

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of a submission in respect of the **PROPOSED WAIKATO DISTRICT PLAN** by **AMBURY PROPERTIES LIMITED** pursuant to Clause 6 of Schedule 1 of the Act seeking the rezoning of land at Ohinewai

SUMMARY STATEMENT OF PRANIL WADAN

1. My full name is Pranil Wadan. I am a Principal Stormwater engineer at Wood & Partners Consultants Limited. I prepared a statement of evidence dated 9 July 2020. The purpose of this document is to summarise that statement.
2. I outlined my qualifications, experience and commitment to comply with the Environment Court Expert Witness Code of Conduct in my evidence in chief ("EIC").

Location and catchment

3. The Sleepyhead Estate development area is located at 52-58 Lumsden Road, 88 Lumsden Road and 231 Tahuna Road, Ohinewai ("the Site"). The Site is approximately 178 ha in area.
4. Ground surface elevations vary between approximately RL 20 m on the southern boundary with Tahuna Road and RL 6 m at the far eastern end of the site, as set out in the evidence of Nick Speight.
5. There are no mapped watercourses, wetlands or water bodies within the site according to the Waikato Regional Council's online mapping system, except for the Tahuna Road drain which is noted as "Indigenous Fish Habitat".
6. The site is characterised by two large mapped drainage channels conveying surface flow from both Lake Ohinewai and groundwater from the site, to Lake Rotokawau and Lake Waikare. These drains are known as the Balemi Road and Tahuna Road drains and are associated with the Lower Waikato Land Drainage Scheme ("LWLDS").
7. The Balemi Road drain runs along the north eastern boundary along Balemi Road and then runs north to discharge into Lake Waikare (Balemi drain does not drain to Lake Rotokawau but rather straight into Lake Waikare through the drain system which goes north from Balemi Rd).
8. Tahuna Road drain is currently culverted under Tahuna Road and conveys runoff from the upstream catchment including Lakes Ohinewai & Rotokawau.
9. The Site is located within the Lake Waikare catchment and affected by the Lower Waikato Waipa Flood Control Scheme ("LWWFCS").

10. There is very little or no interaction between River Waikato and the Site as shown in the Lower Waikato Zone Management Plan. The Site drains to Lake Rotokawau which flows into Lake Waikare that ultimately discharge to the Whangamarino Wetland via Waikare Gate in a controlled manner under the LWWFCS.

Receiving Environment

Lake Rotokawau

11. Lake Rotokawau is located adjacent to the eastern boundary of the Site. It has been classified as a peat lake- It is located on the south western side of Lake Waikare and is hydraulically connected to it.
12. Lake Rotokawau is classified as hyper-eutrophic in TR2011/05 with poor water quality. This poor water quality is likely caused from the existing land use (farming) and surrounding agricultural activities.

Lake Waikare

13. Lake Waikare encompasses approximately 3442¹ hectares within the lower Waikato catchment. It is hypertrophic and has poor water quality, with particularly high levels of nitrogen and phosphorus. The lake harbours high levels of suspended solids.²

Proposed Sleepyhead Estate development

14. The Ohinewai Structure Plan provides for a mixed-use development across the 178ha site. The development includes industrial, business and residential land uses. The Sleepyhead Estate Masterplan, and consequently the Ohinewai Structure Plan and zoning plan, which is intended to give effect to the Masterplan, have been informed by stormwater management requirements.
15. Approx. 55ha of the development is allocated to open space that includes recreational facilities, ecological enhancement & stormwater provisions.
16. Two designated stormwater management areas have been included in the Masterplan – the Central Park Area (“CPA”) and the Wetland Park Area (“WPA”). The CPA is intended to provide stormwater treatment and centralised conveyance via Wetlands, rain gardens and swales.
17. The WPA is proposed to be created as an enhanced natural wetland that is enhanced with local flora. Engineered wetlands will be constructed around the fringes of the WPA that will provide treatment for the lower residential zone. The WPA is intended to provide “informal treatment”: although it will not be designed to meet the specific design and performance requirements, a level of polishing will likely occur as a result of discharges to this area.
18. The design of the primary and secondary networks are as per the Waikato Regional Infrastructure Technical Specification (RITS).

1 Lake Waikare and Whangamarino Wetland Catchment Management Plan (2018).

2 Lake Waikare and Whangamarino Wetland Catchment Management Plan (2018).

Stormwater Management Approach

19. The stormwater management approach divides the Site into three zones (Industrial, Business/ Commercial and Residential), the approach is unique to the topography, discharge point and land use characteristics of each zone.
20. A treatment train approach is adopted in order to meet the requirements for discharges to a lake environment outlined in Waikato Regional Council ("WRC") document TR2018/01.
21. A flow chart outlining the management approach proposed for the Ohinewai Structure plan area is outlined in the flow chart attached to my EIC.

Water Quality

22. I anticipate, based on the available literature, that the proposed development will result in a decrease of nutrients (nitrogen, phosphorus) due to a change in land use from dairy farming to an urban environment.
23. The stormwater contaminants resultant from an urban environment (total suspended solids, heavy metals and hydrocarbons) are managed through a treatment train approach. The treatment train approach also provides for treatment of any residual nutrients (including in particular nitrogen and phosphorus).
24. Water quality treatment is proposed for all trafficked areas in all zones (includes parking areas and driveways). A minimum of two stage treatment prior to discharge to the receiving environment is proposed. This comprises of at-source treatment and communal with devices within the CPA and WPA.
25. A stormwater management toolbox has been prepared which provides options for devices that can be utilised within the development.
26. The use of multistage stage treatment provides greater benefit than where devices are used individually³. The OSP proposes the use of a multistage treatment train approach with a minimum 2 stage treatment requirement as shown in the stormwater management flow chart.

Erosion Protection and Re-use

27. Extended detention / volume control criteria are not applicable for discharges to a lake environment. Volume reduction is proposed through re-use from roof runoff. The strategy adopts a naturalised interface through inclusion of the wetland park area that provides a diffused outlet to Lake Rotokawau

Flood Protection & Management

28. Issues related to flooding are addressed in the evidence of Ajay Desai. The Site is located within a floodplain. The development proposes to elevate the Site above the floodplain. No development is proposed within the 1% AEP floodplain. Flood attenuation is not required as set out in Mr Desai's evidence.

Incorporation of Maturanga Maori

29. A key aspect of maturaanga Maori is that the holders of this knowledge are tangata whenua, and access to this detailed knowledge relies entirely upon consultation and engagement with these groups. Mr Gaze's evidence provides an overview of collaboration with mana whenua and the formation of the Tangata Whenua Governance Group ("TWGG"). I presented at a Hui

3 Waikato Regional Council Technical Report 2018/01 - Section 6.2.6.1

with the TWGG on 22 October 2019 on the proposed stormwater management framework to seek feedback from iwi in order to fine tune the framework. Iwi sought ongoing input into the stormwater management design and emphasised the need for ecological considerations to be integrated into the SMP.

30. The SMP is intended to reflect that philosophy, including through the naturalised interface between the wetland park and Lake Rotokawau, the requirement for reuse tanks to preserve the resource and its mauri and the construction of the wetland park area, which will have notable ecological and amenity benefits.

Pranil Wadan
9 September 2020