

8 January 2025

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Senior Infrastructure Planner - Infrastructure Strategy
Far North District Council

Air Quality (Odour) Assessment – Application for Discharge to Air – Resource Consent for Whatuwhiwhi Wastewater Treatment Plant

1-14657.00

Dear Louise,

1 Introduction

This letter report provides Far North District Council (FNDC) with a qualitative assessment of potential odour affects associated with the operations at the wastewater treatment plant (WWTP) located off Inland Road in Whatuwhiwhi. Figure 1 shows the location and schematic of the WWTP, provided by FNDC.

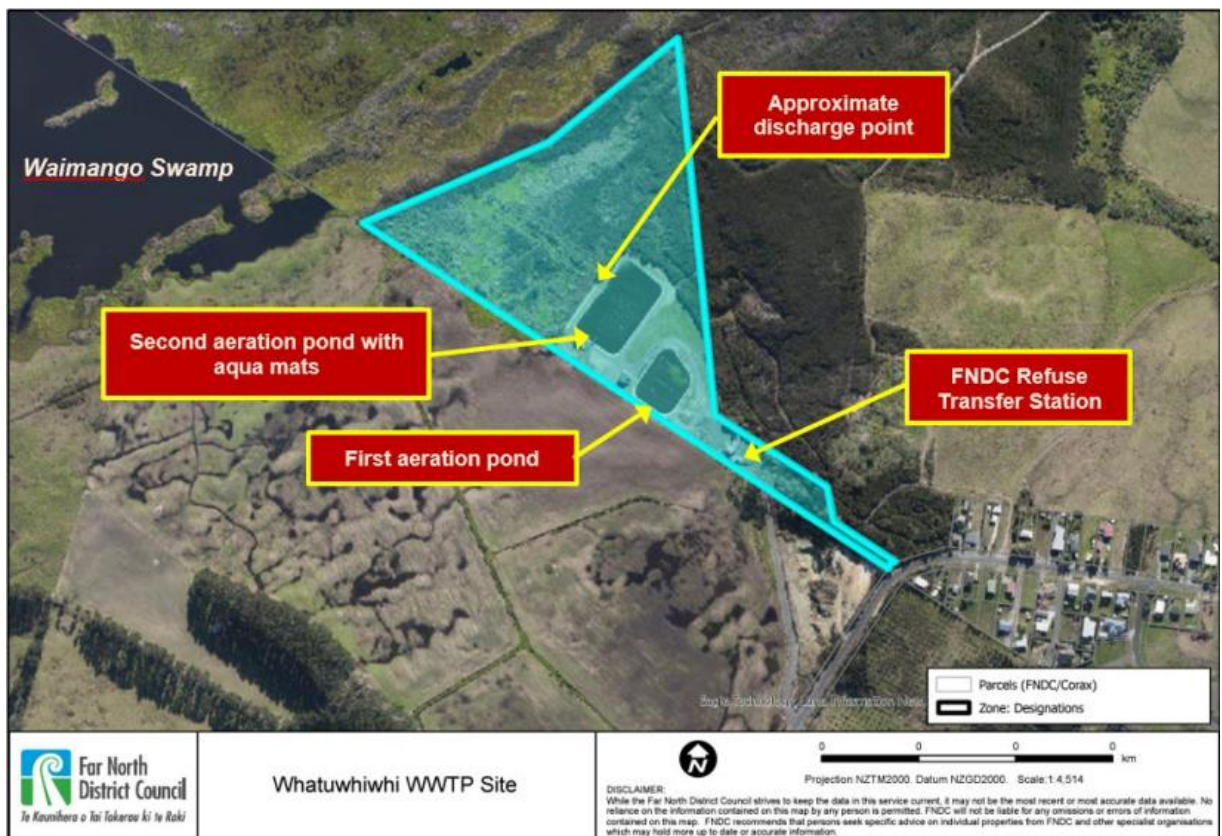


Figure 1 Site location of the Whatuwhiwhi WWTP.

FNDC currently holds resource consent AUT.007203.03.02, which was granted by Northland Regional Council (NRC) on 8 July 2011. This consent expires on 30 November 2032.

This letter is limited to a qualitative assessment of potential odour effects associated with the Whatuwhiwhi WWTP. There is a community refuse transfer station on-site that operates under the same resource consent.

2 Description of Site and Environment

2.1 Overview

The WWTP is located off Inland Road on the Karikari Peninsula, on a relatively flat topography, adjacent to swamps, wetlands and coastal lands. The WWTP receives wastewater from coastal settlements of Whatuwhiwhi and Tokerau Beach, which are approximately 1.5 km away from the WWTP. The general population of the settlements fluctuates between seasons with 450 during the winter periods and up to 1,500 during summer periods.¹

These settlements are a mixture of dwellings and commercial activities. There are no industrial activities identified in the FNDC proposed district plan. Figure 2 shows the land uses surrounding the WWTP, as provided by FNDC. According to the FNDC-proposed district plan, the surrounding the land uses includes the following:

- Coastal, general coastal and coastal living
- Carrington Estate which includes a Golf course, vineyard
- Residential and commercial
- Recreational activities and holiday parks.

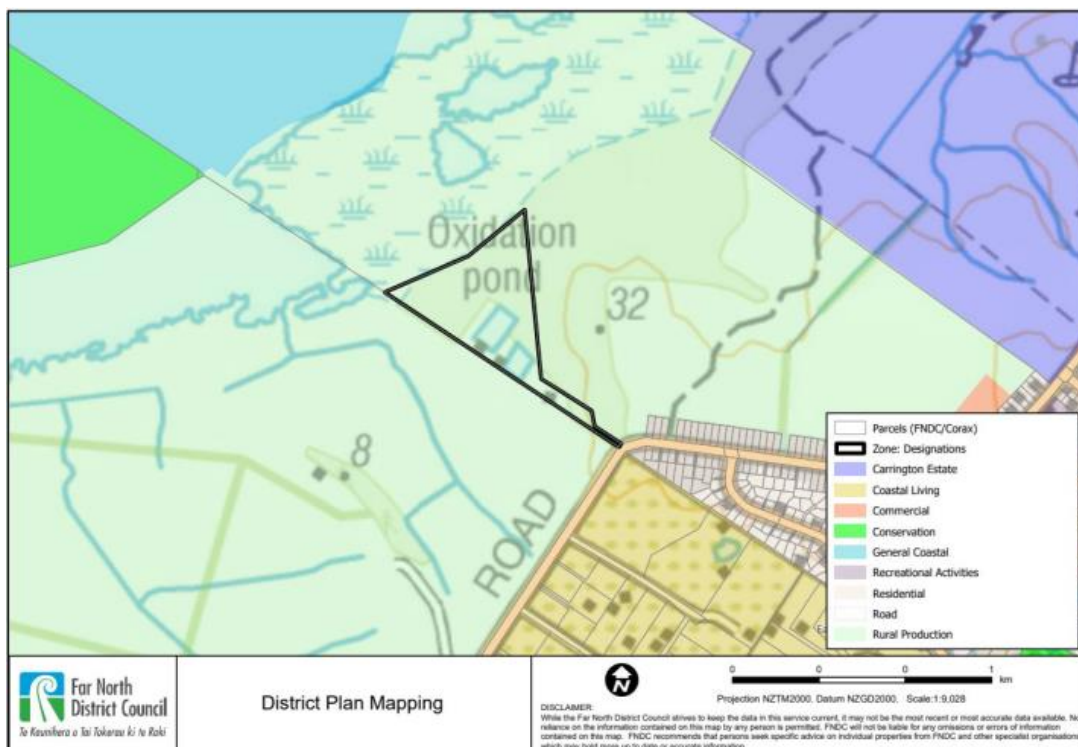


Figure 2 WWTP location and surrounding land uses.

¹ <https://www.fndc.govt.nz/services/wastewater-and-stormwater/Wastewater/wastewater-treatment-plants/Whatuwhiwhi-Wastewater-Treatment-Plant>

3 Odour Assessment

3.1 Background Air Quality - Odour Sources

The Whatuwhiwhi community refuse transfer station is located within the same property boundary. Other than the refuse transfer station, there are no other significant sources of odour in the area.

The surrounding environment may be affected by natural odours associated with the ocean and beach. However, as these would be of a different character, there is not expected to be any potential for cumulative effects in combination with odours originating from the WWTP.

3.2 Odour Complaints

WSP understands that FNDC has not received any complaints relating to odour from the local community.

3.3 Separation Distance Guidelines

Separation distances in New Zealand is guided by a good-practice guide (GPG) that was issued by the Ministry for the Environment (MfE)² in 2016. This GPG refers to separation distances that appear in guidelines set by Environment Protection Authority (EPA) Victoria³ in Australia:

EPA Victoria recommends separation distances for different types of sewage installations and based on the population that the WWTP it serves. For aerobic pondage systems such as Whatuwhiwhi, the separation distance is calculated as follows:

$$\text{separation distance, metres} = 5 n^{1/2}$$

where n is the population served by the WWTP.

For the current population based in winter (450) and summer (1,500), the calculated separation distances are 106 m and 194 m, respectively. Allowing for a 20 % increase in population, and concurrent increase in capacity of the WWTP, these values would rise to 116 m and 212 m, respectively.

The recommended separation distance for a waste transfer station is 250 m.

The closest dwellings are approximately 300 m from the WWTP's closest aerobic pond and the waste transfer station. These residences are beyond the separation distance and therefore not expected to experience residual odours.

² Ministry for the Environment, 2016. Good Practice Guide for Assessing and Managing Odour. Publication number ME1278, Wellington.

³ Environment Protection Authority (EPA) Victoria: *Recommended separation distances for industrial residual air emissions*. March 2013.

4 Conclusion

Based on the provided information and WSP's findings, since FNDC has not received any odour complaints from the WWTP and the nearest dwelling is beyond the calculated separation distance, it can be concluded that no offensive or objectionable odour originating from the Whatuwhiwhi WWTP or the waste transfer station is expected in the closest communities to the WWTP.

The MfE issued its GPG for odour in 2016, which WSP follows when carrying out odour assessments. The GPG provides advice on such matters as assessment techniques, odour surveys, and best-practice methods for odour control. The priority techniques for odour assessment include consultation with community associations and analysis of complaint records. As there have been no complaints, there are unlikely to be any off-site odours, and hence most of the tools and techniques available are not necessary in this case; the assessment is commensurate with the negligible level of odour impacts observed. Had there been any odours in the community, the assessment would include a review of the site's odour treatment systems, management plans, and would carry out odour annoyance surveys. These would be in line with MfE guidance.

5 Report Limitations

This report ('Report') has been prepared by WSP New Zealand Limited ('WSP') exclusively for Far North District Council ('Client') in relation to Air Quality Odour Assessment ('Purpose') and in accordance with the Short Form Agreement dated 14 August 2024 ('Agreement'). The findings in this Report are based on and are subject to the assumptions specified in the Report. WSP accepts no liability whatsoever for any use or reliance on this Report, in whole or in part, for any purpose other than the Purpose or for any use or reliance on this Report by any third party.

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6 Closure

If you have any queries related to this letter report, please do not hesitate to contact the undersigned.

Regards,

Authored by:

A handwritten signature in black ink, appearing to read 'Darlene Adrian'.

Darlene Adrian
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Reviewed by:

A handwritten signature in black ink, appearing to read 'Neil Gimson'.

Neil Gimson
Principal Air Quality Scientist