

MEMO

Project:	Huia WTP	Document No.:	Mm 001
To:	Watercare Services Limited	Date:	16 June 2016
Attention:	Alastair Stewart	Cross Reference:	
Delivery:	Email	Project No.:	2016245A
From:	Mathew Cottle	No. Pages:	5
CC:		Attachments:	Yes
Subject	Huia WTP Short-listed Site Noise Contours		

Alastair,

MDA has prepared preliminary noise contours for the following short-listed sites:

- Woodlands Park upgrade
- Manuka Road
- Parker North (Parker 1)
- Parker South (Parker 2)

The objective is that the noise contours can be used to assist and inform the land acquisition process. From a noise perspective, having reasonable setback distances between noise generating plant on site and the nearest dwellings provides a buffer that can allow for the addition of more plant in the future within a reasonable noise budget.

We have predicted the 40dBA noise contour (the current night-time noise limit in the Operative District Plan) for each short-listed site and overlaid the results on aerial imagery. The predictions assume that each site is an 'area source' in terms of noise generation and use the existing ground contours available via Auckland Council.

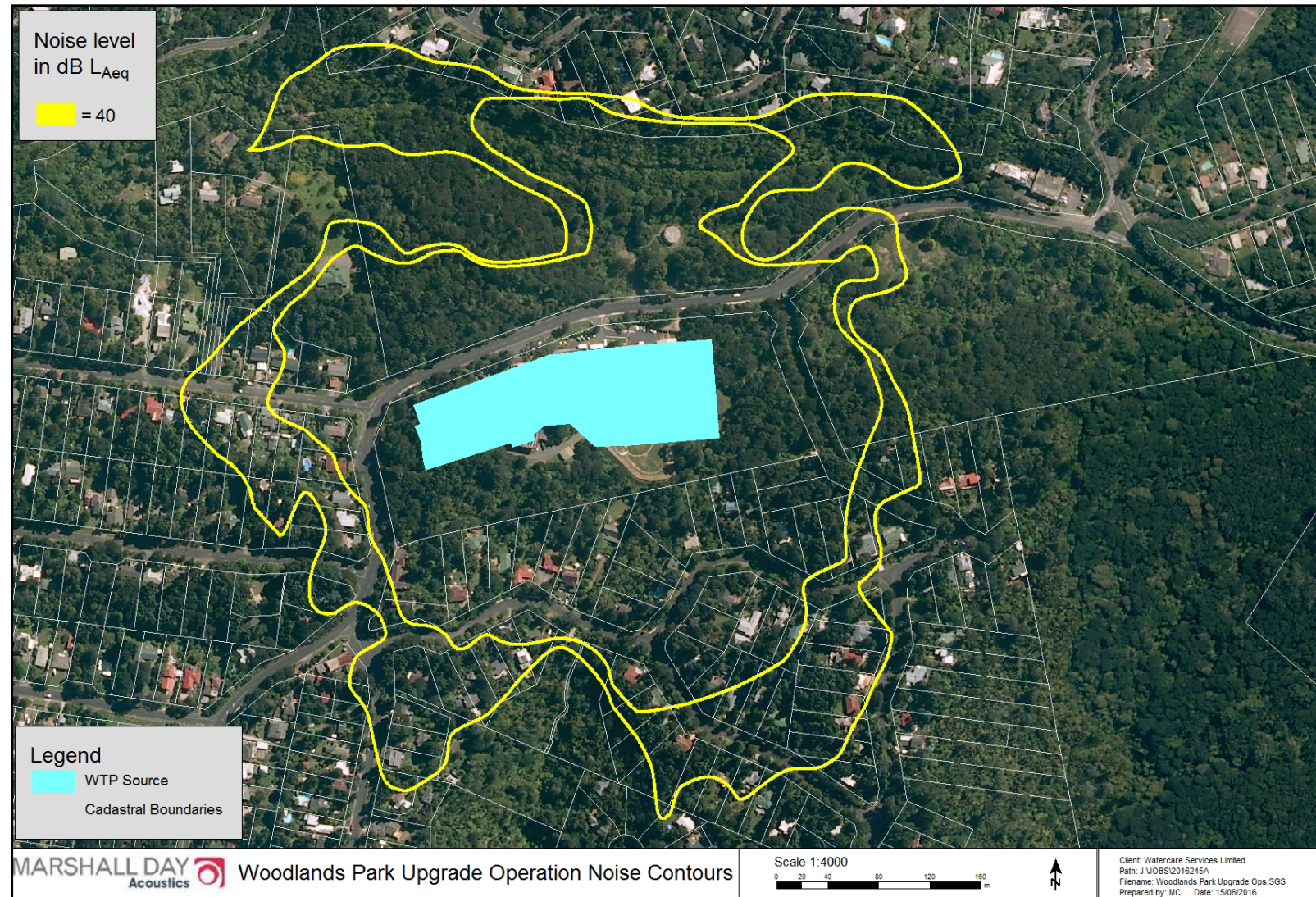
Noise budget determination

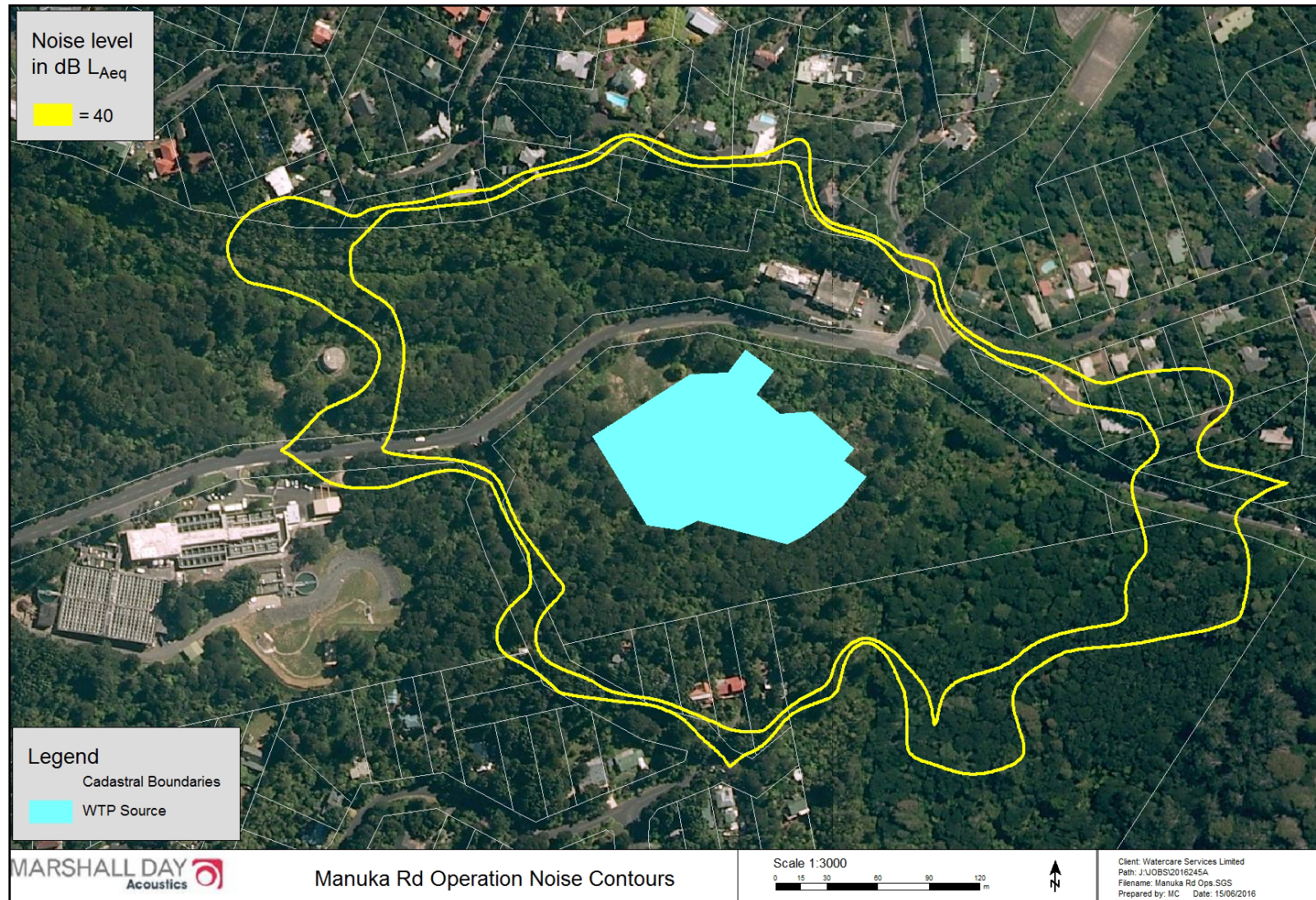
We have provided two sets of contours for each site based on total site noise budgets of 102dB L_{WA} and 105dB L_{WA} . A 'noise budget' is the term used to quantify the total allocated sound power level for an activity or an item of plant. At the design stage of the project we would break the budget down into component parts e.g. DAF, pumps, truck deliveries etc. However, for the short-list screening stage, using the total noise budget to predict the noise contour is considered to be appropriate. Note: for the Resource Consent assessment we will require greater noise source detail in the form of an itemised schedule nominating noise source levels referenced to a site plan showing source locations. In addition, finished ground contours for the chosen site would also be needed, given that there is significant cut and fill proposed.

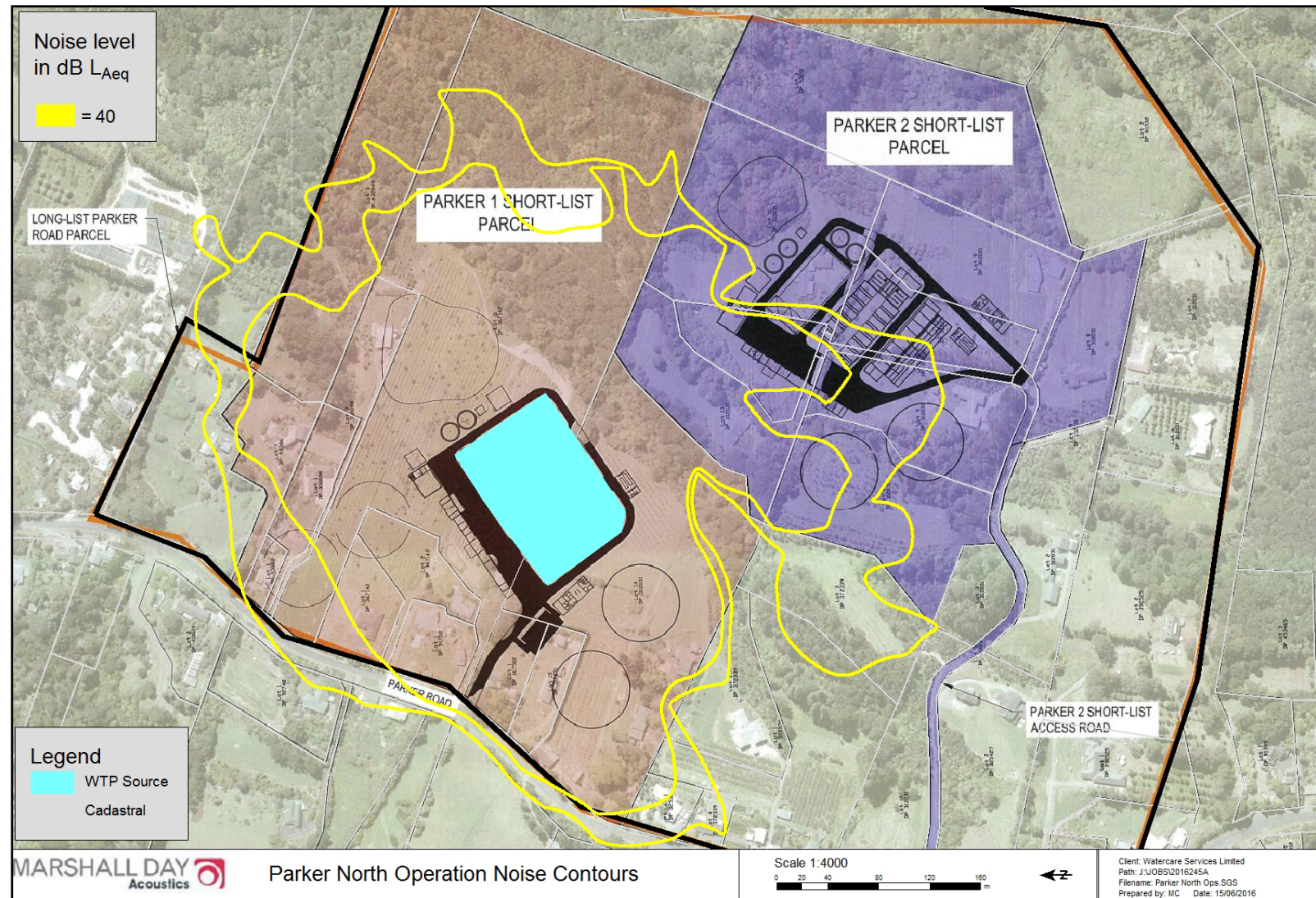
The purpose of the two noise budgets is so that we can predict noise contours for a typical wastewater treatment plant on the currently proposed site layout but also provide a contingency for any future proposed expansion or redevelopment. In this case, a 3dB difference between the nominated noise budgets represents a doubling of the number of sources on site, all other things being equal. The outer contour is considered to outline the risk for future expansion.

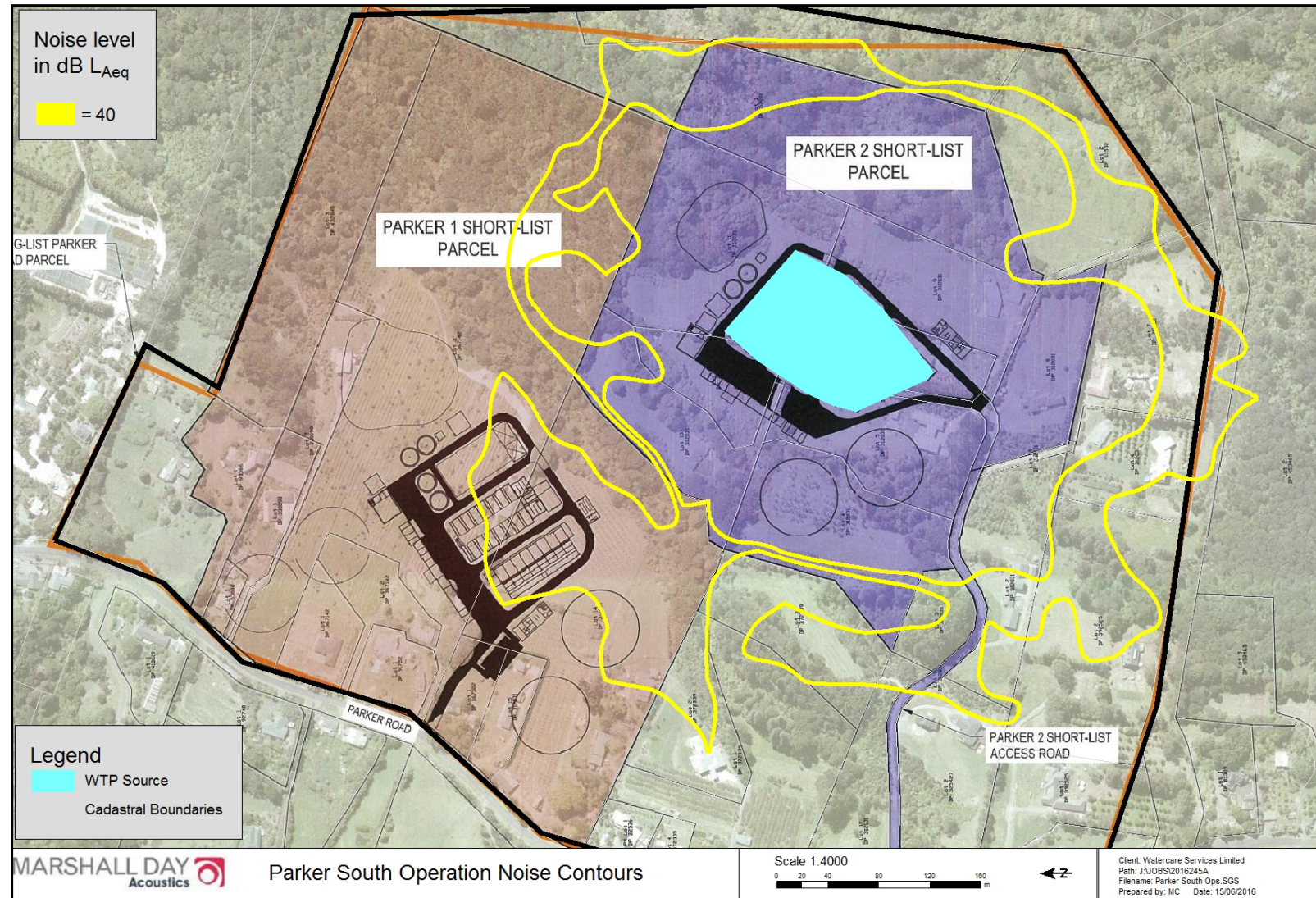
The nominated budgets assume that all significant noise generating plant will be located inside acoustically robust enclosures constructed from for example, precast concrete, and with acoustic design to penetrations, vents and doorways.

The predicted noise contours are attached.











Noise level
UNMITIGATED
in dB L_{Aeq}

 = 40

Noise level
MITIGATED
in dB L_{Aeq}


 = 40


Legend


Cadastral Boundaries


 Site Area

 Industrial building


 Point source on roof

 Facade as source

 Roof as source

 Area source

Geometry bitmap

 Point source

Noise level
in dB L_{Aeq}

Yellow = 40

Legend


- Industrial building
- Point source on roof
- Facade as source
- Roof as source
- Area source
- Point source
- Cadastral Boundaries
- Proposed Site Area

Noise level
MITIGATED
in dB L_{Aeq}

Yellow = 40











Noise level
UNMITIGATED
in dB L_{Aeq}

 = 40


Noise level
MITIGATED
in dB L_{Aeq}

 = 40


Legend

-  Cadastral
-  Proposed Site Area
-  Industrial building
-  Point source on roof
-  Facade as source
-  Roof as source
-  Area source
-  Point source









Noise level
UNMITIGATED
in dB L_{Aeq}

 = 40

Noise level
MITIGATED
in dB L_{Aeq}

 = 40

Legend

-  Cadastral Boundaries
-  Proposed Site Area
-  Industrial building
-  Point source on roof
-  Facade as source
-  Roof as source
-  Area source
-  Point source

Shortlist Site Assessment

Criteria	WOODLANDS PARK (MANUKA ROAD) SCORE	Rationale / justification	WOODLANDS PARK (EXISTING HUIA WTP) SCORE	Rationale / justification	PARKER NORTH SCORE	Rationale / justification	PARKER SOUTH SCORE	Rationale / justification
1. CONSTRUCTION NOISE & VIBRATION	5	To comply with NZS6803:1999 noise limit of 70dB LAeq would not require significant mitigation. Although construction noise will be audible at neighbouring dwellings, the levels would comply with the limit and it is considered that keeping neighbours informed of Project works and undertaking construction during 'normal construction hours (0730-1800hrs) would be sufficient. Ready compliance with DIN4150-3:1999 would occur - there is a negligible risk of building damage	5	To comply with NZS6803:1999 noise limit of 70dB LAeq would not require significant mitigation. Although construction noise will be audible at neighbouring dwellings, the levels would comply with the limit and it is considered that keeping neighbours informed of Project works and undertaking construction during 'normal construction hours (0730-1800hrs) would be sufficient. Ready compliance with DIN4150-3:1999 would occur - there is a negligible risk of building damage	5	To comply with NZS6803:1999 noise limit of 70dB LAeq would not require significant mitigation. Although construction noise will be audible at neighbouring dwellings, the levels would comply with the limit and it is considered that keeping neighbours informed of Project works and undertaking construction during 'normal construction hours (0730-1800hrs) would be sufficient. Ready compliance with DIN4150-3:1999 would occur - there is a negligible risk of building damage	5	To comply with NZS6803:1999 noise limit of 70dB LAeq would not require significant mitigation. Although construction noise will be audible at neighbouring dwellings, the levels would comply with the limit and it is considered that keeping neighbours informed of Project works and undertaking construction during 'normal construction hours (0730-1800hrs) would be sufficient. Ready compliance with DIN4150-3:1999 would occur - there is a negligible risk of building damage
2. OPERATION NOISE & VIBRATION	3	3 rd : Required acoustic mitigation is higher than for Parker North & South sites, although lower than for Existing Site Option. Sludge de-watering, Silo, DAF, Blower, Treated Water PS buildings all requiring acoustic treatment (masonry or additional mass layers). Some pump/motors located close to NE boundary will also need enclosing/screening. Chemical Storage forced ventilation will require silencing. Over 200 potentially affected sites 16dB site noise reduction	2	4 th : Highest level of acoustic mitigation required for this site option to comply with night-time limit of 40dB LAeq. Sludge de-watering, Silo, DAF, Blower, Treated Water PS buildings all requiring acoustic treatment (masonry or additional mass layers). Some pump/motors located close to south boundary will also need enclosing/screening. Chemical Storage forced ventilation will require silencing. 210 potentially affected sites 21dB site noise reduction	5	1 st : Lowest (with Parker South) level of acoustic mitigation required for this site option to comply with night-time limit of 40dB LAeq. It would require only conventional noise control methods, therefore would be more cost-effective than the Woodlands Park Rd site options 31 potentially affected sites 12dB site noise reduction	4.5	2 nd : Second lowest level of acoustic mitigation required for this site option to comply with night-time limit of 40dB LAeq. It would require only conventional noise control methods, therefore would be more cost-effective than the Woodlands Park Rd site options 37 potentially affected sites 13dB site noise reduction Slightly more constrained on west boundary (1/2 point differentiator)