



297 Te Puna Station Road

Proposed Industrial Development

Te Puna, Tauranga

OPERATIONAL NOISE AND VIBRATION S92 QUERIES

Date: 29th March 2023

Prepared for: Te Puna Industrial Limited

Prepared by: Earcon Acoustics Limited

Reference: J005252.S92.1

Application #: RC13360L



Document Control

297 Te Puna Station Road, Te Puna, Tauranga
Proposed Industrial Development
Operational Noise and Vibration – S92 Queries
J005252.S92.1

| Contact | Issue | Date | Rev |
|--|------------------|------------|-----|
| Alex Jacob alex.jacob@earcon.co.nz | For S92 Response | 29/03/2023 | B |

ONVA Queries dated 9th March 2023

Thank you for the review and comments on the ONVA dated 24/01/2023 for the proposed development at 297 Te Puna Station Road. The following responses pertain to the queries raised:

Query

1. What reduction in noise is the fabric roofed workshop area assumed to provide to workshop noise within the model?

Response

The proposed fabric roofing of the workshop area was disregarded acoustically. It was assumed to have no effect on noise propagation, and as such, the workshop was modelled without a roof (i.e. wall shielding only.) The following cross section from the modelling is representative of the noise propagation from the workshop.

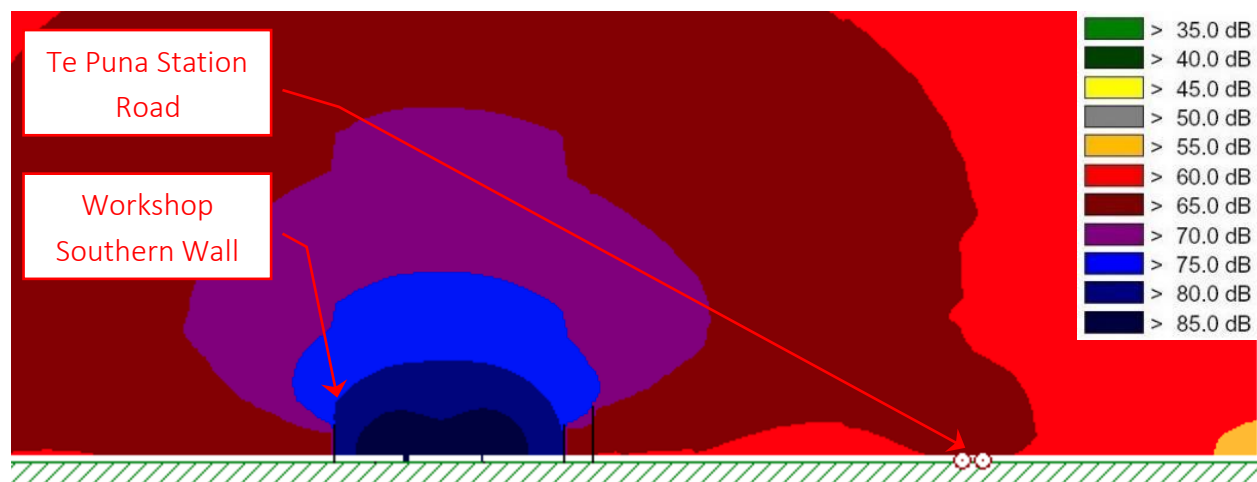


Figure 1 - Cross Section of the Workshop at Alternate Location (N-S Section facing West)

Query

2. Is the stacked container wall to mitigate the reefer noise (noted in Section 9.3) required to be permanent and not formed of containers moving in and out of the yard?

Response

Confirmed. The reefers require specific consideration and mitigation, and the proposed wall is intended as a permanent shield. It is our understanding this wall would be constructed using containers owned by the facility operator, and as such can be formed permanently and will not need to be regularly moved.

Query

3. The predicted noise levels appear to include noise from road and rail activities occurring off site?

Response

Confirmed. The assessment of noise effects conservatively takes into account cumulative effects over the current ambient noise environment associated with road and rail activities. In situations where the ambient noise levels are well below the zone noise limits, this would not usually be necessary.

For the subject area however, there is significant variance in ambient noise levels between receivers. Where receivers are in proximity to road or rail traffic, noise levels are generally already high relative to the compliance limits.

We note for reference that while we could technically disregard road traffic (as per the provisions of *Western Bay of Plenty Operative District Plan – 4C.1.3.3(e)*) there is no provision to similarly disregard railway noise. As such, and as a conservative measure, noise levels were assessed with both road and rail noise taken into account as ambient noise.

Query

4. Please provide a table of predicted noise levels at the notional boundary of receivers (day and night) from activities only occurring within the site boundary.

Response

The diagrams in the following pages are representative of predicted noise levels from the operation of the site only (disregarding all existing noise sources and ambient noise.) The numerical values in rectangles are representative of the predicted noise levels at notional boundaries (or boundaries in the case of industrial zones) of each receiver.

In addition, the following table pertains to examples of these noise levels at the closest receivers.

We note the predicted noise levels would be within the compliance limits at all receivers during all times.

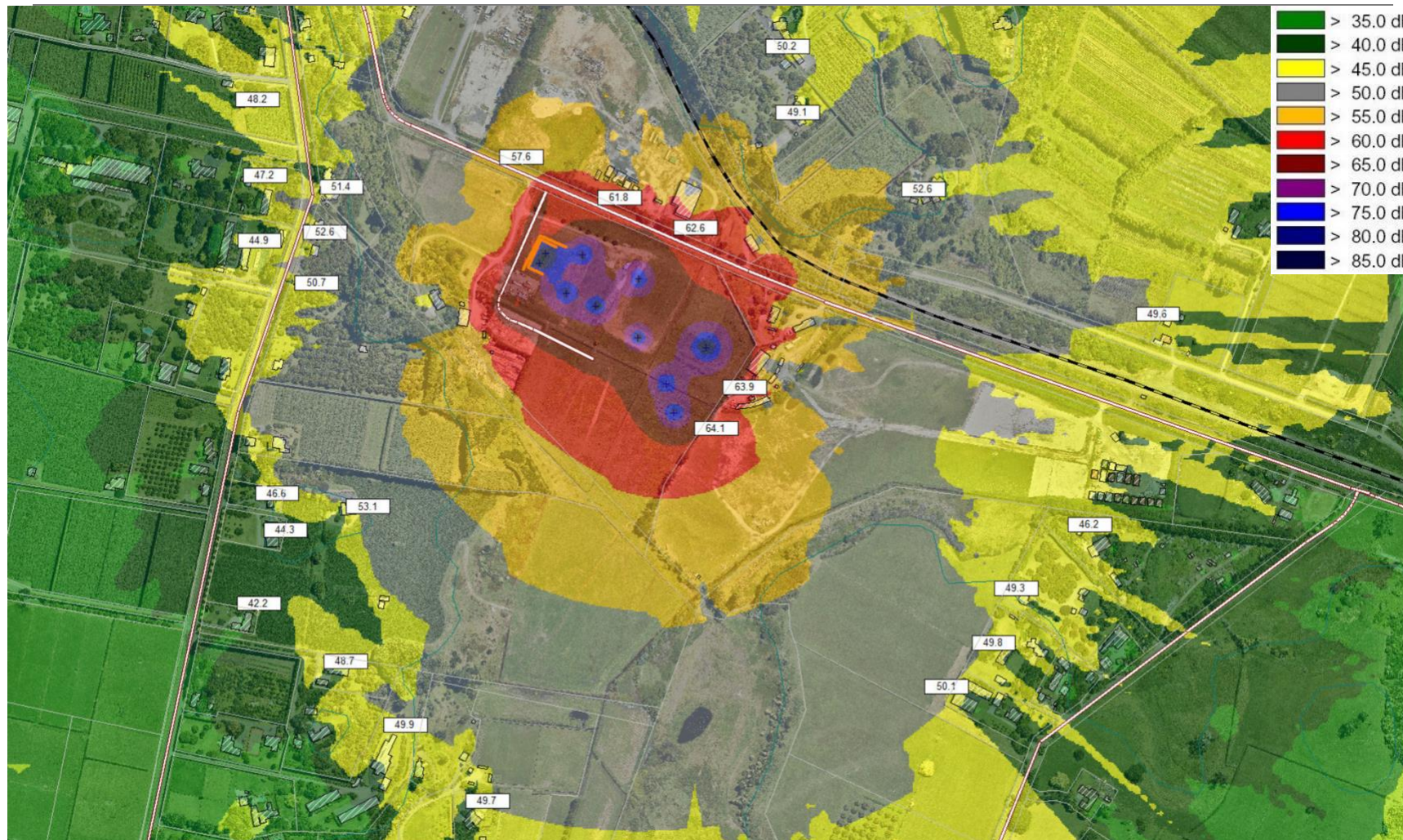
| Zone | Receiver | Highest Predicted Noise Levels (Leq) | |
|-------------|---------------------------|--------------------------------------|------------|
| | | Daytime | Night time |
| Residential | 148 Te Puna Road | 52 dBA | 40 dBA |
| | 138 Te Puna Road | 51 dBA | 39 dBA |
| | 118 Te Puna Road | 51 dBA | 37 dBA |
| | 112 Te Puna Road | 52 dBA | 38 dBA |
| | 110 Te Puna Road | 53 dBA | 40 dBA |
| | 66A Te Puna Road | 50 dBA | 41 dBA |
| | 56E Te Puna Road | 50 dBA | 39 dBA |
| | 139 Clarke Road | 50 dBA | 34 dBA |
| | 145 Clarke Road | 50 dBA | 34 dBA |
| | 149 Clarke Road | 49 dBA | 35 dBA |
| | 161 Clarke Road | 46 dBA | 36 dBA |
| | 177 Clarke Road | 44 dBA | 37 dBA |
| | 42 Teihana Road | 50 dBA | 40 dBA |
| | 76 Teihana Road | 53 dBA | 39 dBA |
| | 71B James Road | 49 dBA | 41 dBA |
| | 288B Te Puna Station Road | 51 dBA | 42 dBA |
| Industrial | 245 Te Puna Station Road | 64 dBA | 53 dBA |
| | 250 Te Puna Station Road | 63 dBA | 51 dBA |

Model

Predicted Noise Levels (Daytime Compliance) – Full Activities at Container Operation –
Alternative Workshop Location – No Public Traffic

Receiver Height

1.5m above ground level



Model

Predicted Noise Levels (Night time Compliance) – Reefers Running – Traffic excluded

Receiver Height

1.5m above ground level

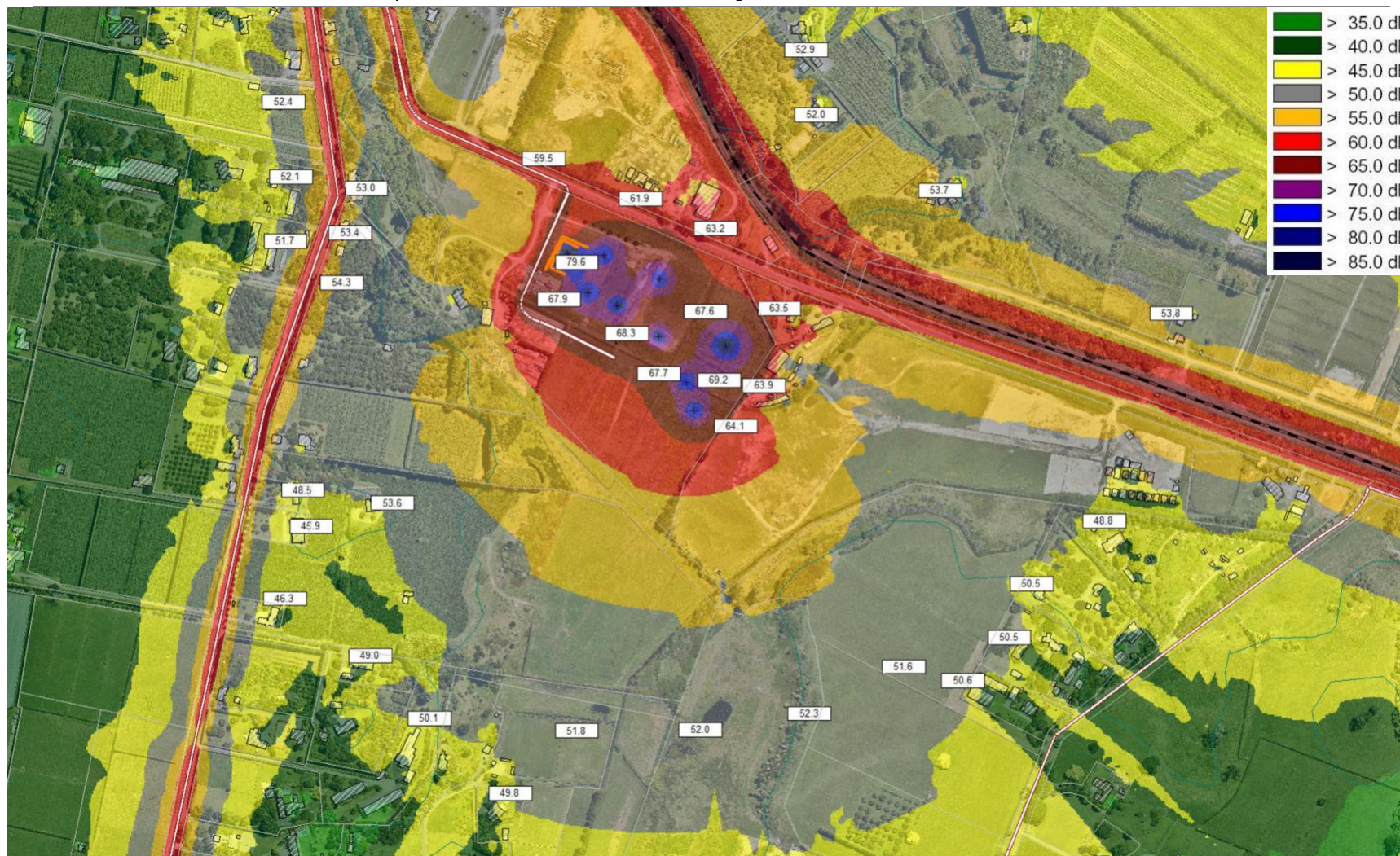


Model

Receiver Height

Predicted Noise Levels (daytime amenity assessment)– Full Activities at Container Operation – Public Traffic increased –
Te Puna Station Road Closed – All Facility Traffic directed west of the site through/from Te Puna Rd.

1.5m above ground level



Query

5. Please review/model the impact on noise amenity (section 9.4 of the Acoustic Report) from the potential change in traffic flows should the southern end of Te Puna Station Road be permanently closed. For example, with all Business Park Traffic directed via Te Puna Road, we would expect to see more transport noise impacts on residents in the vicinity of Te Puna Road/Te Puna Station Road intersection and the Te Puna Road corridor.

Response

The figure above for assessment of amenity (i.e. including traffic on public roads) is representative of noise levels associated with the potential closure of Te Puna Station Road at the southern end. This would result in all facility traffic being directed through/from Te Puna Road to the West. For example, All traffic exiting the site would in this context turn left. For reference, this amenity assessment supersedes the previous assessment as it represents the proposed alternative location of the workshop being at the western end of the facility.

The highest noise level increases from current ambient levels would be along Te Puna Road from the increased traffic on that road from vehicles travelling to/from subject site. Noise levels along Te Puna Road would generally increase in the order of 5dBA, which would usually be subjectively described as “just louder.”

We note again for context that this pertains to assessment of amenity effects, not compliance (where traffic on public road is exempt.)

Query

6. Please review whether any other updates to the assessment need to be made to make it consistent with the required updated Transport Assessment Report (as noted in Transport above).

Response

The assessment was updated (Revision D dated 27/03/2023) to reference the Transport Assessment Report, and takes into account the potential for the southern end of Te Puna Station Road to be permanently closed. For completeness, the update also includes the noise predictions requested in the queries above.

Query

7. Please include more detailed commentary on the potential noise from stacking containers, and methods to minimise banging.

Response

We fully appreciate the point raised here as noise from steel impact is usually high, sudden, and tonal, making it of special concern pertaining to effects.

We note that the most effective mitigation measure to reduce steel impact noises is personnel training. On a well-managed site implementing best practice measures, steel impact can be generally avoided.

For reference, the operator of the proposed container facility, already operate several similar facilities, some understood to be in closer proximity to sensitive receivers than the subject site. The operator's established measures, understood to be developed and implemented across multiple sites, would be reflected in their Noise Management Plan (NMP).

Query

8. Section 8.24 of the Acoustic Report states in relation to potential noise from adjacent industrial sites, and potential cumulative effects, that "In addition a safety margin is taken into account in consideration of currently unknown nature of the other operations". Please clarify/confirm what this safety margin is.

Response

We note the reference to a safety margin here pertains to the proposed Noise Management Plans for individual operations within the subject site. The safety margins may differ between operations depending on the distances of each to the closest receivers, and the density of operations (i.e. how large each site is.)

The above safety margin becomes less significant for larger facilities (where effects from other facilities is minimal) and more for smaller facilities (where multiple facilities are in close proximity.)

For the avoidance of doubt, we note this would be specific to each operation, albeit the minimum safety margin for all sites would be at least 1dBA.

As an example, for two adjacent operations in close proximity, the safety margin would be in the order of 2dBA above the cumulative of both operating at equal highest noise levels simultaneously.

Query

9. The modelling is based on noise at a height of 1.5m. The proposed acoustic bunds are 2.0m in height. Please outline the amount of mitigation that acoustic bunding will provide and whether they will cause any sound deflection. Also provide specific assessment of the noise levels unbuffered at height (given that refrigerated containers are proposed to be stacked above the height of acoustic bunds), and then confirm the degree of acoustic mitigation that the proposed container wall will provide. Note – this assessment will need to be based upon a confirmed location for this facility.

Response

The modelling used for noise predictions disregards the proposed acoustic bund. A 2m high bund, even if the terrain was flat, was assessed to make circa 1dBA difference in noise levels at receivers based on the proposed locations of works. As a conservative measure, this was disregarded and the bund is not included in the modelling.

Query

10. At the applicant meeting held on 1/03/2023, Ms Harris stated that permanent noise loggers would be in place for noise monitoring from the site. Please confirm this in writing and demonstrate the proposed location(s) on the site plan. Also confirm how the results would be recorded and reported to Council on a regular basis. Also detail how often the loggers will need to be calibrated and maintained.

Response

The nature of the other proposed facilities is unknown at this stage, and as such we are unable to confirm exact proposed locations of noise monitors. We note the locations would form an integral part of the Noise Management Plans. Nevertheless, we note that adequate monitoring would require no less than 2 automated monitors covering the southern and northern areas respectively at locations along a general line between the highest noise sources and the closest receivers.

For reference we note that:

- Noise monitors are required to have alert and notification capabilities (e.g. email or text alerts,) triggered if noise levels approach or exceed the configured compliance limits at the location of the monitor.
- Logging would depend on the make and model of the monitor. Preference should be given to models capable of regularly uploading data to web based interfaces accessible

by stakeholders. Otherwise, regular manual extraction, compilation and circulation of data would be required.

- With regards to calibration, monitors (depending on make and model) usually require calibration by an authorised testing facility once every two years. In addition, modern monitors can have Charge Injection Calibration (CIC) whereby the measurement channel and microphone are self-verified as regularly as required (usually configured for daily checks).

Query

11. The updated AEE states that the Container Co facility would operate from 7am – 6.30pm Monday to Saturday. However the Acoustic Report states Operations to be limited to hours of 7am to 6pm. Please confirm the operating hours sought, and if operating beyond 6pm is proposed, please provide further justification for why this is acceptable. Please also confirm that the facility will not operate on Sundays or Public Holidays, and whether the refrigerated containers would still be running/generating noise on those days.

Response

We can confirm that:

- The facility will not operate on Sundays or Public Holidays.
- The hours of operation during Monday to Saturday is proposed to be 7am to 6:30pm.
- Refrigerated containers would run 24/7, including weekends and public holidays.

The above has been reflected in the updated assessment (Revision D – 27/03/2023.) We note for reference that in accordance with the Western Bay of Plenty Operative District Plan, the same noise limits that apply at 6pm would also apply at 6:30pm. Daytime noise limits, in accordance with the plan, apply at all receivers in the vicinity until 10pm during weekdays. As such the above update would have no effect on compliance considerations.

Query

Noise Management Plans:

The proposal for multiple NMPs for approval from the Council each time will be quite complex for Council to effectively manage, it appears to push the onus of managing noise individual uses from within the site to Council rather than the owner/operator of the wider site.

1. It is not clear how the overall management of noise from the site would take place. An example noise management plan may assist in understanding how they would all interact together as proposed.

2. How will it be made clear in NMPs who is ultimately responsible for ensuring the plan(s) is/are implemented and where the overall 'noise budget' will be retained / confirmed for other NMPs. This is especially important given the proposal for multiple activities operating independently – further clarity on this matter should be provided.

Response

We fully appreciate the concern here, and note the intent of the NMPs is actually to put the onus on the operators to manage and control their processes, equipment, layouts, operations, etc. To alleviate the concern noted, and as per the assessment report (Revision D dated 27/03/2023), we updated the noise management process to the following:

Overall Site Noise Management Plan (*Master Noise Management Plan*):

The Master Noise Management Plan would cover the requirements of the whole site, and would demonstrate to the Council how the compliance limits at all receivers would translate to noise limits at the boundaries of the site, and for each of the operations, and at the monitoring locations for compliance monitoring.

- This plan would be prepared and submitted to Council prior to operation of any facilities.
- This covers all the operations proposed to start at that time (may only be 1 or 2 facilities) and the layout of each facility/operation and noise sources.
- This master plan Includes the typical information in a noise management plan, applicable to the whole site, such as operating hours, operational restrictions (e.g. no amplified music externally,) monitoring requirements (e.g. locations of monitors,) best practice guidelines (e.g. placing items without dropping them,) personnel training, etc.
- This master plan would include Regulatory Compliance limits at receivers and the resulting required noise levels at the overall site boundaries and the proposed monitoring locations based on the layout of each facility. (This could be presented as a noise contour or limits at the site boundaries resulting in compliance at receivers)

- In addition, this master plan would include a section covering each of the proposed operations at the time, and the noise limits applicable to each at their external boundary (boundary of the overall site,) and between sites if necessary. These could also be represented as noise contours or noise limits on a map.
- The allocation of noise levels to each operation (to the cumulative noise limits) would be decided by the site management provided the cumulative levels are within the required boundary compliance limits (e.g. first come first served, or equal allocation, etc.)
- The Master Noise Management Plan would need to be reviewed and approved by the Council to ensure the proposed noise levels would result in compliance and reasonable effects at the neighbours.
- The Master Noise Management would need to be resubmitted to Council for approval if new facilities/operations are added or if existing operations require material changes to the individual noise limits.
- It would usually be recommended that a Noise Officer is appointed by the entity responsible for the overall subject site. The Noise Officer would be responsible for implementation of the plan and coordination with individual operations.

Individual Noise Management Plans

The noise limits for each operation, would be reflected in individual Noise Management Plans for each operation, which would include mitigation measures, procedures and restrictions specific to that operation.

These individual Noise Management Plans would not usually require approval from council, but may need to be made available to council. These are intended to detail the mechanisms specific to each operation that would result in compliance. It would be the responsibility of each operation to comply with their allocated noise limits as per their management plan.

This is similar to individual operations on individual lots within industrial zones. Each is required to comply with noise limits at their own boundaries. For example the mitigation measures required of a warehousing facility would differ significantly from a manufacturing facility.

The specifics of each operation are likely to be technical, and it would not be reasonable to require the Council to delve into the mechanics of each operation. The intent of the individual plans is to ensure each operation develops and implements management procedures that result in compliance with the noise limits in the master plan.

Example noise plan – demonstration only

The example on the page below is of a noise map for the site covering example compliance noise limits at the boundaries both cumulative and specific to different operations. This is based on the first operation being the Container facility and each of the other facility having noise sources at circa 25m from the boundaries.

For example as per the figure below, each of Facility #2 and #3 can only generate 55 dBA near the boundary between them at the southern site boundary. This would result in the cumulative noise from them and the other facilities to be within compliance at the receivers (cumulatively 60dBA at the southern boundary.)

We note for the avoidance of doubt that the sample noise map below is presented as an example only, and the noise limits are presented for demonstration purposes only.

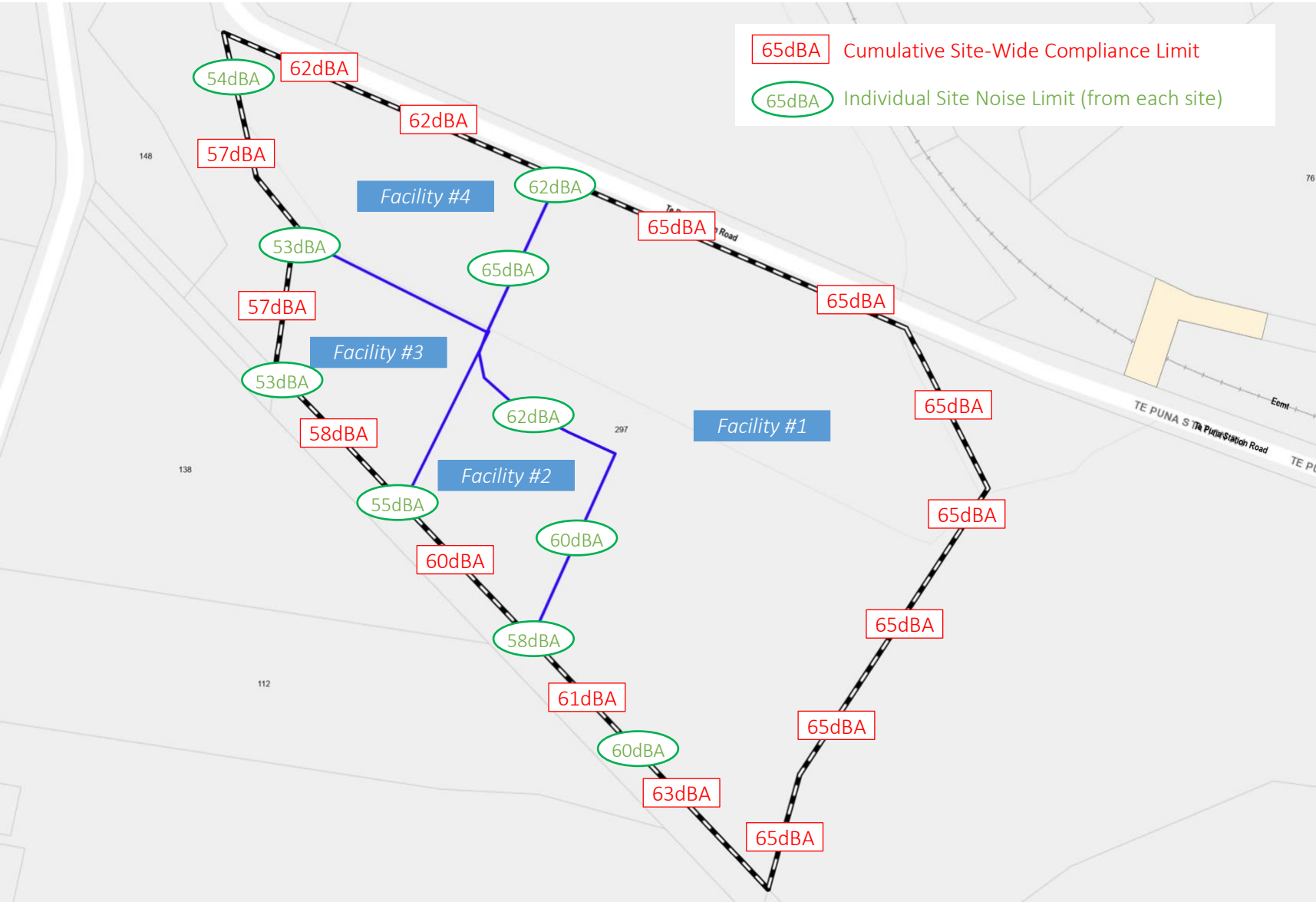


Figure 2 - Sample Cumulative and Individual Noise Limits - Demonstration Only

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