Proposal to vary the Deniliquin radio licence area plan

Consultation paper

March 2022

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Executive summary

## Proposed changes to a licence area plan (LAP)

The Australian Communications and Media Authority (ACMA) is seeking comment on proposed changes to the [Licence Area Plan - Deniliquin (Radio) - September 1997](https://www.legislation.gov.au/Details/F2017C01171) (Deniliquin LAP).

We are proposing to vary the Deniliquin LAP to:

* make spectrum available for:

a new infill transmitter to serve Echuca/Moama for the 2QN commercial radio broadcasting service operating on 102.9 MHz, in the Deniliquin RA1 licence area

a new infill transmitter to serve Cobram for the 2QN commercial radio broadcasting service operating on 93.3 MHz, in the Deniliquin RA1 licence area

a new infill transmitter to serve Echuca/Moama for the 2MOR commercial radio broadcasting service operating on 103.9 MHz, in the Deniliquin RA1 licence area, to commence when 92.5 MHz ceases operation

a temporary infill transmitter to serve Echuca/Moama for the 2MOR commercial radio broadcasting service operating on 92.5 MHz, in the Deniliquin RA1 licence area, until the permanent infill transmitter on 103.9 MHz commences operation

* remove a technical specification for a high-power open narrowcasting (HPON) service transmitter operating on 92.5 MHz that was planned to serve Moama

make minor changes to technical specifications and other consequential changes.

The draft variation instrument, Variation to Licence Area Plan – Deniliquin Radio – 2022 (No. 1) that would give effect to the proposed changes is available alongside this paper on the [ACMA website](https://www.acma.gov.au/have-your-say).

# Issues for comment

We welcome comment from interested stakeholders on the issues raised in this paper or any other issues raised relevant to the proposed LAP variation.

Details on making a submission can be found at [*Invitation to comment*](#Invite)at the end of this document.

# Introduction

## Planning of broadcasting services and the preparation of LAPs

The ACMA’s broadcasting planning functions are set out in Part 3 of the *Broadcasting Services Act 1992* (BSA). In performing these functions, we promote the objects of the BSA (section 3), including the economic and efficient use of radiofrequency spectrum, and have regard to the planning criteria set out in section 23 of the BSA. When planning analog broadcasting services, we refer to [ACMA’s approach to broadcast planning and varying LAPs](https://www.acma.gov.au/sites/default/files/2021-08/ACMA%20approach%20to%20broadcast%20planning%20and%20varying%20LAPs.docx), which provides an overview of the regulatory framework, policy objectives and planning process for analog broadcasting services.

Under section 26 of the BSA, the ACMA must, by legislative instrument, prepare LAPs that determine the number and characteristics, including technical specifications, of broadcasting services that are to be available in particular areas of Australia. The BSA also provides the ACMA with a discretionary power to vary LAPs.

## Deniliquin LAP

All radio services in the Deniliquin area are described in the Deniliquin LAP in 2 licence areas: Deniliquin RA1 and Deniliquin RA2. The issues discussed in this consultation paper relate to the Deniliquin RA1 licence area only.

### Deniliquin RA1

The Deniliquin RA1 licence area is approximately 725 kilometres southwest of [Sydney](https://en.wikipedia.org/wiki/Sydney). The southern part of the licence area partly straddles and follows the Murray River. The licence area includes Deniliquin in the centre, Echuca to the south, smaller localities such as Finley and Cobram to the east and Barham on the western edge.

The Deniliquin LAP states that 2 national radio broadcasting services, 2 commercial radio broadcasting services and 7 open narrowcasting radio services are to be available in the Deniliquin RA1 licence area. The licence area is described in [Appendix A](#AppendixA) to the Deniliquin LAP.

# Proposed changes to the Deniliquin LAP

## Summary

In the Deniliquin LAP, the ACMA proposes to:

Make spectrum available in the Deniliquin RA1 licence area ([Appendix A](#_Appendix_A)) for an FM infill transmitter for the commercial radio broadcasting service, 2MOR. The proposed technical specification permits operation of a transmitter located at the 2QN-2MOR Office, 250 Anstruther Street, Echuca, on 103.9 MHz, to serve the Echuca/Moama area. The full technical specification is at [Appendix B](#_Appendix_B).

Make spectrum available for an FM infill transmitter for the commercial radio broadcasting service, 2QN. The proposed technical specification permits operation of an FM transmitter located at the 2QN-2MOR Office, 250 Anstruther Street, Echuca, on 102.9 MHz, to serve the Echuca/Moama area. The full technical specification is at [Appendix C](#_Appendix_C).

* Make spectrum available for an FM infill transmitter for the 2QN service. The proposed technical specification permits operation of an FM transmitter located at Broadcast Site, Racecourse Ritchie Road, Cobram, on 93.3 MHz, to serve the Cobram area. The full technical specification is at [Appendix D](#AppendixD).
* Make spectrum available for an FM infill transmitter for the 2MOR service. The proposed technical specification permits operation of an FM transmitter located at the 2QN-2MOR Office, 250 Anstruther Street, Echuca, on 92.5 MHz, to serve Echuca/Moama. This is the same frequency for a high-power open narrowcasting (HPON) transmitter planned to serve Moama (Attachment 1.11 of the current LAP, which is proposed to be removed) and will be available until such time as the permanent infill transmitter on 103.9 MHz commences operation. The full technical specification is at [Appendix E](#_Appendix_E).
* Remove the technical specification for the HPON transmitter planned to operate on 92.5 MHz, which was planned to serve Moama.
* Make minor amendments to the text, schedules and attachments, as outlined in the next section.

We consider that these proposals, if implemented, constitute an economic and efficient use of the spectrum and promote the objects in section 3 of the BSA. In particular, the proposals support the availability of a diverse range of radio services (paragraph 3(1)(a)) and the need for appropriate coverage of matters of local significance (paragraph 3(1)(g)).

In making these proposals, we have also had considered the planning criteria in section 23 of the BSA, specifically:

relevant demographics and social and economic characteristics (paragraphs 23(a) and (b))

the number of existing broadcasting services and the demand for new services (paragraph 23(c))

technical restraints relating to the delivery or reception of broadcasting services (paragraph 23(e)).

## Discussion of proposal – 2MOR

Rich Rivers Radio Pty Ltd (Rich Rivers) is the licensee of the commercial radio broadcasting licence used to provide the FM service ‘Edge FM’ (callsign 2MOR).[[1]](#footnote-2) The service’s main transmitter is located at Deniliquin and operates on 102.5 MHz. An infill transmitter provides the service to Cobram on 88.5 MHz. Rich Rivers is also the licensee of a commercial radio broadcasting licence used to provide an AM service (callsign 2QN)[[2]](#footnote-3) that also serves Deniliquin.

Rich Rivers is the licensee of 2 high power open narrowcasting (HPON) licences issued under the *Radiocommunications Act* 1992, one of which is planned to serve Deniliquin, the other Moama. Both services are planned in the Deniliquin RA1 licence area.

The planned Moama HPON service has not been operating as planned for long. Instead, the frequency planned for that HPON service – 92.5 MHz – has been utilised to transmit the 2MOR service to Echuca.

ACE Radio, which acquired Rich Rivers in 2017, has identified that coverage of the 2MOR FM service in the Echuca/Moama area is deficient. Using an infill transmitter is the best option to address the deficiency. We have developed a proposal to provide appropriate level of service to the Echuca/Moama area with the technical specification at [Appendix B](#_Appendix_B).

### Spectrum availability and coverage

The urban centre/locality of Echuca/Moama had a population of 18,526 as at the 2016 Census, comprising 12,906 people in [Echuca](https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/UCL213006?opendocument) and 5,620 people in [Moama](https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/UCL113004?opendocument). Our engineering assessment indicates that 2MOR’s main transmitter located at Deniliquin cannot provide a suburban grade of service to that area.[[3]](#footnote-4) However, our assessment indicates that an infill transmitter located at Echuca and operating on 103.9 MHz, with a maximum effective radiated power (ERP) of 200 W, should provide a suburban level of coverage. Furthermore, our assessment indicates that there would be no significant overspill from the infill transmitter outside the Deniliquin RA1 licence area.

### Interference to and from other broadcasting services

Our modelling predicts that there is a small risk of interference from the infill transmitter to the 3GRR community radio broadcasting service at Echuca. If the 3GRR transmitter were situated at the LAP-planned nominal location[[4]](#footnote-5), the percentage of potentially affected people would be minor[[5]](#footnote-6) and the impact even less than if the 3GRR service continued to transmit from its licensed site.[[6]](#footnote-7)

The assessment also indicates that the proposed infill transmitter may be susceptible to interference from the 3GRR service. This interference potentially may occur even in areas where the infill transmitter’s transmission exceeds 66 dBµV/m. If the 3GRR transmitter were situated at the LAP-planned nominal location, the percentage of potentially affected people would be between 9% and 15.38%[[7]](#footnote-8) and the impact would be reduced to between 1.84% and 8.15%[[8]](#footnote-9) if the transmitter was located at its current licensed site. Our assessment is that the predicted interference is unlikely to occur.

### HPON spectrum usage

We consider that the technical specification using the frequency 92.5 MHz that had been planned for the Moama HPON service should be removed from the Deniliquin LAP. Our engineering analysis found that the technical specification for the Moama HPON service is not suitable to serve either Moama or Echuca, with the planned LAP site considerably north of Moama and Echuca. The removal of the current technical specifications from the LAP will increase the availability of frequencies that may be needed for AM/FM conversion activities in nearby licence areas. Further, the frequency is not being used to provide an HPON service.

Given that the technical specification planned for the Moama HPON service (proposed to be removed) has been used to transmit the 2MOR service, we propose to add a temporary infill transmitter for 2MOR using the same HPON frequency (92.5 MHz) to serve Echuca/Moama, to allow transition from the current transmission to the proposed technical specification on 103.9 MHz. The proposed transmitter site is 2QN-2MOR Office, 250 Anstruther Street, Echuca. This technical specification will not be available after the start of transmission by the FM infill transmitter operating on 103.9MHz.

### Conclusion

Taking into consideration [the ACMA’s approach to AM–FM conversions and infill transmitters for commercial radio broadcasting services](https://www.acma.gov.au/publications/2017-11/guide/am-fm-conversion-and-requests-fm-fill-transmitters) and the engineering assessment, we consider it appropriate to make spectrum available for an infill transmitter for the 2MOR service to serve Echuca/Moama. For these reasons, we also consider it appropriate to remove the Moama HPON service’s technical specification from the Deniliquin LAP.

As a temporary solution, we consider it appropriate to add an infill transmitter for the 2MOR service operating on 92.5 MHz, until the start of the infill transmitter operating on 103.9 MHz, at which time the availability of the 92.5 MHz technical specification would stop.

### Advisory notes

Because of the potential for the infill transmitter to receive interference to field strengths below the suburban grade level (>66 dBµV/m), we propose to include advisory notes on the technical specification (see [Appendix B](#_Appendix_B)) about the planning of the transmitter and the level of protection provided.

The draft Variation to Licence Area Plan – Deniliquin Radio – 2022 (No. 1)is available alongside this paper on the [ACMA website](https://www.acma.gov.au/have-your-say).

## Discussion of proposal – 2QN

The ACMA’s [*Technical Planning Parameters and Methods for Terrestrial Broadcasting (TPPs)*](https://www.acma.gov.au/publications/2019-11/guide/technical-planning-parameters-and-methods-terrestrial-broadcasting-tpps) explains that for planning purposes, cities of more than 10,000 people are considered ‘urban’ and towns with between 2,000 and 10,000 people are ‘suburban’.

As mentioned, the urban centre/locality of Echuca/Moama had a population of 18,526 as at the 2016 Census. Our assessment indicates that the signal level of the 2QN service is significantly below the protected field strength level for an urban area, and therefore is not consistent with the usual planning approach.

The urban centre/locality of [Cobram](https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/UCL214004?opendocument) had a population of 5,375 as at the 2016 Census. Our assessment indicates that the 2QN service’s signal level in Cobram is less than the suburban level.

As the field strength levels of the 2QN AM transmission are less than the usual levels at both Echuca/Moama and Cobram, we propose to make spectrum available for 2 infill transmitters, one at each location. This approach is in keeping with our infill policy.

### Spectrum availability, coverage and overspill

#### Echuca/Moama

Our assessment indicates that, in the absence of interference, an infill transmitter with a 200 W maximum ERP operating on frequency 102.9 MHz would provide a suburban level of coverage to the entire urban area of Echuca/Moama.

The assessment also indicates that there would be some overspill of this service into the adjacent licence areas of Bendigo RA1 and Shepparton RA1, which are planned in other LAPs. However, this overspill would not provide a median field strength of 54 dBµV/m to any urban centre/locality other than Echuca/Moama.

#### Cobram

Our field strength predictions indicate that, in the absence of interference, an infill transmitter operating at a maximum ERP of 100 W, operating on frequency 93.3 MHz would provide most of the Cobram urban centre/locality with at least a suburban level of signal.

### Interference to and from other broadcasting services

#### Echuca/Moama

There is some potential for interference to the proposed Echuca/Moama infill transmitter, mainly from the 3ABCRR Alexandra national radio broadcasting service. This interference may occur even in areas where the 2QN service’s transmission exceeds 54 dBµV/m within the Deniliquin RA1 licence area. The population potentially affected would be between 1.08%[[9]](#footnote-10) and 2.07%[[10]](#footnote-11) of the Deniliquin RA1 population.

Furthermore, there is potential for interference to the Echuca/Moama infill transmitter from other broadcasting services, even in areas where the infill transmitter’s transmission exceeds 66 dBµV/m within the Deniliquin RA1 licence area; however, the approximate number of potentially affected people is fewer than 10.

#### Cobram

Our assessment indicates an infill transmitter operating in accordance with the technical specification proposed would not cause co-channel or adjacent channel interference to other broadcasting services.

The assessment indicates, however, that the Cobram infill transmitter could potentially receive interference from other broadcasting services. This potential interference may occur even where the infill transmitter’s signal level exceeds 54 dBµV/m within the Deniliquin RA1 licence area. The potentially affected population would be between 3.28%[[11]](#footnote-12) and 5.43%[[12]](#footnote-13) of the Deniliquin RA1 licence area. If the infill transmitter’s signal level exceeded 66 dBµV/m within the Deniliquin RA1 licence area, the approximate number of potentially affected people is less than 0.1% of the licence area population.[[13]](#footnote-14)

### Conclusion

Taking into consideration our published approach to infill transmitters and the outcome of the engineering assessment, we propose to make spectrum available for infill transmitters for the 2QN service at Echuca/Moama and Cobram.

### Advisory notes

Because of the potential for the Echuca/Moama and Cobram infill transmitters to receive interference to field strengths below the suburban grade level (>66 dBµV/m), we propose to include the same 2 advisory notes on each infill transmitter’s technical specification ([Appendix C](#AppendixC) and [Appendix D](#AppendixD), respectively). The advisory notes are about the planning of each transmitter and the level of protection provided.

The draft Variation to Licence Area Plan – Deniliquin Radio – 2022 (No. 1) is available alongside this paper on the [ACMA website](https://www.acma.gov.au/have-your-say).

# Minor amendments to the Deniliquin LAP

In addition to the more substantial changes outlined, we also propose to make minor amendments to the text, schedules and attachments of the Deniliquin LAP to:

update various transmitter site nominal locations and change all Australian Map Grid references to Geocentric Datum of Australia (GDA94) co-ordinates

insert the word ‘and’ between the service licence numbers in Attachment 1.1

change the advisory note about maximum cymomotive force in Attachment 1.4 to a special condition as the text is prescriptive rather than advisory in nature

change the 2 special conditions in attachments 1.11, 1.13, 1.15, 1.16 and 1.17 to advisory notes as the text is advisory rather than prescriptive, and make minor changes to the first note in each attachment to refer to GDA94 co-ordinates

amend Attachment 1.12 to change the special condition to an advisory note as the text is advisory rather than prescriptive, and update the note to include GDA94 co-ordinates

amend attachments 1.17 and 2.2 to change the special condition to an advisory note and add a second advisory note about minimum field strength

make consequential amendments to Schedule 1

make formatting and grammatical changes to various attachments.

The draft Variation to Licence Area Plan – Deniliquin Radio – 2022 (No. 1*)* is available alongside this paper on the [ACMA website](https://www.acma.gov.au/have-your-say).

# Invitation to comment

## Making a submission

The ACMA invites comments on the issues set out in this consultation paper.

[Online submissions](https://www.acma.gov.au/have-your-say) can be made by uploading a document. Submissions in PDF, Microsoft Word or Rich Text Format are preferred.

Submissions by post can be sent to:

The Manager

Broadcasting Carriage Policy Section

Australian Communications and Media Authority

PO Box 78

Belconnen ACT 2616

The closing date for submissions is COB, **Friday 22 April 2022**.

Consultation enquiries can be emailed to BCP@acma.gov.au.

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# Appendix A

## Map of Deniliquin RA1 licence area



# Appendix B

## Proposed specification for 2MOR infill transmitter to serve Echuca/Moama

LICENCE AREA PLAN : Deniliquin Radio

Category : Commercial

General Area Served : Echuca/Moama (VIC)

Service Licence Number : SL10408

TECHNICAL SPECIFICATION - FM Radio

Specification Number : TS12000441

Transmitter Site :-

Nominal location : 2QN-2MOR Office 250 Anstruther St ECHUCA

Nominal Co-ordinates Latitude Longitude
(GDA94) : -36.126345 144.74853611

Site Tolerance : Refer to *Broadcasting Services
 (Technical Planning) Guidelines 2017*

Emission :-

Frequency Band & Mode : VHF-FM

Carrier Frequency : 103.9 MHz

Polarisation : Mixed

Maximum antenna height : 25 m

Output Radiation Pattern :-

|  |  |
| --- | --- |
| Bearing or Sector (Clockwise direction) | Maximum ERP |
| At all angles of azimuth | 200 W |

Availability of TS12000441 :-

TS12000441 is only available for the transmission of a service under licence SL10408 when the transmission of a service under licence SL10408 by transmitter TS12000971 has ceased.

Advisory Note :-

This service has been planned on an interference limited basis. Field strengths below the planned minimum median field strength level are likely to suffer interference from other broadcasting services.

Any transmission in accordance with this specification is planned on the basis that it will be protected to a minimum median field strength level of 66 dBµV/m against interference from other broadcasting services.

# Appendix C

## Proposed specification for 2QN infill transmitter to serve Echuca/Moama

LICENCE AREA PLAN : Deniliquin Radio

Category : Commercial

General Area Served : Echuca/Moama (VIC)

Service Licence Number : SL10407

TECHNICAL SPECIFICATION - FM Radio

Specification Number : TS12000437

Transmitter Site :-

Nominal location : 2QN-2MOR Office 250 Anstruther St ECHUCA

Nominal Co-ordinates Latitude Longitude
(GDA94) : -36.126345 144.74853611

Site Tolerance : Refer to *Broadcasting Services
 (Technical Planning) Guidelines 2017*

Emission :-

Frequency Band & Mode : VHF-FM

Carrier Frequency : 102.9 MHz

Polarisation : Mixed

Maximum antenna height : 25 m

Output Radiation Pattern :-

|  |  |
| --- | --- |
| Bearing or Sector (Clockwise direction) | Maximum ERP |
| At all angles of azimuth | 200 W |

Advisory Note :-

This service has been planned on an interference limited basis. Field strengths below the planned minimum median field strength level are likely to suffer interference from other broadcasting services.

Any transmission in accordance with this specification is planned on the basis that it will be protected to a minimum median field strength level of 66 dBµV/m against interference from other broadcasting services.

# Appendix D

## Proposed specification for 2QN infill transmitter to serve Cobram

LICENCE AREA PLAN : Deniliquin Radio

Category : Commercial

General Area Served : Cobram (VIC)

Service Licence Number : SL10407

TECHNICAL SPECIFICATION - FM Radio

Specification Number : TS12000648

Transmitter Site :-

Nominal location : Broadcast Site Racecourse Ritchie Rd COBRAM

Nominal Co-ordinates Latitude Longitude
(GDA94) : -35.904024 145.636837

Site Tolerance : Refer to *Broadcasting Services
 (Technical Planning) Guidelines 2017*

Emission :-

Frequency Band & Mode : VHF-FM

Carrier Frequency : 93.3 MHz

Polarisation : Mixed

Maximum antenna height : 30 m

Output Radiation Pattern :-

|  |  |
| --- | --- |
| Bearing or Sector (Clockwise direction) | Maximum ERP |
| At all angles of azimuth | 100 W |

Advisory Note :-

This service has been planned on an interference limited basis. Field strengths below the planned minimum median field strength level are likely to suffer interference from other broadcasting services.

Any transmission in accordance with this specification is planned on the basis that it will be protected to a minimum median field strength level of 66 dBµV/m against interference from other broadcasting services.

# Appendix E

## Proposed specification for 2MOR infill transmitter to serve Echuca/Moama

LICENCE AREA PLAN : Deniliquin Radio

Category : Commercial

General Area Served : Echuca/Moama (VIC)

Service Licence Number : SL10408

TECHNICAL SPECIFICATION - FM Radio

Specification Number : TS12000971

Transmitter Site :-

Nominal location : 2QN-2MOR Office 250 Anstruther St ECHUCA

Nominal Co-ordinates Latitude Longitude
(GDA94) : -36.126345 144.74853611

Site Tolerance : Refer to *Broadcasting Services
 (Technical Planning) Guidelines 2017*

Emission :-

Frequency Band & Mode : VHF-FM

Carrier Frequency : 92.5 MHz

Polarisation : Mixed

Maximum antenna height : 25 m

Output Radiation Pattern :-

|  |  |
| --- | --- |
| Bearing or Sector (Clockwise direction) | Maximum ERP |
| At all angles of azimuth | 200 W |

***Availability of TS12000971 :-***

TS12000971 ceases to be available under licence SL10408 upon the commencement of transmission of a service under licence SL10408 by transmitter TS12000441.

Advisory Note :-

This service has been planned on an interference limited basis. Field strengths below the planned minimum median field strength level are likely to suffer interference from other broadcasting services.

Any transmission in accordance with this specification is planned on the basis that it will be protected to a minimum median field strength level of 66 dBµV/m against interference from other broadcasting services.

1. Broadcasting services licence number 10408. [↑](#footnote-ref-2)
2. Broadcasting services licence number 10407. [↑](#footnote-ref-3)
3. For further information regarding different coverage levels see: ‘Adequate coverage levels’ in [AM-FM conversions | ACMA](https://www.acma.gov.au/am-fm-conversions). [↑](#footnote-ref-4)
4. As per *Broadcasting Services (Technical Planning) Guidelines* 2017 (TPG), a transmitter can be located at a site that is not a LAP-planned nominal location if it operates in accordance with Part 3 and Part 4 of TPGs. [↑](#footnote-ref-5)
5. Between 1.08% and 2.20% of the Echuca RA1 licence area population. [↑](#footnote-ref-6)
6. Between 0.06% and 0.11% of the licence area population. [↑](#footnote-ref-7)
7. Predicted number of people affected would be between 1,758 and 3,003. [↑](#footnote-ref-8)
8. Predicted number of people affected would be between 359 and 1,572. [↑](#footnote-ref-9)
9. The predicted number of people is 587 (CRC-Predict. DEM: 3s). [↑](#footnote-ref-10)
10. The predicted number of people is 1,130 (ITU 1546-1 Terrain. DEM: 3s). [↑](#footnote-ref-11)
11. The predicted number of people is 1,790 (CRC-Predict. DEM: 3s). [↑](#footnote-ref-12)
12. The predicted number of people is 2,961 (ITU 1546-1 Terrain. DEM: 3s). [↑](#footnote-ref-13)
13. (ITU 1546-1 Terrain. DEM: 3s). [↑](#footnote-ref-14)