28 February 2006

Revised Draft LAP Variation – Perth
Australian Communications and Media Authority
PO Box 34
Belconnen ACT 2616
By Email: lapvariation@acma.gov.au
Attention: Stirling Finlay

Copy To:

Mr Greg Cupitt
Manager – Allocation Planning
National Licensing and Allocations Branch
Australian Communications and Media Authority
PO Box Q500
Queen Victoria Building
New South Wales 1230

Dear Mr Finlay,

Reference: PF2005/1233
Draft Variation to Licence Area Plan for Perth

I refer to news release MR63-05 issued by ACMA on 14 December 2005 concerning a draft variation to the licence area plan for Perth to amend the technical specifications for the 6IX translator at Wanneroo ("Draft Variation").

DMG Radio (Australia) Pty Ltd ("DMG"), through its wholly owned and associated companies, operates the commercial radio station in Perth with call sign 6PER and known as Nova 93.7.

ACMA on 2 February 2006 approved a request by DMG for an extension of time to lodge a submission on this matter to 28 February 2006.

DMG has undertaken the following steps in its consideration of this matter:

- we have reviewed the Explanatory Paper published by ACMA and entitled "Explanatory Paper Revised Draft Variation to Licence Area Plan – Perth, WA – Radio";

- we have obtained independent field strength measurements by Broadcast Engineering & Services at various locations within the permitted reach of the translator at Wanneroo;

- we have obtained under the Freedom of Information Act 1982 and have reviewed a copy of the report obtained by ACMA from Gibson Quai AAS and dated 27 April 2005;

- we have undertaken subjective listening tests at some of the locations identified in their report by Gibson Quai AAS; and

- we have obtained independent verification of some of those subjective listening tests by Broadcast Engineering & Services.
Executive Summary

DMG submits that ACMA should not vary the technical specifications for the 6IX translator at Wanneroo in the manner proposed in the Draft Variation.

DMG submits that the primary service of 6IX on 1080kHz is transmitted to and can be received at the locations identified in the report of Gibson Quai AAS with adequate field strength and subjective listening quality, and without interference, in accordance with the requirements of the Technical Planning Guidelines.

DMG therefore submits that there is no need to amend the technical specifications for the 6IX translator at Wanneroo.

DMG further submits that if ACMA decides to consider this matter any further, it should only do so after new subjective listening tests are undertaken by or on behalf of ACMA at the locations identified in their report by Gibson Quai AAS.

DMG is concerned that to amend the technical specifications for the 6IX translator at Wanneroo, in these circumstances, would enable the primary service on 1080kHz to be converted in effect from an AM service to an FM service, when both the field strength and subjective listening quality of the AM service is adequate for the purposes of the Technical Planning Guidelines.

Discussion

A copy of a letter from Geoff Jones of Broadcast Engineering & Services and dated 19 January 2006, and a copy of the field strength measurements appended to that letter, are attached. These field strength measurements demonstrate, at various locations within the permitted reach of the translator at Wanneroo, that the signal strength of the AM service is adequate for the purposes of the Technical Planning Guidelines.

In particular, at most locations, the field strength measurements were in excess of the suburban grade for AM services of 2.5mV/m (in accordance with paragraph 25(b) and paragraph 26 of the Technical Planning Guidelines).

DMG also notes that Gibson Quai AAS, at the locations measured by them, also concluded that the signal strength of the AM service was adequate, at almost every one of those locations, for the purposes of the Technical Planning Guidelines.

DMG nonetheless recognises that it is not enough that the field strength measurements are in excess of the suburban grade for AM services of 2.5mV/m. It is also necessary to undertake subjective listening tests at the same locations in order to determine whether the subjective listening quality at those locations is adequate for the purposes of the Technical Planning Guidelines.

DMG notes that Gibson Quai AAS, in their report, conclude that there are some locations, in particular in and around Scarborough and one or two other cities within the permitted reach of the translator at Wanneroo, where the subjective listening quality is not adequate for the purposes of the Technical Planning Guidelines, even though the field strength measurements at those locations are in excess of the suburban grade for AM services of 2.5mV/m.
DMG notes that the subjective listening tests were undertaken by Gibson Quai AAS through three different methods. The first tests were from a car radio. The second tests were from a portable radio in the open. The third tests were from that portable radio taken inside a car.

DMG understands and accepts the first two of these methods. However, in respect of the third method, it is submitted that those tests should have been carried out inside a building with the portable radio and not inside a car with that radio. Portable radios are used by listeners inside buildings and not inside cars (where car radios are of course used).

DMG was of the view that the results of subjective listening tests with a portable radio inside a car would differ, sometimes to a large extent, from the results of such tests undertaken with a portable radio inside a building. Among other reasons, that is because interference levels, due to poor signal strength, inside a car, can be expected to be greater than interference levels inside a building (when the radio used is a portable radio).

DMG in these circumstances undertook its own subjective listening tests with a portable radio of the same specifications as that used by Gibson Quai AAS. DMG however undertook those tests inside buildings that were situated as close as possible to the locations where such tests had been undertaken inside a car by Gibson Quai AAS.

A copy of the table of results of the subjective listening tests undertaken in that way is attached. Those tests demonstrate that the subjective listening quality at each of those locations, inside buildings rather than inside a car, was more than adequate for the purposes of the Technical Planning Guidelines.

Those tests were of course undertaken by employees of DMG. We recognise that it is important to have at least a small number of those tests verified by an independent expert.

DMG therefore engaged Broadcast Engineering & Services to repeat its subjective listening tests at three locations (being the locations identified as Whitfords 8, Scarborough 13 and Hillarys 16 in the report of Gibson Quai AAS).

A copy of the letter from Tim Hamilton of Broadcast Engineering & Services and dated 20 February 2006 is attached, together with a copy of the table recording the results of his independent subjective listening tests at Whitfords 8, Scarborough 13 and Hillarys 16.

All of our audio grabs at each of the locations at which we undertook our subjective listening tests are also attached.

ACMA will note that the results of all of these subjective listening tests were more than adequate for the purposes of the Technical Planning Guidelines.

DMG in these circumstances submits that ACMA should not vary the technical specifications for the 6lX translator at Wanneroo in the manner proposed in the Draft Variation because the results of field strength tests and subjective listening tests at the relevant locations demonstrate that the primary service of 6lX on 1080kHz is transmitted to and can be received at those locations with adequate field strength and subjective listening quality.

DMG further urges ACMA to undertake new subjective listening tests, at the relevant locations, before it considers any other possible variations of the technical specifications for the 6lX translator at Wanneroo. DMG would welcome an opportunity to be involved in discussing the parameters for any such tests with ACMA.
If you have any queries, please do not hesitate to contact me on (08) 8419 5026.

Yours sincerely

\[Signature\]

KINGSLEY HALL  
Finance Director

<table>
<thead>
<tr>
<th>Attachment</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attachment 1</td>
<td>Copy of a letter from Geoff Jones of Broadcast Engineering &amp; Services and dated 19 January 2006, and a copy of the field strength measurements appended to that letter.</td>
</tr>
<tr>
<td>Attachment 2</td>
<td>Subjective listening test for 6IX MW service conducted by DMGRA and copy of the table of results of the subjective listening tests undertaken in that way.</td>
</tr>
<tr>
<td>Attachment 3</td>
<td>Copy of letter from Tim Hamilton of Broadcast Engineering &amp; Services dated 20 February 2006, together with a copy of the table recording the results of his independent subjective listening tests at Whitfords 8, Scarborough 13 and Hillarys 16.</td>
</tr>
<tr>
<td>Email Attachments:</td>
<td>Audio grabs at each of the locations at which we undertook our subjective listening tests were attached to email dated 28-02-06 to <a href="mailto:lapvariation@acma.gov.au">lapvariation@acma.gov.au</a> and <a href="mailto:greg.cupitt@acma.gov.au">greg.cupitt@acma.gov.au</a></td>
</tr>
</tbody>
</table>
Mr. Steve Adler  
Technology Director  
DMG Radio Australia  
Level 5 75 Hindmarsh Square  
South Australia 5000  

Dear Mr. Adler  

The FI Measurements made on the as normal performance of station 6IX during normal transmission hours have been conducted and the results are attached.  

The only comment I can make is that the field seems to be normal and adequate for the service area. You will see that there is a fall of signal to the North breaking down to 2.0 Mv/permeter at the most Northerly point of our survey. This little area has a signal level of less than planned. Due entirely to the sandy soil in the area. This may be considered normal dependent on the result of the FM coverage of the new translator.  

No other discrepancy is noted.  

Our invoice for conducting this work is enclosed.  

Yours faithfully  

Geoff Jones  
Project Officer  
Broadcasting Division  
19 January 2006
<table>
<thead>
<tr>
<th>Point</th>
<th>Description</th>
<th>Map Reference</th>
<th>FI Reading in mV</th>
<th>On scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point 1</td>
<td>St Ives Northshore Estate Dampier</td>
<td>250 B6</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Point 2</td>
<td>Lumberger Drive (near toilets) Hilarys</td>
<td>280 B2</td>
<td>2.2</td>
<td>10</td>
</tr>
<tr>
<td>Point 3</td>
<td>Robin Reserve on Parnell Ave</td>
<td>280 C6</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Point 4</td>
<td>End of May Street near Star Swamp Reserve</td>
<td>280 C9</td>
<td>4.8</td>
<td>10</td>
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<tr>
<td>Point 5</td>
<td>Karinyup Road near space on roadway Between Duart and Armott Road</td>
<td>310 D5</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Point 6</td>
<td>Scarbrough Beach Road near Dawson (in car park)</td>
<td>310 E9</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Point 7</td>
<td>Karinyup Shopping Centre Clear of buildings to the East</td>
<td>311 A6</td>
<td>7.9</td>
<td>10</td>
</tr>
<tr>
<td>Point 8</td>
<td>Errindale Road Just West of freeway</td>
<td>311 C4</td>
<td>10 +</td>
<td>10</td>
</tr>
<tr>
<td>Point 9</td>
<td>Errindale Road Just in front of Reed Highway</td>
<td>311 E1</td>
<td>5.31</td>
<td>10</td>
</tr>
<tr>
<td>Point 10</td>
<td>Beach Road Just East of Girawheen Drive</td>
<td>282 C9</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Point 11</td>
<td>Alexander Road Near Hepburn Ave side of roadway</td>
<td>283 B3</td>
<td>9.6</td>
<td>10</td>
</tr>
<tr>
<td>Point 12</td>
<td>Beach Road Near Clear space on Rendall Way</td>
<td>283 B9</td>
<td>6.6</td>
<td>10</td>
</tr>
<tr>
<td>Point 13</td>
<td>Corner Beach Road and Lloyd Drive</td>
<td>281 E8</td>
<td>5.5</td>
<td>10</td>
</tr>
<tr>
<td>Point 14</td>
<td>East side of Warwick Road just by Davalrea St</td>
<td>280 B7</td>
<td>4.3</td>
<td>10</td>
</tr>
<tr>
<td>Point 15</td>
<td>Warwick and Allenswood (measure on cycleway)</td>
<td>281 O6</td>
<td>3.3</td>
<td>10</td>
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<tr>
<td>Point 16</td>
<td>Abborswood Road and Kigsway Road (at round about)</td>
<td>283 A1</td>
<td>5.1</td>
<td>10</td>
</tr>
<tr>
<td>Point 17</td>
<td>Hepburn Ave near Freemasons Retirement Village</td>
<td>281 D3</td>
<td>3.9</td>
<td>10</td>
</tr>
<tr>
<td>Point 18</td>
<td>Padbury and Gibson Ave Near Pinaroo In Park marked Gison Park</td>
<td>250 E10</td>
<td>2.7</td>
<td>10</td>
</tr>
<tr>
<td>Point 19</td>
<td>Corner Whitford and Moolander Drive</td>
<td>252 D9</td>
<td>3.3</td>
<td>10</td>
</tr>
<tr>
<td>Point 20</td>
<td>Warrandye reserve</td>
<td>250 E5</td>
<td>1.6</td>
<td>10</td>
</tr>
<tr>
<td>Point 21</td>
<td>Cattlegate Way east end of road way near Lakeland Joondalup</td>
<td>251 B3</td>
<td>2.6</td>
<td>10</td>
</tr>
<tr>
<td>Point 22</td>
<td>East Road near Archer Road</td>
<td>251 D3</td>
<td>2.9</td>
<td>10</td>
</tr>
<tr>
<td>Point 23</td>
<td>Bennul Road near to the corner of Nicholas Road</td>
<td>252 C2</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Point 24</td>
<td>Cnr Regent Road and Farrinton Place Alexandria Place End of measurements</td>
<td>283</td>
<td>9.6</td>
<td>10</td>
</tr>
</tbody>
</table>
6IX Listening report conducted on 13 February 2006
by Gary Roberts (Managing Director) and
Stephen Lloyd (Chief Engineer) – Nova 93.7

Here’s how we did it.

At each site the assessments were made in four ways (where possible):

1. From the car radio
2. From the portable radio inside the car with the engine turned off
3. From the portable radio outside the car
4. From inside real buildings, where possible and where they existed

We used the standard radio in a Chrysler Voyager vehicle for the “Car” listening tests, where the vehicle antenna is an automatic fixed length.

For the portable measurements, we used a portable Sony CFD-S350 Radio/CD/Cassette unit. The unit has synthesised tuning, and was battery powered.

Audio was recorded with a Marantz PMD-660 Solid State Recorder directly into MP3 format. The audio files in this report have not received post production or been altered in any way. The time stamps on the files are that of the original recording.

Listening tests were judged on the same scale as the original report:

5 – Excellent (no perceptible noise or interference)
4 – Good (perceptible noise or interference, but not annoying)
3 – Fair (slightly annoying noise or interference)
2 – Poor (annoying noise or interference)
1 – Bad (very annoying noise or interference)
The Sites – #5.5 (p.8) in Gibson Quai-AAS document:

**Whitfords Site 7 - Whitfords east park Corner Whitfords and Marmion Ave**
Listening test was conducted in car park. No inside test was possible at this location (as there was no building).

**Whitfords Site 8 - Shopping centre near Library**
Car was parked in bus bay outside library. Outside listening test was conducted near metal bus shelter. Inside test was completed in the foyer of the library.

**Whitfords Site 9 - Corner Whitfords Ave & Dampier Ave on verge**
Inside test was conducted in the waiting area of the Kallaroo physio centre.

**Warwick Site 10 - Warwick Tennis Club**
Car was parked in the disabled bay outside the tennis club. Inside test was conducted under a metal awning on the corner of the club.

**Warwick Site 11 - Warwick Tennis Club closer to Warwick Road end**
Car was parked at the far end of the car park. No inside listening test was possible at this location (as there was no building).

**Warwick Site Wa 1 - Corner Warwick and Dava St**
Car was parked on the corner verge. Inside listening test was conducted in a residential garage under a fluorescent light at 36 Bernedale Way – just down from the corner from Warwick Road and Dava Street.

**Scarborough Site 12 - Corner West Coast Highway & Reserve St**
Please note that the original report location was incorrect as Reserve St does not intersect Scarborough Beach Road, However, the GPS Coordinates were correct. Car was parked on verge near corner. No inside listening test was possible at this location as we were unable to access a residential property.

**Scarborough Site 13 – Scarborough Beach Car park (south end)**
Car was parked at the far southern end of the car park. Inside test was conducted at Roc’s Café.

**Scarborough Site 14 - White Sands Tavern Car park**
Car was parked at the far southern end of the car park. Inside test was conducted on the ground floor of the White Sands Tavern, in the TAB / Bar on a pool table, amongst TV’s and under fluorescent lights.

**Hillarys Site 16 – Corner Angove St and West coast Hwy**
Car was parked on the corner of Angove St and West Coast Highway. Inside test was conducted downstairs in an almost complete house at 18 Mallorca Av.

**Marmion Site 17 - Marmion Angling club Car park**
Car was parked outside the Angling club. Inside test was conducted inside the foyer of the Angling Club. The foyer had a metal roof.

**North Beach Site 18 - Bailey St and West Coast Highway – Trigg**
Car was parked on the verge of Bailey Street and West Coast Highway. Inside test was completed inside the nearby Bennion Street Food Store & Café – close to fridges and kitchen.
# 6IX Subjective AM Listening Results

<table>
<thead>
<tr>
<th>Report Location</th>
<th>Position</th>
<th>Description</th>
<th>Subjective AM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Car</td>
</tr>
<tr>
<td><strong>Whitfords 7</strong></td>
<td>S31.79550 E115.75470</td>
<td>Whitfords east park Cnr Whitford &amp; Mar</td>
<td>5 (4)</td>
</tr>
<tr>
<td><strong>Whitfords 8</strong></td>
<td>S31.79798 E115.75198</td>
<td>Shopping centre near Library</td>
<td>5 (4)</td>
</tr>
<tr>
<td><strong>Whitfords 9</strong></td>
<td>S31.79639 E115.74665</td>
<td>Cnr Whitfords &amp; Dampier</td>
<td>4 (4)</td>
</tr>
<tr>
<td>Warwick 10</td>
<td>S31.84439 E115.81502</td>
<td>Warwick Tennis Club</td>
<td>5 (3)</td>
</tr>
<tr>
<td>Warwick 11</td>
<td>S31.83839 E115.81595</td>
<td>Warwick Tennis Club close to Warwick</td>
<td>4 (3)</td>
</tr>
<tr>
<td>Warwick Wa 1</td>
<td>S31.83640 E115.77970</td>
<td>Cnr Warwick and Dava St</td>
<td>4 (3)</td>
</tr>
<tr>
<td>Scarborough 12</td>
<td>S31.89126 E115.75560</td>
<td>Cnr West Coast Highway &amp; Reserve St</td>
<td>5 (4)</td>
</tr>
<tr>
<td>Scarborough 13</td>
<td>S31.89760 E115.75494</td>
<td>Scab Beach Car park south end</td>
<td>5 (4)</td>
</tr>
<tr>
<td>Scarborough 14</td>
<td>S31.89796 E115.75677</td>
<td>White Sands Tavern Car Park</td>
<td>5 (4)</td>
</tr>
<tr>
<td><strong>Illawara 16</strong></td>
<td>S31.81570 E115.73970</td>
<td>Cnr Angove St and West Coast Hwy</td>
<td>4 (3)</td>
</tr>
<tr>
<td>Marmion 17</td>
<td>S31.83870 E115.75000</td>
<td>Marmion Angling club Car park</td>
<td>3 (3)</td>
</tr>
<tr>
<td>orth Beach 18</td>
<td>S31.87030 E115.75280</td>
<td>Bailey St and West Coast Hwy Trigg</td>
<td>5 (3)</td>
</tr>
</tbody>
</table>

Audio quality scale:
- Excellent (no perceptible noise or interference)
- Good (perceptible noise or interference, but not annoying)
- Fair (slightly annoying noise or interference)
- Poor (annoying noise or interference)
- Bad (very annoying noise or interference)

Results (Original figures in brackets)
Car - Car Radio
Out Ptb - Portable radio in free space
Car Ptb - Portable radio inside vehicle
Ins Ptb - Portable radio inside building
NB - No building
N/A - No access
Summary

At all locations in Whitfords, Warwick, Scarborough, Hillarys, Marmion and North Beach all audio quality was assessed between 3 and 5, which rated it between ‘fair’ and ‘excellent’.

There was only one exception, which was the inside listening test at The White Sands Tavern, which was conducted as a ‘worst case scenario’ on the ground floor of a two storey hotel in the front bar / TAB facility.

The test was conducted on a pool table under a fluorescent light, surrounded by at approximately 20 TV screens.

Even under these extreme conditions, the audio quality was still listenable but we only rated it a 2, due to some interference.

At no time during this survey did we experience any listening problems to the 6IX AM signal in the car.

Clearly our assessments are in conflict of those of Gibson Quai – AAS.

Unlike the original report, we have submitted audio files from all locations so that our assessments can themselves be assessed.

It is our conclusion that the AM coverage provided in all of the areas surveyed in this report is of adequate quality and does not require any alterations to 6IX’s technical operating conditions.

We would welcome the ACMA to conduct their own subjective listening tests.
6IX AM Radio Coverage Listening Tests

Listening Tests of 6IX AM (1080 kHz) were conducted at three locations as requested by DMG Radio Australia on Monday 20\textsuperscript{th} February 2006 between 9.00am and 11.00am. The tests were conducted with a Sony CFD 5350 battery powered radio with synthesised tuner and the Car Radio factory installed in the DMG Radio Link Vehicle. At each location a CCIR subjective listening rating was given to the 6IX AM (1080 kHz) signal under four listening conditions.

2. Portable Radio inside the vehicle with Engine off and doors shut.
3. Portable Radio outside and approximately 2m from the vehicle.
4. Portable Radio inside a nearby building.

The results of the tests are attached.

From these tests it is concluded that at these three locations the AM coverage provided by the 6IX AM Transmitter is of acceptable quality under normal daytime listening conditions.

Tim Hamilton
Engineering Manager
Broadcast Engineering Services
20/2/06
<table>
<thead>
<tr>
<th>Report Location</th>
<th>Position</th>
<th>Description</th>
<th>Subjective AM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whitfords 8</td>
<td>S31.79798</td>
<td>Shopping centre near Library</td>
<td>5 5 3 4</td>
</tr>
<tr>
<td></td>
<td>E115.75198</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scarborough 13</td>
<td>S31.89760</td>
<td>Scab Beach Car park south - Roc’s Café</td>
<td>5 4 4 4</td>
</tr>
<tr>
<td></td>
<td>E115.75494</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hillarys 16</td>
<td>S31.81570</td>
<td>Cnr Angove St and West Coast Hwy - House</td>
<td>5 4 4 4</td>
</tr>
<tr>
<td></td>
<td>E115.73970</td>
<td></td>
<td></td>
</tr>
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