



DISCUSSION DOCUMENT

**FUTURE OF THE
FM BAND**

Radio Spectrum and Broadcasting Policy Group
Resources and Networks Branch
Ministry of Economic Development
WELLINGTON

ISBN 0-478-24258-1

August 2001

Introduction

1 The frequency band 100-108 MHz has recently been cleared for FM broadcasting. The Government has developed preliminary proposals for its allocation. The purpose of this discussion paper is to seek public feedback on these proposals prior to final decisions on the future of the 100-108 MHz band being made. The paper seeks feedback on:

- i the proposal to reserve parts of the 100-108 MHz band for National Radio, Concert FM¹, Maori radio and Pacific Island radio;
- ii the desired level of coverage for each of the four proposed networks;
- iii the use of any 100-108 MHz spectrum left over after the coverage requirements of the four networks have been met;
- iv the proposal to auction spectrum freed-up in the AM band and lower FM band as a result of the proposed new reservations;
- v opportunities for low power broadcasting in the top end of the 100-108 MHz band (i.e. 106.6-108 MHz).

2 **Expressions of interest in obtaining licences for 100-108 MHz spectrum are not being sought at this time.** A process for applying for licences to access reserved spectrum will be publicly notified once final policy decisions have been agreed and options for delivering any new programmes further explored.

Background

3 New Zealand's FM broadcasting band lies between 88 and 108 MHz. The lower part of the band (88-100 MHz) is currently used for a mix of commercial and non-commercial radio broadcasting services. Over the past five years, the upper part of the band (100-108 MHz) has been cleared of land mobile services. This is in accordance with international practice in which most countries designate this spectrum for FM broadcasting. At present, a licensing prohibition prevents any new broadcasting services from being established in the upper FM band until an overall policy has been developed².

4 Spectrum in the lower FM band is managed under the property-rights based regime of the Radiocommunications Act 1989. Licence-holders hold tradable, fixed-term rights to broadcast at specific locations granted by the Crown as holder of the overarching, nation-wide management right. Licences used for commercial broadcasting are generally purchased through auction or tender.

¹ A transfer from the lower FM band (88-100 MHz) to the upper FM band (100-108 MHz).

² A general exception to this is National Radio, which the Government has previously agreed will be permitted to simulcast in the FM band. In addition, Auckland Access Radio has recently been temporarily licenced in the upper FM band because of the unavailability of suitable AM sites.

5 From time to time, the Government has reserved spectrum for non-commercial broadcasting services, such as National Radio, Concert FM and Access radio, and for the promotion of Maori language and culture. The purpose of making these reservations is to promote a range of public policy objectives. Conditions are generally attached to non-commercial licences that restrict the licence holder's ability to trade.

6 In December 1998, the Ministry of Commerce (now the Ministry of Economic Development) published a discussion paper, which sought to identify general issues associated with the 88-108 MHz band. As part of that process, a number of submissions were received expressing views on how the 100-108 MHz band should be used. This document takes the next step by drawing on those earlier views and providing an opportunity to comment on specific proposals for using the 100-108 MHz band.

Key Issues

Spectrum Availability

7 The 100-108 MHz band will support up to eight new frequencies in any one coverage area. If repeaters are required to provide supplementary coverage in areas of poor coverage, then the band will support between four and eight new networks. The need for repeaters will depend on the geographical features in coverage areas and the coverage requirements of the new programmes.

8 For example, hilly terrain in Wellington means that if reasonably comprehensive coverage is desired, the upper FM band will support a maximum of four new programmes. At the other end of the scale is Auckland, where the band could be expected to support eight new programmes with reasonably comprehensive coverage. This is possible because most of Auckland can be reached with one transmitter per programme, whereas in Wellington at least two transmitters per programme would be required.

9 In other areas, the maximum number of new programmes will lie between these extremes, depending on the coverage objectives of each programme. In addition to Wellington, other key areas where higher coverage demands may affect the number of programmes are the Far North, Wanganui, Palmerston North and Levin. Small pockets of Christchurch, Dunedin and Taupo may also be affected.

10 Based on the above factors, there is sufficient spectrum within the 100-108 MHz band to provide the equivalent of four new programmes with comprehensive nationwide coverage. This is the maximum number of new nation-wide networks that can be created without compromising the ability of listeners to enjoy interference-free reception of the programme of their choice.

11 Setting aside sufficient spectrum for four new nation-wide programmes will mean that in some areas, such as Auckland, there will be spectrum left over in the 100-108 MHz band that could be used for new 'local' programmes. The amount of spectrum left over in any one coverage area will depend on the coverage requirements of the four new programmes. In essence, there is a trade-off between the number of new programmes that can be provided in any one area and the coverage of those

programmes (i.e. greater coverage will mean that fewer new programmes can be provided in areas where repeaters are needed).

Alternative Options for the Four Programmes

12 The 100-108 MHz band could be used to provide a range of programmes. As the band will only support four nation-wide networks, choices must be made to ensure that the spectrum is used in a manner that creates the greatest benefit for all New Zealanders. The key choices are:

- whether to use the spectrum to provide additional commercial programmes or to provide additional non-commercial programmes, or a balance of both; and
- if non-commercial programmes are to be provided, which programmes should be given priority.

13 The alternative programme options are outlined below.

Commercial Licences

14 The 100-108 MHz band could be used to provide new commercial programmes. There are currently around 400 licences in the lower FM band allocated to commercial broadcasters. Overall (including AM licences), commercial licences account for approximately two thirds of all existing licence allocations. There have been no new FM licences available for commercial acquisition in the main centres for some time.

15 Government policy is to allocate spectrum for commercial use through auction. Commercial licences are granted for a fixed period of 20 years after which time they revert back to the Crown. Existing commercial licences begin to expire in 2011. The Government is currently considering options for reallocating these licences when they expire.

Non-commercial Reservations

16 As noted above, the Government has, from time to time, reserved spectrum for the purpose of achieving its public policy objectives and helping to meet its obligations under the Treaty of Waitangi. The non-commercial programmes for which spectrum could be reserved are outlined below.

National Radio

17 National Radio currently operates over a wide coverage area mainly in the AM broadcast bands³. Radio New Zealand has a desire to convert National Radio services to FM broadcasting. The Government has previously agreed that National Radio should be able to migrate to spectrum within the 100-108 MHz band, subject to a business case being made.

³ National Radio has twenty four AM licences and three FM licences

18 The current AM coverage of National Radio is unlikely to be quickly replicated by a network of FM stations. It is expected, however, that over time some of the AM spectrum currently used for National Radio will become available for other uses.

Concert FM

19 Concert FM currently operates a network of 34 stations on frequencies dispersed throughout the lower FM band (88-100 MHz). Radio New Zealand has expressed a general desire to bundle the Concert FM system within a dedicated block of frequencies in the upper FM band. This approach may also provide for the expansion of Concert FM to areas currently without service.

20 It is anticipated that should Concert FM move to the upper FM band, the frequencies that it is currently using in the lower band would become available for alternative uses.

Youth Radio

21 The Government is currently working through its policy objectives with respect to broadcasting for youth. It is unclear at this stage whether FM spectrum will be required for a youth radio network. It is expected that spectrum can be made available for this purpose if necessary.

Maori Radio

22 The Crown has an obligation under the Treaty of Waitangi to promote Maori language and culture. This has been recognised in the past through the reservation of spectrum and the provision of funding for iwi-based broadcasting. Approximately 32 AM licences and 74 FM licences are currently reserved for Maori radio. Approximately 50% of these licences are currently being used (70% of FM licences are used).

23 In general, there are no unused, reserved licences currently available in the main population centres. In addition, the unused licences cannot be combined to provide a national programme. A key question to be addressed is whether the Crown's obligation to promote Maori language and culture would be enhanced if spectrum within the 100-108 MHz band were to be set aside for a national Maori radio network.

Pacific Island Radio

24 A Pacific Island radio station currently exists on a reserved AM frequency in Auckland (Radio 531 PI). Several Access stations also carry programming for Pacific Island people (for example, Samoan Capital Radio in Wellington).

25 The Government has signalled that it wishes to extend Pacific Island radio to major centres with significant Pacific peoples populations, including Auckland, Hamilton, Tokoroa, Wellington, and Christchurch. To assist with this, funding to NZ On Air was increased by \$280,000 in 2000/2001 and out-years to enable it to fund the establishment and maintenance of a Pacific Island radio network.

Access and Community Radio

26 Access radio allows small interest groups to share a single broadcasting licence. Community radio includes services such as radio reading services for the visually impaired, and community specific broadcasting requirements, such as local radio services for Pacific Island and Asian communities.

27 Services such as these currently exist in most main population centres. Approximately eight AM licences and forty-six FM licences⁴ are currently reserved for access and community radio. Approximately 50% of these reservations are currently being used.

Preliminary Proposals

Four Priority Programmes

28 The Government proposes to use the 100-108 MHz band to provide new and enhanced non-commercial broadcast programmes. The four programmes which the Government proposes to give priority to are:

- i National Radio – to enable it to be broadcast on FM;
- ii Concert FM – to enable it to migrate to the upper FM band;
- iii Maori radio – to enable the establishment of a national programme for the promotion of Maori language and culture;
- iv Pacific Island radio – for the establishment of a national programme to enable Pacific peoples’ cultures and languages to be heard.

29 It should be noted that at this stage the Government is proposing only to reserve or ‘set aside’ spectrum for the above four programmes. Further work and public consultation would be required to develop detailed and comprehensive proposals for each of the programmes before any of the reserved spectrum would be allocated in the form of a radio licence. In particular, the Government would need to be satisfied that the appropriate governance and funding arrangements were in place for the efficient, effective and accountable delivery of the above programmes.

⁴ Most of these frequencies are reserved for community extension services. These services provide radio access to small communities that would otherwise be unable to receive a primary radio signal due to their geographical location (for example, Murchison).

Key Questions:

- 1.1 *Do you agree that the 100-108 MHz band should be used to provide additional non-commercial broadcast services? Do you think any provision should be made for commercial broadcasting?*
- 1.2 *Do you agree that priority should be given to reserving spectrum for National Radio, the transfer of Concert FM, Maori radio and Pacific Island radio? If not, what programmes do you think should be given priority?*
- 1.3 *With respect to a Maori national radio network, do you consider that reserving spectrum within the 100-108 MHz band for this purpose will further the Crown's achievement of its obligation under the Treaty of Waitangi to promote Maori language and culture?*

Coverage

30 The desired coverage level of the four priority programmes will determine the amount of 100-108 MHz spectrum that will need to be reserved for the delivery of the programmes. The coverage requirements will also determine how much 100-108 MHz spectrum will be available for other programmes in certain areas.

31 The Government is seeking feedback on the desired coverage levels for each of the four proposed programmes. The optimal coverage level may be different for each programme. For example, it may be possible to reach the majority of Pacific Island radio listeners by providing coverage in the main centres of Auckland, Hamilton, Tokoroa, Wellington, and Christchurch. On the other hand, the desired coverage level for a Maori national radio programme may include access for all rohe, which would require the use of additional repeater stations.

32 To assist in identifying the desired level of coverage for each service, it is estimated that National Radio currently covers 97% of the population and that Concert FM covers 92% of the population. A programme broadcasting in the five main centres⁵ would result in coverage of around 68% of the population. Finally, it can be noted that TV One has a coverage level of approximately 99%.

Key Questions:

- 2.1 *Do you think that the 100-108 MHz band should be used primarily to provide a greater choice of new broadcast services, or to provide a few new services with high levels of population coverage?*
- 2.2 *What level of population coverage do you think is necessary for each of the following proposed national programmes: National Radio, Concert FM, Maori radio, Pacific Island radio?*

⁵ Auckland, Hamilton, Wellington, Christchurch and Dunedin.

2.3 *What population centres do you consider it is important for each of the four priority services to cover? For example, the five main centres, or all centres with a population greater than 10,000.*

Remaining Spectrum

33 The Government proposes to keep open at this stage the possibility of reserving more spectrum for non-commercial services (e.g. Access and Community radio) from whatever is left over in the upper FM band, after coverage requirements for the four priority programmes have been met. There are currently no plans to make any of the 100-108 MHz spectrum available for acquisition through auction.

Key Questions:

- 3.1 *Do you agree that any spectrum left over after the coverage requirements for the four priority services have been met should be kept open for further possible reservations for non-commercial services?*
- 3.2 *If you agree with this proposal, what non-commercial services do you think should be given priority in any future reservations?*
- 3.3 *Do you consider that commercial broadcasters should have an opportunity to access left over spectrum in the 100-108 MHz band?*
- 3.4 *Do you think that providing more spectrum for commercial broadcasting would result in a better choice of broadcasting services than currently exists?*

Spectrum Freed-up from New Reservations

34 The reservation of 100-108 MHz spectrum for National Radio and Concert FM is likely to free-up some of the AM and lower FM band spectrum currently being used by these programmes. The Government proposes that this spectrum be auctioned for commercial use in due course. This will be subject, however, to future decisions regarding youth radio, as the establishment of a youth radio network may require the use of spectrum in the lower FM band freed-up from the movement of Concert FM.

35 As indicated above, some of the AM spectrum and lower FM band spectrum previously reserved for non-commercial broadcasting services is not currently being used. This is the case for Maori radio and Access and Community radio. In some instances, the reserved spectrum is not used because it is not considered suitable to reach the areas that potential broadcasters wish to cover.

36 Given the level of demand for radio broadcasting licences and the possibility of reservations of 100-108 MHz spectrum for Maori radio and for Access and Community radio (i.e. from spectrum left over from the four priority programmes), it may be possible to free-up some of the existing, unused reservations for alternative uses, such as commercial broadcasting.

Key Questions:

- 4.1 *Do you agree that spectrum freed-up as a result of new reservations for National Radio and Concert FM should be auctioned in due course?*
- 4.2 *Do you consider that some of the existing, unused reservations of spectrum (both AM and lower band FM) should be freed-up for alternative uses? If so, under what circumstances?*

Low Power Broadcasting

Adjacent Spectrum

37 The spectrum adjacent to the 100-108 MHz band (i.e. 108-137 MHz) is used for aeronautical navigation and communications services and is generally referred to as the VHF Aeronautical band. It is used for the following services:

- 108 to 112 MHz - Instrument Landing System (ILS);
- 112 to 118 MHz - VHF Omnidirectional Range (VOR); and
- 118 to 136 MHz - Voice Communications.

38 It is generally acknowledged that aeronautical services in the VHF Aeronautical band will suffer from interference if high power FM broadcast services are operated immediately adjacent at the upper end of the 100-108 MHz band. The Radiocommunications Amendment Act 2000, which will come into force later this year, provides additional protection for radio licences, including aeronautical services, from interference caused by the operation of spectrum licences.

39 In order to ensure that use of the 100-108 MHz band does not cause interference to services in the VHF Aeronautical band, it is proposed that the band from 106.6 MHz to 108.0 MHz be used for services where the power output is limited. These services are discussed below.

Low Power Spectrum Use

Restricted Radiation Devices⁶

40 Under the Radiocommunications (Radio) Regulations 1993, the Chief Executive of the Ministry of Economic Development is able to exempt certain radio apparatus from the requirement to be licensed. For some years the Ministry has issued exemptions for certain low powered apparatus, such as wireless microphones and tourist information services operating in the band 100.2 MHz to 100.8 MHz. As this band is to be used for broadcasting purposes, the current exemptions will be revoked during 2002.

⁶ To be known as 'Short Range Devices'.

41 It is recognised that there is a continuing demand for the operation of low powered devices. To enable the continued operation of these devices in New Zealand, a new allocation in the frequency range 107.4 MHz to 108.0 MHz is proposed to replace 100.2 MHz to 100.8 MHz. Rather than operating under an exemption from licensing, devices operating in this band will be included in a General User Radio Licence for Short Range Devices (SRDs).

Fixed Public Address Systems

42 Low power FM broadcasting in the past has been limited to specific bands on a short term basis to provide radio and public address coverage at large public gatherings such as sports events, A&P shows, airshows, and so on, where a cable based public address system could be impractical. The concept to date has been to limit the licensing for the period of the event.

43 Although there will be a need to ensure aeronautical services remain unaffected by their operation, there are no proposals to alter the current policies for the short term licensing of fixed public address systems, other than to utilise the higher frequency range from 107.4 MHz to 108.0 MHz.

Low Power FM Broadcasting

44 Low power FM broadcasting is an expanding area of radio broadcasting internationally. In some countries, such as the United States of America, there are specific licensing arrangements for stations with power levels up to 100 watts (20dBW) effective radiated power (erp). In other countries, low power (less than 1 watt) stations do not require specific licensing.

45 The alternatives that have so far been identified for this type of licensed operation are:

- utilisation for “in-fill” coverage in order to expand the coverage of high and medium power FM broadcasting in some areas;
- for “very modest” non-commercial broadcasting. The low power could ensure a true ‘local’ flavour at a low cost;
- operation of a “very modest” commercial broadcasting service on a localised basis. Again, the low entry cost could be attractive to small-scale broadcasters.

46 It is proposed to use the band 106.6 MHz to 107.4 MHz to meet the low power FM radio needs in the future. Again, there will be a continuing need to ensure that the operation of aeronautical services remains unaffected by the provision of these licences. Further work is required to determine how many licences would be available and under what conditions (for example, whether these licences would be auctioned).

Key Questions:

- 5.1 *Do you have any views on the above proposals for using 106.6 MHz to 108 MHz for low power broadcasting?*
- 5.2 *What conditions do you consider should be attached to licences for low power FM Broadcasting and how should such licences be allocated?*

Invitation for Submissions

47 Submissions are invited on any of the issues or questions raised in this paper. **It should be noted, however, that expressions of interest in obtaining licences for future reservations of 100-108 MHz spectrum are not being sought at this time.**

48 All submissions that are received by the due date will be carefully considered and used to inform the final decisions of the Government with respect to the future of the 100-108 MHz band. Submissions should be provided to:

Submission: Future of the FM Band
Resources Directorate
Resources and Networks Branch
Ministry of Economic Development
PO Box 1473
WELLINGTON

Fax: (04) 499 0969
Email: dawn.randall@med.govt.nz

49 Responses should be received by Friday **28 September 2001**.

Official Information Act 1982

50 The content of submissions provided to the Ministry in response to this discussion paper may become subject to public release under the Official Information Act 1982. Please advise of any objection held to the release of any information contained in a submission to this discussion paper, and in particular, which part(s) should be withheld, together with the reason(s) for withholding the information concerned. The Ministry will take into account all such objections when responding to requests for information on submissions to this document under the Official Information Act 1982.

Privacy Act 1993

51 The Privacy Act 1993 establishes certain principles with respect to the collection, use and disclosure, by various agencies including the Ministry, of information relating to individuals, and access by individuals to information relating to them held by agencies. Any personal information you supply to the Ministry in the course of making a submission will be used by the Ministry in conjunction with

considerations of matters covered by this document only. Please clearly indicate in your submissions if you do not wish your name to be included in any summary the Ministry may prepare for public release on submissions received.

Crown Copyright 2001. All Rights Reserved: no part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the copyright holders, the Ministry of Economic Development, New Zealand.