



Christopher Biggs
Lighthorse Business Centre
Sent via email to ChrisBiggs@dadi.com.au

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RE: Light Horse Business Centre Modifications – Noise Assessment

1 INTRODUCTION

The Light Horse Business Centre (LHBC) commissioned an Environmental Assessment (EA) in 2008 for approval to operate a waste processing facility at Eastern Creek landfill site. A Noise Impact Assessment (NIA) formed part of this EA and was conducted by ERM with reference to the Department of Environment, Climate Change and Water (DECCW) Industrial Noise Policy (INP) (**DECCW, 2000**), Environmental Criteria for Road Traffic Noise (ECRTN) (**DECCW, 1999**) and the Environmental Noise Control Manual (ENCM) (**DECCW, 1994**).

The LHBC are now proposing minor modifications to the approval and PAEHolmes has been requested to assess these modifications and their potential impact on noise levels predicted in the NIA (**ERM, 2008**).

2 PROPOSED MODIFICATIONS

The proposed modifications to the LHBC waste processing facility are listed below.

- **Modification 1** – The postponement of the construction of certain buildings and parts of buildings.
- **Modification 2** – The construction of a silo/hopper (within MPC building), with electrically powered conveyor (covered) and chute for the conveyance of shredded waste directly from the processing centre to the bottom of the landfill.
- **Modification 3** – Changing one of the internal roads from one-way traffic to two-way.
- **Modification 4** – The construction of concrete bay walls within the area designated for receipt and processing of green waste.
- **Modification 5** – The relocation of the wheel-wash to a position 100 metres further north on Second Avenue.

PAEHolmes

SYDNEY

Suite 2B, 14 Glen St
Eastwood NSW 2122

Ph: + 61 2 9874 8644
Fax: + 61 2 9874 8904

info@paeholmes.com
www.paeholmes.com

BRISBANE

GOLD COAST

TOOWOOMBA

A PEL COMPANY

3 SUMMARY OF NIA FINDINGS

These results relate to the assessment of the proposed LHBC Eastern Creek Landfill Project prior to the proposal of modifications as listed in **Section 2**.

The results from the NIA (**ERM, 2008**) report were compared with the noise criteria listed by the NSW Department of Environment, Climate Change and Water (DECCW). The report included an assessment of operational, construction and road traffic noise, as well as sleep disturbance and cumulative noise impacts.

It was noted in the NIA that existing noise levels were dominated by traffic and residential noise sources. It was determined that the acoustical environment surrounding the site was typical of an urban environment, as dominated by through traffic on the M4 motorway and Great Western Highway, in particular during peak times including the evenings.

These results indicated that the operational noise emissions were predicted to meet the project specific noise criteria at all receivers during calm and prevailing meteorological conditions. The project was also predicted to comply with construction noise criteria as well as sleep disturbance and cumulative noise criteria.

4 IMPACTS OF MODIFICATIONS ON NOISE EMISSIONS

4.1 Modification 1

The postponement of the construction of certain buildings and parts of buildings is not anticipated to affect the predicted impacts in the NIA. The earthworks activities are expected to be completed within the original timetable and will not require any additional machinery. This modification is simply a postponement of previously approved works and as such would be predicted to meet the same construction noise criteria assessed in the NIA.

4.2 Modification 2

This involves the construction of a silo/hopper (within MPC building), with electrically powered conveyor (covered) and chute. It is anticipated that this modification will reduce potential noise impact at nearby receptors, as the conveyer will replace the need for haul trucks to travel into and out of the pit, reducing noise emissions from the site. While the construction and operation of the hopper and chute will produce some short term noise emissions, these will largely occur within the enclosed area of the MPC building and will therefore be reduced transmission loss through the building envelope.

The MPC building will also provide a noise buffer for the power generation during the operation of the conveyer. Any noise generated from the conveyer activities will be less than those from the haul trucks previously assessed.

4.3 Modification 3

Changing one of the internal roads from one-way traffic to two-way will not have a measureable effect on noise levels during operation as there is not anticipated to be any increase in traffic volumes. Even though this change will move traffic a few metres closer to the residences north of the M4 motorway, it is not expected that the relatively small shift will be discernible at those residences given they are approximately 400 m away. As noted in the NIA, the dominant noise source in the area is through traffic on the M4 motorway and Great Western Highway and so it is unlikely that the vehicles travelling on this internal road will be discernible above the existing traffic noise.

4.4 Modification 4

The addition of concrete bay walls within the area designated for receipt and processing of green waste will not have any negative impact on the noise emissions from the site and may provide some noise reduction due to shielding. The construction of these walls may involve some minor short term construction noise but would not be discernible above existing traffic noise and approved construction activities.

4.5 Modification 5

Relocating the wheel-wash area will not have any impact on the results from the original noise impact assessment. The relocation will take the wheel-wash a matter of 100 m closer to the nearest residences on the northern side of the M4 motorway, but these houses are still more than 400 m from the new location and any increase would not be discernible over the existing traffic noise and predicted operational noise.

5 CONCLUSIONS

Each of the five proposed modifications to the LHBC landfill approval have been investigated in relation to the effect that they could potentially have on the generation of noise at the site. These effects have been compared qualitatively to the results and conclusions in the NIA (**ERM, 2008**) prepared for the development application in 2008.

The only modification which may significantly affect the generation of noise is Modification 4, which proposes to replace the haulage of material by truck, with an enclosed conveyer system. This would have appositive impact on noise emissions by reducing the number of noise sources and enclosing the generator used to power the conveyer.

In summary, the proposed modifications are likely to have an overall beneficial effect on the noise generated from the site.

6 REFERENCES

DECCW 1994

Environmental Noise Control Manual (ENCM), published by the NSW Department of Environment, Climate Change and Water

DECCW 1999

Environmental Criteria for Road Traffic Noise (ECRTN), published by the NSW Department of Environment, Climate Change and Water

DECCW 2000

Industrial Noise Policy (INP), published by the NSW Department of Environment, Climate Change and Water, January 2000

ERM 2008

Noise Impact Assessment for the Light Horse Business Centre, prepared by ERM for ThaQuarry Pty Ltd in August 2008.