EXPLANATORY PAPER

Draft Variation to Licence Area Plan for Remote Central and Eastern Australia Radio
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Call for Submissions

Submissions on the matters raised in this Explanatory Paper may be made to the Australian Communications and Media Authority (ACMA) as follows:

By email: lapvariation@acma.gov.au
By mail: Draft LAP Variation –Remote Central and Eastern Australia
        ACMA
        PO Box 34
        BELCONNEN  ACT  2616

By fax:(02) 6253 3277

Please quote file reference 2002/0713 in your reply.

Any enquiries concerning matters raised in this document should be directed to Mr Brett McClymont on (02) 6256 2831 or Mark Bidwell on (02) 6256 2835.

The closing date for submissions is 5.00pm, 30 September 2005.

All submissions received will be made available for public inspection on the ACMA website.1 (www.acma.gov.au)

1 Note that any submission marked “In Confidence”, “Confidential” or similar, cannot be considered by the ACMA in finalising the LAP variation.
PRELIMINARY VIEWS

Preliminary View – Commercial FM Radio – Remote Central Zone

ACMA proposes to vary the technical specifications of the 8SAT commercial radio service in the Remote Commercial Radio Central Zone licence area to operate as follows:

- 102.5 MHz from Mt Oxley Bourke, with a maximum effective radiated power (ERP) of 3 kW omni-directional, vertical polarisation;
- 106.1 MHz from 8 km east of Ceduna, with a maximum ERP of 3 kW omni-directional, vertical polarisation;
- 99.7 MHz from R/T site Coober Pedy, with a maximum ERP of 100 W omni-directional, vertical polarisation;
- 97.7 MHz from Coorong Council Tower Binnie Lookout Coonalpyn Road Meningie, with a maximum ERP of 3 kW directional, vertical polarisation;
- 100.5 MHz from Gregory Place Jabiru, with a maximum ERP of 250 W omni-directional, mixed polarisation;
- 99.5 MHz from Power Comm site 6km NNW of Dutton Mt Rufus (Kapunda), with a maximum ERP of 1 kW directional, vertical polarisation;
- 95.3 MHz from Perponda Hill 2.2 km W of Fiveways Rd Perponda (Lameroo), with a maximum ERP of 2 kW directional, vertical polarisation;
- 95.5 MHz from CFS Site Old Bullock Track Kingscote, with a maximum ERP of 3 kW directional, vertical polarisation;
- 107.3 MHz from Broadcasting Site Ling Murraup Tank Pump Hill Coombargana, (Kingston SE) with a maximum ERP of 2 kW directional, vertical polarisation;
- 89.3 MHz Lake Mountain Road Lake Mountain, with a maximum ERP of 500 W directional, vertical polarisation;
- 90.9 MHz from Tank Site 5.5 km east Maitland, with a maximum ERP of 4 kW directional, vertical polarisation;
- 98.9 MHz from Broadcast Site South Australia Water Tank Stansbury Road Minlaton, with a maximum ERP of 10 kW omni-directional, vertical polarisation;
- 100.3 MHz from Collins Hill Bordertown Road Padthaway, with a maximum ERP of 5 kW directional, vertical polarisation;
- 96.5 MHz from Thomas Tank Hill Pinnaroo, with a maximum ERP of 4 kW directional, mixed polarisation;
- 97.9 MHz from 1.5 km N of Roxby Downs, with a maximum ERP of 1.3 kW directional, vertical polarisation;
- 99.3 MHz from Council Site, Medlingie Hill, 25 km east of Streaky Bay, with a maximum ERP of 4 kW omni-directional, vertical polarisation; and
- 101.7 MHz from Imparja Transmitter Site Woomera, with a maximum ERP of 50 W omni-directional, mixed polarisation.
ACMA proposes to remove the technical specifications of the 8SAT commercial radio service in the Remote Commercial Radio Central Zone licence area as follows:

- 92.1 MHz from Western Drive 2 km south of Bordertown, with a maximum ERP of 250 W omni-directional, vertical polarisation; and
- 106.5 MHz from Fairview Trig Fairview, with a maximum ERP of 250 W omni-directional, vertical polarisation.

The existing Remote Commercial Radio Central Zone licence area is to be redefined using 2001 Census boundaries, but otherwise remain unchanged.

Commercial FM Radio Service – Remote Central Zone

Background

The Australian Broadcasting Authority (ABA) determined the Remote Central and Eastern Australia licence area plan (LAP) in October 1996. The LAP included two remote commercial radio licence areas – the Remote Central Zone and the Remote North East Zone. The commercial FM radio service operating in the Remote Central Zone licence area is known by the callsign 8SAT. The then ABA determined a number of variations to the Remote North East Zone, however this is the first variation proposed for the Remote Central Zone licence area.

In the October 1996 LAP, channel capacity was made available for 8SAT at Apollo Bay, Bordertown, Bourke, Ceduna/Smoky Bay, Coober Pedy, Fairview, Groote Eylandt, Jabiru, Kapunda, Keith, Kingscote, Kingston SE/Robe, Lameroo, Lord Howe Island, Marysville, Mt St Leonard, Nhulunbuy, Pinnaroo, Port Vincent, Roxby Downs, Streaky Bay, Tennant Creek, The Gap, Woomera and Yorketown.

In 1996, the licensee of the 8SAT commercial radio service was Central Zone Investments Ltd. In December 2000, W and L Phillips Pty Ltd (Freshstream FM) acquired the 8SAT commercial FM radio licence. Since acquiring the licence in December 2000, Freshstream FM has requested a number of changes to the 8SAT services to provide greater coverage to the numerous communities within the Remote Central Zone licence area.

Commercial Radio Blackspots Program

The Commercial Radio Blackspots Program (CRBP) is an Australian Government initiative, which provided $5 million over three years (2002-2005) to deliver new or improved commercial FM radio services to regional and remote communities where it has not been commercially viable for licensees to provide coverage. The CRBP, run by the Department of Communication, Information Technology and the Arts, will ensure that greater access to commercial FM radio services is provided to a large number of people located in regional and remote areas of Australia.

As part of the CRBP, Freshstream FM identified the areas of Bordertown/The Gap, Ceduna, Coober Pedy, Jabiru, Kingston SE, Kingscote, Marysville, Nhulunbuy, Pinnaroo, Roxby Downs, Streaky Bay, Tennant Creek, and Woomera within the Remote Central Zone commercial radio licence area as radio blackspot reception areas for the 8SAT service. Freshstream FM has been provided with funding under the CRBP for the establishment of these 8SAT services.
Bourke, NSW

In the October 1996 LAP, the ABA made FM channel capacity available for the 8SAT service at Bourke to operate on 102.5 MHz from Mt Oxley with a maximum ERP of 750 W using an omni-directional radiation pattern with vertical polarisation.

In April 2005, Freshstream FM advised the ABA that it wished to increase the maximum ERP of its Bourke service from 750 W to 3 kW. A broadcast planning analysis of this request highlighted the low risk potential for 5th harmonic interference to a Telstra radio communications receiver on 513.1 MHz from the 8SAT service. Therefore, it may be necessary for Freshstream FM to install a filter should this interference occur.

Interference issues are managed under the provisions of ACMA’s “Start-Up Procedures” of the Technical Planning Guidelines (TPGs). In accordance with the TPGs, a licensee must adjust, or fit devices to, the transmitter or affected receivers or undertake other necessary measures in order to eliminate or minimise interference to other services where the received median field strength is equal to, or greater than, the planned minimum field strength. The TPGs are available on the ACMA website at www.acma.gov.au.

Accordingly, ACMA proposes that the 8SAT Bourke service operate from Mt Oxley on 102.5 MHz with a maximum ERP of 3 kW using an omni-directional radiation pattern with vertical polarisation.

Ceduna/Smoky Bay, SA

In the October 1996 LAP, the ABA made FM channel capacity available for the 8SAT service at Ceduna/Smoky Bay to operate on 106.1 MHz from the broadcasting site at Ceduna with a maximum ERP of 250 W using an omni-directional radiation pattern with mixed polarisation.

In June 2004, Freshstream FM requested a change of site from the broadcasting site at Ceduna to an alternative Broadcasting Site 8 km East of Ceduna operating at the existing ERP of 250 W. Planning analysis found that the 8SAT service operating from the alternative site at 250 W would provide a suburban grade of service to the Ceduna township, but would not provide a rural grade of service to Smoky Bay.

In September 2004, Freshstream FM requested an increase in ERP from 250 W to 3 kW to serve the outlying districts of Ceduna, mainly Smoky Bay, Penong and Wirrulla. Freshstream FM was also hoping to provide a rural grade of coverage along the roads connecting Ceduna and these localities.

Analysis of the September 2004 request found that with the 8SAT service operating at 3 kW ERP, it is unlikely to provide a rural grade of service to the towns of Penong and Wirrulla. In order to provide adequate coverage to Penong and Wirrulla it is likely that low power translators would be required. Taking this into consideration, ACMA seeks comments from Freshstream FM whether it wishes to provide a service to these areas, and if so, how using practical solutions.

Although the towns of Penong and Wirrulla may not receive a rural grade of service, the increase in ERP to 3 kW would improve the grade of service in Ceduna and Smoky Bay and also increase the rural grade of service on the roads towards Penong and Wirrulla. Additionally, there is no signal overspill or broadcasting interference impediment to the 8SAT service operating at 3 kW ERP from the proposed site.
Therefore, ACMA proposes that the 8SAT Ceduna/Smoky Bay service operate from the Broadcasting Site 8km East of Ceduna on 106.1 MHz with a maximum ERP of 3 kW using an omni-directional radiation pattern with vertical polarisation.

**Coober Pedy, SA**

In the October 1996 LAP, the ABA made FM channel capacity available for the 8SAT service at Coober Pedy to operate on 99.7 MHz from the Radio/Telephone (R/T) site with a maximum ERP of 25 W using an omni-directional radiation pattern with vertical polarisation.

Freshstream FM has requested an increase in ERP from 25 W to 100 W and change of site, noting that a suburban grade of service radius of at least 4 km is required to serve the Coober Pedy community. At this stage, ACMA has not received firm details of the new site from Freshstream FM and has assessed the proposal to increase the ERP to 100 W based on the existing LAP site. Although the siting arrangements are yet to be finalised, ACMA considers that a minor site change should fall within the 100 W planning envelope and that further LAP changes should not be required.

In assessing Freshstream FM’s request, ACMA found that the increase in ERP to the existing LAP specifications should be sufficient to serve Coober Pedy from a variety of sites. Also, as there are no interference issues or signal overspill issues to adjacent licence areas with the service operating at 100 W, ACMA has no objection to increasing the ERP.

Therefore, ACMA proposes that the 8SAT Coober Pedy service operates on 99.7 MHz from the R/T Site with a maximum ERP of 100 W using an omni-directional radiation pattern with vertical polarisation.

**Coonalpyn (formerly Keith), SA**

In the October 1996 LAP, the ABA made FM channel capacity available for the 8SAT service at Keith to operate on 97.7 MHz from the Keith Silo with a maximum ERP of 250 W using an omni-directional radiation pattern with vertical polarisation.

In 2002, Freshstream FM requested that the Keith service be re-located to Binnie Lookout, Coonalpyn together with an increase in ERP to 3 kW towards Coonalpyn, Coomandook, Keith and Tintinara and restricted ERP of 800 W towards the Murray Bridge licence area to minimise the possibility of any signal overspill. Coonalpyn is located near the boundary of the Murray Bridge licence area.

Assessment of the increase in ERP to 3 kW found that there is a requirement to restrict the ERP towards the Murray Bridge commercial radio licence area. Based on a 3 kW service at 20 metres antenna height, the assessment highlighted the potential for the 8SAT service to cause signal overspill into the urban centre of Tailem Bend within the Murray Bridge licence area. As such, the ABA recommended a radiation pattern using 3 kW ERP towards Coonalpyn, Coomandook, Keith and Tintinara and restricted the pattern to 500 W ERP to prevent excessive signal overspill towards Tailem Bend within the Murray Bridge licence area.

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2 Urban centre where the population is equal to or greater than 1 000 people.
Test transmissions were conducted by Freshstream FM using the recommended directional radiation pattern for assessing the level of interference and signal overspill. Freshstream FM advised the ABA that there were no reports of signal overspill or interference in Tailem Bend. As a result, Freshstream FM requested an upgrade in ERP from 500 W to 1 kW towards Murray Bridge, together with an increase in antenna height from 20 to 45 metres. This request was to allow Freshstream FM to provide coverage to the Coomandook, Salt Creek, Ki Ki, Yumali and Peake areas within the 8SAT licence area whilst still minimising signal overspill into the Murray Bridge licence area.

The ABA found this proposal was unacceptable because of the greatly increased potential for signal overspill into the Tailem Bend urban centre in the Murray Bridge licence area. Freshstream FM has also not performed field strength measurements in Tailem Bend to support its claim for increased ERP in the direction of Tailem Bend.

In order to improve coverage of the Coonalpyn service within the 8SAT licence area and minimise the potential for signal overspill into Tailem Bend, the ABA recommended an alternative directional radiation pattern. The alternative pattern reduced the size of the 500 W restricted arc towards Tailem Bend and maintained 3 kW ERP elsewhere. This radiation pattern was based on the existing antenna height of 20 metres.

Grant Broadcasters, licensee of the 5EZY Murray Bridge commercial service, wrote to the ABA in July 2004 objecting to fortuitous reception of the 8SAT service within the Murray Bridge licence area with the 500 W ERP restrictions towards the Murray Bridge licence area. Grant Broadcasters advised that there was good reception of the Coonalpyn service in Tailem Bend, Strathalbyn, Murray Bridge and Mt Barker. In regard to the objections raised by Grant Broadcasters, a planning assessment showed that there should not be signal overspill in excess of 54 dBuV/m into any urban centres in the Murray Bridge licence area if the 8SAT service is operating with the 500 W ERP restricted arc towards Tailem Bend at an antenna height of 20 metres. In February 2005, the ABA advised Freshstream FM has been advised to perform field strength measurements before ACMA will consider any increase in antenna height to 45 metres. Field strength measurements could be conducted, in consultation with Grant Broadcasters, to determine if signal overspill is occurring within the Tailem Bend, Strathalbyn, Murray Bridge and Mt Barker urban centres once the service commences on the recommended specifications. To date, ACMA has not received any evidence (such as field strength measurements) from either broadcaster to support or deny any claims of signal overspill into these areas.

Therefore, ACMA proposes that the 8SAT Keith service be varied to operate on 99.7 MHz from Coorong Council Tower Binnie Lookout with a maximum ERP of 3 kW using a directional radiation pattern with an antenna height of 20 metres. The area served is also to be changed from Keith to Coonalpyn to reflect the proposed technical changes.
**Fairview, SA**

In the October 1996 LAP, the ABA made FM channel capacity available for the 8SAT service at Fairview to operate on 106.5 MHz from the Fairview Trig site with a maximum ERP of 250 W using an omni-directional radiation pattern with vertical polarisation.

Freshstream FM has indicated that the Fairview area is likely to receive coverage from the proposed Padthaway East service and as such no longer requires the Fairview service. Therefore, ACMA proposes to remove the technical specification for the 8SAT Fairview service from the LAP.

**Jabiru, NT**

In the October 1996 LAP, the ABA made FM channel capacity available for the 8SAT service at Jabiru to operate on 100.5 MHz from Gregory Place with a maximum ERP of 25 W using an omni-directional radiation pattern with mixed polarisation.

Freshstream FM has requested an increase in ERP from 25 W to 250 W and a change of transmission site with a view to improving the coverage in the Jabiru area. At this stage, ACMA has not received firm details of the new site from Freshtream FM and has assessed the proposed increase in ERP based on the existing LAP site. ACMA considers that a minor site change at Jabiru should fall within the 250 W planning envelope and that further LAP changes should not be required.

In assessing Freshstream FM’s request, ACMA found that the increase in ERP should be sufficient to serve Jabiru from a variety of sites. Also, as there are no signal overspill or interference issues with the service operating at 250 W, ACMA has no objection to increasing the ERP.

Therefore, ACMA proposes that the 8SAT Jabiru service operate on 100.5 MHz from Gregory Place with a maximum ERP of 250 W using an omni-directional pattern with mixed polarisation.

**Kapunda, SA**

In the October 1996 LAP, the ABA made FM channel capacity available for the 8SAT service at Kapunda to operate on 99.5 MHz from Mt Rufus with a maximum ERP of 250 W using an omni-directional radiation pattern and vertical polarisation.

In 2002, Freshstream FM requested the Kapunda service be changed to a 2 kW directional radiation pattern towards Kapunda and Eudunda and restricted to 500 W ERP towards Nuriootpa within the Adelaide commercial radio licence area. This was to improve coverage in Kapunda and Eudunda whilst minimising the possibility of signal overspill into the Adelaide licence area. The Mt Rufus transmission site is located near the boundary of the Adelaide licence area.

As Mt Rufus is sited near the boundary of the Adelaide licence area, the direction of the maximum ERP proposed by Freshstream FM had the potential to result in signal overspill into urban centres within the adjacent Adelaide licence area. A restricted radiation pattern of 2 kW ERP towards Kapunda and Eudunda and 250 W ERP towards Nuriootpa was recommended to minimise the potential for signal overspill.
Since then, Freshstream FM has proposed several different directional radiation patterns for the Kapunda service. The ABA rejected these proposals because of the potential for excessive signal overspill into the Adelaide licence area.

In the absence of field strength measurements to determine the signal overspill and taking into account Freshstream FM’s various requests for changes at Kapunda, further planning work was undertaken to specify a radiation pattern that would allow use of a cost-effective antenna system to provide coverage to Eudunda and Kapunda while limiting the extent of signal overspill into the Adelaide licence areas.

ACMA assessed the potential for signal overspill into five urban centre localities (Tanunda, Nuriootpa, Angaston, Freeling and Lyndoch) within the Adelaide licence area. Field strength predictions indicated that a 250 W ERP service has the potential to provide a rural grade of service to Tanunda, Nuriootpa and Angaston which are outside the 8SAT licence area. Although there is potential for some signal overspill, a minimum ERP of 250 W is required to serve the areas within the 8SAT licence area and signal overspill is unavoidable in some cases. In addition, the 8SAT service has been operating at 250 W for some time and ACMA has not received any reports of signal overspill from licensees of the Adelaide services. Therefore, ACMA has recommended that the maximum ERP in the direction of these urban centres remain at an ERP of 250 W.

Also, ACMA field strength predictions indicated that any increase in ERP over 500 W towards Freeling and Lyndoch would result in excessive signal overspill into these areas also outside of the 8SAT licence area. Therefore, it is recommended that the maximum ERP towards Freeling and Lyndoch be restricted to 500 W ERP.

The proposed radiation pattern has a maximum ERP of 1 kW towards Eudunda and Kapunda, restricted to 250 W ERP towards Tanunda, Nuriootpa and 500 W ERP towards Freeling and Lyndoch. Therefore, ACMA proposes that the 8SAT Kapunda service operate on 99.5 MHz from Mt Rufus using a 1 kW directional radiation pattern with vertical polarisation.

It should be noted that it is possible that residents in the Kapunda coverage area may be using mast-head amplifiers to receive television signals from Adelaide. Interference issues are managed under the provisions of the “Start-Up Procedures of the TPGs. Under the TPGs a licensee must adjust, or fit devices to, the transmitter or affected receivers or undertake other necessary measures in order to eliminate or minimise interference to other services.

Karoonda (formerly Lameroo), SA

In the October 1996 LAP, the ABA made FM channel capacity available for the 8SAT service at Lameroo to operate on 95.3 MHz from the R/T Site with a maximum ERP of 100 W using an omni-directional pattern with mixed polarisation.

Freshstream FM requested that the Lameroo service be relocated to the Perponda Hill site and increase the ERP to 2 kW using a directional radiation pattern with an antenna height of 25 metres to serve the Karoonda area. Freshstream FM indicated that proposed changes for the Pinnaroo service would allow it to provide coverage to Lameroo (see Pinnaroo).

Analysis of this request found that there was no signal overspill of the 8SAT service into urban centres within the nearby Murray Bridge commercial radio licence area. However,
the analysis did highlight that Lameroo would no longer receive a rural grade of service and that there was potential for interference to the reception of television services for residents that used mast-head amplifiers in the area.

Because of Karoonda’s remote location, it is possible that residents may be using mast-head amplifiers to receive distant weaker television signals from Adelaide or Renmark/Loxton or both. Interference issues are managed under the provisions of the “Start-Up Procedures” of the TPGs. Under the TPGs a licensee must adjust, or fit devices to, the transmitter or affected receivers or undertake other necessary measures in order to eliminate or minimise interference to other services.

Therefore, ACMA proposes that the 8SAT Lameroo service be varied to operate on 95.3 MHz from Perponda Hill with a maximum ERP of 2 kW using a directional radiation pattern with vertical polarisation. The area served is to be changed from Lameroo to Karoonda to reflect the proposed technical changes.

**Kingscote, SA**

In the October 1996 LAP, the ABA made FM channel capacity available for the 8SAT service at Kingscote to operate on 94.7 MHz from Telegraph Rd with a maximum ERP of 250 W using a omni-directional radiation pattern with vertical polarisation.

In January 2004, Freshstream FM requested a change of site, increase in maximum ERP to 3 kW and change of frequency. Freshstream FM advised that an increase in ERP to 3 kW using a directional radiation pattern is required to provide suitable coverage to Kingscote, Penneshaw, Emu Bay and American River.

An engineering analysis identified an alternative frequency of 95.5 MHz for use at Kingscote. Freshstream FM agreed to the proposed allocation of 95.5 MHz.

The engineering analysis also identified that an increase in ERP to 3 kW has the potential to cause interference to television mast-head amplifiers in the area. Due to the limited number of television services directly available in Kingscote, it is likely that residents use mast-head amplifiers to watch the distant weaker Adelaide television signals.

Interference issues are managed under the provisions of the “Start-Up Procedures” of the TPGs. Under the TPGs a licensee must adjust, or fit devices to, the transmitter or affected receivers or undertake other necessary measures in order to eliminate or minimise interference to other services.

Therefore, ACMA proposes that the 8SAT Kingscote service operate on 95.5 MHz from the CFS site Old Bullock Track with a maximum ERP of 3 kW using a directional radiation pattern with vertical polarisation.

**Kingston South East, SA**

In the October 1996, LAP the ABA made FM channel capacity available for the 8SAT service at Kingston SE to operate on 107.3 MHz from Mt Benson with a maximum ERP of 250 W using an omni-directional pattern with vertical polarisation.

In August 2004, Freshstream FM requested an increase in ERP to 2 kW using a directional radiation pattern together with a change of site to Ling ‘Murrap’ Tank Pump Hill Coombargana.
The assessment of this request did not highlight any significant signal overspill or interference issues. Therefore, ACMA proposes that the 8SAT Kingston SE service operate on 107.3 MHz from Ling ‘Murrap’ Tank Pump Hill Coombargana with a maximum ERP of 2 kW using a directional radiation pattern with vertical polarisation.

**Lake Mountain (formerly Marysville), VIC**

In the October 1996 LAP, the ABA made FM channel capacity available for the 8SAT service at Marysville to operate on 89.3 MHz from the Mt Gordon R/T site with a maximum ERP of 250 W using an omni-directional pattern with vertical polarisation. Freshstream FM first requested a change of site for the Marysville service to the Lake Mountain summit and then another site change to the Telstra site. The latest site change was approximately 160 metres lower than the summit and as such Freshstream FM requested an increase in ERP of 500 W to provide greater coverage to the Marysville, Buxton and Lake Mountain areas.

An analysis of the latest request found that a 500 W ERP service has the potential to cause and receive interference from a Geelong High Power Open Narrowcasting Service. In order to alleviate any interference concerns, ACMA proposes that the 8SAT Marysville service be varied to operate on 89.3 MHz from Lake Mountain Road, with a maximum ERP of 500 W using a directional radiation pattern restricted to 250 W towards Geelong with vertical polarisation. The area served is to be changed from Marysville to Lake Mountain to reflect the proposed technical changes.

**Maitland (formerly Port Vincent), SA**

In the October 1996 LAP, the ABA made channel capacity available for the 8SAT service at Port Vincent to operate on 98.9 MHz with a maximum ERP of 250 W using an omni-directional pattern with vertical polarisation.

In 2002, Freshstream FM requested to relocate its Port Vincent service to Maitland with an increase in ERP to 1 kW using an omni-directional pattern. Freshstream FM advised that the existing service only covers the coastal areas to the east and south of the Yorke Peninsula, but not areas to the west and north. Freshstream FM later requested an increase in ERP to 2 kW using a directional radiation pattern together with a change of frequency to 97.3 MHz, which is the frequency assigned to the 8SAT Yorketown service.

Assessment of this request found that there is the potential for interference to and from the adjacent channel 5ABCFM Adelaide Foothills service on 97.5 MHz. The ABA approved this request on the basis that test transmissions be conducted to assess this potential for interference.

Test transmissions conducted in October 2003 highlighted interference to the reception of the GTS4 Spencer Gulf television service in Moonta and Kadina. Moonta and Kadina are located on the edge of the Spencer Gulf television licence area. As such, viewer’s antenna installations and the use of mast-head amplifiers made them susceptible to interference.

To alleviate the interference, an alternative frequency of 90.9 MHz was identified, however this frequency required ERP restrictions of 250 W towards the Moonta and Kadina areas and still had the potential for interference to the reception of the GTS4 television service.
As a result of test transmissions, Freshstream FM identified coverage deficiencies in Ardrossan, Port Victoria and Port Vincent and requested an increase in ERP to 4 kW with a 1 kW restriction towards Moonta.

An assessment of this request found that 90.9 MHz could be implemented at Maitland with a 4 kW directional radiation pattern, however the ERP would need to be restricted to 500 W towards Moonta.

The Freshstream FM transmission site of Maitland is not within the Spencer Gulf Television licence area but is within the Adelaide Metropolitan Television licence area. The Maitland service operating on 90.9 MHz with an ERP of 4 kW using a directional radiation pattern has the potential to cause 2nd harmonic interference (2 × 90.9 = 181.8 MHz) to the reception of SAS7 Adelaide in the vicinity of the transmission site. There were no reports of interference when the Maitland service was operating on 90.9 MHz with an ERP of 2 kW under test transmission conditions. However, should 2nd harmonic interference occur, the broadcaster will be required to take remedial action to alleviate the interference.

Interference issues are managed under the provisions of the ACMA “Start Up Procedures” of the TPGs. Under the TPGs a licensee must adjust, or fit devices to, the transmitter or affected receivers or undertake other necessary measures in order to eliminate or minimise interference to other services.

Therefore, ACMA is proposing that the 8SAT Port Vincent service be varied to operate on 90.9 MHz from Tank Site 5.5 km east Maitland with a maximum ERP of 4 kW using a directional pattern with vertical polarisation. Because of the potential for interference to the reception of GTS4 Spencer Gulf, the ACMA is also proposing to include a special condition on the 8SAT service stating that “In the event of interference to the GTS4 television service within its licence area, the licensee shall reduce the maximum ERP accordingly”. The area served is to be changed from Port Vincent to Maitland to reflect the proposed technical changes.

**Minlaton (formerly Yorketown), SA**

In the October 1996 LAP, the ABA made FM channel capacity available for the 8SAT service at Yorketown to operate on 97.3 MHz with a maximum ERP of 250 W using an omni-directional radiation pattern with vertical polarisation.

Since 2002, Freshstream FM has made various requests for changes to the Yorketown service. Freshstream FM was seeking to relocate the Yorketown service to Minlaton, change the frequency to 98.9 MHz and increase the maximum ERP to 3 kW. Freshstream FM was seeking the changes to enable it to provide coverage of the 8SAT service to Port Vincent, Minlaton, Yorketown and Edithburgh.

Whilst an assessment of the latest request found that both 98.9 MHz and 100.7 MHz suggested by Freshstream FM are potentially available at Minlaton, the preferred frequency is 98.9 MHz. The analysis found that a 3 kW to 5 kW omni-directional service would result in significant areas of signal overlap with the 8SAT Maitland service and also increase the risk of interference to reception of GTS4 Spencer Gulf television service. Also, the intended coverage areas of Yorketown and Edithburgh would not receive a rural grade of service.
The use of a directional radiation pattern with 10 kW to the south and a restriction of 1.6 kW to the north did not result in coverage overlap with Maitland whilst providing Yorketown and Edithburgh with an adequate grade of service. However, the increase in ERP would also increase the potential risk for interference to the reception of the GTS4 service within the Spencer Gulf Television licence area particularly in Moonta, Wallaroo, Kadina, Bute and Burra.

The Freshstream FM transmission site of Minlaton is not within the Spencer Gulf Television licence area but is within the Adelaide Metropolitan Television licence area. The Minlaton service operating on 98.9 MHz with an ERP of 10 kW using a directional antenna has potential to cause 2\textsuperscript{nd} harmonic interference (2 \times 98.9 = 197.8 MHz) to the reception of NWS9 in the vicinity of the transmission site. There were no reports of interference when the Minlaton service was operating on 98.9 MHz with an ERP of 500 W under test transmission conditions. However, should 2\textsuperscript{nd} harmonic interference occur, the broadcaster will be required to take remedial action to alleviate the interference.

Because of the risk of interference to the reception of GTS4 Spencer Gulf, ACMA is proposing to include a special condition on the technical specification to address any interference to the reception of the GTS4 television service. The special condition states that, “In the event of interference to the GTS4 television service within its licence area, the licensee shall reduce the maximum ERP accordingly”.

Interference issues are managed under the provisions of the ACMA “Start Up Procedures” of the TPGs. Under the TPGs a licensee must adjust, or fit devices to, the transmitter or affected receivers or undertake other necessary measures in order to eliminate or minimise interference to other services.

Therefore, ACMA proposes that the 8SAT Yorketown service be varied to operate on 98.9 MHz from Water Tank Stansbury Road with a maximum ERP of 10 kW using a directional radiation pattern, noting the special condition relating to interference to GTS4 Spencer Gulf. The area served is to be changed from Yorketown to Minlaton to reflect the proposed changes.

\textit{Padthaway East (formerly Bordertown and The Gap), SA}

In the October 1996 LAP, the ABA made FM channel capacity available for the 8SAT service at Bordertown to operate on 92.1 MHz from Bordertown with a maximum ERP of 250 W using an omni-directional radiation pattern and vertical polarisation. Also, FM channel capacity was made available for the 8SAT service to operate from The Gap on 95.3 MHz from The Gap with a maximum ERP of 250 W using an omni-directional radiation pattern with vertical polarisation.

Through the CRBP, Freshstream FM requested to relocate The Gap service on 95.3 MHz to the Padthaway East site. The purpose for the relocation was to allow Freshstream FM to provide coverage of the 8SAT service to Bordertown, The Gap, Mundulla, Padthaway and Kingston SE from a single transmitter site.

Analysis found 92.1 MHz and 95.3 MHz unsuitable from the Padthaway East site. Further analysis identified 100.3 MHz as a suitable frequency for the Padthaway East site.

The analysis confirmed that there is some potential for interference to the 5EZY Murray Bridge service from the proposed 8SAT Padthaway East service on 100.3 MHz. The
ABA consulted with the affected licensee of 5EZY Mt Barker, Grant Broadcasters regarding the proposed use of 100.3 MHz. Grant Broadcasters advised the ABA that it was satisfied with the proposed service but noted there may be potential for tropospheric ducting during the summer months. To address this issue, ACMA is proposing to place a special condition on the Padthaway East service requiring that the ERP be reduced towards Mt Barker in the event of tropospheric ducting leading to interference.

Freshstream agreed to the proposed allocation of 100.3 MHz, but requested a change from 5 kW/2 kW directional to a 5 kW omni-directional radiation pattern and an increase in antenna height to 25 metres to better serve areas within the 8SAT licence area. ACMA rejected the proposal for an omni-directional radiation pattern because of potential overspill into the Murray Bridge licence area and proposes that The Gap service be varied to operate from the Padthaway East site on 100.3 MHz with a maximum ERP of 5 kW/2 kW directional radiation pattern at an antenna height of 25 metres. The area to be served will be changed from The Gap to Padthaway East to reflect the proposed technical changes.

As Bordertown will be covered by the proposed Padthaway East service, ACMA also proposes that channel capacity for the 8SAT Bordertown service be removed from the LAP.

**Pinnaroo, SA**

In the October 1996 LAP, the ABA made FM channel capacity available for the 8SAT service at Pinnaroo to operate on 96.5 MHz from the Pinnaroo R/T site with a maximum ERP of 100 W using an omni-directional radiation pattern and vertical polarisation.

Since 2002, Freshstream FM has made various requests for changes to the Pinnaroo service. In June 2004, Freshstream FM requested a change of site to Thomas Tank Hill with an increase in maximum ERP from 100 W to 3 kW using a directional radiation pattern. The reason for the site change was to serve Murrayville, Pinnaroo, Lameroo, Karte and Kringin.

Analysis found that whilst the new site is suitable, Freshstream FM would not be able to provide a minimum grade of service to Lameroo, Karte and Kringin. Based on this analysis, Freshstream FM requested an increase in ERP to 4 kW using a 30 metre antenna. Further analysis found that the towns of Lameroo, Karte and Kringin would not receive a rural grade of service, however Pinnaroo and Murrayville are expected to receive a better than a rural grade of service. In order to provide coverage to Lameroo, Karte and Kringin it is likely that low power translators would be required. Taking this into consideration, ACMA seeks comments from Freshstream FM whether it wishes to provide a service to these areas, and if so, how using practical solutions.

As the analysis found no signal overspill or interference issues associated with a 4 kW service, ACMA proposes that the 8SAT Pinnaroo service operate on 96.5 MHz from the Thomas Tank Hill site with a maximum ERP of 4 kW using a directional radiation pattern with mixed polarisation and an antenna height of 30 metres.
Roxby Downs, SA
In the October 1996 LAP, the ABA made FM channel capacity available for the 8SAT service at Roxby Downs to operate on 97.9 MHz from a broadcasting site 1.5 km north of town with a maximum ERP of 500 W omni-directional with vertical polarisation.

In February 2005, Freshstream FM requested an increase in ERP from 500 W to 1300 W to allow it to operate at the same ERP as existing national services in Roxby Downs. Freshstream FM intends to provide coverage to Roxby Downs, Andamooka and Olympic Dam.

Analysis found there are no impediments to the 8SAT service operating at 1300 W. This will provide rural grade of service to Roxby Downs and Olympic Dam, however Andamooka will not receive a rural grade of service. Taking this into consideration, ACMA seeks comments from Freshstream FM whether it wishes to provide a service to Andamooka, and if so, how using practical solutions.

Therefore, ACMA proposes that the 8SAT Roxby Downs service operate from Goonda Street on 97.9 MHz with a maximum ERP of 1300 W using a directional radiation pattern and vertical polarisation.

Streaky Bay, SA
In the October 1996 LAP, the ABA made FM channel capacity available for the 8SAT service to operate on 99.3 MHz from the National MF Tx Site with a maximum ERP of 2 kW using a directional radiation pattern with mixed polarisation.

Freshstream FM requested a change of site to Medlingie Hill, an increase in antenna height to 40 metres and an increase in the maximum ERP from 2 kW to 4 kW using an omni-directional pattern. Assessment of this request indicated there were no signal overspill or interference issues. Therefore, ACMA proposes that the 8SAT Streaky Bay service operate on 99.3 MHz from Medlingie Hill with a maximum ERP of 4 kW using an omni-directional radiation pattern with mixed polarisation at an antenna height of 40 metres.

Woomera, SA
In the October 1996 LAP, the ABA made FM channel capacity available for the 8SAT service to operate on 101.7 MHz from Goonda St with a maximum ERP of 50 W omni-directional.

In 2004, Freshstream FM indicated it would like to implement the Woomera service from the Imparja Transmitter site. Assessment of this request indicated there were no signal overspill or interference issues. Therefore, ACMA proposes that the 8SAT Woomera service operate on 101.7 MHz from Imparja Transmitter Site with a maximum ERP of 50 W using an omni-directional radiation pattern with mixed polarisation.

Licence Area
In addition to the above technical changes, Freshstream FM has made repeated requests for extensions of the Remote Central Zone licence area to allow it to serve the Yarra and Murrindindi Shires in Victoria, the Barossa region and the Northern Eyre Peninsula in
South Australia. These requests incorporate overlaps with the Adelaide, Melbourne and Spencer Gulf commercial radio licence areas.

In general, the ACMA assumes that the licence areas of existing commercial and community broadcasting services using the broadcasting service bands represent accepted media markets and ACMA will not vary them without good reason, other than to update them where boundaries are based on outdated Census descriptions. In considering whether a change to a commercial licence area is appropriate, the then ABA develop criteria, which is detailed in The ABA’s General Approach to Planning.

ACMA is required by s.23 (a) and (b) of the Broadcasting Service Act 1992 (the Act) to have regard to the demographic, social and economic characteristics within the licence area, within neighbouring licence areas and within Australia generally. ACMA is also required to take into account technical restraints relating to the delivery or reception of broadcasting services (s.23 (e)).

The service areas of the existing commercial radio services were determined by the Minister for Communications in 1987 and continued as licence areas by s.8 of the Broadcasting Services (Transitional Provisions and Consequential Amendments) Act 1992.

In determining the licence areas, the Minister took into account the following factors: social and economic links between major urban centres in the area; governmental functions and responsibilities; topography; signal coverage and possible effects on the commercial balance between the stations and other stations claiming to serve the community or communities in the area.

The ABA determined the Remote Central Zone commercial radio licence area in 1996.

At this stage, ACMA considers that Freshstream FM has not provided enough supporting evidence regarding community of interest ties with the requested areas. ACMA considers it is important for licensees to address community of interest and related technical issues serving these communities when considering any possible licence area extensions. In order to adequately consider any proposed extension to the licence area, Freshstream FM is required to address the following:

1. Whether a commercial radio broadcasting service exists in the proposed licence area extension, and to what extent the areas are served by currently available services.

2. Whether there is spectrum available to provide coverage of the geographic area requested, whether it would represent an economic and efficient use of the radiofrequency spectrum.

3. Whether a community-of-interest exists, over what geographic area, and whether that community-of-interest is currently being served. Indicators of community-of-interest include:

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3 The ABA’s Record of Assumptions (in accordance with subsection 27(2) of the Act) are at Appendix 3.
- social and economic links between major urban centres (e.g., shopping, education, medical, sporting employment, banking, or other cultural links);

- governmental functions and responsibilities (e.g., local government, Aboriginal and Torres Strait Islander Commission, council boundaries);

4. Any other matters that the broadcasters consider to be of relevance.

It is important to note that ACMA places the onus on the submitter/organisation making the request to demonstrate that a community-of-interest exists.

ACMA also seeks comments from the licensed commercial broadcasters in the Melbourne, Adelaide and Spencer Gulf commercial radio licence areas on the proposals by Freshstream FM to extend the Remote Central Zone licence area.

ACMA will take into account any submissions received while considering changes to the Remote Central Zone licence area. If ACMA proposes to extend the licence area, a revised draft variation to the Remote Central and Eastern Australia LAP will be released for further consultation. At this stage, ACMA is not proposing to alter the Remote Central Zone licence area other than to update the licence area according to 2001 Census data.
Preliminary View – Commercial Radio – Remote North East Zone

The ABA proposes to vary the technical specifications of the 4RBL commercial FM radio service in the Remote Commercial Radio North East Zone licence area to operate as follows:

- 95.5 MHz from Water Tower Cnr Middle and Colamba Sts Chinchilla, with a maximum ERP of 175 W omni-directional, vertical polarisation;
- 98.1 MHz from Water Tower Dirranbandi, with a maximum ERP of 100 W omni-directional, vertical polarisation;
- 102.1 MHz from Water Tower Cranmer St Taroom, with a maximum ERP of 100 W omni-directional, vertical polarisation;
- 100.5 MHz from Water Tower Wandoan, with a maximum ERP of 100 W omni-directional, vertical polarisation; and
- 96.1 MHz from Comalco Bauxite Mine Lorin Point, with a maximum ERP of 1 kW omni-directional, mixed polarisation.

The ABA proposes to make additional FM channel capacity available for the 4BRZ commercial FM radio service in the Remote Commercial Radio North East Zone licence area to operate as follows:

- 97.1 MHz from Water Tower Cnr Middle and Colamba Sts Chinchilla, with a maximum ERP of 175 W omni-directional, vertical polarisation;
- 107.3 MHz from Broadcast Site Mt Oxley Bourke, with a maximum ERP of 3 kW omni-directional, vertical polarisation; and
- 97.7 MHz from Water Tower Weipa, with a maximum ERP of 1 kW omni-directional, vertical polarisation.

ACMA also proposes to make some technical amendments to rectify previous drafting errors.

The changes will confirm, rather than change, current rights, obligations and arrangements.

Commercial Radio Service – Remote North East Zone

Background

The ABA determined the Remote Central and Eastern Australia LAP in October 1996 and last determined a variation for the Remote North East Zone in May 2005. Rebel Radio Network (RRN) is the licensee of the 4RBL and 4BRZ commercial FM radio broadcasting services available in the Remote North East Zone licence area.

Commercial Radio Blackspots Program

As part of the Commercial Radio Blackspots Program, RRN identified a number of areas within the Remote North East licence area as radio blackspots. The list of areas included Bourke, Chinchilla, Dirranbandi, Taroom, Wandoan and Weipa. RRN has been provided with funding under the Program for the establishment of the 4RBL FM service in these areas except for Chinchilla.

Bourke, NSW

In December 2004, RRN requested additional FM channel capacity for the 4BRZ service at Bourke based on the same technical specifications as the existing 4RBL Bourke
service. Channel capacity was made available for 4RBL in the 1996 LAP to operate on 104.9 MHz from Mt Oxley with a maximum ERP of 3 kW.

Analysis identified 103.3 MHz and 107.3 MHz as suitable frequencies for the provision of the 4BRZ FM service. The analysis found that there are no contentious issues concerning signal overspill or broadcasting interference with either of these frequencies.

As RRN has indicated its preference for 107.3 MHz, ACMA is proposing that the 4BRZ Bourke service operate on 107.3 MHz from Mt Oxley with a maximum ERP of 3 kW using an omni-directional radiation pattern with vertical polarisation.

**Chinchilla, QLD**

In the October 1996 LAP, the ABA made FM channel capacity available for the 4RBL service at Chinchilla to operate on 95.5 MHz from the Water Tower at 25 metres with a maximum ERP of 50 W using an omni-directional radiation pattern with vertical polarisation.

RRN requested an increase in maximum ERP from 50 W to 175 W and 50 metres antenna height for the 4RBL Chinchilla service. RRN also requested additional FM channel capacity to be made available for the 4BRZ service at Chinchilla.

Assessment of RRN’s request found there are no overspill or interference impediments to the 4RBL service operating at 175 W with a maximum antenna height of 50 metres. ACMA has also identified 97.1 MHz as being available for the 4BRZ service at Chinchilla. This frequency was also found to have no overspill or interference issues.

Therefore, ACMA proposes that the 4RBL and 4BRZ services operate on 95.5 MHz and 97.1 MHz respectively from the Water Tower with a maximum ERP of 175 W using an omni-directional radiation pattern with vertical polarisation and an antenna height of 50 metres.

**Dirranbandi, QLD**

In the October 1996 LAP, the ABA made FM channel capacity for 4RBL at Dirranbandi to operate on 92.1 MHz from 4km NE of town with a maximum ERP of 100 W using an omni-directional radiation pattern with vertical polarisation.

Through the Commercial Radio Blackspots Program RRN received funding to assist in the establishment of the 4RBL service at Dirranbandi. In September 2003, RRN commenced operation in Dirranbandi. Following its commencement, RRN advised the ABA that the 4RBL service was causing widespread interference within Dirranbandi to the reception of the ABC television service ABDIQ7. In the interim, RRN reduced the power to resolve the interference.

However, to overcome longer term interference issues, RRN requested a change of frequency and change of site to Dirranbandi Water Tower. Assessment found that 98.1 MHz is available in Dirranbandi with a maximum ERP of 100 W from the Water Tower using an omni-directional radiation pattern. However, the assessment indicated there may still be some issues with overload to television mast-head amplifiers and interference to the reception of ABDIQ7 television service. As a result, ACMA requested
RRN to conduct test transmissions on 98.1 MHz to determine the extent of this interference.

Following the test transmissions, RRN advised the ABA that there was only one isolated case of television interference. RRN resolved the interference and was not aware of any other cases. As such, ACMA proposes to vary the 4RBL Dirranbandi service to operate on 98.1 MHz from the new Water Tower site with a maximum ERP of 100 W using an omni-directional radiation pattern with vertical polarisation.

**Taroom, QLD**

The October 1996 LAP made 102.1 MHz available at Taroom from Cranmer St with a maximum ERP of 100 W using an omni-directional radiation pattern with vertical polarisation.

In January 2005, RRN requested a minor change of site for the Taroom service. The new site is within a short distance of the current LAP site.

As there are no interference or overspill issues associated with the change of site, ACMA proposes that the 4RBL Taroom service operate from the Water Tower, Cranmer St with a maximum ERP of 100 W using an omni-directional radiation pattern with vertical polarisation.

**Wandoan, QLD**

In the October 1996 LAP, the ABA made FM channel capacity available for the 4RBL service at Wandoan to operate on 99.7 MHz from Broadcast Site Nathan Rd with a maximum ERP of 100 W using an omni-directional radiation pattern with vertical polarisation.

In January 2005, RRN requested a change of site to Wandoan Water Tower and found that there is potential for mutual interference between 4ABCRN on 98.9 MHz and 4RBL operating from the proposed site at Wandoan Water Tower on 99.7 MHz. Analysis identified 100.5 MHz as a suitable alternative frequency for the 4RBL service at the proposed Wandoan site.

Therefore, ACMA proposes that the 4RBL Wandoan service operate on 100.5 MHz from the Water Tower Wandoan with a maximum ERP of 100 W using an omni-directional radiation pattern with vertical polarisation.

**Weipa, QLD**

In the October 1996 LAP, the ABA made channel capacity available for the 4RBL service at Weipa to operate on 96.1 MHz from Comalco Bauxite Mine Lorin Point with a maximum ERP of 150 W using an omni-directional radiation pattern with mixed polarisation.

In January 2005, RRN requested that FM channel capacity using 97.7 MHz from the Water Tower be made available for the establishment of the 4BRZ service at Weipa. This frequency was previously used by Tablelands Broadcasting Pty Ltd to retransmit the 4AM Atherton service into Weipa under the Out of Area provisions of the Act. Tablelands Broadcasting Pty Ltd advised the ABA in May 2003 that it would be...
withdrawing its 4AM service from Weipa as RRN had been provided with funding under the Commercial Radio Blackspots Program to establish the 4BRZ service.

In May 2005, RRN requested a change of site and an increase in ERP for the existing 4RBL Weipa service to provide coverage to a Comalco mine site approximately 15 km from Weipa. RRN was proposing to move the site to the Water Tower Weipa and increase the ERP from 150 W to 1 kW. RRN also requested that the proposed 4BRZ service be planned with a maximum ERP of 1 kW using an omni-directional radiation pattern with vertical polarisation.

Analysis found 97.7 MHz is suitable for 4BRZ at Weipa and there were no signal overspill or broadcasting interference issues associated with the operation of 97.7 MHz and 96.1 MHz from the Water Tower using a maximum ERP of 1 kW using an omni-directional radiation pattern.

Therefore ACMA proposes that the existing 4RBL service and proposed 4BRZ service operate on 96.1 MHz and 97.7 MHz respectively from the Water Tower Weipa with a maximum ERP of 1 kW using an omni-directional radiation pattern with mixed polarisation.
ACMA proposes to vary the frequency allotment plan (FAP) for the VHF FM radio bands for Remote and Central Eastern Australia as it relates to the preliminary views on the commercial radio services in the Remote Commercial Radio Central Zone and North East Zone licence areas

The FAP and LAP for an area together constitute ACMA’s ‘blueprint’ for the development of broadcasting in that area using the broadcasting services bands. The frequency allotment plan sets out the number of channels and the licence area plan describes the characteristics of the services using, or that are proposed to use, those channels. The two documents must be consistent: s.26(1).

In preparing its initial, Australia-wide frequency allotment plan of August 1994, the ABA foreshadowed that the plan would be revised as necessary, market by market, to accommodate any additional or changed broadcasting requirements disclosed during public consultation at the licence area planning stage:

‘(The FAP’s) assumptions about demand, nominal transmitter specifications and siting will be re-examined during preparation of the LAPs for particular areas of Australia, at which time it will be subject to intensive public consultation. This may necessitate variations to this FAP... Consultation on the changes will take place within the LAP consultation process.’

‘The FAP will also be revised to reflect any additional services planned during the LAP stage (particularly low power channels). If the revised FAP results in changes in channel capacity for areas outside the area for which the licence area plan is being prepared, the changes will be subjected to public consultation in affected areas.’

(Frequency Allotment Plan; August 1994; Pg. 9, ‘Planning Process Overview’)

ACMA proposes to remove channel capacity from the FAP for the Remote Central Zone commercial radio service (8SAT) at Bordertown, Fairview, Keith, Marysville, Port Vincent, The Gap and Yorketown. The FAP is also to be varied to include additional channel capacity at Coonalpyn, Karoonda, Lake Mountain, Maitland, Minlaton, Padthaway East, Chinchilla, Bourke and Weipa.