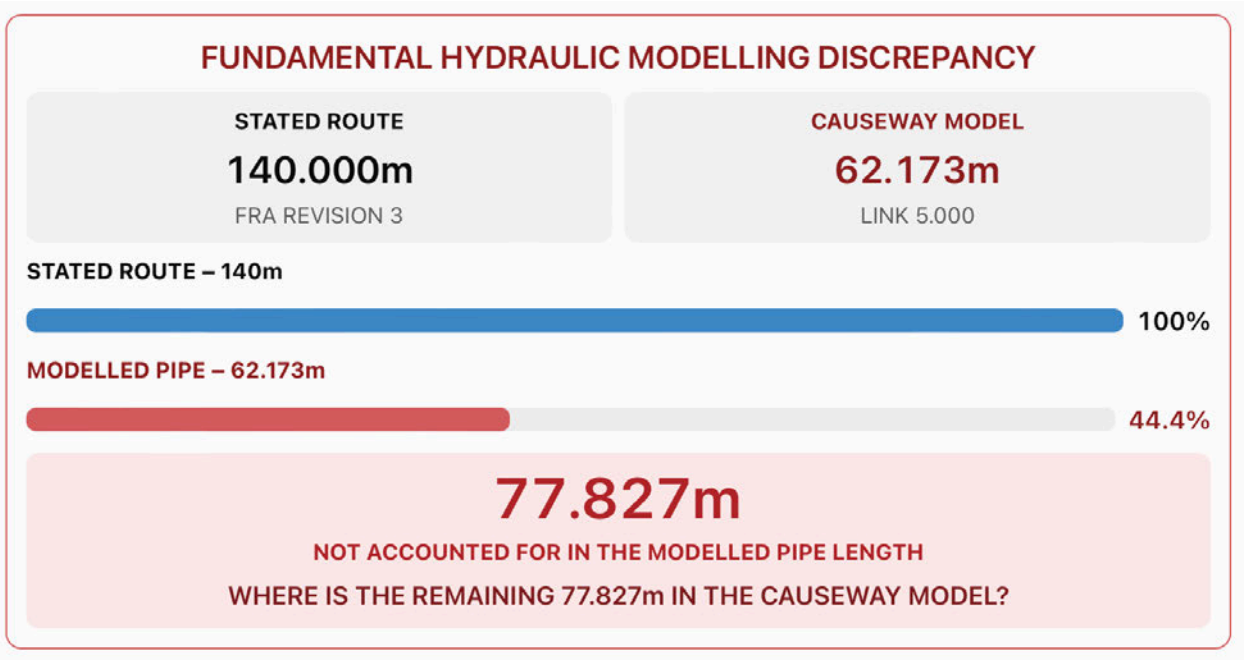
DC/25/2114

FORMAL TECHNICAL OBJECTION

FUNDAMENTAL HYDRAULIC MODELLING DISCREPANCY:

140.000 METRES vs 62.173 METRES

The applicant's drainage assessment identifies an approximately 140-metre drainage route.The Causeway Flow hydraulic model uses a pipe length of only 62.173 metres.



140.000m **STATED PHYSICAL ROUTE**

Flood Risk Assessment and Outline Drainage Strategy Revision3

62.173m **CAUSEWAY MODEL**

Link 5.000 – Central Swale to Outfall

77.827 METRES **UNEXPLAINED DIFFERENCE**

The model accounts for only **44.4%** of the stated route.

To: Horsham District Council – Planning Case Officer and Drainage Officer

Application reference: DC/25/2114

Subject: Fundamental discrepancy in Causeway Flow hydraulic modelling – failure to demonstrate the proposed drainage strategy is feasible.

1. THE CENTRAL ISSUE: THE CAUSEWAY MODEL DOES NOT MATCH THE STATED DRAINAGE ROUTE

I formally object to planning application DC/25/2114 and request refusal because the applicant has failed to demonstrate that the proposed drainage strategy is hydraulically feasible.

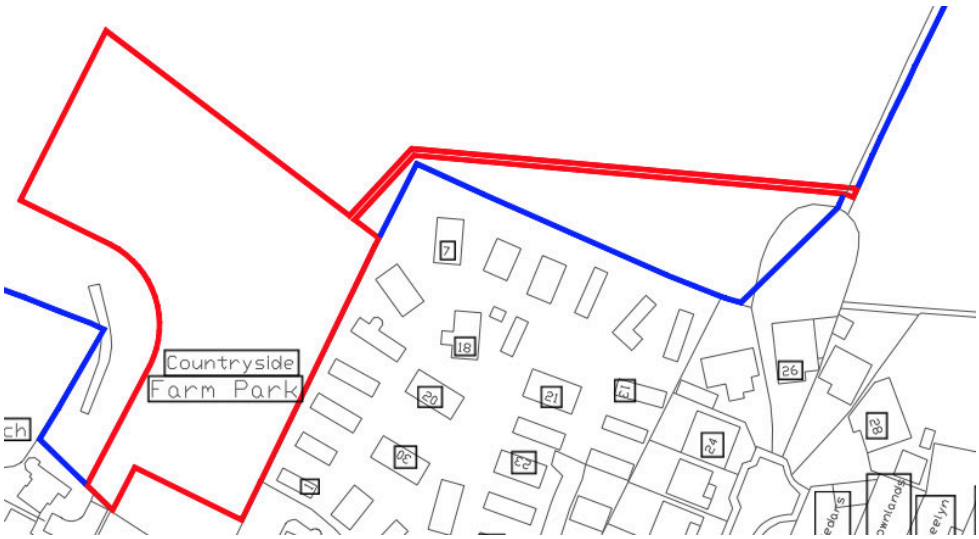
The fundamental problem is immediately apparent from the applicant's own submitted documents.

STATED PHYSICAL DRAINAGE ROUTE – 140 METRES

FLOOD RISK ASSESSMENT AND OUTLINE DRAINAGE STRATEGY REVISION 3

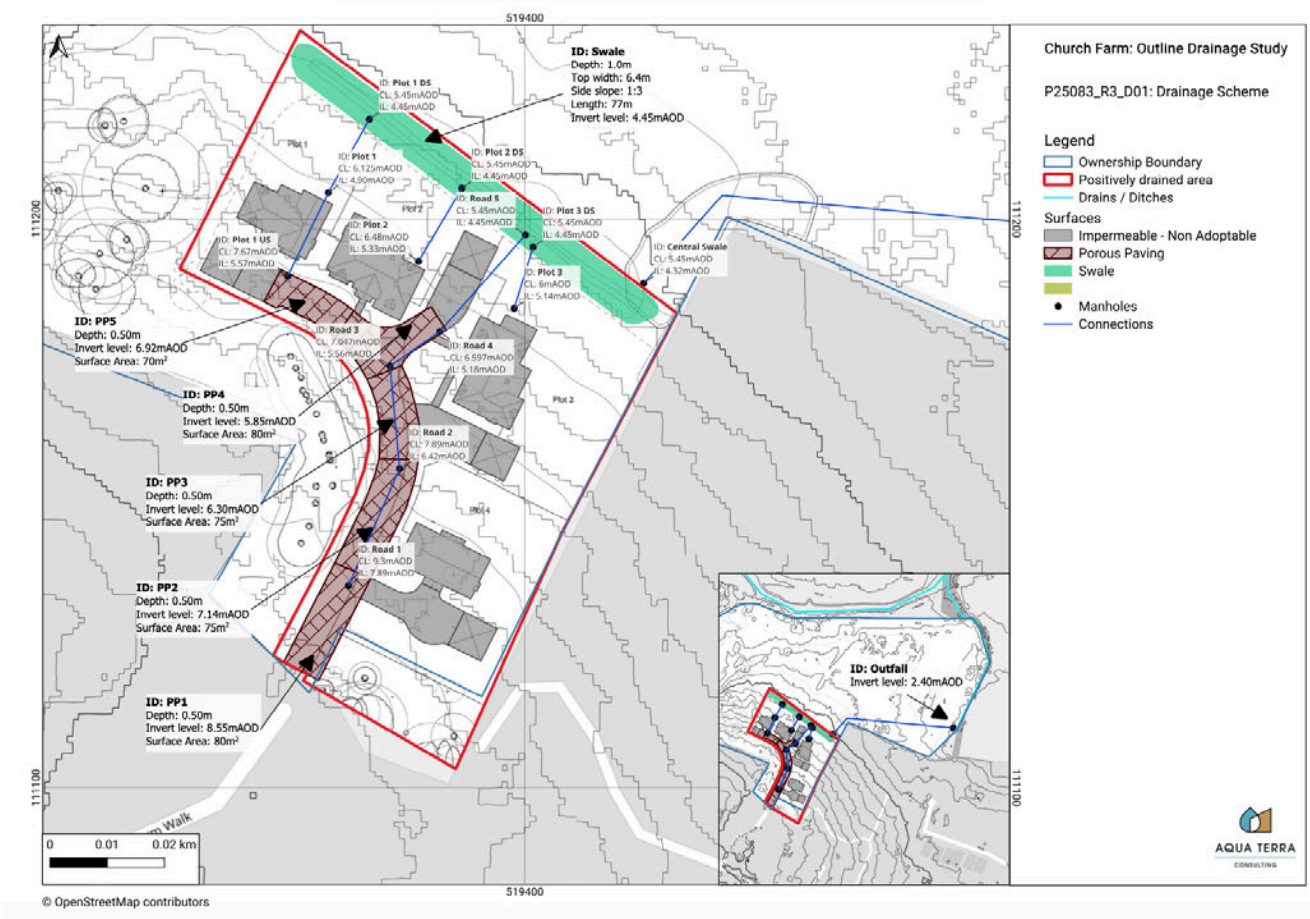
140.000m

The applicant's documentation states:
"The drain runs along the eastern boundary of the land ownership and is 140m away from the Site boundary."
Source: Flood Risk Assessment and Outline Drainage Strategy Revision 3.



Location Plan
25/08/2026

FLOOD RISK ASSESSMENT AND OUTLINE DRAINAGE STRATEGY REVISION 3
Appendix D - Proposed Drainage Plan



Swale to Outfall - Distance 140m:



CAUSEWAY FLOW MODEL – 62.173 METRES

CAUSEWAY FLOW – LINK 5.000

62.173m

Modelled connection:

- Upstream: Central Swale
- Downstream: Outfall
- Pipe diameter: 100mm
- Modelled pipe length: **62.173m**
- Source: Causeway Flow hydraulic calculations.

Causeway Model - Pipe length discrepancy:

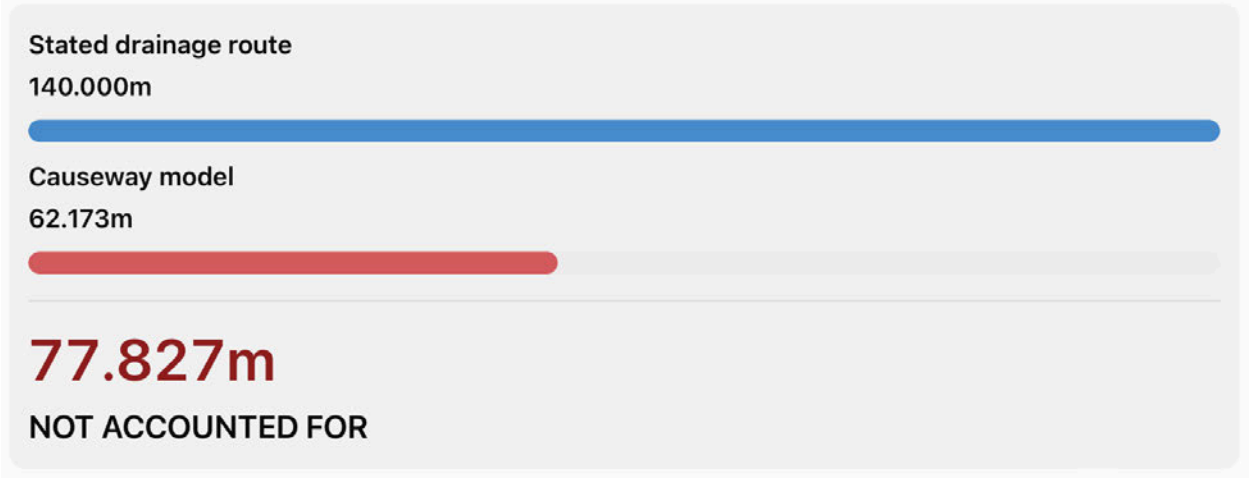
Pipe Length: Causeway Model - 62.173m

Causeway | Aqua Terra Consultants Ltd | File: Church Farm_v7.pfd Network: Storm Network MJF 08/12/2025 | Page 2

Links

	Name	US Node	DS Node	Length (m)	ks (mm) / n	Velocity Equation	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	Link Type	T of C (mins)	Rain (mm/hr)	Min DS IL (m)
?	5.000	Central Swale	Outfall	62.173	0.600	Colebrook-White	4.320	1.000	3.320	18.7	100	Circular	5.58	50.0	

THE UNEXPLAINED DIFFERENCE



The applicant has therefore submitted a hydraulic model using a pipe length substantially shorter than the drainage route identified in its own Revision 3 documentation.

Where is the missing 77.827 metres?

The applicant has not demonstrated that this additional length is represented anywhere in the hydraulic model.

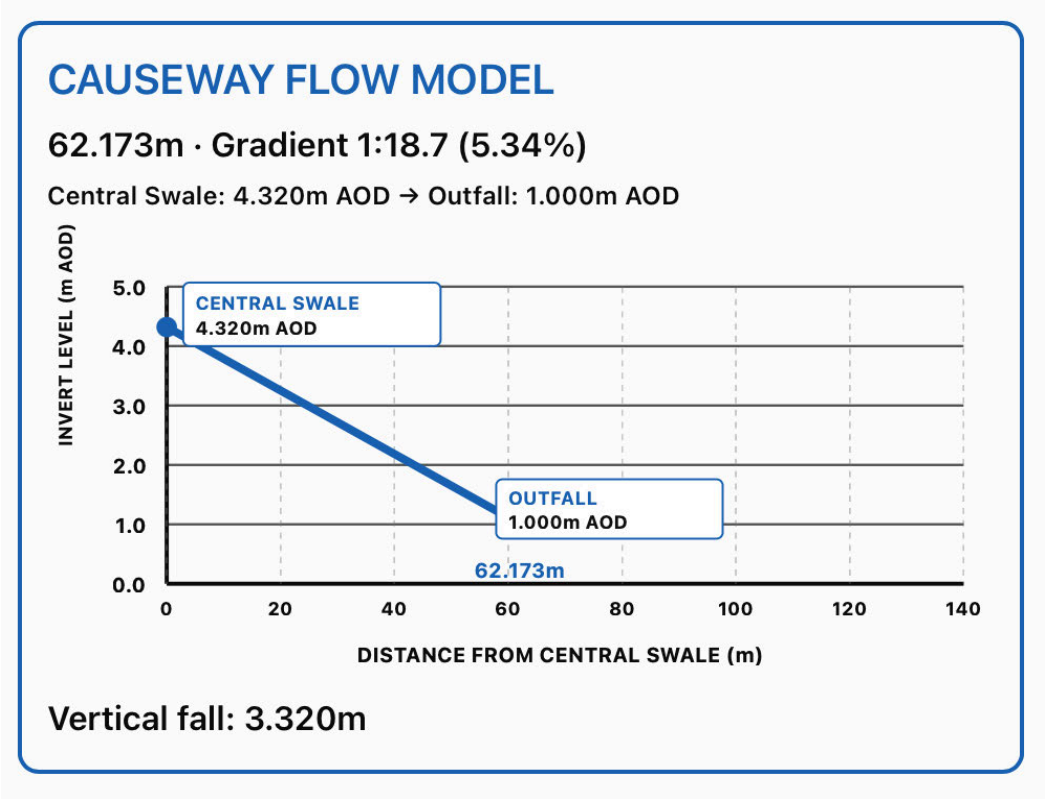
The Council has not demonstrated that it has been checked and reconciled.

This is a fundamental failure in the submitted drainage evidence.

A hydraulic model using a 62.173-metre pipe cannot be relied upon to demonstrate the feasibility of a proposed drainage connection identified as approximately 140 metres without evidence establishing that the two configurations are equivalent.

The Causeway model, as submitted, does not demonstrate the hydraulic feasibility of the stated 140-metre drainage route.

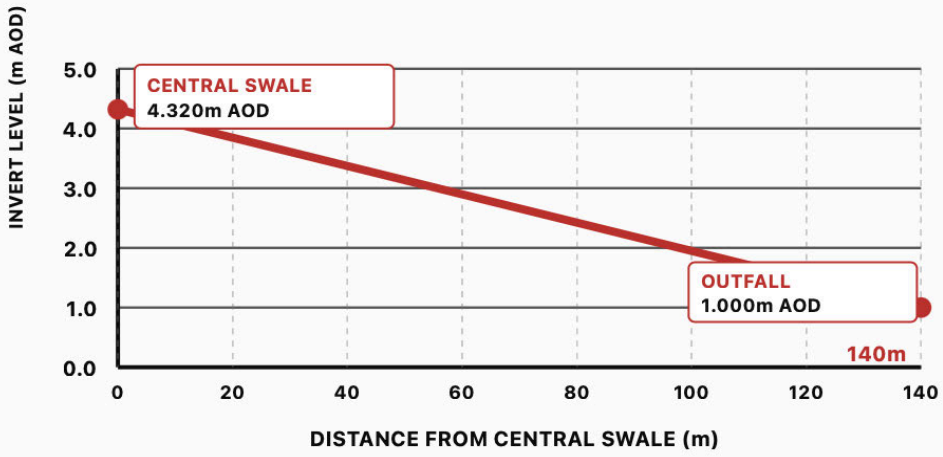
Gradient comparison:



140m ROUTE – 1.000m OUTFALL

Gradient 1:42.2 (2.37%)

Central Swale: 4.320m AOD → Outfall: 1.000m AOD

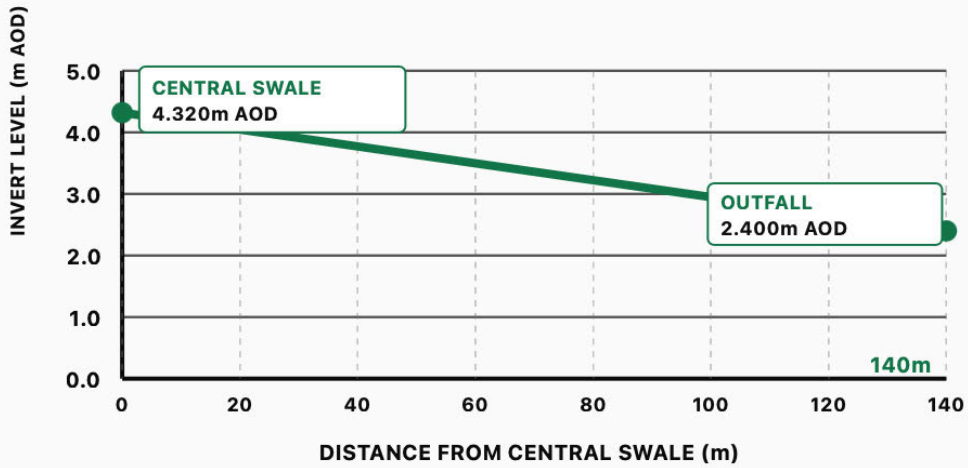


Vertical fall: 3.320m

140m ROUTE – 2.400m OUTFALL

Gradient 1:72.9 (1.37%)

Central Swale: 4.320m AOD → Outfall: 2.400m AOD



Vertical fall: 1.920m

2. PREVIOUS ASSURANCES OF FEASIBILITY ARE NOW IN QUESTION

Of equal concern is the fact that the applicant and Horsham District Council's Drainage Officer have repeatedly maintained that the drainage strategy is feasible and that the Causeway calculations support that conclusion.

The Drainage Officer has previously stated:

"The Causeway calculations support the feasibility of the drainage strategy based on an invert level of 1m AOD and demonstrate that the surcharged outfall scenario has been considered."

That assurance is now seriously undermined by the pipe-length discrepancy.

The critical question is:

Did the applicant and Drainage Officer actually examine the Causeway model data and compare the modelled pipe length against the physical drainage route identified in Revision 3?

The figures are clearly identifiable in the submitted documents. The difference is 77.827 metres.

There are two possible explanations:

- The discrepancy was overlooked. This would mean that assurances of drainage feasibility were given without establishing whether the hydraulic model actually represented the proposed drainage infrastructure.

- The discrepancy was known. In that case, why was it not identified, explained and resolved before assurances of feasibility were given and relied upon in the planning process?

Neither situation is acceptable.

The applicant is responsible for providing accurate and consistent technical evidence. The Drainage Officer is responsible for properly scrutinising the drainage evidence on which the Council relies.

Residents should not be expected to discover fundamental discrepancies in an applicant's hydraulic model that should have been identified through the preparation and technical assessment of the application.

This raises serious questions about the reliability of the applicant's evidence, the adequacy of the Council's technical scrutiny and, ultimately, public confidence in the planning process.

3. THE OUTSTANDING OUTFALL LEVEL DISCREPANCY

There is a further unresolved inconsistency between:

- 2.400m AOD identified in Appendix D.
- 1.000m AOD used as the downstream invert in the Causeway model.

The Drainage Officer has previously stated that 1.000m AOD is the relevant level for assessment.

However, accepting that level does nothing to resolve the fundamental discrepancy between the 140-metre drainage route and the 62.173-metre modelled pipe.

The Council must also establish what the 2.400m AOD level actually represents and how it relates to the proposed outfall.

These inconsistencies further undermine confidence in the submitted drainage assessment.

4. THE COUNCIL MUST ANSWER THESE QUESTIONS BEFORE DETERMINATION

I require the Case Officer and Drainage Officer to address the following questions directly:

1. Has the Drainage Officer examined Causeway Link 5.000 and identified its modelled pipe length of 62.173metres?

2. Has the Drainage Officer compared this against the approximately 140-metre drainage route identified in Revision 3?

3. Where is the remaining 77.827 metres represented in the Causeway hydraulic model?

4. Has the complete proposed drainage connection actually been included in the hydraulic calculations?

5. If the discrepancy was known, why were previous assurances of hydraulic feasibility given without it being satisfactorily explained?

6. If the discrepancy was not known, on what technical basis were those assurances provided?

7. Will the Council now acknowledge that the existing Causeway calculations do not establish the feasibility of the stated 140-metre drainage route?

These are straightforward questions arising from the applicant's own submitted evidence. They require clear technical answers, not general assurances.

5. FORMAL REQUEST FOR REFUSAL

The applicant has failed to demonstrate that its proposed drainage strategy is hydraulically feasible.

The Causeway Flow model uses a 62.173-metre pipe connection, whereas the applicant's Revision3 documentation identifies an approximately 140-metre drainage route.

The unexplained difference of 77.827 metres means that the Council has not been provided with demonstrably representative hydraulic modelling of the stated drainage arrangement.

The previous assurances of feasibility given by the applicant and Drainage Officer cannot reasonably be relied upon without this fundamental discrepancy being addressed.

I do not consider it acceptable for the Council to grant permission and defer the resolution of this matter to a planning condition. The feasibility of an essential drainage connection must be established before permission is granted.

I therefore formally request that Horsham District Council **REFUSE** planning application DC/25/2114 because the applicant has failed to demonstrate that the proposed drainage infrastructure is technically sound, hydraulically feasible and deliverable.

[redacted]
Stockmans Barn
Church Farm Walk
Upper Beeding
BN443HD