



22 October 2013

Jeff Bulfin
Precise Planning
PO Box 426
Northbridge NSW 1560

Review of noise and odour issues for a proposed land rezoning near a proposed waste Transfer station at Bargo land

Dear Jeff,

This letter provides a review of the key odour and noise issues to consider in making an assessment of the suitability of land at 35-55 Government Road at Bargo and 95 Great Southern Road Bargo for rezoning.

The proposed land rezoning for 35-55 Government Road would result in large rural residential allotments ranging from 4000sqm (in the southern half of the land), to in excess of 3ha (in the northern half of the land). The proposed land rezoning for 95 Great Southern Road would result in 1500sqm lots (in the eastern part of the land) and conventional residential development on the western part of the site.

A Waste Transfer Station (WTS) is proposed on a site to the north of 35-55 Government Road and east of 95 Great Southern Road.

The WTS would generate some noise and also odour. The key question is whether the noise and odour from the WTS would impact the proposed area(s) to be rezoned, and also whether the rezoning(s) would alter the applicable criteria and affect the potential operability of the proposed WTS.

This may at first appear to be a complex "chicken and the egg" sort of issue, but in this case the issues are quite clear, and fall clearly into the scope for prudent planning decision making, as outlined below.

The key issues to consider in planning decisions related to potential odour and noise environment are outlined below.

Odour

What are the applicable odour criteria with or without the development and/or rezoning?

Presently, based on few isolated rural receptors in the area the odour criteria applicable to the existing land use would be 7 OU.

The proposed rezoning at 35-55 Government Road would add nominally 18 lots if subdivided, and the proposed rezoning at 95 Government Road may add up to an additional 200 new lots. In total, these two rezonings may result in about 218 lots or more, or up to say 327 people residing in the locality in the future. The future odour amenity criteria would be approximately 4 to 5 OU, depending on the exact number of dwellings and the subdivision layout.

If a dense urban area were developed adjacent to the WTS, an odour criteria of 2 OU would apply.

What potential would there be for odour impact to occur?

At present, there is no WTS so there is no potential for odour impacts.

In the future, assuming these rezonings, and the WTS all proceed to be developed, there would also be no potential for odour impact to arise.

The Air Quality Impact Assessment report for the Bargo Resource Recovery Facility by AECOM dated 27 August 2013 shows that the odour levels from the WTS would not exceed 2 OU on any of the proposed land for re-zoning. **Figure 1** shows the maximum odour impact contours from the AECOM report with the two proposed areas for re-zoning overlaid.

The maximum predicted odour levels for the WTS are less than ½ of the applicable criteria on all land proposed for rezoning and remain within the proposed WTS land boundary.

The predicted WTS odour levels are sufficiently low, and the WTS site sufficiently large in buffer area to permit urban development (with 2 OU criteria) to occur adjacent to the WTS, or for the WTS to double its impact footprint without impacting on all of the proposed land rezoning(s).

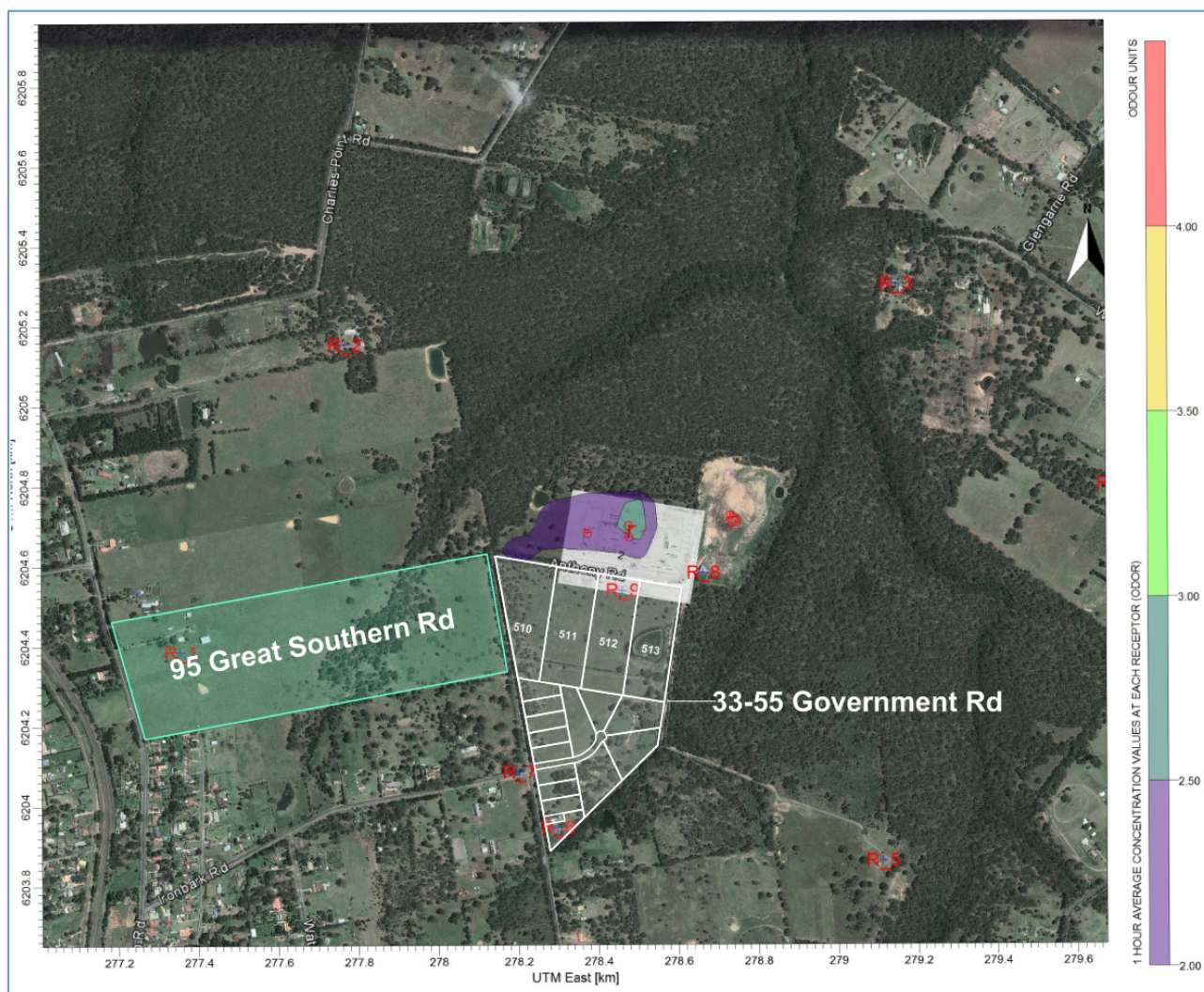


Figure 1: Extent of potential odour

Noise

What are the applicable noise criteria with or without the development and/or rezoning?

There are two key considerations in this case. The first is the criteria applicable to the WTS operation (with and with any nearby land rezoning), and the second is the criteria applicable to the land proposed to be rezoned.

It is important to understand that the criteria for the WTS and for land rezoning are independently derived criteria, and it is also important to understand how they interrelate.

In regard to the WTS, the criteria (in the absence of any proposed rezoning) would be derived based on the NSW Industrial Noise policy (INP). This is done by measuring the background level in the surrounding receptor areas and applying the INP guidelines. The criteria (in the absence of any proposed rezoning) would be set at 5 dB(A) above the background level.

The existing measured background levels are relatively low at 36 dB(A) in the day and evening and 37 dB(A) at night).

Therefore the applicable noise criteria for the WTS (without any land rezoning proceeding would be 41 dB(A) in the day and evening and 42 dB(A) at night. This is described in detail in the Environmental Noise Impact Assessment report for the Bargo Resource Recovery Facility by AECOM dated 21 June 2013.

(Note that a criterion of 40 dB(A) was adopted at night by AECOM, however only limited activity may occur at night at the WTS, as the WTS is primarily a daytime and evening operation.)

However, the current background levels and criteria for the WTS in the absence of proposed rezoning are not relevant to considerations in this situation, because there are concurrent proposals for land rezoning(s) and an industrial development.

Situations with simultaneous proposals can be complex and hard for planning authorities to deal with, however it may potentially breach procedural fairness legislation for a planning authority to stall or ignore one proposal and thus inadvertently favour another proposal in this situation

To allow planning bodies to best deal with multiple complex proposals concurrently, Section 2.5 of the INP; "Effects of changing land use" was developed and deals specifically with the situation in this case.

Section 2.5 of the INP states:

"Land uses can change – sometimes dramatically – with an increase in industrial activities,...or the development of new residential suburbs. A consequence of this is that the land use designation of an area may change. Changes in designation occur as a result of urban type residential subdivisions in a village or rural area with few receptors, or the encroachment of industrial developments near residential areas, and vice versa.

li such cases, the primary decision by planning authorities to cause or allow development would take account of the many consequent implications. As developments introduce increased activities, they also increase environmental noise levels. Therefore, previously low ambient noise levels will not be maintained, and assessment of noise sources for control purposes should be made against the acceptable noise levels relevant to the modified land use. "

This means that the planning authority should consider the recommended "acceptable noise levels" in the INP when making planning decisions in situations such as in this case, as these criteria levels apply to the future "modified land use", (i.e. in this case more intense residential dwelling than at present), bearing in mind that higher background noise levels will naturally occur in such areas relative to the existing rural area (and hence higher criteria apply).

The recommended Acceptable Noise Levels (ANL's) are shown in Table 2.1 of the INP. For suburban areas the ANL's are 55 dB(A) day, 45 dB(A) evening and 40 dB(A) night.

The ANL's set out in Table 2.1 of the INP are the applicable criteria to correctly consider the land rezoning(s) and the WTS proposal concurrently.

Other potential considerations for planning authorities

The recommended design considerations of Australian Standard, AS/ NZS 2107:2000 Acoustics – Recommended Design Sound Levels and Reverberation Times for Building Interiors can also be referred to in this case.

The relevant recommended standards in AS/NZS 2107:2000 for internal noise levels are set at 30 to 35 dB(A) for sleeping areas for houses and apartments near minor roads.

The recommended levels in the AS/NZS standard specify internal noise levels, and the Acceptable Noise Levels in the INP specify external industrial noise levels in receiver areas where dwellings would be located.

The standards are related to the INP guideline level through the building construction standards required for the area. Planning authorities may set minimum construction standards to meet acceptable levels of noise transmission loss, but also acceptable levels of thermal comfort, energy efficiency and many other factors.

In this case, based on acceptable external noise levels of 55 dB(A) for the day and evening when the WTS may operate, in order to maintain the most sensitive sleeping areas of any future residential dwellings within the recommended standard of 30 to 35 dB(A), the construction required would need to achieve a noise transmission loss of (55 less 30 to 35 =) 20 to 25 dB(A) through the external shell. This would permit people to sleep in the daytime when external noise levels are at the recommended loudest acceptable levels of 55 dB(A) as set out in the INP.

A construction standard that achieves this level of noise transmission loss would be met or exceeded by normal construction standard requirements than apply in NSW for new dwellings.

What potential would there be for noise impacts to occur?

In the future, assuming this rezoning, the nearby rezoning and WTS all proceed to be developed, there would also be no potential for noise impact to arise, apart from the most northern parts of lots 510, 511, 512 and 513 of the proposed rezoning.

The Environmental Noise Impact Assessment report for the Bargo Resource Recovery Facility by AECOM dated 21 June 2013 are shown in **Figure 2**, with the proposed subdivisions overlaid. The figure shows that the maximum noise levels from the WTS would not exceed:

- ✦ the daytime criteria of 55 dB(A) except for some minor areas on proposed lots 510 to 513 (green shaded areas);
- ✦ the evening criteria of 45 dB(A) except for approx. 50% to 70% of the northern parts of lots 510 to 513 (medium and light blue shaded areas); and
- ✦ the night time criteria, as there is limited night time WTS operation.

The requirements of AS/NZS would be met in all circumstances in all areas except for the minor (green shaded) areas on proposed lots 510 to 513.

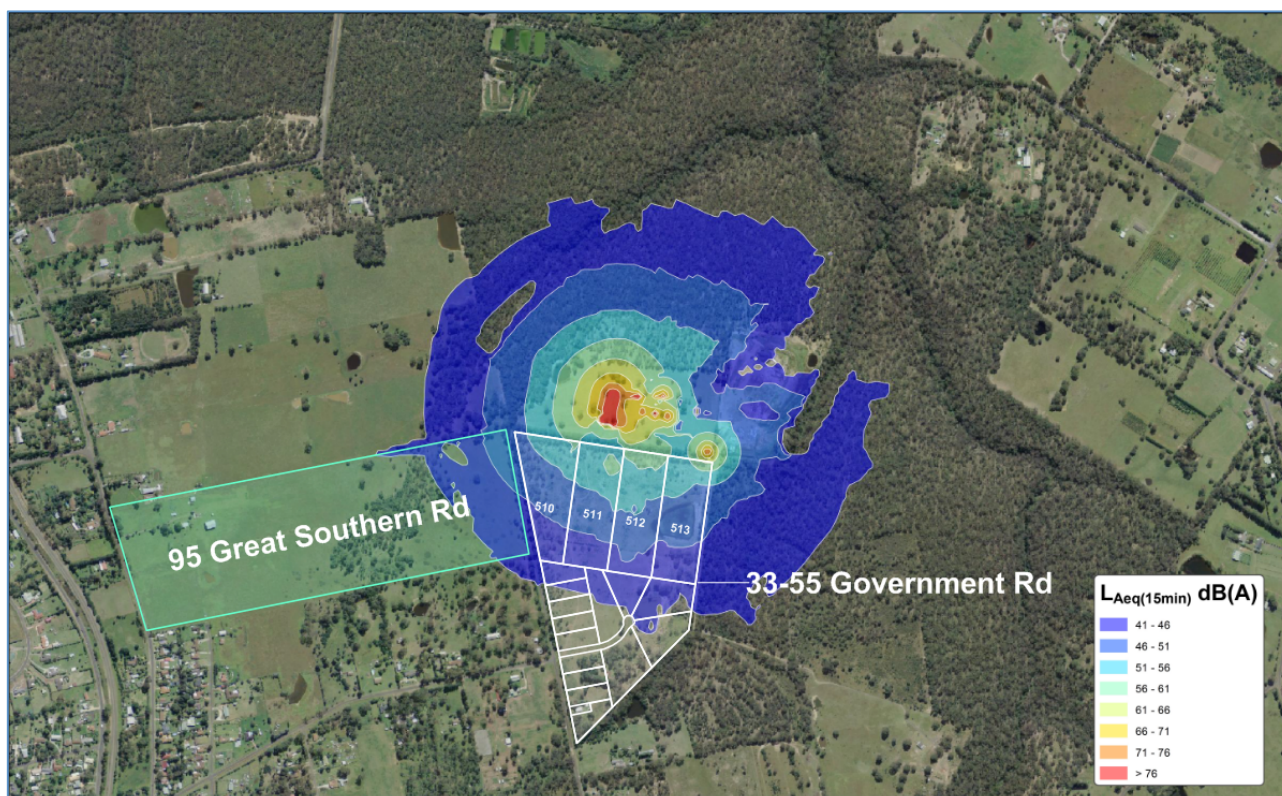


Figure 2: Potential extent of industrial noise

Discussion and Conclusion

This letter provides an assessment of noise issues related to the proposed rezoning and waste transfer facility development at Bargo.

The key issues that should be considered by planning authorities when dealing with concurrent rezoning and industrial development applications are outlined also.

When these considerations are applied, it was found that;

- ✦ no odour impacts would occur in any situation;
- ✦ the requirements of internal noise levels standards set out in AS/NZS 2107:2000 can be met at any location beyond the boundary of the WTS by specifying normal modern dwelling constructions standards, which would occur anyway;
- ✦ The erection of a solid fence approximately 1.8 to 2.0 m high along the northern boundary of the proposed subdivision would provide nominally 5 to 6 dB(A) of acoustic shielding during daytime and evening periods, and would mean that only small portions of lots 510 to 513 may not meet acceptable noise levels.

This would permit dwelling construction nominally on the southern half of lots 510 to 513, and anywhere on any other lot.

- ✦ Even without a solid fence to act as a barrier, a dwelling could be constructed on the southern quarter of lots 510 to 513, or on any other lot.

Yours faithfully,
Todoroski Air Sciences

A handwritten signature in cursive script, appearing to read "A. Todoroski".

Aleks Todoroski