Birch
LAND DEVELOPMENT CONSULTANTS
0508 4 BIRCH
www.birch.nz

Friday, 13 December 2024

BSL Ref: 4553

Clause 23 response

Auckland Council Healthy Waters,

RE: Request for Further Information under Clause 23 for Private Plan Change of 70, 70A & 70B Lisle Farm Drive

Thank you for your request for further information dated 27 November 2024, after the Teams Meeting with Jimmy Zhang from Auckland Council and Jack Thompson from Healthy Waters. We have now completed the additional assessment and clarification of the items raised by Clause 23, and have responded below. Note: Response in **BOLD**.

SW 13: A sensitivity assessment of device sizing with allowance for 3.8-degree climate change is now provided. However, the rationale behind how the Maximum Probable Development (MPD) was calculated is confusing and has the potential to underestimate the area of impervious surface that requires mitigation (refer to section 2.3.2 of the Modelling Report). The entire plan change area is proposed to be rezoned to Residential – Mixed House Urban. On this basis, a sensitivity assessment of device sizing should consider a MPD of 60% of the entire plan change area. This is to ensure that the worst-case scenario is identified and assessed.

Our inputs and assumptions for the calculation and modelling in the latest Stormwater Management Plan (provided in December 2024) allows for 3.8-degree climate change factor for the stormwater modelling and design to comply with the upcoming Stormwater Code of Practice Version 4.0 which will be operated in February 2025. In general, the standard MPD for Mixed Housing Suburban/Urban is 60% which the plan change rezone is proposed, our latest modelling and design has allowed for maximum of 60% impervious area, including 40% building coverage plus 20% impervious area (driveway, hardstand area and etc.). The worst-case scenario has been identified and assessed.

SW 14: The attenuation requirements for communal and "offset compensate" devices are still unclear. This information is required to enable assessment of whether appropriate and feasible flood mitigation is to be proposed so that downstream flooding risks are not increased. Please explain:

- *How the 76% figure has been decided on;*
- *Whether 76% attenuation is appropriate for the 1% AEP events and whether this requirement needs to be adjusted for communal and "offset compensate" devices (refer to sections 5.2.8 and 5.2.9 of the SMP). Please confirm the internal layout of the dwellings and accessory buildings. It has been advised a subsidiary dwelling has been identified in the internal layout as a part of building consent. Please confirm if there is an infringement against Rule 23A.1.3, if so, please provide an updated assessment accordingly.*

Given the new concept plan is proposed to fit in a communal stormwater pond to support the plan change application, the post-development catchments have been adjusted. The latest designed 73% attenuation percentage is calculated based on the pre-development catchment area (71,890m² - Pre-catchment B, C and D under HEC HMS Section 2.3.3) divided by the post-development catchment area (98,928m² - Post-catchment B, C and D under HEC HMS Section 2.3.3), giving 0.73 or 73%. After the completion of the bulk earthwork, the post-earthwork catchment area which flows to the north is greater than the pre-development catchment area. Given the impervious area percentage utilised in the current modelling were assumed, and the future individual lot owner will build the house and associated stormwater mitigation system at different time, applying the 73% attenuation requirement for the lots which discharge to the north will ensure the post-development peak flows for all rainfall events up to and including the 1% AEP storm event is no greater than the pre-development peak flows, from the 224c stage (all public assets constructed and no private on-site development) up to the last house and its associated stormwater mitigation device is completed.

Also, the pre-development catchments and post-development catchments are updated to exclude the area within the stormwater reserves, where is currently covered by grassed and will remain as it and vest to the council in the future.

SW 15: Three Cirtex Rainsmart Modular tanks are proposed to achieve communal attenuation and to be vested with Healthy Waters. Healthy Waters is unlikely to accept a communal tank solution unless it is demonstrated as the Best Practicable Option (BPO). As a greenfield site it seems unlikely that better solutions are not feasible.

Tanks for stormwater attenuation can have limitations e.g. maintenance and appropriate orifice design can be challenging. Opportunity to provide an integrated approach to stormwater management with communal devices providing multiple functions e.g. end of catchment wetlands should be considered.

Please also demonstrate how stormwater flows will be conveyed to the tanks? Will all upstream connections to the tanks be sized to accommodate the 1% AEP storm events? Supporting information are required to demonstrate feasibility.

The feasibility and suitability of the proposed stormwater devices should be demonstrated. And hence to confirm if adverse effects associated with stormwater discharge will practically be able to be mitigated.

the latest concept plan which proposes a communal stormwater pond to replaced the previous underground communal tank was accepted in principle during the Meeting with Jack Thompson and Jimmy Zhang.

The latest concept plan, stormwater modelling result and assessment is completed based on the stormwater pond option, with 3.8-degree climate change factor, and 60% MPD.

If you have any queries, please feel free to contact me.

Yours faithfully,

Skyward Hang

B.Eng | MEngst (CM) | CPEngNZ | CMEngNZ | IntPE (NZ)
Senior Civil Engineer/Project Manager
DDI: 09 571 2004
Mobile: 027 801 9999