

Appendix 9: s53(2)(a) Fast-track Approvals Act 2024 (FTAA) Technical Advice

Date	12/10/2026
To	Consents – Fast-track
Expert Name and Job Title	John Kindness, Senior Water Engineer, GHD Limited
Project advice provided for	Carter Group Limited - Ōhoka Residential Subdivision
Documents referred to	Appendix 14 - Infrastructure Assessment - Inovo Projects (June 2026) Appendix 26 (UPDATED) – Scheme Plans – Inovo (Sept 2026) Appendix 27 - Civil Engineering Plans (June 2026) Appendix 30 - Site Management Plan - Inovo Projects (June 2026) Appendix 31 (UPDATED) - Stormwater Management Report - Pattle Delamore Partners (Sept 2026) Updated Typical Road Cross-sections – Inovo (Sept 2026)
Qualifications	I hold a Masters in Civil and Environmental Engineering, I am a registered Chartered Civil Engineer with the Institution of Civil Engineers (UK) and a member of Engineers NZ. I am employed at GHD as a Senior Water Engineer and have 18 years of water industry experience. My work includes design and review of stormwater reticulation, treatment and low impact urban design, covering commercial, industrial and residential developments and local Council projects.
Code of Conduct	I confirm that I have read and agree to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. This technical report has been prepared in accordance with that Code. In particular, unless I state otherwise, the opinions I 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.

Introduction/ Executive Summary

1. There are a number of outstanding issues, specifically:
 - a. Pre/Post-Development Stormwater Discharges
 - b. Stormwater Run-off C-Values
 - c. Tailwater Impacts
 - d. Maintenance
 - e. Range of AEP Events
 - f. Groundwater
 - g. Area Constraints

Discussions with the applicant

2. I have been involved with meetings and/or discussions with the applicant (or their experts) as recorded in Appendix 1.

Outstanding areas of contention and significance

Outstanding areas of contention 1

3. It is unclear whether the post-development stormwater related discharges and volumes are less than the pre-development situation. Table 6 of the Stormwater Management Report provides a comparison on discharge flows from each of the proposed catchments; however, no table has been provided covering the downstream discharge points between the development and the surrounding area.

Significance of this matter

4. Increased stormwater run-off rates from the site may negatively impact the downstream watercourses due to increased flow rates / velocities / volumes. I cannot advise on these impacts as the downstream watercourses have not been assessed within the PDP Report.

Solution

5. Provide an additional table covering the flow rate and total volume at each of the discharge points from the proposed development, for both pre- and post-development situations. This should be for a range of rainfall events similar to those presented within Table 6.

In addition, further clarity should be provided by clearly stating that the post-development catchments do not align with the pre-development catchments and that Table 5 is based on best case alignment.

A separate row should be added to Table 3 covering drains and buffers (rather than excluding them) to enable an area comparison between pre- and post-development situations.

Outstanding areas of contention 2

6. It is unclear how the C-Value of 0.47 was derived in Table 4, or where the 20% impervious limit originated from. I disagree with Stormwater Management Areas (SMAs) being assigned a C-Value of 0.47, as any attenuation area that receives direct rainfall should have a C-Value of 1.

Significance of this matter

7. If the post-development stormwater discharge is underestimated, then the system may be undersized, with associated knock-on impacts.

Solution

8. Provide a breakdown of how the 0.47 value was calculated and where the 20% limit originated from.
Provide justification as to why the Applicant believes a C-Value of 0.47 is appropriate for the SMAs.

Outstanding areas of contention 3

9. Tailwater impacts have been partially addressed downstream of the basins / wetlands however no assessment appears to have been undertaken at this stage on the potential attenuation volume lost due to tailwater flows entering the SMAs.

Tailwater impacts have not been addressed upstream of the SMAs. This can have a direct impact on the viability of upstream Filtera raingardens and proprietary devices.

Significance of this matter

10. Stormwater quality and quantity management methods may not achieve the design intent, with associated potential negative impacts downstream.

Solution

11. Include consent conditions requiring tailwater to be fully considered during further design stages and prior to construction commencing.

Outstanding areas of contention 4

12. The stormwater design submitted with the application has not been updated to be compliant with the mowing requirements within the WDC ECoP Part 5: Stormwater & Land Drainage, 2025.

Significance of this matter

13. Changing the slopes of the grass areas from 1(v):3(h) to 1(v):4(h), will either result in reduced storage or a larger footprint than is included within the current design.

Solution

14. Either reach agreement with Waimakariri District Council to use a maximum slope of 1(v):3(h), revise the design using 1(v):4(h) or consider the impacts of planting the slopes instead of using grass.

Outstanding areas of contention 5

15. Limited AEP rainfall events are covered within the Stormwater Management Report, with no appendix covering a wider range of events. In particular, the impact of more frequent storm events needs to be considered for multi-use areas such as the polo field, and additional durations, between 1 hour and 12 hours, are needed in order to confirm that 6 hours is indeed the critical duration.

Significance of this matter

16. The polo field may not be able to operate in its proposed dual role as a polo field and an attenuation area, with generated stormwater run-off potentially higher across the development if the polo field is designed for less frequent flooding than attenuation requirements, with associated knock-on impacts.

Solution

17. Provide an appendix covering both more frequent stormwater events and a wider range of durations, including hourly interpolation (to confirm the critical event).

Outstanding areas of contention 6

18. It is not comprehensively shown how groundwater will affect the stormwater design. There is no groundwater data in the Stormwater Management Report for Catchments 11 (polo field) and 12, and it is not clarified whether the stated groundwater depths are in relation to existing ground surface levels or the post-development surface levels.

Whilst groundwater ranges are noted for most of the catchments, it is unknown where these measurements were taken in relation to the SMAs. Without this information, it is not possible to assess if the SMA freeboard levels are possible or whether stormwater attenuation and treatment methods will operate as intended.

Significance of this matter

19. Groundwater impacts the majority of the stormwater design. Underestimating the groundwater depth in key locations can result in a stormwater system that does not meet the design intent.

Solution

20. Additional groundwater monitoring could be undertaken and a plan produced showing monitoring locations compared to the SMA locations. Groundwater results to be correlated to the post-development design surface levels.

Outstanding areas of contention 7

21. There are a lack of details provided around the areas required to accommodate the identified attenuation volumes, as well as no swale sizing to meet conveyance requirements (within the space constraints shown on the Inovo Drawings).

Significance of this matter

22. Stormwater quality and quantity management methods may not achieve the design intent, with associated potential negative impacts downstream.

Solution

23. Clarify the SMA footprints associated with the provided volumes (specify where in the vertical plane this area is measured) and provide a comparison against the available areas identified on the Inovo Drawings.
Provide the maximum typical dimensions for swales needed to accommodate the intended stormwater flows, and provide a comparison against the available width identified on the Inovo Drawings.

Solutions and/or comments on conditions

24. Appendix 2 provides a summary of solutions or conditions sought and reasons for these.

Benefits of the project

25. There are no specific benefits with respect to my area of expertise.

Appendix 1: Record of consultation

Expert and date of discussion	Subject	Summary	Matter resolved?
Eoghan O'Neill (PDP) 20 th Aught 2026	Required Annual Recurrence Intervals (ARIs)	The Carter Group and PDP were still in discussions with Waimakariri District Council around the requirement to use the 2025 version of their Engineering Code of Practice	Yes
Eoghan O'Neill (PDP) 20 th Aught 2026	Pre/Post-Development Inconsistencies	Following discussion of the issues, PDP would update their Stormwater Management Report to address them	Partially, refer to Outstanding Areas of Contention 1 for unresolved elements
Eoghan O'Neill (PDP) 20 th Aught 2026	Tailwater	Following discussion of the issues, PDP would update their Stormwater Management Report to include further details on potential tailwater impacts	Partially, refer to Outstanding Areas of Contention 3 for unresolved elements
Eoghan O'Neill (PDP) 20 th Aught 2026	Mowing	This would depend on the outcome of the WDC ECoP 2025 discussions, but would be updated based on that	No
Eoghan O'Neill (PDP) 20 th Aught 2026	Seasonal Groundwater Fluctuations	Following discussion of the issues, PDP would update their Stormwater Management Report to include further details on seasonal groundwater fluctuations	Yes
Eoghan O'Neill (PDP) 20 th Aught 2026	Treatment Efficiency	Consideration of the full treatment range rather than medium values would be considered in later design stages	No
Eoghan O'Neill (PDP) 20 th Aught 2026	Flow Interception – Bradleys Road	Following discussion of the issue, Carter Group will address this in conjunction with WDC (no longer part of stormwater assessment)	Yes
Eoghan O'Neill (PDP) 20 th Aught 2026	Regional Plan Requirements	Following discussion of the issue, ECan confirmed that they would not require Rule 5.96 to be included in the PDP Stormwater Management Report	Yes

Appendix 2: Summary

Issue/ Environmental Effect	Significance of the issue	Solution	Conditions and/or mitigation	Why Condition or mitigation is necessary and not too onerous.
Pre/Post- Development Stormwater Discharges	Medium	Refer to Outstanding Areas of Contention 1 above	Refer to Outstanding Areas of Contention 1 Solution	Required to demonstrate that the stormwater impact of the post- development situation is not worse than the pre-development situation.
Stormwater Run-off C-Values	Medium	Refer to Outstanding Areas of Contention 2 above	Refer to Outstanding Areas of Contention 2 Solution	Required to demonstrate that the stormwater impact of the post- development situation is not worse than the pre-development situation.
Tailwater Impacts	High	Refer to Outstanding Areas of Contention 3 above	Refer to Outstanding Areas of Contention 3 Solution	Required to demonstrate that the proposed stormwater management systems operate as intended
Maintenance	Low	Refer to Outstanding Areas of Contention 4 above	Refer to Outstanding Areas of Contention 4 Solution	Required to demonstrate that the proposed stormwater management systems operate as intended
Range of AEP Events	Medium	Refer to Outstanding Areas of Contention 5 above	Refer to Outstanding Areas of Contention 5 Solution	Required to demonstrate that the stormwater impact of the post- development situation is not worse than the pre-development situation.

Groundwater	High	Refer to Outstanding Areas of Contention 6 above	Refer to Outstanding Areas of Contention 6 Solution	Required to demonstrate that the proposed stormwater management systems operate as intended
Flow paths designed to convey 0.5% AEP event only to prevent scour up to a 1% AEP event	Low	Design the flow path conveyance to 1% AEP or increase the scour protection to manage the 0.5% AEP event	Wording change in Stormwater Management Report or increased scour design	Change is necessary for clarity, no need for a Condition.
Suitability of attenuation basins	Low	Clarify whether the attenuation basins for Catchments 4, 5A and 9B are wet ponds (in line with the other attenuation basins)	Wording change in Stormwater Management Report	Change is necessary for clarity, no need for a Condition.
Parks, drain areas and buffer strips are noted as excluded from the first flush calculations because they do not require treatment	Low	Clarify the reason for the exclusion of these areas. They are excluded because the generated flows will either not discharge to first flush capture areas or run-off is slower so will not occur until after the first flush has been attenuated.	Wording change in Stormwater Management Report	Change is necessary for clarity, no need for a Condition.
Sensitivity check on stormwater treatment efficiencies	Low	Include sensitivity checks during detailed design to identify efficiency trigger point that would exceed contaminant targets, and compare that to	Condition to ensure that sensitivity checks have been undertaken as part of the design process	Required to understand what level of treatment underperformance would trigger exceedance of contaminant targets. Cost should not be onerous as can be undertaken as part of the design process

		the anticipated treatment levels		
Model and Calculations	High	Undertake a peer review of the detailed design	Condition to ensure a peer review is undertaken, and raised points closed out, prior to construction commencing	Required due to the complexity of the design, especially given the shallow groundwater

Fast Track Approvals Act 2024 (FTAA) Technical Advice

Ōhoka Residential Development – Stormwater

Date	06/07/2026
To	Joanne Mitten, Principal Consents Planner, Environment Canterbury, cc Samuel Prystupa, Consents Planner, Environment Canterbury
From	John Kindness, Senior Water Engineer, GHD Limited
Project advice provided for	Carter Group Limited - Ōhoka Residential Subdivision
Documents referred to	Appendix 14 - Infrastructure Assessment - Inovo Projects Appendix 27 - Civil Engineering Plans Appendix 30 - Site Management Plan - Inovo Projects Appendix 31 - Stormwater Management Report - Pattle Delamore Partners
Qualifications	I hold a Masters in Civil and Environmental Engineering, am a registered Chartered Civil Engineer with the Institution of Civil Engineers (UK) and a member of Engineers NZ. I am employed at GHD as a Senior Water Engineer and have 18 years of water industry experience. My work includes design and review of stormwater reticulation, treatment and low impact urban design, covering commercial, industrial and residential developments and local Council projects.
Code of Conduct	I confirm that I have read and agree to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. This technical report has been prepared in accordance with that Code. In particular, unless I state otherwise, the opinions I 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.

Overview

- I have reviewed the following titled documents
 - Infrastructure Report - Inovo
 - Mill Road, Ohoka Subdivision Development Drawings - Inovo
 - Site Management Plan - Inovo
 - Fast Track Application - Stormwater Management for 531 & 535 Mill Road, Ohoka - Pattle Delamore Partners (PDP)
- In summary, this review focused solely of the rainfall induced stormwater infrastructure.
- I am in general agreement with the stormwater design intent proposed by the Applicant, with the exception of the items listed within this technical report. Items with a negligible impact on the stormwater design have not been included.
- I discuss below the outstanding areas of contention and significance of these.

Rainfall Annual Recurrence Interval (ARI)

- The stormwater design submitted with the application is not compliant with Part 5 (Stormwater & Land Drainage) of the Waimakariri District Council Engineering Code of

Practice (WDC ECoP), 2025. The WDC ECoP requires a 10-year ARI for the primary network and a 100-year ARI for the secondary system, whilst the submitted design has used a 5-year ARI for the primary network and a 50-year ARI for the secondary system.

Pre/Post Development Inconsistencies

6. The catchment areas listed in Tables 3 and 5 of the PDP Report do not have matching area totals.
7. Post-development stormwater run-off for catchments C1 and C3 do not match pre-development values. For the entire site, the total run-off values exceed those of the pre-development run-off.
8. Based on the information provided within the PDP Report, I disagree with their statement that the post-development values do not exceed the pre-development values.
9. Increased stormwater run-off rates from the site may negatively impact the downstream watercourses due to increased flow rates / velocities. I cannot advise on these impacts as the downstream watercourse assessment sits outside the scope of this review and have not been assessed within the PDP Report.

Tailwater Impacts

10. No information has been provided around the potential impact of tailwater effect (from the SMA areas or wetland) on the stormwater pipe network. The PDP Report notes only that the design intent is to have no tailwater effects from the existing drains on the wetlands (with modelling assessing this to be undertaken at the detailed design stage). Insufficient information has been provided in the PDP Report for me to undertake an assessment on the impact of tailwater on the design.
11. If tailwater has not been considered within the stormwater design, then there is a notable risk that inlet pipes to the SMA areas and wetland will become submerged prior to the full storage being achieved in the SMA areas and wetland. This would limit the conveyance capacity of the pipe network, potentially resulting in increased flooding levels.

Mowing

12. The stormwater design submitted with the application is not compliant with the mowing requirements within the WDC ECoP Part 5: Stormwater & Land Drainage, 2025. Changing the slopes of the grass areas from 1(v):3(h) to 1(v):4(h), will either result in reduced storage or a larger footprint than is included within the current design.

Seasonal Groundwater Fluctuations

13. The PDP Report does not contain information on the impact of low seasonal groundwater levels on the SMA areas. It is therefore unknown if any of the SMA areas will be permanently wet or if they will dry out.
14. This information is required in order to assess the impacts on SMA maintenance, the survivability of plants or grass within the areas and the potential for increased resuspension of sediment.

Treatment Efficiency

15. The PDP Report does not present any sensitivity checks on the efficiency of the proposed treatment methods, with the average (mean) used based on published ranges.
16. If the treatment methods do not perform as well as assumed (average in range), then the treatment requirements may not be met.

Flow Interception - Bradleys Road

17. The PDP Report has not clearly defined responsibility for the construction of the proposed swales or cut-off drains between Bradleys Road and the site (although the areas where they will likely be located. It appears to be set aside for vesting to Council – Lots 7000, 7003 and 7005).
18. Without clear responsibility, the swales or cut-off drains may not be constructed, resulting in stormwater overtopping Bradleys Road and discharging uncontrolled into the site. I cannot advise on the suitability of the swales or cut-off drains as no details have been provided.

Regional Plan Requirements

19. There is the potential for overland flows to enter wet ponds or wetlands, Rule 5.96 from the Canterbury Land and Water Regional Plan (2025) should therefore be included within Section 4.2 of the PDP Report. If the rule requirements are not clearly stated, then there is a risk of unintentional failure to comply.

Potential Solutions

20. I have provided the following solution options to address the outstanding areas of contention.

Rainfall Annual Recurrence Interval (ARI)

21. Either confirm agreement with Waimakariri District Council that use of the 2020 WDC ECoP (specifically a 5-year ARI for the primary network and a 50-year ARI for the secondary system) is acceptable, or update the stormwater design to meet the current requirements within the 2025 WDC ECoP.

Pre/Post Development Inconsistencies

22. Provide clarity by adding another row in Tables 3 and 5 detailing the areas and run-off associated with the 'drains and buffers'.
23. Provide clarity by adding another row in Table 5 detailing the areas and run-off associated with the SMA areas.
24. Provide clarity by adding another row in Tables 3 and 5 noting the total areas and total run-off. This should show that all the site has been accounted for and enable a simple comparison between overall stormwater run-off for the pre and post development cases.

Tailwater Impacts

25. Provide additional information by undertaking sanity checks on the conveyance capacity of the stormwater pipe network using a water level in the SMA areas and wetland equal to their maximum design top water level.

Mowing

26. Either reach agreement with Waimakariri District Council to use a maximum slope of 1(v):3(h), revise the design using 1(v):4(h) or consider the impacts of planting the slopes instead of using grass.

Seasonal Groundwater Fluctuations

27. Include a consent condition that requires the stormwater design to account for both anticipated high and low groundwater levels.

Treatment Efficiency

28. Include a consent condition that requires an upper and lower treatment range sanity check, to provide confidence in the potential performance of the proposed treatment system.

Flow Interception - Bradleys Road

29. Provide confirmation on who would be responsible for constructing the proposed swales or cut-off drains and whether they would be vested to Council.

Regional Plan Requirements

30. Include Rule 5.96 within Section 4.2 of the PDP Report.

