SUBMISSION BY DR. ERIC ANCICH TO THE SENATE FINANCE & PUBLIC ADMINISTRATION REFERENCES COMMITTEE RELATING TO THE PLANNING, CONSTRUCTION & MANAGEMENT OF THE WESTERN SYDNEY AIRPORT PROJECT

Terms of Reference

On 9 December 2020, the following matter was referred to the Finance and Public Administration References Committee for inquiry and report by **30 June 2022:**

The planning, construction and management of the Western Sydney Airport project, with particular reference to:

a. probity planning and management, risk assessment frameworks and management;
b. land acquisition and related leases, including transactions related to the Leppington Triangle;
c. the role and performance of WSA Co Limited;
d. site preparation, including the realignment of the Northern Road;
e. environment and heritage management;
f. community engagement;
g. transport links and supporting infrastructure;
h. training and employment; and
i. any related matters.

This submission will be confined to (e) environment and heritage management, and (f) community engagement.

Background to this Submission

In March 2019, the report "*9173.R1 - "Assessment Of Measured Aircraft Noise Levels Under The Existing Flight Paths of Sydney Kingsford Smith Airport With Reference To Western Sydney Airport*" (prepared by Dr Eric Ancich and Mr Donald Carter) was submitted to Blacktown City Council. The report subsequently attracted media interest (both electronic and print) and is now widely known as the Ancich Report. On 19 April 2019, Dr Ancich received a telephone request from Ms Sarah Leeming (General Manager, Regulatory, Environmental and Stakeholder Engagement Branch, Western Sydney Unit, Department of Infrastructure, Transport, Cities and Regional Development) for a copy of the report. A full copy of the report, including technical appendices, was provided the same day. That full copy is currently available from the Department's FOI Disclosure Log (see FOI 20-130, Pages 26-74).

The Ancich Report suggested that the noise level predictions for Western Sydney Airport underestimated the true impact. A total of 330 flights (263 approach and 67 departure) were tracked over locations considered to be representative of locations under the flight paths of the proposed Western Sydney Airport (WSA). These representative locations have not subsequently been disputed by critical reviewers.

The conclusion of the study was that measurement of noise generated by aircraft in flight had demonstrated that variability in the height of aircraft will result in a wide range of receiver noise levels. This variability in height and the commensurate variability in noise levels would increase the noise impact over Blacktown and the Lower Blue Mountains, by 3 and 4 times respectively in perceived loudness, compared to that predicted in the EIS due to assumptions built into the modelling.

The default modelling condition is that departing aircraft climb at an angle of ascent of 6°, and arriving aircraft use an angle of descent of 3° (commonly referred to as Continuous Descent Approach). However, in the real world, there is significant variation in these angles as some aircraft simply can't (or don't) climb that steeply. Other aircraft, for whatever reason, simply don't hit the target altitude as they descend, and these real-world deviations from the theoretical input change the loudness on the ground in ways the modelling can't capture but actual noise monitoring can (as was done in the Ancich Report).

It is understood that as Wilkinson Murray Pty Ltd (WM) had prepared the aircraft noise section of the EIS for Western Sydney Airport, they were invited by the Department to comment on the Ancich Report. Initial review comments were received from Wilkinson Murray by letter dated 1 May 2019 (see FOI 20-130). Pages 124-131 of this release show a letter from WM to the Department signed by Dr Rob Bullen. In this letter, Dr Bullen is described as "*Principal*".

Further review comments were received from Wilkinson Murray by way of Report No**.** 14168-10, Version B "*Western Sydney Airport Noise Assessment: Response to Ancich Report"*. The report is dated 23 July 2019 and was prepared by Mr Barry Murray (see FOI 20-130).

Final review comments appear to have been made by letter dated 17 December 2019 (see FOI 20-125-documents-redacted.pdf). This letter was sent by Rob Bullen Consulting and is signed by Dr Rob Bullen. It is understood that Dr Bullen is now no longer a direct employee of Wilkinson Murray Pty Ltd.

Wilkinson Murray Pty Ltd initially identified four possible sources of error in the Ancich Report that, in their opinion, could explain the difference between the Ancich measured and EIS computer predicted noise levels. In his letter to the Department (dated 17 December 2019), Dr Bullen has reduced the four key issues set out in earlier correspondence to three with the possibility of extraneous noise no longer considered relevant. Dr Bullen advised the Department that "*…with respect to point 1, I believe there is agreement that "Slow" speed setting is the appropriate measurement procedure for aircraft noise, although there is disagreement about the difference between maximum noise levels that would be obtained using "Fast" and "Slow" speed. The size of the difference could be demonstrated relatively simply using existing or newly-obtained audio recordings of aircraft operations. My experience indicates that the difference would be 2 – 5 dBA*".

(N.B.: The reference to "*fast*" and "*slow*" speed refers to a switch setting on the measuring instrument. Time weighting is applied so that the levels measured are easier to read on a sound level meter. The time weighting dampens sudden changes in levels, thus creating a smoother and more easily read display)

A similar back-to-back measurement was offered to the Department during a meeting in Canberra on 9 August 2019 but was not adopted. The offer was repeated to Dr Bullen during a meeting in Penrith on 5 December 2019 but was summarily rejected.

It is noted that a change in noise level of 3 dBA is commonly regarded as "*just detectable*" from a human perception perspective.

Dr Bullen went on to say that:

*"This leaves point 2, which is related to the meaning of the maximum noise level descriptor identified as LAmax in the EIS. I can confirm that in this EIS and others, maximum noise levels are described in terms of an average of maximum noise levels from a specific aircraft type performing a specific operation, and not by the highest maximum level that would be measured during any such operation. A remaining question is whether wording in the EIS made this sufficiently clear. This is admittedly unclear – single operations by a specific aircraft type will result in a range of maximum noise levels, and exactly how this range is "depicted" is not stated. If the intention had been to describe only the highest of these maximum levels the wording would presumably have been "…the **highest** maximum (LAmax) noise **level** resulting from **any** single operation …" However it would certainly have been clearer if the process of averaging these maximum levels had been explicitly stated. Confusion could have been avoided by the insertion of two words – "Single-event noise contours depict the **average of** maximum (LAmax) noise levels …"*

It is noted that this approach is inconsistent with the CANSO definition of LAmax used by Airservices Australia. By letter dated 3 July 2020, Airservices Australia (ASA) advised that the definition of LAmax shown in the Civil Air Navigation Services Organisation (2013) document entitled "*Considerations for Community Noise Interactions"* is correct. In Appendix 1, Noise Metrics of that document, LAmax is defined as:

> *Maximum Noise Levels (LAmax, PNLmax). The noise level is assessed in terms of the **instantaneous** (emphasis added) maximum sound level that is reached during an overflight.*

The most likely explanation for the difference between the measured and EIS computer predicted noise levels identified by the Ancich Report is that the EIS used an admitted undocumented process for averaging noise levels and the Ancich Report used the highest maximum (LAmax) noise level resulting from each of the reported 330 individual over-flights. It is submitted that the Ancich Report approach is entirely consistent with the CANSO definition and the advice of Airservices Australia in their letter of 3 July 2020.

Environment and Heritage Management

In their submission to the Melbourne Airport Environs Safeguarding Standing Advisory Committee (Submission 17), the Department of Infrastructure, Transport, Regional Development and Communications indicated that:

> "*The Australian Noise Exposure Forecast (ANEF) system is internationally considered to be a valid means of defining land use compatibility for areas around an airport. However, the 1995 Senate Select Committee on Aircraft Noise in Sydney, the Senate Committee report on the Brisbane Airport Master Plan in 2000 and more recently the 2019 Canadian House of Commons Standing Committee on Transport, Infrastructure and Communities report on Assessing the Impact of Aircraft Noise in the Vicinity of Major Canadian Airports (Report No. 28) all recognise that while the ANEF system may be suitable for land use planning purposes, it does* ***not*** *(emphasis added) provide an accurate indication of an individual's potential reaction to aircraft noise exposure*".

Rob Bullen Consulting has also made a submission to the Melbourne Airport Environs Safeguarding Standing Advisory Committee. In this submission, Dr Bullen notes that:

> *"… in areas below 20 ANEF there is nothing in AS 2021(Australian Standard 2021:2015 "Acoustics – Aircraft noise intrusion – Building siting and construction" Australian Standards Association, 2015) prohibiting planners from refusing residential zoning on the basis of aircraft noise. In these areas aircraft noise is one issue that should still be considered along with other planning issues when allocating zoning permission. To make these decisions, planners require access to information on aircraft noise impacts that is both accurate and easy to understand...*"

It should be clear from the above that the use of the ANEF metric is an imperfect measure of likely adverse community reaction to aircraft over-flight noise. Clearly, an alternative procedure is indicated. As was shown earlier, an undocumented process for averaging noise levels was used in the preparation of the Noise Section of the WSA EIS. If, due to the limitations of computer modelling of aircraft over-flight noise, some form of averaging is necessary, then the resulting "*average*" should be associated with a confidence level that is clearly defined before processing the data. Most commonly, a 95% confidence level is used elsewhere and should also be applied to this application. A simple arithmetic average provides no information relating to the range of data used to produce that average.

Emeritus Professor Andrew Hede is commonly regarded as the developer of the ANEF metric (see Hede, AJ, & Bullen, RB. 1982, *Aircraft Noise in Australia: A Survey of Community Reaction*, National Acoustic Laboratories Report No. 88, Australian Government Publishing Service, Canberra).

However, in his "*Review of International Research on Community Reaction to Aircraft Noise Report No.1: Overview of Aircraft Noise Metrics, 2018*" commissioned by the Sydney Airport Community Forum *(SACF)*, Prof. Hede notes that:

> *"The land-use planning application of the ANEF metric relates mainly to the Australian Standard on aircraft noise (ref., Standards Australia, AS2021, 2015). This standard lists the ANEF cut-offs approved for building siting. Specifically, the Standard provides a table prescribing that areas exposed to less than 20 ANEF are considered 'acceptable' for such listed building types as 'house', 'school', and 'hospital' (see Standards Australia, 2015, Table 2.1, p12).*
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> *This standard uses the term 'acceptable' only to mean acceptable for specified land uses (e.g., 'less than 20 ANEF' is rated as 'acceptable' for new residential development). However, public officials and community members often* ***misinterpret this*** *(emphasis added) to mean that 'less than 20 ANEF' is an 'acceptable' amount of aircraft noise and by implication, that this amount of noise is 'insignificant' or 'negligible' not only for residential land use but also fo*r *'permissible' human reaction"*.

The impact of averaging was of major concern in submissions to the 1995 Senate Select Committee (see Senate Select Committee. 1995, *Falling on Deaf Ears*, Report of the Senate Select Committee on Aircraft Noise in Sydney, Parliament House, Canberra). The following statement from that report (Paragraph 8.46, Page 187) is particularly relevant:

> "*…the effects of averaging were criticised by many - Sutherland Shire Council, for example, stated that it was 'left with the overwhelming impression that complexity and the averaging of data were used as devices to obscure meaning'…"*

Community Engagement

On the webpage for the Forum on Western Sydney Airport (FOWSA), their mission statement appears to be:
"The Forum on Western Sydney Airport (FOWSA) links the community, the Government and WSA Co during planning and construction of Western Sydney Airport and provides a consultative forum for the exchange of information and ideas.

FOWSA members have a responsibility to inform their communities about planning and progress of the airport project and share information on a range of issues relating to the broader airport development. In turn, members will raise community concerns to be discussed at FOWSA meetings."

There have been 11 FOWSA meetings but only two (2 June 2018 & 7 September 2019) have been open to the public. It is fair to say that FOWSA meetings are shrouded in secrecy. Minutes are eventually published on the website but sometimes months after the meeting.

It does not appear that members have raised any significant community concerns to be discussed at FOWSA meetings even though groups like Residents against Western Sydney Airport (RAWSA) have major concerns.

On 6 December 2019, Dr Rob Bullen addressed FOWSA Meeting 10 and delivered a PowerPoint critique of the Ancich Report. His presentation was included in the minutes of this meeting (as point 5 of the record - pages 8 – 11). It is understood that on 6 November 2020, Dr Bullen requested corrections to the minutes with respect to his presentation. The requested corrections have not been implemented and the uncorrected minutes remain in the public domain. Furthermore, neither Dr Ancich nor co-author Mr Carter has been offered an opportunity to address the FOWSA members about their report or to respond to the critique by Dr Bullen.

It is noted that all FOWSA members, including the Chair, are determined by the Minister for Urban Infrastructure (Terms of Reference, Section 3) and this can scarcely be described as "*Community Engagement*" as it clearly lacks any independence. The current membership of FOWSA is seriously deficient as the Federal Member for Macquarie has not been offered membership even though the electorate encompasses the Blue Mountains and the Hawkesbury, and includes areas that will be directly impacted by Western Sydney Airport.

This is an aspect requiring a major upgrade in accessibility and transparency. Not just for WSA but for all Australian Airports.

Conclusion

The "Falling on Deaf Ears" Report (Senate Select Committee, "*Falling on Deaf Ears"*, Report of the Senate Select Committee on Aircraft Noise in Sydney, Parliament House, Canberra, November, 1995) and the 2018 report by Emeritus Prof. Andrew Hede commissioned by the Sydney Airport Community Forum *(SACF)* both question the almost religious reliance on the ANEF metric as an indicator of likely adverse community reaction to aircraft over-flight noise.

In his letter of 17 December 2019 (See FOI 20-125-documents-redacted.pdf), Dr Bullen has confirmed that an undocumented process for averaging noise levels was used in the preparation of the Noise Section of the WSA EIS.

This undocumented process is inconsistent with the definition of LAmax shown in the Civil Air Navigation Services Organisation (2013) document entitled "*Considerations for Community Noise Interactions"* and supported by Airservices Australia.

Accordingly, it is submitted that Wilkinson Murray Pty Ltd may have misled the Community, the Department of Infrastructure and Regional Development (as it was then known) as the designated proponent for the Western Sydney Airport Project. Other members of the study team may also have been misled.

As the Department of Agriculture, Water and the Environment is responsible for managing the environmental assessment and approval process under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), that Department may also have been misled in addition to the relevant Ministers.

This would appear to fall within the requirements of ***Division 17—Duty to provide accurate information*** and be covered by Section 491 (1) of the EPBC Act.

Since an undocumented process for averaging noise levels was used in the preparation of the Noise Section of the WSA EIS, some alternative forms of data processing and presentation need consideration. If, due to the limitations of computer modelling of aircraft over-flight noise, some form of averaging is necessary, then the resulting "*average*" should be associated with a confidence level that is clearly defined before processing the data. Most commonly, a 95% confidence level is used elsewhere and should also be applied to this application.

A simple arithmetic average provides no information relating to the overall range of data used to produce that average.

Where the WSA EIS states a noise level as being LAmax, this is not correct as the EIS used an undocumented process to average noise levels. This largely explains the differences in noise levels between the Ancich Report measurements and the WSA EIS modelling.

It is further submitted that what purports to be Community Engagement through the auspices of FOWSA is opaque and unrepresentative of real community views. In selecting FOWSA members, the Minister appears to heavily bias the FOWSA membership with pro-airport representatives. This does not facilitate an objective and balanced discussion of important grass-roots community issues.

This is an aspect requiring a major upgrade in accessibility and transparency, not just for WSA but for all Australian Airports.