:** Gene Sams <[Gene.Sams@MeridianEnergy.co.nz](mailto:Gene.Sams@MeridianEnergy.co.nz)>  
**Sent:** Friday, 10 March 2023 2:53 pm  
**To:** Hider, Vaughan <[Vaughan.Hider@airways.co.nz](mailto:Vaughan.Hider@airways.co.nz)>  
**Cc:** Stewart, Michael <[michael.stewart@airways.co.nz](mailto:michael.stewart@airways.co.nz)>; Nick Bowmar <[Nick.Bowmar@MeridianEnergy.co.nz](mailto:Nick.Bowmar@MeridianEnergy.co.nz)>  
**Subject:** RE: [EXTERNAL] FW: Proposed Windfarm - Aeronautical Radar

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Hi Vaughan,

Thank you, we look forward to hearing what works best.

Using a 200 km radius of the site, Kordia found Radar Systems operating 16 km SSW (Rangitumau) and balance 32 km to the north. We plotted the Rangitumau points into our GIS layer. We saw that the RADAR system is 16,080 m from the closest turbine, approximately within the boundary you mentioned in your email below. Could you please let us know whether you foresee any issues here?

Best regards,  
Gene

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**From:** Hider, Vaughan <[Vaughan.Hider@airways.co.nz](mailto:Vaughan.Hider@airways.co.nz)>  
**Sent:** Friday, 10 March 2023 11:59 am  
**To:** Gene Sams <[Gene.Sams@MeridianEnergy.co.nz](mailto:Gene.Sams@MeridianEnergy.co.nz)>  
**Cc:** Stewart, Michael <[michael.stewart@airways.co.nz](mailto:michael.stewart@airways.co.nz)>; Nick Bowmar <[Nick.Bowmar@MeridianEnergy.co.nz](mailto:Nick.Bowmar@MeridianEnergy.co.nz)>  
**Subject:** RE: [EXTERNAL] FW: Proposed Windfarm - Aeronautical Radar

Hi Gene

Thanks for the update, the radar section is correct now.

I will have a quick discussion here about the best way to formally reply to this. Can you please confirm that the closest wind turbine is greater than 16km from the radar?

Regards  
Vaughan

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**From:** Gene Sams <[Gene.Sams@MeridianEnergy.co.nz](mailto:Gene.Sams@MeridianEnergy.co.nz)>  
**Sent:** Thursday, 9 March 2023 3:18 pm  
**To:** Hider, Vaughan <[Vaughan.Hider@airways.co.nz](mailto:Vaughan.Hider@airways.co.nz)>  
**Cc:** Stewart, Michael <[michael.stewart@airways.co.nz](mailto:michael.stewart@airways.co.nz)>; Nick Bowmar <[Nick.Bowmar@MeridianEnergy.co.nz](mailto:Nick.Bowmar@MeridianEnergy.co.nz)>  
**Subject:** RE: [EXTERNAL] FW: Proposed Windfarm - Aeronautical Radar

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Hi Vaughan, I hope your week goes well.

Kordia has amended the report after taking your comments on board (see attached). Jason Hills from Kordia mentions in his email response: *"Apart from correcting section 3.3.2, there is no material impact on the wind farm project and no mitigations required. The closing paragraph of this section still stands correct, recommending to contact Airways for their approval. I expect that Airways will provide a similar letter of approval for you like previously provided in 2011."*

Our wind farm site design is based on an 'envelope approach' where we use ribbons to show where the potential turbines, infrastructure, and accessways could be if we successfully gain consent and move into construction. As Meridian plans to lodge for consent in late April/May, I wondered if you could please provide a small approval letter, with official letterhead, for this project. We are happy to provide GIS files that show a potential 20-turbine layout if that would be useful in your decision-making. Alternatively, we can provide the final design (pre-construction) following the consenting phase.

Thank you,  
Gene Sams  
021 532 751

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**From:** Hider, Vaughan <[Vaughan.Hider@airways.co.nz](mailto:Vaughan.Hider@airways.co.nz)>  
**Sent:** Monday, 6 March 2023 2:57 pm

To: Gene Sams <[Gene.Sams@MeridianEnergy.co.nz](mailto:Gene.Sams@MeridianEnergy.co.nz)>  
Cc: Stewart, Michael <[michael.stewart@airways.co.nz](mailto:michael.stewart@airways.co.nz)>; Nick Bowmar <[Nick.Bowmar@MeridianEnergy.co.nz](mailto:Nick.Bowmar@MeridianEnergy.co.nz)>  
Subject: RE: [EXTERNAL] FW: Proposed Windfarm - Aeronautical Radar

Hi Gene

I've had a read over the report.

Section 3.3.2 is not accurate and the author seems to have mixed up various technologies and sites. I would recommend going back to Kordia about this section. Airways can assist in clarifying the technologies we use. The impact of windfarms can be significant and while this can be filtered out by our software to some degree it does have the potential to make sectors of radar coverage unusable so the statement about filtering in software is not as simple as it seems.

At Ballance we operate a Monopulse Secondary Surveillance Radar (MSSR). This interrogates the transponder on-board an aircraft and gets information such as identity and altitude. The radar is also able to calculate range and bearing to the aircraft. This operates on frequencies of 1030MHz and 1090MHz. The only other services we have there are VHF radio communications and microwave links to our national system. We do not have a DME site at Ballance.

Rangitatau is another site where we only have VHF radio communications. We do use the Kordia links at this site for our network connectivity. We do not have anything at Masterton.

For the MSSR at Ballance we would have not issue with the proposed windfarm as it is far enough away from the radar that we do not have to assess its impact. This is based on guidelines issued Eurocontrol (European organisation for safety of air navigation, Airways uses these standards for all our radar equipment) which state any windfarms within 16km should be assessed. The VHF services at Ballance and Rangitatau have a limit of 2km.

Regards  
Vaughan

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From: Gene Sams <[Gene.Sams@MeridianEnergy.co.nz](mailto:Gene.Sams@MeridianEnergy.co.nz)>  
Sent: Monday, 6 March 2023 9:15 am  
To: Hider, Vaughan <[Vaughan.Hider@airways.co.nz](mailto:Vaughan.Hider@airways.co.nz)>  
Cc: Stewart, Michael <[michael.stewart@airways.co.nz](mailto:michael.stewart@airways.co.nz)>; Nick Bowmar <[Nick.Bowmar@MeridianEnergy.co.nz](mailto:Nick.Bowmar@MeridianEnergy.co.nz)>  
Subject: RE: [EXTERNAL] FW: Proposed Windfarm - Aeronautical Radar

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Hi Vaughan,

Thanks for your prompt email. I have attached the Kordia report for your review.

Best regards,  
Gene

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From: Hider, Vaughan <[Vaughan.Hider@airways.co.nz](mailto:Vaughan.Hider@airways.co.nz)>  
Sent: Friday, 3 March 2023 9:44 am  
To: Gene Sams <[gene.sams@meridianenergy.co.nz](mailto:gene.sams@meridianenergy.co.nz)>  
Cc: Stewart, Michael <[michael.stewart@airways.co.nz](mailto:michael.stewart@airways.co.nz)>  
Subject: [EXTERNAL] FW: Proposed Windfarm - Aeronautical Radar

Hello Gene

I am a Senior Surveillance engineer here at Airways and I'm responsible for our radars. I was passed on your enquiry about the possible impact of your proposed windfarm.

Windfarms can cause interference with radar systems and so we need to be careful of how close wind turbines are placed to radar facilities. We do have a radar installation called Ballance which is Palmerston North. I am not sure of the other two locations the Kordia has referenced.

The best way forward would be to share the details of your project and the Kordia report, from there we can make an assessment of any potential impacts.

Regards  
Vaughan

**Vaughan Hider**  
Senior Communication, Navigation and Surveillance Engineer

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w. [www.airways.co.nz](http://www.airways.co.nz)

---

From: Stewart, Michael <[michael.stewart@airways.co.nz](mailto:michael.stewart@airways.co.nz)>  
Sent: Thursday, 2 March 2023 9:27 pm  
To: Hider, Vaughan <[Vaughan.Hider@airways.co.nz](mailto:Vaughan.Hider@airways.co.nz)>  
Subject: Fw: Proposed Windfarm - Aeronautical Radar

Hi Vaughan, can you follow up please.

Thanks  
Mike

---

**From:** Hall, Tracey <[Tracey.Hall@airways.co.nz](mailto:Tracey.Hall@airways.co.nz)>  
**Sent:** Thursday, March 2, 2023 10:50 AM  
**To:** Stewart, Michael <[michael.stewart@airways.co.nz](mailto:michael.stewart@airways.co.nz)>  
**Cc:** Hounsell, Geoff <[Geoff.Hounsell@airways.co.nz](mailto:Geoff.Hounsell@airways.co.nz)>  
**Subject:** FW: Proposed Windfarm - Aeronautical Radar

Hi Mike,

Hope you're well.

Please see below re proposed windfarm and aeronautical radar – assume this would sit with yourself in the first instance?

Thanks,  
Tracey

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**From:** [no-reply@airways.co.nz](mailto:no-reply@airways.co.nz) <[no-reply@airways.co.nz](mailto:no-reply@airways.co.nz)>  
**Sent:** Wednesday, 1 March 2023 10:21 am  
**To:** Feedback <[Feedback@airways.co.nz](mailto:Feedback@airways.co.nz)>  
**Subject:** Web Enquiry - Customer feedback



## New General Enquiry

**First Name:** Gene

**Last Name:** Sams

**Company:** Meridian Energy Ltd

**Country:** nz

**Email:** [gene.sams@meridianenergy.co.nz](mailto:gene.sams@meridianenergy.co.nz)

**Type:** Customer feedback

**Enquiry:** Kia ora team,

My name is Gene Sams, and work for Meridian Energy's Renewable Development Team in Wellington. I am contacting you today about a proposed wind farm near Eketahuna that our team is actively developing, and soon aim to lodge a consent. The wind farm is located near the small community of Kaiparoro, approximately 5 kilometres south of Eketahuna.

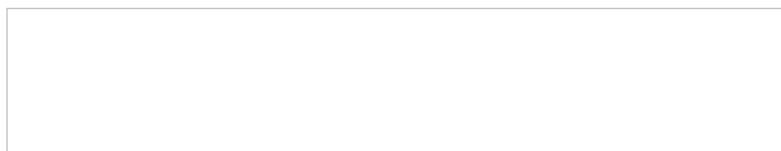
As part of our development studies, we've engaged Kordia to conduct a radio compatibility assessment report. Kordia have identified Aeronautical RADAR services at Rangitumau, Masterton and at Ballance.

We're pleased to see that Kordia concluded by saying any potential effects to aeronautical RADAR services can be filtered out by operators.

We are keen to continue discussions on this project as it develops further, so please let me know who is best to contact directly.

I am happy to jump on a call and discuss this project in more depth (and share report findings), so please feel free to contact me with the details below.

Kind regards,  
Gene Sams  
Renewable Development Project Manager  
021 532 751





Ph: [+64 3 358 1500](tel:+6433581500) Airways Corporation of New Zealand,  
[airways.co.nz](http://airways.co.nz) PO Box 53093, Auckland 2150

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