

9.1 Comment on Traffic Generated Noise Levels

We expect that there would be generally little noise impact from traffic flow associated with the development as most of the increase are either insignificant or well below the 2 dB permissible increase.

There is a possible exception however in that Hospital Road, north of Barker Street will increase of the order of 4 dB(A) during the morning peak, in excess of the 2 dB(A) recommended in the ECRTN. The PM peak is less significant at 2.1 dB(A) increase. It is likely that the possible exceedance would occur only over a short time period of the day (ie am peak).

This is only a possible exceedance as PB have indicated that the facility would mainly be used by researchers who do not follow standard travel patterns. PB have advised that their projections took a conservatively high risk management approach and that in practice arrival would be expected to be spread across a greater time period. Where the projected peak hour traffic flows are spread over a greater time frame, then the noise increase should reduce to the recommended margin. By way of example where the arrivals are actually spread say between 6.30am and 9.30 am then the noise increase would be within acceptable limits.

Further, we understand that the speed limit is 20 km/hr for Hospital Road. We estimate that where this speed limit is observed, noise levels from the additional AM peak traffic would be of the order of 54 LAEQ(1hr), within the recommended daytime levels of 55 LAEQ(1hr), despite the apparent 4 dB(A) increase.

We note the location of the existing roadway means that noise controls would be difficult to implement without visual impact to the nearby properties. The boundary beyond Hospital Road is also not under the control of POWMRI. As a result of these difficulties and the likely reduced concentration of vehicle arrivals in practice (say a minimum 2 hour period) screening measures are unlikely to be warranted.

9.2 Delivery Bay

Drawing PA-201-D shows a delivery dock at ground level from a separate loading zone access road.

The PB report refers to 73 deliveries per day. The time period is not known however we have understand that most of the deliveries would be made during business hours. As such, the flows would not necessarily be included within the peak hour traffic projections calculated by PB.

We have assumed an overall period of 7am to 5pm for the deliveries. While the delivery pattern is not known the long term average would therefore be of the order of 2 per 15 minute period.

We have prepared an additional analysis of vehicles accessing the loading dock itself and comparing the noise generation with the noise criteria given by item 6 of the Council Condition and discussed in section 5.3.

We have considered the likely noise impact due to a truck manoeuvring into the dock, assessed at the nearest residential properties across Hospital Road at approximately 30 metres distance.

Based on previous measurement records of small to medium size non refrigerated trucks would generate noise levels of the order of 60 to 68 L_{Aeq} at the residential boundaries as they enter or exit the loading zone. (approximately 10-20 seconds duration). Refrigerated trucks are likely to be noisier due to the motor driven Thermopac, however these vehicles are unlikely to be required for the NRP as the loading dock is not serving a supermarket or the like.

We also understand that there are currently infrequent deliveries of gas via an articulated gas tanker. This would be maintained under the new loading dock arrangement.

Reverse Beepers

We have also considered the additional effect of reverse beepers. As the loading zone can generally be accessed in the forward direction, reverse beepers should sound only as the vehicles are reversing into the dock itself.

There would be an exception to this due to the infrequent gas deliveries. In this instance the gas tanker will not fit into the loading dock and instead will stop on Hospital Road and reverse into the loading zone. This means that the reverse beeper would be in closer proximity to the residential boundaries than that on other smaller delivery vehicle driving forward into the loading zone. We understand however that this is the situation with the current loading dock arrangement and as a result noise levels from the gas deliveries would not change significantly.

For general delivery vehicles however, equipped with a reverse beeper at 90 dB(A) at 1 metre, the estimated noise level at the residential boundary would be 60.5 dB(A), assuming a forward approach to the delivery zone. The L_{Aeq} contribution over 15 minutes would be 46 dB(A) allowing for 2 trucks in that period (each taking 15 seconds to reverse into the dock). Allowing for a tonality correction of +5 dB(A) would result in a level of 51 $L_{Aeq}(15 \text{ minute})$.

The following noise data (non refrigerated trucks) has been incorporated from previous surveys on order to develop a model:

Description	Duration	Measured LAEQ(Duration)	Calculated LAEQ(15 minute)
12t Tautliner	15	60.2	42
6t Pantech 1	11	67.5	48
6t Pantech 2	18	62.1	45
6t flat tray	18	62.0	45
Total for 4 vehicles (per above) in 15 minutes			54.8 allowing for entry + exit
Total for 2 vehicles (say 2 x 6t Pantech @ 67.5 @ 62.1)			53.1 allowing for entry + exit
Reverse beeper contribution for 2 deliveries			51

The total estimated LAEQ(15 minute) is 55 dB(A) when including the reverse beeper.

From the above we expect that the noise derived from the typical Council Conditions may be exceeded by around 4 dB(A) during the daytime hours for 2 deliveries in 15 minutes. This is a similar degree to the predicted exceedances noted in section 9.1

However a review of the existing ambient LAEQ noise data at logger location 3 indicates that the existing ambient LAEQ(15 minute) is already above 55 dB(A) (typically 60 dB(A)) during the daytime hours of 7am to 6pm. This is due to the existing traffic flow along hospital road and other intermittent noise sources. As such the combined loading dock and existing LAEQ noise levels is likely to exceed that existing by approximately 1 – 3 dB(A) in the vicinity of the delivery dock access.

As noted in section 9.1 providing noise reducing screening is difficult to implement without imposing on the residential boundary. In the absence of this provision the following operational procedures should be adopted in order to minimise noise impact to the residential boundaries:

- Ensure that the delivery dock is generally accessed only during the daytime hours of 7am to 6pm Mondays to Fridays. We understand that it may be necessary however to accept gas deliveries outside of normal business hours as the truck would block access to the loading dock. In such instances the deliveries should be made prior to 10pm however, preparation should be made to revert to business hours deliveries where necessary.
- Ensure vehicle are driven forward into and out of the loading zone, reversing only into the loading dock, in order to minimise the use of reverse beepers.
- Provision of rubberised drop surfaces where equipment and materials is to be unloaded from trucks
- Provide acoustic absorption within the loading dock area (soffits and upper walls) to minimum NRC 0.8 in order to reduce reverberant noise spill and reflection, particularly from reverse beepers.

Noise control could also be achieved by specifying reverse beeper types and noise levels however this is unlikely to be feasible as POWMRI would have no control over individual delivery vehicles.