

Appendix P Aviation safety

Technical Memorandum

Subject: ARL Transition Project Referral Application - Aviation Assessment
Reference No: N/A
Author: Mike Haines
Date: 12 November 2025

1 Introduction

Mike Haines Aviation has been engaged by WM New Zealand (WMNZ) to provide technical assessments to understand the effects from a proposal to reconsult Redvale Landfill, north of Auckland.

Redvale Landfill is currently scheduled to cease accepting waste in December 2028 and due to a delay in the authorisation and establishment of the replacement Auckland Regional Landfill (ARL) a transition plan is required. The proposal is to continue sending the current residual waste (around 600,000 tonnes per year) to Redvale Landfill, beyond the existing consent limit of December 2028. This would require new resource consents at Redvale Landfill.

To accommodate the on-going placement of waste at Redvale Landfill beyond 2028, the proposed works will involve the following:

- **Revised final surface profile of the existing landfill:** The current final design landfill ground profile varies but is less than 1V:3H across the footprint. That ground profile will be steepened up to a maximum grade of 1V:3H, to allow placement of additional waste within the existing landfill footprint. Bunds, varying in height between 2 and 6 m, will be constructed along the eastern and southern boundaries to accommodate the required additional waste volumes.
- **Class 2 extension:** The landfill is proposed to be extended to the south-west of the current landfill boundary, within the area currently occupied by the of the now decommissioned Managed Fill and Pond 6. The extension will comprise the excavation and lining of a new landfill cell, allowing the acceptance of waste that meets the Class 2 waste acceptance criteria, which will be constructed in a manner similar to the already constructed cells within the current landfill.
- **Relocation of ancillary activities:** the relocation of ancillary activities to allow for the placement of waste.
- **Sediment Retention Ponds:** The removal and filling in of Sediment Retention Pond 6 and the Office Pond while enlarging Pond 1 to capture and treat the stormwater from these catchments.

This technical memorandum provides an outline of the initial findings of the Aviation Assessment and has been prepared for inclusion in an application for Ministerial referral of the project under the Fast-track Approvals Act 2024. Specifically, this technical memorandum responds to the requirements under section 3.4 of the Fast-track Approvals Referral Application Form. A full description of the draft proposal is included in the accompanying information attached to the application form for the referral.

2 Summary of findings

The Redvale landfill location is within the Airport Approach Surface Overlay – North Shore Airport overlay in the Auckland Unitary Plan - Operative in Part (AUP), with published heights and dimensions that appear to reflect the Obstacle Limitation Surface (OLS) dimensions for the current airport operations in accordance with Civil Aviation Rule (CAR) Part 139 and the Civil Aviation Authority (CAA) Advisory Circulars.

In regard to the published height specifications in the Airport Approach Surface Overlay – North Shore Airport, Redvale landfill is located outside the approach and take-off fans but beneath the horizontal surface. The landfill is approximately 2 kilometres from the aerodrome so almost at the extremity of the horizontal surface area.

Redvale Landfill is not within an area where an aircraft would normally operate to or from the airport. The rising ground from the landfill area to the west also restricts aircraft operations to a higher height. A pilot operating under Visual Flight Rules (VFR) would not normally track directly overhead the landfill, and if they do, they must be at 1,000 feet above ground level in accordance with Civil Aviation Rules as it is would be deemed a congested area.

The change of surface profile of the existing Class 1 landfill would have no adverse effects on aviation operations as it is lower than the currently consented landfill height. The Class 2 expansion to the southwest would have no additional impact as it is further away from the aerodrome and will not exceed RL 106.7 m being compliant with the Airport Approach Surface Overlay.

In our professional opinion, and with specialist knowledge of aviation regulations and aerodrome requirements, no additional aviation effects are identified from the proposed expansion of Redvale Landfill.

3 Assessment methodology

The methodology to inform the assessment to date has been desktop and by a site visit to the Redvale Landfill.

The following information and desktop-based tasks have been undertaken to inform the assessment:

- North Shore aerodrome published Aeronautical Information Publication New Zealand operational data
- Assessment of the North Shore aerodrome obstacle limitation surface and the landfill location
- Review of applicable civil aviation regulations and rules
- Minimum aircraft operating heights detailed in Civil Aviation Rule Part 91
- Assessment of terrain close to the landfill in regard to aviation operations and shielding
- Assessment of the related airspace and other aviation hazards

Field work to inform the assessment undertaken to date has included:

- Onsite visit on 22nd January 2024 to confirm associated terrain and other obstacles close to the landfill
- Checking the standard aircraft circuit locations and operations in relation to the operational runways and area close to the landfill

Modelling that has been undertaken to inform this assessment has included:

- Aircraft operations – Visual and Instrument operations
- Risk assessment of the aviation aspects
- Bird hazards related to the landfill site

4 Site and project context

A general description of the site and surrounding locality is included in the accompanying information as part of the referral application.

The following elements of the site's context and project are key to the aviation assessment:

- Class 1 area will remain within the existing consented landfilling footprint. While the profile of this area will be altered to accommodate the additional waste, the maximum pre-settlement cap elevation within the waste extension will be RL 106.7 m in compliance with the Airport Approach Surface Overlay and OLS.
- Class 2 area extension to the south-west would have no additional impact as it is further away from the aerodrome and no higher than the existing consented Class 1 landfill heights.
- Natural terrain that is close to the landfill and/or higher than the landfill is shown in Appendix A.¹ This shows terrain at 129 m and 156 m which has trees that extend to a further height than the landfill. Based on this, pilots would need to be well above that terrain as the controlling obstacle for aircraft operations.
- The operational OLS, in accordance with CAR Part 139 and the CAA Advisory Circulars, reflects the current airport layout and flight operations. The Airport Approach Surface Overlay in the AUP is not necessarily directly reflective of the OLS. However, height limitations in planning frameworks can be more conservative than the operational OLS to protect airport operations.

5 Assessment of potential effects

It is noted from the North Shore Aerodrome published aeronautical information² that aircraft operate well clear of the landfill site for both runways, for instrument flight and visual flight operations. The aircraft flying under visual conditions operate north and south of the landfill location with the circuit pattern clear of the landfill for both runways.

The aerodrome instrument procedures and standard circuit patterns ensure they remain clear of terrain. Pilots must remain clear of terrain both vertically and horizontally. As the terrain surrounding the landfill is higher than the existing landfill aircraft will be well clear of the landfill even with the steepened ground profile.

A pilot on a VFR track would not normally operate directly overhead, and if they do, they must be at least 1,000 feet above ground level in accordance with Civil Aviation Rules as it is would be deemed a congested area.

Review of the CAA³ data, including bird strike, has shown that there do not appear to be any current wildlife issues, particularly birds. This is further described within the Ecology Assessment included with this referral application.

The Class 2 extension to the southwest is further from the aerodrome and is no higher than the currently consented landfill. There is also higher terrain near the landfill area that pilots must remain well above.

¹ LINZ Topo Map: MBA31 - Waitemata Harbour Edition 1.07 Published 2020 accessed from www.topomap.co.nz.

² North Shore Aerodrome AIPNZ data as accessed 25 July 2025 from www.aip.net.nz.

6 **Applicability**

This report has been prepared for the exclusive use of our client WMNZ, with respect to the Redvale Landfill , and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

We understand and agree that WMNZ will submit this report to the Environmental Protection Authority in support of a referral application under the Fast-track Approvals Act 2024 for the works described herein, and that the Environmental Protection Authority will rely on this report for the purpose of assessing that application.

Technical memorandum prepared and authorised by:



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Mike Haines
Aviation Consultant

Mike Haines Aviation

Appendix A Topographic Map





COMPARISON TO Auckland Council