

Attachment 1 - Assessment against Engineering JWS

Mt Welcome - additional information and clarification

Source: Applicant's Revised Proposal Documents, September 2026
 Assessment against Engineering Caucus Joint Witness Statement, dated 21 August 2026; signed 24 August 2026 (FTAA-2603-1181).

Item	JWS issue	Issue category	Matter	JWS Additional information / clarification required	JWS Recorded basis / unresolved position	JWS pages	Item addressed in revised proposal? (Y/N)	GW Comments (15 October 2026)
1	1	Sediment sources	Sediment loads and phases	Clarify the contribution of the four identified sediment sources during house building and long-term operation, and the implications for downstream sediment loads and wetland operation and maintenance.	The sources and phases are agreed, but their combined effects remain unresolved.	3-4	N	No change to design, item not addressed.
2	1	Sediment sources	Local scour assessment	Determine whether a supplementary hydrological / geomorphological model is required to assess channel-forming flows and scour between individual outfalls and wetlands; provide an appropriate assessment.	The existing water balance model is not suitable for short-term, micro-scale scour assessment.	3-4, 18	N	Revised detention pond design does not include allowance for extended detention. Extended detention for road catchment runoff not provided, mitigation against channel forming flows not fully addressed.
3	1	Sediment sources	Outfall erosion mitigation	Clarify and substantiate the engineering response to erosion below gully-head outfalls, including outlet lowering or relocation, hydrological control and downstream erosion protection, while maintaining wetland water balance.	Outfall scour is an agreed unresolved risk; the Applicant considers current mitigation fit for purpose, while GWRC / Tiaki Wai seek additional mitigation.	3-4	N	Outlet design unchanged, item not addressed.
7	2	Sediment removal	Sediment accumulation and wetland performance	Provide the sediment-life assessment and modelling supporting the claim that sediment fill and dense vegetation will not compromise peak-flow / storage performance, for review by GWRC and Tiaki Wai.	The Applicant cites at least 35 years, more realistically 3-8 decades, before meaningful storage effects; the assessment had not been provided for review.	5	N	Capacity to manage sediment accumulation by providing sediment storage drastically reduced by new proposed filled detention ponds, which leaves only 100mm sediment storage capacity. Shallow water depth also creates temperature issues/concerns.
8	2	Sediment removal	Forebay requirement and configuration	Resolve whether forebays / pre-treatment are required, including how multiple inflow locations would be served and how sediment would be removed from accessible areas outside ecological offset wetlands.	The Applicant considers forebays unnecessary; GWRC / Tiaki Wai consider them essential, including for vesting and maintenance.	5	N	The request to provide forebays remains unaddressed. The reduced sediment storage capacity under the revised proposal further reinforces the need for forebays.
10	3	Wetland operation / access	Wetland classification and vesting	Clarify the classification, ownership / vesting and operational arrangements for wetlands performing both stormwater and ecological offset functions.	Tiaki Wai will not vest an ecological wetland; classification is a precondition to agreeing maintenance access requirements.	7	N	The non-provision of forebays or clear sediment extraction points make maintenance requirements unworkable.
11	3	Wetland operation / access	Legal boundaries and offset exclusion	Define the legal boundaries and mechanism separating forebays, stormwater structures and maintenance / access zones from ecological offset land, and reconcile offset calculations.	Boundaries and the mechanism for excluding maintenance areas are unresolved; excavation within ecological offset wetlands requires consent.	5, 7, 18	N	The non-provision of forebays or clear sediment extraction points make maintenance requirements unworkable.
14	3	Wetland operation / access	Vesting trigger and handover	Confirm the vesting trigger and staging / handover timing for retention wetlands with the Applicant and Tiaki Wai.	Approximately 80% lot build-out was suggested but not formally agreed.	18	N	The non-provision of forebays or clear sediment extraction points make maintenance requirements unworkable.
22	5	Additional detention	Distributed retention / extended detention	Assess whether smaller-scale distributed retention or extended detention, including tanks or unlined rain gardens, is achievable and materially reduces downstream erosion.	The uncertainties section identifies this as a discrete item not addressed in the 20 August session.	18	N	Newly proposed 3000L rainwater tanks include 2000L retention and 1000L extended detention volume (EDV). Retention only partially addressed (only outdoor use proposed, no plumbing to the house). Additionally, tanks do not appear to have been sized following GW's Hydrological Control Practice Note (for reference, a 200m ² roof would require 3,000L retention plus 1,000 to 2,000L EDV, so a 4,000 to 5,000L tank, depending on in-situ soils). Further, the EDV outlet should be sized to discharge the EDV over 24 hours (this has not been demonstrated).
23	6	On-lot tanks	Full-development tank benefits	Extend / clarify the rainwater-tank assessment to include the Kakaho Stream catchment and quantify water conservation benefits across the full development.	The PDP assessment models only the Taupo catchment and does not present full-development water conservation benefits.	11	N	The rainwater tank comments in item 22 above apply to across the site, which covers all catchments involved (including both the Kakaho Stream and Taupo catchments).
26	6	On-lot tanks	Cumulative effects	Address cumulative hydrological effects if other developments in the catchment adopt the same stormwater approach.	The Applicant's PDP assessment does not consider cumulative effects.	11	N	Item not specifically addressed.
27	6	On-lot tanks	Extended detention function	Clarify whether tanks should be required for extended detention under GWRC's 2025 practice note, and demonstrate how any proposed tanks would meet retention / extended detention objectives.	The PDP assessment covers harvesting / retention only; no tanks or other retention / extended detention are proposed, and the tank function is disputed.	11-12	N	Newly proposed 3000L rainwater tanks include 2000L retention and 1000L extended detention volume (EDV). Retention only partially addressed (only outdoor use proposed, no plumbing to the house). Additionally, tanks do not appear to have been sized following GW's Hydrological Control Practice Note (for reference, a 200m ² roof would require 3,000L retention plus 1,000 to 2,000L EDV, so a 4,000 to 5,000L tank, depending on in-situ soils). Further, the EDV outlet should be sized to discharge the EDV over 24 hours (this has not been demonstrated).
28	7	Rain garden design	Contributing area and 2% criterion	Resolve the interpretation and application of the 2% rain garden sizing criterion, including contributing roof and road impervious areas and any upstream treatment.	Tiaki Wai / GWRC apply the criterion to total contributing impervious area; the Applicant interprets it as untreated surfaces only.	13-14	N	Not addressed yet. This is contingent on acceptable rainwater tank design, which is subject to the above clarification requests.
29	7	Rain garden design	Design infiltration rate	Provide technical justification and resolve the design infiltration rate, including allowances for long-term clogging, deterioration and maintenance.	The Applicant proposes 87.5 mm/hr (175 mm/hr with a 0.5 factor); GWRC / Tiaki Wai consider 30 mm/hr appropriate.	13	N	Item not specifically addressed.

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30	7	Rain garden design	Lot imperviousness assumption	Resolve the design imperviousness allowance: 236 m² per lot versus the maximum permitted 75% imperviousness excluding batters, accounting for buildable-area constraints.	The Applicant and GWRC disagree on the appropriate design allowance.	13	N	Item not specifically addressed.
31	7	Rain garden design	Enforceable imperviousness limit	Identify a reliable legal / consenting mechanism to constrain future lot imperviousness to the assumptions used in rain garden design.	The mechanism, if any, remains unresolved.	14, 18	N	The maximum 75% imperviousness limit (envforced by PCC), minus any agreed allowance for batters and buildable area constraints, should form the basis for sizing stormwater devices including rainwater tanks and raingardens which service impervious lot areas (notwithstanding that the provision of rainwater tanks would allow the contributing roof catchment areas to be removed from the raingarden catchments for purposes of raingarden sizing).
33	7	Rain garden design	Roof diversion and redesign	If roof runoff is diverted to tanks, confirm tank sizing meets hydrological-control objectives and provide the necessary stormwater redesign and revised road-runoff rain garden sizing.	Tank diversion could bring sizing close to the 2% criterion; accepting only road runoff requires stormwater redesign.	13-14	N	Newly proposed 3000L rainwater tanks include 2000L retention and 1000L extended detention volume (EDV). Retention only partially addressed (ouly outdoor use proposed, no plumbing to the house). Additionally, tanks do not appear to have been sized following GW's Hydrological Control Practice Note (for reference, a 200m2 roof would require 3,000L retention plus 1,000 to 2,000L EDV, so a 4,000 to 5,000L tank, depending on in-situ soils). Further, the EDV outlet should be sized to discharge the EDV over 24 hours (this has not been demonstrated).