



Statutory Rules 1991 No. 355

VHF Mid Band Frequency Band Plan (70 to 87.5 MHz)

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I, WARREN EDWARD SNOWDON, Parliamentary Secretary to the Minister of State for Transport and Communications, acting for and on behalf of the Minister of State for Transport and Communications, make the following band plan, under section 19 of the *Radiocommunications Act 1983* .

Dated 14 November 1991.

WARREN SNOWDON
Parliamentary Secretary to the
Minister of State for Transport and Communications
for and on behalf of the
Minister of State for Transport and Communications

Citation

1. This Band Plan for the 70 to 87.5 MHz band may be cited as the VHF Mid Band Frequency Band Plan (70 to 87.5 MHz).

General

2. The following notes describe the intention of the VHF Mid Band Frequency Band Plan (70 to 87.5 MHz) and outline the approach adopted for its implementation.

[GENERAL NOTE:

- (1) The VHF Mid Band Frequency Band Plan (70 to 87.5 MHz) provides for the expansion of existing services and the introduction of new types of services.
- (2) The principal changes to the VHF Mid Band provide for:
 - (a) predominant use of the band for land mobile services; and
 - (b) a band structure which accommodates predominantly two frequency systems to facilitate more efficient use of radiocommunications sites; and
 - (c) the existing 30 kHz channelling to be replaced by a more spectrum efficient 12.5 kHz channelling to increase the short and medium term productivity of the band; and
 - (d) flexibility to accommodate services which provide more efficient use of the spectrum.
- (3) The VHF Mid Band Plan will come into effect on the date of notification of the Band Plan in the Commonwealth Gazette.
- (4) Each Regional Office of the Department will develop and manage the detailed programme for conversion of services in their region.
- (5) Conversion of services will generally require modification or replacement of existing equipment and a change in operating frequency.
- (6) To permit time for conversion to the new arrangements, conversion time frames have been provided and are specified in clause 4 for High Spectrum Demand (HSD) areas of each Region.
- (7) No conversion deadline is specified for non-HSD areas.
- (8) To ensure completion of the programme for conversion by the dates specified, individual users will be required by the relevant Regional Office to convert their service earlier than the relevant State conversion date.
- (9) The cost impact of the conversion and possible disruption of user operations will be minimised by:
 - (a) focusing the implementation programme upon HSD areas and only converting services in non-HSD areas as necessitated by spectrum demand; and
 - (b) generally converting small services ahead of large services; and

- (c) implementing conversion in periods when operational demands upon the user's communications system are lowest; and
- (d) a progressive and systematic clearance and conversion on an area by area and channel by channel basis.]

Interpretation

3. (1) Unless the contrary intention appears, if any expression used in this Band Plan is defined in the *Radiocommunications Act 1983*, the Radiocommunications—Australian Spectrum Plan, or the Radiocommunications (Licensing and General) Regulations, that expression has the same meaning in this Band Plan as in that Act, that Spectrum Plan, or those Regulations, as the case requires.

(2) In this Band Plan, unless the contrary intention appears:

“allocation” means the purpose for which a segment may be used;

“allowed area” means the geographic area in which services specified in this plan may be operated;

“Band Plan” means the VHF Mid Band Plan;

“bandwidth” means the frequency difference between the upper frequency limit and the lower frequency limit of a sub-band;

“base receive” means a segment which may be used at a base station for reception only;

“base transmit” means a segment which may be used at a base station for transmission only;

“channel” means a sub-band in a segment, with a specified centre frequency;

“channelling” refers to the frequency separation between 2 consecutive channel centre frequencies in the same segment;

“conversion date” means the date by which all users in HSD areas of each State are required to have completed conversion of their service to the new VHF Mid Band Plan.

[NOTE: No conversion deadline is set for users to convert their service in non-HSD areas.]

“HSD area” has the meaning it is given in clause 13;

“land mobile service” means a radiocommunications service between ambulatory stations on land and:

- (a) land stations; or
- (b) other ambulatory stations on land;

“**miscellaneous service**” means a land mobile service or a fixed service, the provision for which is intended to support the development of unconventional and innovative radiocommunications technologies, but is not intended to accommodate services whose purpose can be met by other allocations within the Band Plan;

“**non-HSD area**” means an area outside an HSD area;

“**primary service**” has the same meaning as in Part 3 of the Radiocommunications—Australian Spectrum Plan;

“**Regional Office**” means a State or Territory Office of the Department;

“**secondary service**” has the same meaning as in Part 3 of the Radiocommunications—Australian Spectrum Plan;

“**segment**” is a sub-band of the VHF Mid Band, represented by a letter in the range ‘A’ to ‘Q’, as indicated in Column 2 of an item in Table 2 or 3, to which the frequency range in Column 3 of Table 2 corresponds;

“**single frequency**” means a mode of operation in which transmissions can be made between 2 stations in either one or both directions, but not simultaneously in both directions, and for which only one channel is used;

“**sub-band**” means any part of the VHF Mid Band;

“**transmit/receive split**” means the frequency separation between the transmit channel centre frequency and receive channel centre frequency of a station in a two frequency service;

“**two frequency**” means a mode of operation in which transmissions can be made between 2 stations and in which 2 channels are used;

“**VHF Mid Band**” is the range of frequencies from 70 MHz (exclusive) to 87.5 MHz (inclusive).

(3) Wherever in this Band Plan “**authorised**” is used, this refers to an authorisation given by the Secretary of the Department, or by an officer of the Department authorised in writing by the Secretary, for the relevant purpose.

Conversion Dates

4. (1) Implementation of conversion to the VHF Mid Band Frequency Band Plan (70 to 87.5 MHz) commences on the date of notification of the making of the Band Plan in the *Gazette*.

(2) The conversion date for HSD areas of a State, specified in Column 2 of an item in Table 1, is the date specified in Column 3 of that item.

[NOTE: There are no HSD areas in South Australia, Tasmania, the Northern Territory, the Australian Capital Territory or any other territory of Australia.]

Table 1

5. TABLE 1: CONVERSION DATE IN HIGH SPECTRUM DEMAND AREAS OF STATES

Column 1 Item	Column 2 State	Column 3 Date
1	New South Wales	1 July 1996
2	Queensland	1 July 1998
3	Victoria	1 July 1998
4	Western Australia	1 July 1998

General Purposes for Band Segments

6. Subject to clause 9 of this Band Plan and Part 4 of the Radiocommunications—Australian Spectrum Plan, the VHF Mid Band, represented diagrammatically in Figure 1, may only be used for a service:

- (a) which transmits or receives signals in a channel in the range specified in Column 3 of an item in Table 2, to which range the segment in Column 2 corresponds; and
- (b) whose purpose accords with the allocation specified in Column 4 of that item; and
- (c) in a geographic area specified in Column 5 of that item.

Channelling Arrangements for Band Segments

7. (1) Subject to clause 9 and subclause 7 (3) of this Band Plan and Part 4 of the Radiocommunications—Australian Spectrum Plan, the VHF Mid Band may only be used for a service which operates:

- (a) within a channel whose centre frequency is determined by the formula specified in Column 3 of an item in Table 3, where the values of “n” in the formula are specified in Column 4 of that item; and
- (b) within a channel bandwidth as specified in Column 5 of that item.

(2) The transmit/receive split in the VHF Mid Band is 2.5 MHz.

(3) Channelling arrangements other than those specified by subclauses 7 (1) and 7 (2) may be authorised where such arrangements provide for more efficient use of the spectrum, as compared to the channelling arrangements specified for that segment.

[NOTE: In determining the spectrum efficiency of a service, without limiting the range of matters which may be taken into account, the following matters may be considered:

- (a) occupied bandwidth;
- (b) adjacent channel performance;
- (c) the distance from the transmitter that the channel may be used again without causing harmful interference;
- (d) the impact that introduction of the service will have upon existing services.]

Status of Allocations

8. Unless the contrary intention appears, a service which is operated according to clauses 6 and 7 is a primary service.

Exemption From Compliance With Clauses 6 and 7

9. (1) In non-HSD areas of any State or Territory, a service currently operating with technical or operational characteristics other than those specified by clauses 6 and 7 may continue to operate as a secondary service.

(2) In non-HSD areas of any State or Territory, a new service which would be operated with technical and operational characteristics as prescribed by clause 6, but would not be operated in accordance with clause 7, may be authorized only as a secondary service.

(3) Any segment of the Band Plan may be authorised to be used, up to the relevant conversion date, for purposes or with technical or operational characteristics other than those specified in the Band Plan for that segment on a transitional basis to facilitate implementation of the Band Plan.

Table 2

10. TABLE 2: SERVICE ALLOCATIONS (See note 1)

Column 1 Item	Column 2 Segment	Column 3 Segment limits (MHz) (Lower limit exclusive, upper limit inclusive)	Column 4 Allocation	Column 5 Allowed Areas
1	A	70.00000 to 70.24375	Miscellaneous Service	Australia Wide
2	B	70.24375 to 72.29375	Land Mobile Service (two frequency, base transmit)	Australia Wide
3	C	72.29375 to 72.74375	Land Mobile Service (single frequency)	Australia Wide
4	D	72.74375 to 74.80000	Land Mobile Service (two frequency, base receive)	Australia Wide
5	E	74.80000 to 75.20000	Aeronautical Radionavigation Service (See note 2)	Australia Wide
6	F	75.20000 to 77.29375	Land Mobile Service (single frequency)	Australia Wide
7	G	77.29375 to 77.49375	Miscellaneous Service	Australia Wide
8	H	77.49375 to 79.80625	Land Mobile Service (two frequency, base transmit)	Australia Wide
9	I	79.80625 to 79.99375	Land Mobile Service (single frequency)	Australia Wide
10	J	79.99375 to 82.30625	Land Mobile Service (two frequency, base receive)	Australia Wide
11	K	82.30625 to 82.49375	Land Mobile Service (single frequency)	Australia Wide
12	L	82.49375 to 83.74375	Land Mobile Service (two frequency, base receive)	Australia Wide

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Column 1 Item	Column 2 Segment	Column 3 Segment limits (MHz) (Lower limit exclusive, upper limit inclusive)	Column 4 Allocation	Column 5 Allowed Areas
13	M	83.74375 to 84.69375	Land Mobile Service (two frequency, base receive) OR (single frequency) (See note 3)	Australia Wide
14	N	84.69375 to 84.99375	Miscellaneous Service	Australia Wide
15	O	84.99375 to 86.24375	Land Mobile Service (two frequency, base transmit) (See note 4)	Australia Wide
16	P	86.24375 to 87.19375	Land Mobile Service (two frequency, base transmit) OR (single frequency) (See notes 3 and 4)	Australia Wide
17	Q	87.19375 to 87.50000	Miscellaneous Service (See note 4)	Australia Wide

Notes :

1. The Department of Defence and the Australian Defence Force are allowed secondary use of the 70 MHz to 87.5 MHz band for the purpose of tactical land mobile communications.
2. The operation of aeronautical marker beacons within the aeronautical radionavigation service is subject to the provisions of Annex 10 to the Convention on International Civil Aviation and the Standards and Recommended Practices of the International Civil Aviation Organisation.

3. Land mobile segments referenced by this note may be used in a single frequency mode or a two frequency mode in non-HSD areas of any State or Territory. In HSD areas of any State or Territory, either single or two frequency modes may be used, but not both. The mode of operation for these segments in HSD areas may be determined by the Secretary, or by an officer of the Department authorised in writing by the Secretary, based upon relative demand for these modes of operation in each State and Territory.
4. Subject to the Band II Television Clearance Programme, the 85 MHz to 87.5 MHz Band may be used for broadcasting services as primary services. The band may be used for other services, as indicated in Table 2, as secondary services.

Table 3

11. TABLE 3: CHANNELLING ARRANGEMENTS

(See note 1)

Column 1 Item	Column 2 Segment	Column 3 Channel centre frequencies formula (MHz)	Column 4 Range of integer values for the variable 'n' (inclusive)	Column 5 Channel bandwidth (kHz)
1	A	70.0000 + (n x (0.0125)) (See note 2)	1 to 19	12.5 (See note 2)
2	B	70.2375 + (n x (0.0125))	1 to 164	12.5
3	C	72.2875 + (n x (0.0125))	1 to 36	12.5
4	D	72.7375 + (n x (0.0125))	1 to 164	12.5
5	E	See note 3	See note 3	See note 3
6	F	75.2000 + (n x (0.0125))	1 to 167	12.5
7	G	77.2875 + (n x (0.0125)) (See note 2)	1 to 16	12.5 (See note 2)
8	H	77.4875 + (n x (0.0125))	1 to 185	12.5
9	I	79.8000 + (n x (0.0125))	1 to 15	12.5
10	J	79.9875 + (n x (0.0125))	1 to 185	12.5
11	K	82.3000 + (n x (0.0125))	1 to 15	12.5
12	L	82.4875 + (n x (0.0125))	1 to 100	12.5
13	M	83.7375 + (n x (0.0125))	1 to 76	12.5

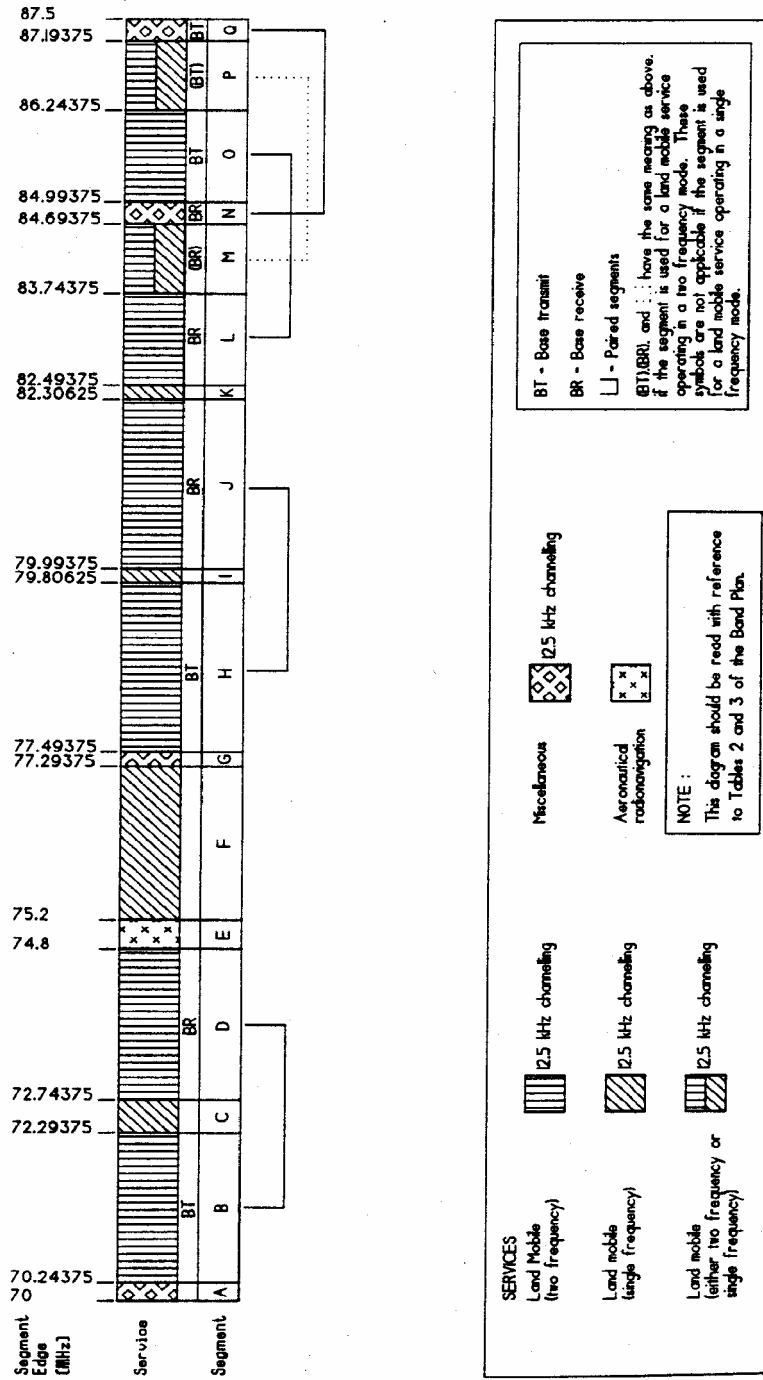
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Column 1 Item	Column 2 Segment	Column 3 Channel centre frequencies formula (MHz)	Column 4 Range of integer values for the variable 'n' (inclusive)	Column 5 Channel bandwidth (kHz)
14	N	84.6875 + (n x (0.0125)) (See note 2)	1 to 24	12.5 (See note 2)
15	O	84.9875 + (n x (0.0125)) (See note 4)	1 to 100	12.5 (See note 4)
16	P	86.2375 + (n x (0.0125)) (See note 4)	1 to 76	12.5 (See note 4)
17	Q	87.1875 + (n x (0.0125)) (See notes 2 and 4)	1 to 24	12.5 (See notes 2 and 4)

Notes:

1. The Department of Defence and the Australian Defence Force may operate with channelling arrangements other than those specified in Table 3.
2. The channelling arrangements specified for miscellaneous services are nominal only. Any user of a miscellaneous service may be authorised to operate with a channel centre frequency and channel bandwidth other than that specified.
3. The operation of aeronautical marker beacons within the aeronautical radionavigation service is subject to the provisions of Annex 10 to the Convention on International Civil Aviation and the Standards and Recommended Practices of the International Civil Aviation Organisation.
4. Broadcasting services may operate with channelling arrangements other than those specified in Table 3.

12. FIGURE 1: VHF MID BAND PLAN DIAGRAM



High Spectrum Demand Areas

13. (1) A High Spectrum Demand (HSD) area is the area on or within a circular contour drawn with a radius specified in Column 5 of an item in Table 4, centred on a point specified as an Australian Map Grid coordinate in Column 4 of that item.

(2) The centre point is nominally described by reference to a nearby town, specified in Column 3, situated in a State specified in Column 2 of that item.

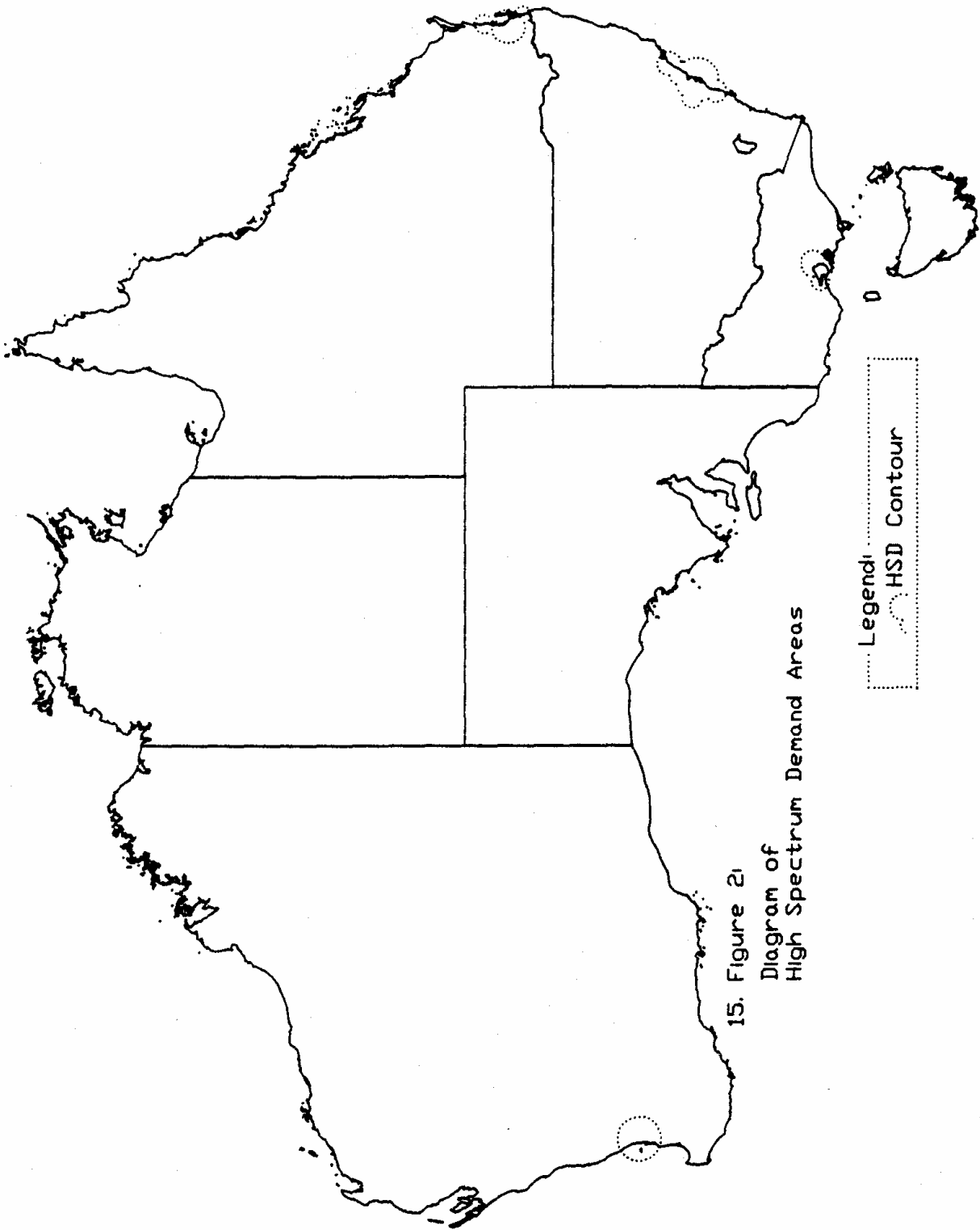
(3) Where adjacent areas overlap, an HSD area then becomes the combination of those adjacent areas.

(4) Diagrammatic representations of the HSD areas are set out in Figure 2.

Table 4

**14. TABLE 4: HIGH SPECTRUM DEMAND CONTOUR
CENTRE COORDINATES AND RADII**

Column 1 Item	Column 2 State	Column 3 Town	Column 4 Coordinate (Easting, Northing, Zone)	Column 5 Radius
1	New South Wales	Newcastle	384722 6355447 56	50 km
2	New South Wales	Sydney	335103 6249367 56	60 km
3	New South Wales	Penrith	279726 6267448 56	35 km
4	New South Wales	Wollongong	301116 6177146 56	35 km
5	Queensland	Maroochydore	509952 7052315 56	35 km
6	Queensland	Brisbane	501674 6961834 56	55 km
7	Queensland	Surfers Paradise	542065 6902340 56	35 km
8	Victoria	Melbourne	320605 5812740 55	50 km
9	Victoria	Mornington	328000 5768000 55	50 km
10	Victoria	Geelong	268300 5774265 55	20 km
11	Western Australia	Perth	391314 6464517 50	50 km



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NOTE

1. Notified in the *Commonwealth of Australia Gazette* on 27 November 1991.