

7 November 2019

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via email

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**Re: Georges Cove Marina – background noise levels and project noise trigger levels**

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Dear Ms Barker,

On 23 October 2019, the Environment Protection Authority (EPA), Liverpool City Council, Benedict Industries, Mirvac and technical experts engaged by Benedict Industries met to discuss acoustic and contamination matters in relation to the Georges Cove Marina application before the Council. As part of this discussion, EPA requested further information regarding background noise levels and the project noise trigger levels used in the *Noise and Vibration Impact Assessment (NVIA)* (April 2019) that is provided in Appendix H1 of the *Georges Cove Marina Environmental Impact Statement* prepared by EMM Consulting Pty Limited (EMM) (May 2019). This information is provided below along with a summary of the noise management measures that will be implemented to minimise disturbance to residences from boats using the marina.

## 1 Background noise levels and project noise trigger levels

The existing noise environment in the area surrounding the Georges Cove Marina site is discussed in Section 3.2 of the NVIA. Existing ambient and background noise levels at representative assessment locations that were used for the noise assessment have been reported in the following previous reports:

- *Georges Cove Marina – Noise Impact Assessment* prepared by EMM (17 June 2015) (EMM 2015); and
- *Liverpool City Council v Moorebank Recyclers Pty Ltd & Ors and Benedict Industries Pty Ltd & Ors v Minister for Planning & Ors – L&EC Proceedings No 2016/159652 and 2016/157848 - Expert Evidence of Renzo Tonin – Acoustics* prepared by Renzo Tonin & Associates for the NSW Land and Environment Court (17 August 2016) (the Tonin report).

Baseline noise monitoring, including unattended and attended noise monitoring, are described in sections 3.2.1 and 3.2.2 of the NVIA, respectively. Noise monitoring and assessment locations are shown on Figure 3.1 of the NVIA, which is provided in Appendix A of this letter.

### 1.1 Rating Background Levels

The Rating Background Levels (RBLs) adopted in the NVIA (shown in Table 3.2 of the NVIA) were selected from the aforementioned reports.

Assessment location R10, immediately to the north of the marina site (refer to Appendix A), is the potentially most affected residential receiver within the Moorebank East residential development. This was the focus of discussions at the 23 October meeting and the location for which the EPA requested further information on the adopted RBLs. Determination of the RBLs for assessment location R10 is described below.

The NVIA used the same daytime RBL for R10 that was used for locations M8B and M11 (measured at these locations) in the Tonin report<sup>1</sup>. Locations M8B and M11 are the nearest existing residential locations to R10 (refer to Appendix A). Once Moorebank East is fully developed, it is expected to have a noise climate similar to that measured at M8B and M11 which are in an existing fully developed suburban area close to R10 and hence the only logical proxy locations for R10. Therefore, it is appropriate to adopt the same daytime RBL for R10 as determined (in the Tonin report) for M8B and M11.

The Tonin report did not include noise data for the evening or night periods at M8B and M11. Hence, the evening and night-time RBLs for R10 were adopted from EMM's report dated 17 June 2015. The location of L3 is considerably more sheltered from major roads and hence provides a conservative representation of R10 (ie a lower RBL).

The RBLs adopted for assessment location R10 in the NVIA were therefore:

- Day period RBL (same as M8B/M11 from the Tonin report): 51 dB(A);
- Evening period RBL (same as L3 from EMM (2015)): 40 dB(A); and
- Night period RBL (same as L3 from EMM (2015)): 35 dB(A).

The daytime RBL calculated for another noise monitoring location in the vicinity (M8A) was 50 dB and hence is similar to that adopted for R10. For the evening and night periods, the RBLs calculated for two other monitoring locations (L2 and L4) were the same or higher (by up to 3 dB) than the RBLs adopted for R10. Therefore, the RBLs adopted in the NVIA for R10 are appropriate, if conservative, for the purpose of the NVIA.

## 2 Project noise trigger levels

The intrusiveness noise levels provided in the NVIA for the day, evening and night periods for each location were calculated based on the location RBL + 5 dB.

The amenity noise levels that are provided in the NVIA for each location were based on the trigger levels specific to the land use. A 'Suburban' land use type applies to all existing and future (ie Moorebank East residential development) residential assessment locations.

For each assessment location, the project noise trigger levels (PNTLs) adopted in the NVIA were the lower of the intrusiveness level or amenity noise level in accordance with the *Noise Policy for Industry* (NPfI) (EPA 2017). The intrusive noise level was lower than the amenity noise level for all locations. The PNTLs are presented in Table 4.3 of the NVIA.

The predicted day and night-time noise levels reported in the NVIA were below the PNTLs at all locations. The predicted evening noise levels were below the PNTLs at all locations with the exception of R10 where the  $L_{Aeq,15min}$  54 dB is predicted to be above the PNTL of 45 dB.

This is our best forecast of the applicable PNTL for R10 but we believe that it would be reasonable for the RBL to be confirmed, and adjusted if required, once the residences have been built.

As stated by Mirvac at our meeting, these will be premium residences and will be built with air conditioning as standard. There will also be further opportunities for a cooperative solution to any interface issues between the marina and proposed residential as Mirvac and Benedict are working together to develop both projects.

Given that the occupiers of the properties on the southern boundary of the Moorebank East residential development will be fully aware of the marina development prior to purchasing (or renting) the residence, it

<sup>1</sup> The same assessment location IDs were used in the NVIA and the Tonin report.

would be appropriate that internal noise targets are set based on AS2107 of 35 dB in bedrooms at night and 40 dB in living rooms during the day. This will require adoption of appropriate building treatment to insulate against marina noise within the residences. With the doors/windows facing the marina closed standard construction will provide an approximate reduction in noise levels of 20 dB, and will ensure internal targets described herein will be satisfied. The requirement to close doors/windows to achieve noise targets will mean appropriate ventilation will be required for these homes (eg mechanical air conditioning in accordance with BCA), which Mirvac has committed to as per discussions at the 23 October meeting.

### 3 Feasible and reasonable mitigation and management measures during operations

Noise mitigation and management measures that will be implemented during the operation of the marina are provided in Section 6.1 of the NVIA. These are summarised below.

The marina berthing operations will be restricted to between 7 am and 10 pm seven days a week.

A speed limit of 4 knots will be enforced in the marina basin (refer to EIS Table 7.1). This will minimise engine noise.

Further, noise will be minimised through the implementation of Marina Occupation Agreements between the marina owner and the marina members (refer to EIS Section 5.4). The agreements will apply to every craft and vessel berthed at the marina and will include the general marina rules. These agreements will include specific obligations which will be enforced through a compliance bond system and specific inspections and monitoring. The marina manager will be able to levy penalties and charges in accordance with the Marina Occupation Agreements in relation to breaches of key obligations, such as preventing the creation of “unacceptable creation of noise”.

Furthermore, a code of conduct for boat drivers will be implemented to reduce risks associated with the use of boats at the marina, including that of noise pollution. A code of conduct for boat drivers will be implemented to ensure that drivers adhere to marina rules and associated procedures. The code of conduct for boat drivers will include the following measures as a minimum:

- boaters based at the Marina are to hold an NSW Maritime licence as applicable to their vessel;
- boat drivers based at the Marina are required to go through a marina induction training;
- boat drivers based at the Marina will provide a copy of their boat licence and contact details;
- boat maintenance or repairs will occur during daytime hours only;
- unreasonable driver behaviour (eg unnecessary revving of boats) will not be tolerated, and boats are to be operated in a proper manner;
- speed limits shown on instruction signage will be enforced by banning repeat offenders; and
- all boats are to be switched off when not in use.

Furthermore, the following measures will be implemented to prevent recurrence of any excessive noise incidents:

- marina contact details will be provided at the front of the site and on the marina website;
- incidents (eg noise complaints) will be investigated and recorded in a register;
- management actions are to be taken to address any incidents; and

- a review of the effectiveness of the measures will be conducted periodically by the marina manager.

## 4 Conclusion

We trust the above provides the clarifications that you need and if you require anything further please contact our office.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Najah Ishac', with a stylized, cursive script.

**Najah Ishac**

Director

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Reviewed by P. Towler on 6/11/2019

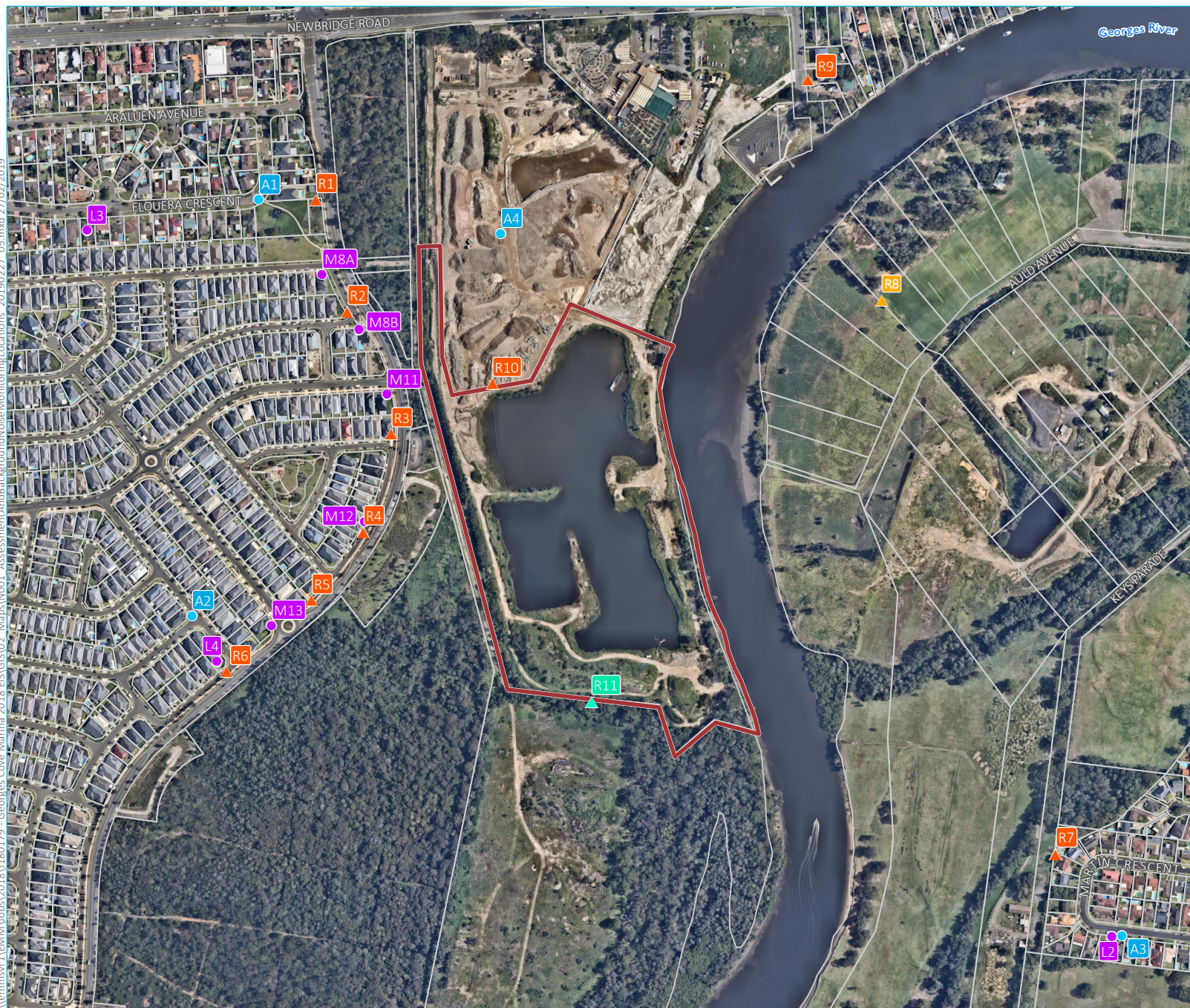
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Appendix A

# Figure 3.1 of the NVIA

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- KEY**
- Site boundary
  - Cadastre
  - Assessment location**
  - ▲ Residential
  - ▲ Active recreation
  - ▲ Industrial
  - Noise monitoring location**
  - Attended
  - Long-term

Noise monitoring and assessment locations

Georges Cove Marina Planning Proposal  
Noise and vibration impact assessment  
Figure 3.1