MARSHALL DAY Acoustics

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9 April 2019

Watercare Services Limited
73 Remuera Road
Remuera
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Attention: Bernice Chiam

Dear Bernice

GREY LYNN INTERCEPTOR

RESPONSE TO S92 REQUEST FROM AUCKLAND COUNCIL

INTRODUCTION

Marshall Day Acoustics (MDA) carried out the assessment of noise effects[1] for the proposed Grey Lynn Interceptor project. Broadly speaking, the project consists of the construction and operation of a gravity sewer and associated drop shafts.

In reviewing the designation and resource consent applications, Auckland Council has requested further information under s92 of the Resource Management Act 1991. The following sets out the further information requested and our responses.

RESPONSES TO NOISE ISSUES RAISED

NOR15 *Please clarify why Condition 4.1 relating to operational noise limits does not address noise at the boundary of sites zoned Special Purpose – School, given that the proposal is on land adjacent to school sites subject to this zoning.*

We consider that where operational noise complies with the Residential Zone noise limits contained in Condition 4.1[2] noise received at the boundary of sites zoned Special Purpose – School Zone will be adequately controlled and will not result in adverse effects in this context. This is on the basis that the Residential Zone limits are 5 decibels stricter than the relevant limits for schools[3].

NOR16 *Please clarify the reference to 'each CNVMP' given that only one CNVMP is required to be prepared and can be updated when necessary (as a 'living document').*

Given that the Project involves 2 stages (Stage 1 – main shaft, chambers and tunnel, and Stage 2 – secondary shaft) a CNVMP is proposed to be prepared for each stage. We note that this is the same approach for Central Interceptor Project.

RC8 *Please advise if the operation of the 4.5m diameter sewer pipeline (post-construction) will give rise to any noise/vibration effects, particularly for dwellings located at the closest vertical distance to the alignment.*

We confirm that no adverse noise effects would be experienced. The locations where noise may be audible at times, post heavy rainfall, would be in the vicinity of the Tawariki Street drop shaft. Based on our

[1] MDA report Rp 002 20180726 *Assessment of Noise Effects* (13 February 2019)

[2] Sourced from Standard E25.6.2

[3] Standard E25.6.24 (the school zone limits) and E25.6.22 (all other zone interfaces provision)

observations and measurements at a similar cascade drop shaft located in Rosedale, the level of breakout noise and its character would not result in adverse effects.

RC9 *Conceptual plant and equipment specifications are provided for construction of the Tawariki Street shafts however in regards to tunnelling, the description is limited to "tunnelling plant". Please advise if further information is available as to the tunnel boring machine likely to be selected for this project and, if predicted regenerated noise levels may change significantly depending on the TBM actually used for tunnelling.*

Watercare can advise as to the selection of a specific model of tunnel boring machine in due course. However, we confirm that our predictions of regenerated noise are not solely dependent upon the model of TBM used. Our predictions are based on a TBM with a diameter of roughly 4m. The diameter of the tunnel Watercare is seeking to construct is 4.5m. Although we recognise that the actual TBM's cutting head will be slightly larger than used in our predictions, we are confident that the change in noise level will be appreciably less than 3 decibels. Notwithstanding, the Project's CNVMP will have appropriate measures in place for managing effects from regenerated noise levels should they exceed the 35dB $L_{Aeq\,(15\,min)}$ criterion.

RC12 *We note that there will be both noise and vibration infringements at a district level under Chapter E25 for the tunnelling works. This was not identified in the AEE. Please outline.*

Our assessment outlined some activities predicted to temporarily exceed the construction noise limits of Standard E25.6.27 (4) and the proposed regenerated noise criterion of 35dB $L_{Aeq\,(15\,min)}$ e.g. vibratory sheet piling and tunnelling where it occurs at depths of less than 18m from dwellings. We consider that the resulting effects can be adequately mitigated and managed via the Project's CNVMP, as occurs on other large infrastructure projects Auckland-wide.

We trust this information is satisfactory. If you have any further questions, please do not hesitate to contact us.

Yours faithfully

MARSHALL DAY ACOUSTICS LTD

Mat Cottle

Senior Consultant