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From: James Boland

Company: Myland Partners

SLR Consulting New Zealand

cc: Charlotte MacDonald
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Project No. 880.016699

**RE: Delmore
Wastewater Treatment Strategy – Updated Operational Noise Assessment**

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1.0 Introduction

SLR has been engaged to provide an update to the assessment of noise effects for the project, specifically relating to the revised strategy for wastewater treatment.

The review considered the following project design information:

- Letter titled *On Site Wastewater – 88, 130, 133 Upper Orewa Road and 53A, 53B, 55 Russell Road, Orewa*, prepared by Commute, dated 3 July 2025.
- Lot plan drawing titled *Rev B Change Plan*, prepared by Terra Studio, dated 13 June 2025.
- *Technical Note – Truck Movements and Volumes*, TN.02, prepared by Apex Water, dated 2 July 2025.

The revised strategy includes the same proposed Wastewater Treatment Plant (WWTP) location and activity as previously assessed but now includes transport of waste material from the site to external locations, using trucks collecting material directly from a remote off-site truck filling point.

This document provides the results of the assessment of noise effects for the proposed revised wastewater treatment strategy.

2.0 Activity Overview

Waste material generated by the WWTP would typically be removed from the site building by trucks taking away skip bins (previously assessed, and still no more than one truck per day) or pumped to the truck filling point approximately 250 m south of the WWTP. The location of the WWTP and the proposed truck filling point is shown in Figure 1.

The proposed truck transport routes to and from the filling point are shown in Figure 2.

2.1 Contingency Scenario

A project design contingency scenario has been considered where all waste material would bypass the WWTP, be stored in tanks, then be pumped to the truck filling point. The maximum potential “worst-case” number of truck movements to the truck filling point would not change from the typical operating scenario, and the occasional collection of sludge from the WWTP would not occur during this period. As such, the noise emission scenario where the WWTP is not operating has not been considered further in the assessment of noise.

Figure 1 WWTP and Remote Filling Point Location



Figure 2 Proposed Truck Transport Routes



Image source: Commute letter.



3.0 Performance Standards

Noise limits are prescribed in the Auckland Unitary Plan (AUP). It is understood that the site and the surrounding area will likely be re-zoned in the future to become Residential – Mixed Housing Suburban Zone. The noise limits shown in Table 1 associated with the future zoning are more stringent than under the existing zone limits and so have been adopted to provide a conservative assessment.

Table 1 Applicable Operational Noise Limits (Standard E25.6.2)

Time Period	Noise Level
Monday to Saturday (7:00am to 10:00pm)	50 dB LAeq
Sunday (9:00am to 6:00pm)	
All other times	40 dB LAeq 75 dB LAFmax

4.0 Noise Assessment

4.1 WWTP Operational Noise

SLR prepared a report to support the Fast Track Application (SLR report reference – 880.016699-R01-v1.0-20250211.pdf) which included an assessment of noise from operation of the proposed on-site WWTP and truck movements associated with removal of waste material directly from the WWTP site.

Based on the proposed WWTP design, the SLR report showed that WWTP activity noise levels could comply with the future AUP noise limits.

The nearest residential lots are located more than 50 m from the WWTP. Based on the assumption that any additional pumps required to achieve the proposed pumping of waste material from the WWTP would be housed inside the WWTP building with the other pumps, WWTP noise levels at receivers would be expected to be able to meet the AUP limits. As such, the effects of noise from the operating WWTP would be considered reasonable.

In summary, noise from the WWTP facility as a result of this change remains as assessed in the SLR report.

4.2 Additional Truck Activity

The additional truck activity considered relevant in terms of noise emission relates to truck movements at the truck filling point and the transport of material on public roads, noting that noise from vehicle movements on public roads is not controlled by the AUP. The following sections provide an assessment of these sources of noise.

4.2.1 Number of Truck Movements

The expected quantity of truck movements associated with transport of the waste material from the truck filling point is provided in the Commute letter as follows:

The majority of the time (99%) there will be up to one truck (two movements) per hour. Even outside this time, there will in practice only ever be three truck movements per hour.

The memo is based on a Fonterra truck and trailer tanker which has a capacity of 28.8 m³.



4.2.2 Truck Filling Point

It is understood the waste material would be pumped under pressure from the WWTP to the truck filling point, and the trucks would simply accept the flow from a fill coupling. As such, noise associated with truck filling activity would comprise noise from the truck moving or sitting at idle. Trucks would generally take material from the filling point during standard hours (Monday to Saturday 7:00 am to 10:00 pm) however there may be instances when material collection is undertaken outside of those hours.

4.2.2.1 External Receivers

The nearest part of the truck filling area is approximately 105 m from the nearest noise assessment location, being the receiver at 54 Russell Road. Assuming the truck arrived at the filling area and the truck engine was switched off within approximately five minutes, the noise from truck movements in the truck filling area would be expected to comply with the night-time noise limits at 54 Russell Road, the predicted noise level being 30 dB LAeq(15 min). Noise from the operation of the WWTP would not significantly contribute to noise at this receiver. As such, the effects of noise from the truck activity at the external receivers would be considered reasonable.

Based on measurements of truck noise the typical difference between the LAeq noise emission level and the LAmix noise emission level ranges from 5 to 15 dB. As such, compliance with the LAeq based noise limit would be expected to also result in compliance with the LAmix based noise limit.

4.2.2.2 Internal Lots

The latest lot plan, included in Figure 3, indicates the truck filling activity could be within approximately 45 to 55 m of the nearest proposed residential lots to the north-east, and directly adjacent to lots to the north.



Figure 3 Proposed Truck Filling Point



Unmitigated noise levels from the truck filling activity can be summarised as follows:

- Predicted to comply with the daytime and night-time noise limits at the nearest lots to the north-east of the truck filling area.
- Predicted to comply with the daytime noise limit but exceed the night-time noise limit by some margin at the adjacent lot to the north.

An acoustic barrier would likely be the most effective option for reducing noise from the truck filling area. An acoustically effective barrier at least 3.0 m high on the alignment marked in Figure 4 is predicted to result in a noise level of 41 dB LAeq(15 min) at a single storey dwelling located on the nearest lot to the north, which would be a residual exceedance of the night-time noise limit of 1 dB. The difference between a complying noise level and marginal 1 dB exceedance is sufficiently small that it would not be expected to be noticeable. As such, the effects of noise from the truck activity at the filler point at the proposed internal lots would be considered reasonable.



Figure 4 Acoustic Barrier – Example Alignment



4.2.3 Road Traffic Noise on Public Roads

As noted previously, noise from vehicle movements on public roads is not controlled by the AUP. The information in this section is provide for information purposes.

The existing road traffic volumes (prior to the development being occupied) for the proposed waste transport routes between the site and State Highway 1 were taken from the Mobileroad¹ database. The traffic volumes and composition for the relevant sections of road along the proposed routes are shown in Table 2.

Table 2 Daily Road Traffic Data – Existing (pre-project)

Road	Traffic Volume ADT	% Heavy Vehicles
Russell Road	92	4
Upper Ōrewa Road	1,342	5
Wainui Road	1,478	20
Grant Drive	17,012	5
Arran Drive (North end)	6,729	11
Arran Drive (South end)	9,263	6
Millwater Parkway	4,024	4

¹ <https://mobileroad.org/desktop.aspx>, viewed 17 June 2025.



It can be seen from Table 2 that the local road network routes between the site and State Highway 1 already includes existing heavy vehicle movements.

The Commute memo states:

In all cases the hourly volume of trucks will be two movements or less (one truck visit). Even using the 99%ile Scenario 2 truck number (15 trucks per day) translates to 30 movements per day.

The additional of 30 heavy vehicle movements (worst case scenario, during peak rainfall event) on the public road network, to and from the truck filling point, would be expected to cause less than a 0.5 dB increase in overall road traffic noise at receivers along most of the proposed route. This change in noise levels is sufficiently small that it would not be expected to be noticeable.

The overall road traffic noise levels at receivers along Russell Road may increase by up to 1.5 dB. Whilst individual truck movements along the road would notably increase, this change in noise levels is sufficiently small that it would not be expected to be noticeable. Further, the actual road traffic noise levels at receivers along Russell Road, given the low traffic volume, would remain reasonable in terms of noise effects.

We trust this information suits your current requirements. Please contact us if you have any queries or comments.

Regards,



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