



FM Broadcasting Services Band in the Perth RA1 Licence Area - Consultation 17/2021

Radio Perth Pty Ltd Submission

June 2021



Radio Perth Pty Ltd

Radio Perth Pty Ltd (Radio Perth) is the licensee of Commercial Radio service 1080 6iX (6iX), which has operated in Perth since 1933.

Radio Perth Pty Ltd is a Joint Venture company between Grant Broadcasters and the Blyton Group.



The Blyton Group is a leisure & entertainment group located in Southern NSW. The Blyton Group holds investments in Radio Stations, Snow Resorts, Hotels, Cinemas, Aviation & Amusement Parks, operating across New South Wales, Victoria, ACT and Western Australia.

Founded by Walter Grant in 1942, Grant Broadcasters is one of Australia's largest family-owned media companies. Grant Broadcasters own 48 commercial radio stations across Australia, as well as the KIX Country narrowcast network.



Background

The Perth Licence Area has long been one that is extremely challenging for AM broadcasters. The unique combination of geography, sand, spectrum availability and frequencies utilised in adjacent Licence Areas have created one of the most challenging operating environments for AM services in Australia.

ACMA as far back as 2004 has acknowledged that the propagation of AM signals in Perth are comparatively poor because of soil conductivity and are the worst of any metropolitan Licence Area in Australia.

Listeners to AM radio services in Perth have expressed for decades their frustration with reception problems. Most listeners are unaware that Perth's soil impedes groundwave propagation of AM signals, instead believing that it is a problem relating to the broadcasters themselves.

For a period of more than 20 years, 6iX has sought a solution to the poor AM reception in Perth. There have been a number of measures implemented by 6iX to address the issue, including the installation of two FM translators to address reception deficiency in the Northern and Southern sections of the Licence Area. None of the solutions implemented to-date have been able to satisfactorily resolve the significant signal deficiency for the service.



6iX acknowledges that any solution to more effectively utilise the FM band was constrained by analogue television services in *Bunbury*, with these analogue frequencies only being vacated following the conversion to Digital Television in 2013.

This now finally presents an opportunity to properly rectify these service deficiencies, with the only solution being the conversion of all Perth AM broadcasters to the FM band.

Historical Attempts to rectify AM Signal Deficiency

The issues associated with AM services in Perth are well known. Most of the *Perth* licence area is covered by sand, which has extremely poor conductivity for AM propagation.

Various attempts to improve signal coverage have been considered and attempted over a significant period.

In 2001, the then *Australian Broadcasting Authority (ABA)* considered a range of options for improving the coverage of AM commercial broadcasters.

Radio 6PR was granted an increase in transmission power from 2kW to 10kW, as well as a relocation of their transmission facilities to improve their service coverage.

6iX was granted two FM translators to cover the Northern (*Wanneroo*) and Southern (*Rockingham*) regions of the *Perth* Licence Area, while leaving the AM output of 6iX at 2kW.

Despite the changes implemented at the time, *Radio Perth* has for a long period of time expressed concern that these measures would be insufficient in the long term and that services would only continue to degrade over time.

In a submission of *September 2004*, *Radio Perth* identified difficulties that AM broadcasters in *Perth* would experience over time due to two key concerns:

- As the population continues to expand within the *Perth* Licence Area, this would occur in the sandy areas along the coastline to the North and south and away from the CBD (the location of the AM transmission sites).
- As the level of ambient electrical noise continues to greatly increase in the Licence Area, it will lead to a need to increase the level of AM signal required for effective clear AM reception.



These concerns have proven to be correct, in particular the impact of ambient electrical noise.

In the last 16 years impulse and ambient electrical noise has significantly increased in the *Perth* Licence Area. There are a number of contributors to this, with implications on both in-car and in-home listening.

One of the most significant impacts on in-car reception is the rail lines that run in the middle of the key *Perth* Road corridors, the *Mitchell Freeway* and *Kwinana Freeway*. These freeways run almost the entire length of the *Perth* Licence Area and have created considerable in-car interference for listening to 6iX.

Listener Feedback

I drive through certain areas of Perth and reception is terrible especially near the large powerlines at Metcalfe Ave Lynwood.

J. Holland, Forrestfield

There are numerous areas where I lose reception, or the reception is poor, for example when driving along the freeway on the way to Rockingham. If I lose reception I don't switch to another station, I either switch over to a CD or turn the radio off. It would be good if 6iX would be able to convert from AM to FM transmission.

B. Bonham, East Perth

There is a lot of interference with reception causing crackling noise anywhere near high voltage power lines anywhere in the northern suburbs north from here.

A. Timms, Landsdale

Constant drops anywhere near the train lines while driving the freeway is probably the worst

R. Orr, Lynwood

I mainly listen in the car. Every time you drive past power lines or passenger train lines, you lose reception. It drives me crazy.

P. Vlajs, Canning Vale

Reception on the AM Band in Morley and surrounds is badly affected by power lines and as a result the signal has a lot of static.

S. Birkett, Morley

In certain parts around Morley / Noranda / Malaga - especially under the big power lines, the reception becomes very crackly.

L. Knight, Noranda

Average reception at home always a little static noise in the background but in the car the worst for example driving down to the coast the static noise that bad end up changing stations

P. DeBarro, Darch



Example Photo of Railway Line in middle of Perth Freeway

Plans are in place to continue expansion of the rail lines across the *Perth* Licence Area, with the *METRONET* project planning for approximately 72 kilometres of new passenger rail and up to 18 new stations¹.

It can therefore only be expected that the 6iX AM signal will continue to degrade in quality.



Proposed Stage One METRONET Rail Upgrades

¹ <https://www.metronet.wa.gov.au/about>



6iX suffers from the current reception deficiencies more than any other broadcaster in the *Perth* Licence Area, due to having the lowest licenced AM transmitter power output.

Currently, the five AM services under consideration are licenced for the following specifications:

Callsign	Frequency (kHz)	Purpose	Maximum CMF (V)	Transmitter Power (W)
6iX	1080	Commercial	450	2000
6PR	882	Commercial	990	10000
6PB	585	National	1210	10000
6RN	810	National	1980	20000
6WF	720	National	2900	50000

At its present licenced output of 2kW, not only is 6iX the lowest power of any AM broadcaster in *Perth*, but it is also the lowest powered Commercial Broadcaster of any Capital City in *Australia*. Below is a table that identifies 6iX in comparison to other Commercial Capital City services:

Area Served	Callsign	Frequency(kHz)	Maximum CMF (V)	Transmitter Power (W)
Perth	6iX	1080	450	2000
Adelaide	5DN	1323	1090	3300
Adelaide	5AA	1395	1200	5000
Brisbane	4BH	882	885	5000
Canberra	2CA	1053	965	5000
Canberra	2CC	1206	1100	5000
Melbourne	3AW	693	1650	5000
Melbourne	3UZ	927	1000	5000
Melbourne	3AK	1116	1250	5000
Melbourne	3EE	1278	780	5000
Melbourne	3MP	1377	1230	5000
Sydney	2UE	954	955	5000
Sydney	2KY	1017	885	5000
Sydney	2SM	1269	1000	5000
Sydney	2GB	873	870	6000
Brisbane	4BC	1116	1110	6300
Sydney	2CH	1170	1130	7500
Brisbane	4KQ	693	1400	10000
Brisbane	4TAB	1008	2110	10000
Perth	6PR	882	990	10000
Sydney	2CH	1170	1310	10000

Table²: Transmitter Power (W) of AM Capital City Commercial Radio Stations in Australia

² <https://www.acma.gov.au/list-transmitters-licence-broadcast#data-files>



When considering the options for improvement of services in 2001, it was identified that it would not be possible to increase the power output of 6iX's 1080AM frequency in the *Perth* Licence Area.

This would be due to interference problems that would be created in the nearby *Katanning* Licence Area for Commercial service 6WB. Operating on 1071AM, any increase in 6iX's AM transmission could result in interference issues, particularly of an evening.

It was again confirmed at a meeting with ACMA in May 2009, that any increase to 1080AM beyond the existing 2kW would not be possible.

Even in the event that an increase in the output of 1080AM became possible in the future, the significant increase in power required would result in the EMR implications needing to be carefully considered for the area surrounding the *Belmont* Transmitter Site. The residential area surrounding the *Belmont* Transmitter site has grown considerably in the last 20 years.

Without any viable options left available to improve the quality of the AM signal, the only alternative available is conversion to FM.

Conversion of AM services to resolve signal deficiency is not without precedent in the *Perth* market. In 2001, the ABA permitted the conversion of Community stations 6NR and 6AR from AM to FM, sighting "*good propagation of AM signals in the Perth area is difficult due to poor soil conductivity*" as the reason.

Due to the unique AM propagation issues in *Perth* that are not experienced to the same extent in any other Capital City, *Radio Perth* believe that ACMA can consider this market in isolation to other metropolitan Licence Areas. Thereby, any decision to convert AM services to FM in the *Perth* market does not need to create a precedent to be followed elsewhere in *Australia*.

Why FM Translators aren't a viable Solution

As identified in the *ACMA Options Paper*, the frequency arrangements for FM broadcasting services in the *Perth* area have evolved over time. Having been constrained by sharing the FM band with nearby *Bunbury* VHF Band II television services, this has historically resulted in limited options for improving signal deficiencies in the *Perth* Licence Area.

In order to address previously acknowledged signal deficiencies with the 1080AM signal, the ABA in 2001 granted 6iX two FM translator licences for the North & South sections of the Licence Area.



These services took a number of years of technical planning to finally launch, as well as variations to the technical specifications. These issues were caused, in part, due to the interference difficulties experienced in locating one of these services in a highly populated area. Following the launch of the FM services, ongoing signal issues have still been experienced in the translator service areas.

In December 2005, ACMA released a *Draft Variation to Licence Area Plan – Perth* that proposed to change to the pattern and power of the 6iX Northern Translator.

In the *Draft Variation to Licence Area Plan – Perth Radio – February 2009*, ACMA then considered allocating supplementary FM translators to 6PR to rectify perceived AM reception deficiencies. 6iX objected to this at the time, on the basis that it would create a further inconsistency between the Commercial AM broadcasters.

While ACMA did not ultimately proceed with the granting of these FM translator services, nonetheless it is another acknowledgement of the AM signal deficiencies in the *Perth* Licence Area.

Despite more than 15 years of consistent on-air messaging to promote the benefits of the 6iX FM translator services, they have not been well received by the listening audience.

Listeners find it difficult to understand where in the *Perth* Licence Area they should be able to hear FM services. They express regular frustration at having to constantly switch between the AM and FM band when driving around *Perth*.

To put it simply, trying to educate the audience that '*When you can't hear us on 1080AM, try FM 105.7FM*' has only generated further listener confusion and frustration. Especially when this action is not required to listen to any other broadcaster in *Perth*.

There is a general lack of understanding from the audience as to why FM is only available in some parts of *Perth*, being the Northern or Southern suburbs. Unfortunately, often the most common view of the audience is that there is instead something wrong with 6iX's broadcast facilities.

When the audience is essentially being asked to check 1080AM, 105.7FM, DAB+ or to stream online in order to try and hear the 6iX program, the far simpler option for them is to switch to another radio station.



Listener Feedback

The strength and clarity of the AM signal received is quite variable as I drive around Perth and surrounding districts. The current FM signal is very average in quality.

P. Cunningham, Hillarys

The station always starts going crazy when I am at Cockburn, FM and AM both drop out

K. Kim, Waikiki

Poor radio reception whilst driving in northern suburbs

A. Murray, East Cannington

I have to change from FM to AM 3 times through out my journey to visit my mum which is 20km away? Sometimes I can't get it clear from either one.

B. Henninghan, Clarkson

I'm a truck driver and always on freeway north and south. Pissed off with having to change am/fm so I can listen to my station of choice

C. Waite, Bertram

As I travel along the freeway heading north-south and south-north, I have to keep changing between AM and FM frequencies to maintain good reception. Very annoying.

D. Tinetti, Mindarie

Listener Survey

Radio Perth recently conducted a survey of the 6iX listenership to gauge the level of support for a full conversion to FM, as well as to better understand the frustrations that listeners are currently experiencing trying to listen to 6iX.

More than 4,000 entries were received expressing support for an improvement to the 6iX signal by converting to FM. The survey result can be found as Attachment A to this Submission. While the listener email addresses have been removed (for privacy reasons), they can be provided to ACMA if required.

The map below shows a visual representation of where the listener responses came from, with the darker shades indicating a higher response rate. While there were responses from right across the Perth Licence Area, interestingly there was a particularly strong response rate from listeners in the Northern and Southern sections of the Licence Area.



Some of the most consistent feedback from listeners related to the issues already identified in this submission.

Listener Feedback

Station dropping out whilst trying to listen in certain areas and can't pick up on radio at home.

K. Lister, South Fremantle

I can't always hear it on the car radio but if it was on a FM frequency there wouldn't be an issue.

G. Nagy, Currambine

Fades out sometimes disappears completely. Very frustrating trying to listen to this station in its present set-up. So I turn off the radio altogether.

L. McDonald, Woodvale

The sound quality decreases in several locations as we are driving from work to home. Often times end up turning the radio off due to the static. It is disappointing because it is the ONLY radio station that we listen to.

P. Lowery, Jarrahdale

I am hard of hearing so any distortion takes away the pleasure of listening. If 6iX could move to FM frequency I would be able to tune.

M. Truscott, Malaga

Over the years the reception of 6iX has gone from poor to almost nothing except extreme static. Please allow for updated FM Technology to give Perth's extended Suburbs the ability to hear this Radio Station with crystal clear reception.

R. Shearn, Kingley

Reception in the eastern suburbs, Mundaring and similar areas is non-existent.

M. Stamatis, Mundaring

Can't get a clear reception no matter where I position the radio, also the reception is punctuated by an annoying whistling sound regularly

A. Pollard, Swanview

The sound quality is poor, fading, crackling and hissing. I thought the problem was the radio reception in my old car, but I bought a brand new Hyundai Tucson and the sound on 6iX is still poor. The other stations are fine.

I. Bonar, Ballajura

Being on the edge of the AM and FM reception areas the signal varies from average to lousy. Driving south down the freeway is terrible as you start on the FM band then have to swap to AM then back to FM as the signal once again drops out. It's ridiculous to have to do this particularly in this day and age of other modern technologies. Plus add into the mix the annoyance of the 10 second difference between the signals.

B. Russell, Kingsley

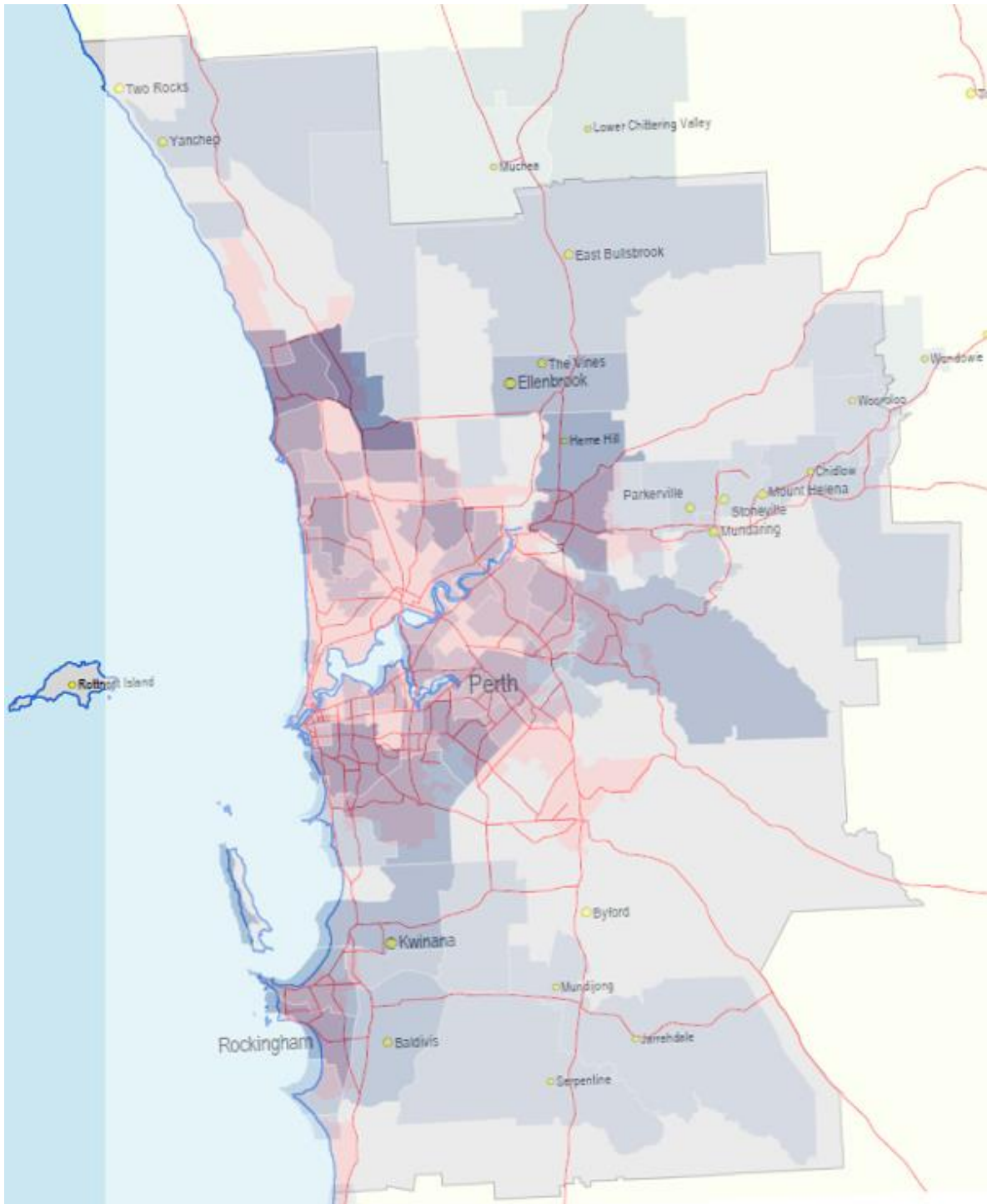


Image: Geographical Representation of 6iX Listener support for full FM Conversion

This further demonstrates that whilst these areas are already serviced by FM translators, the audience still consider there to be an overall deficiency in the 6iX broadcast signal and instead support a full conversion to FM.



Examples of current 6iX Signal Quality

Over the last 20 years, *Radio Perth* has provided ACMA with a number of independent field survey measurements to demonstrate signal issues associated with 6iX's AM and FM services.

Since these field survey measurements were undertaken, there has been further degradation of the AM signal for the various reasons as outlined above.

To demonstrate the 'real world' implications of the current signal deficiencies, we provide the following audio examples to demonstrate:

- **Attachment B**
 - *Services Recorded* - 585AM, 720AM, 810AM, 882AM, 1080AM
 - *Location* - Australia Post Osborne Park Business Hub, WA
 - *Radio Type* - Car Radio
 - *Observation* - Even in an area where most of the AM services would be considered to be acceptable, 6iX experiences interference issues
- **Attachment C**
 - *Services Recorded* - 6PR 882AM, 6iX 1080AM
 - *Location* - 46 King Edward Road, Osborne Park WA
 - *Radio Type* - Portable Radio (Inside)
 - *Observation* - Both AM services experiences interference issues
- **Attachment D**
 - *Services Recorded* - 6PR 882AM, 6iX 1080AM
 - *Location* - Residential Address, Carine WA
 - *Radio Type* - Portable Radio (Inside)
 - *Observation* - 6PR experiences interference issues, 6iX not able to be listened to at all
- **Attachment E**
 - *Services Recorded* - 6iX 1080AM, 6iX 105.7FM
 - *Location* - Santich Park Football Clubrooms, Cockburn WA
 - *Radio Type* - Portable Radio (Outside)
 - *Observation* - Both 6iX services experience interference issues

It is clear from these examples that a significant signal deficiency exists for the 6iX service, which for the reasons already outlined cannot be adequately rectified without a full conversion to FM.



Impact on other broadcasters of 6iX converting to FM

As identified in the Option Paper, any option that involves 6iX converting to FM would only have an impact on a single HPON service.

In effect, *Radio Perth* would vacate 105.7 MHz that is currently utilised by the FM translators. This would then enable the *Perth City* HPON service (currently on 104.9MHz) to move to 105.7MHz.

In order to help facilitate this, *Radio Perth* would be prepared to provide any required technical assistance or expertise to enable the HPON service to change frequency. In addition, *Radio Perth* would be prepared to cover the costs for any hardware required to facilitate the potential ERP increase from 50W to 200W.

Radio Perth provides the following response to each Option as outlined by ACMA:

Option 1

Convert to FM both commercial services (6IX and 6PR) and the national ABC AM services (6PB, 6WF and 6RN).

Radio Perth supports ACMA proceeding with Option 1, as it is the only Option that adequately addresses the issues identified in the *Perth* Licence Area.

It will resolve the longstanding AM reception issues experienced by all AM broadcasters and is consistent with the ABC's planning priorities.

Option 2

Convert to FM the 3 national ABC AM services (6PB, 6WF and 6RN) only. Under this option, the commercial AM services would not convert to FM.

Radio Perth does not support Option 2.

With signal deficiencies already identified and accepted by ACMA as being an issue for all 5 AM services, it would be an inconsistent outcome to then only permit some broadcasters to resolve these signal issues.



The 3 national ABC AM services already operate at significantly higher power outputs (6PB 10kW, 6RN 20kW and 6WF 50kW) in comparison to the 6PR and 6iX services (10kW and 2kW respectively).

If ACMA were to determine that the only solution to improve reception for the ABC services was to permit their conversion to FM, it would be difficult to understand why it would then be considered acceptable to leave the two broadcasters with the weaker AM signals unresolved.

It would also be an inefficient use of FM spectrum, as two of the potential high-power frequencies (91.3 MHz and 104.9 MHz) can only be utilised by the commercial AM services being converted to FM.

104.9 MHz can only be utilised for a high-powered FM service by 6iX switching off the two FM translators currently on 105.7 MHz.

The outcome of implementing Option 2 would result in the commercial AM services being forced to continue operating with poor AM reception across Perth.

Option 3

Convert to FM both commercial AM services (6iX and 6PR) and plan (and subsequently allocate licences for) 3 new high-power FM services in the Perth licence area for commercial radio broadcasting, national radio broadcasting and/or open narrowcasting services. Under this option, the ABC AM services would not convert to FM.

Option 3 again creates an inconsistency in the treatment of AM broadcasters to rectify what are clearly identified and acknowledged reception deficiencies.

The outcome of implementing Option 3 would result in the national AM services continuing to operate with unresolved issues regarding their poor AM reception.

Option 4

Convert to FM one of the 3 national ABC AM services (6PB, 6WF or 6RN). Under this option, the other 2 national ABC AM services and the commercial AM services (6iX and 6PR) would not convert to FM. This option would minimise changes to the existing services.



Radio Perth does not support Option 4.

While Option 4 is identified as having the least impact/changes to existing services, it also fails to address the clearly identified and acknowledged reception deficiencies of four of the five AM services.

With signal deficiencies already identified and accepted by ACMA as being an issue for all 5 AM services, it would be an inconsistent outcome to then only permit one service to resolve their signal issue.

Particularly when this Option could see the service that currently has the strongest AM signal of any broadcaster (6WF, 50Kw) be permitted to convert to FM, whilst leaving 6iX to continue broadcasting an AM service that has 96% less transmitter power.

It would also be an inefficient use of FM spectrum, as 104.9 MHz can only ever be utilised for a high-powered FM service by 6iX switching off the two FM translators currently on 105.7 MHz.

Option 5

Plan (and subsequently allocate licences for) 3 new high power FM services in the Perth LAP for commercial radio broadcasting, national radio broadcasting, community broadcasting and/or open narrowcasting services. Under this option, the ABC and commercial AM services would not convert to FM.

Radio Perth does not support Option 5.

Option 5 appears to defeat the purpose of the Options Paper, which is to consider options to “overcome Perth’s unique geographic circumstances, which result in poor AM propagation..”³.

This option would result in no action being taken to rectify clearly acknowledged reception issues experienced by all AM broadcasters.

The ABC, 6PR and 6iX would continue to operate with unresolved issues regarding poor AM reception.

³ Australian Communications and Media Authority, [The future delivery of radio \[webpage\], ACMA website, March 2020, accessed 20 June 2021.](#)