Comments on a Substantive Application under section 53 of the Fast-track Approvals Act 2024: Water Resilience

Fast-track project name	**Mt Welcome, Pukerua Bay, Porirua**
Fast-track application number	FTAA-2603-1181
GW file number	FTA260348

Technical area	**Water Resilience**
Date	6 July 2026
Author	Kirsty Duff and Tim Lewis
Statement of expertise	Kirsty Duff holds an BSc in environmental sciences and MSc in environmental sciences specialising in river processes from the University of Otago. I have over 10 years' experience in hydrology, river geomorphology, river management and emergency management. As an investigations engineer for Greater Wellington I undertake hydraulic analysis which feeds into flood management plans, undertake flood protection asset investigations, provide technical advice on flood and erosion hazards within the Wellington region. I provide advice to policy analysts, resource managers, consents officers, engineers and elected councillors in the region, and to businesses and the wider public. Tim Lewis holds an MEng in Civil Engineering and an MSc in Asset Management and has over 20 years of experience in all aspects of whole life asset management. As a Senior Engineer - Investigations for Greater Wellington I lead the delivery of investigations projects and provide advice to the public, territorial authorities and consent officers on engineering design, flood & erosion hazards, planning and policy. I support the development of floodplain management plans and risk management strategies.
Code of conduct	We confirm that we have read and agree to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. This technical memorandum has been prepared in accordance with that Code. Unless we state otherwise, the opinions we express are within my area of expertise, and I have not omitted to consider material facts that might alter or detract from the opinions that I express.
Documents considered	• Appendix C-1 – Updated Stormwater Management Plan • Appendix-30-24-1753-02-4100-R1 Drainage-Detailed

Comments

Matters in contention and suggested response

Retention wetlands

1. The proposal does not appear to account for the ongoing maintenance requirements of the wetland dams. Historical flooding in similar local catchments has generated high sediment loads, and ongoing sediment deposition within the retention wetlands should be expected. It is unclear whether this has been allowed for in the wetland sizing, or whether the freeboard allowance accounts for future sediment accumulation. If maintenance is required to manage sediment build-up, the final detailed design should include safe and practical maintenance access.

2. GWRC operates a number of retention/detention dams for flood protection purposes. In our experience as owners of these types of assets, they require ongoing maintenance, including the clearance of post-flood debris and sediment. Consideration should be given not only to environmental matters, but also to the operational requirements for undertaking this work safely and practicably. This includes ensuring that staff or contractors responsible for maintenance can access and complete the works safely. As these assets are proposed to be vested in Tiaki Wai, Tiaki Wai should be satisfied that the structures can be maintained effectively in perpetuity. We recommend that this consideration is undertaken within the consenting process to ensure that the consented design meets vesting requirements.

3. Although these wetlands may not be classifiable as dams, we recommend that the potential failure and overtopping modes of these structures are assessed. It is industry best practice to consider failure modes when designing flood protection structures. Breach and over-design event scenarios should be provided to identify the potential consequences of these structures under extreme conditions. Given the elevation and location of the wetlands upstream of known flood-prone areas, including the Plimmerton roundabout, any adverse downstream or consequential effects of dam failure should be assessed to support emergency management planning and decision-making.

Proposed New Culverts

4. Based on the information currently provided, the feasibility of some proposed culvert crossings remains uncertain. These concerns have been outlined in Table 1. We consider that these matters should be resolved in advance of any decision being made on the proposal.

Table 1: comments on culverts

Culvert ID	Concern	Recommendations
Culvert 33, 32 (labelled on drawings: SW-OUT 90-1 and SW-OUT 91-1)	The wingwall of these structures are far to close together to be feasible.	Further design is required. As changes to culvert/pipe 90 will impact overall roundabout design.
Culvert 33, 32 (labelled on drawings: Sump-304 DBL, SW 90	The length and alignment of Culvert 90 raise concerns regarding maintenance access and the potential for blockage. The pipe is of significant length and changes direction at Sump 304, which may increase operational and maintenance challenges.	Further design with considerations with regards to maintenance and access should be supplied.
Culvert 34 and 35 (labelled on drawings: T3 Post and SW-OUT-01)	The T3 Post culvert wingwall appears to be positioned at an extreme angle, which may affect the culvert's function and potentially result in scour or increased ponding. There may also be consequential impacts on the drainage of Retention Wetland B.	Further details on how this should be undertaken to ensure no impacts on Retention Wetland B or scour on inflow ad Culvert T3.
Culvert 37	Velocities out of the pipe have the potential for scour, specific design for riprap and maintenance should be sort. the probability of impacts is high, potential to improve these after the fact will be difficult due to location.	More specific design detail is required to ensure culvert feasibility.
Culvert 36	Velocities out of the pipe have the potential for scour, specific design for riprap and maintenance should be sort. the probability of impacts is high, potential to improve these after the fact will be difficult due to location.	More specific design detail is required to ensure culvert feasibility.
Culvert 40 (labelled on drawings: SW-OUT 72-1 impacts on EX DN750)	Outlet velocities from the pipe have the potential to cause scour. Specific design details should be provided for riprap protection and ongoing maintenance requirements. The likelihood of	It is likely that EX DN 750 will overtop. The impacts of this should be assessed.

Culvert ID	Concern	Recommendations
	impacts is high, and retrofitting mitigation after construction is likely to be difficult due to the location. There is also potential for outflows to affect EX DN750 due to its proximity downstream.	More specific design detail is required to ensure culvert feasibility.
Culvert 38	This culvert is expected to convey significant velocities and discharges through the working farm area. The stormwater drawings provided indicate that other stormwater outlets may also discharge to this location. Based on the schematic, the proposed arrangement appears overly complex, and its feasibility is uncertain.	More specific design detail is required to ensure culvert feasibility.

Recommendations with regards to culvert detailed design

5. Any consent issued should be conditional upon the detailed design being completed and demonstrating/confirming that:

   (a) The design of each culvert does not result in an increase in flood depth, flood velocity, or flood hazard compared to the site flood assessment;

   (b) Each culvert inlet and outlet is protected against erosion and scour;

   (c) Each culvert is designed to avoid any aggradation, erosion, and scour of the bed, including any erosion and scour at the inlet and the outlet of the culvert;

   (d) Each culvert will avoid causing or increasing flooding on any neighbouring property;

   (e) Each culvert is designed to avoid blockage by debris or other geomorphic processes (such as the movement of sediment).

6. Culverts must also be designed to provide for fish passage (fish passage requirements are addressed elsewhere in Greater Wellington's comments).

7. The other parties and organisations involved, such as NZTA, PCC, Tiaki Wai etc. should also be consulted to ensure that any culverts will not have a negative impact on their assets, especially those which are downstream, and that the assets in the development for which they will become responsible are resilient and can be sustainably and safely maintained. With respect to the design of culverts under SH59, NZTA may have further specific design requirements that need to be considered.