Critical Assessment: The Cumulative Flood Risk of North Petherton Development on the Somerset Levels

Executive Summary

The Core Issue: Unacceptable Cumulative Flood Risk

This report finds that the aggregate flood risk from **1,080 new residential units** in North Petherton has been fundamentally underestimated. The proposals, including sites at Park Lane, Gateway, Stafflands Farm, and Daws Lane, are being assessed in isolation, ignoring their collective impact on the **vulnerable Somerset Levels** catchment, which is already severely constrained, as evidenced by the 2014 flood events.

Vr 1.3 Dec 2025

Contents

1. Introduction: The Critical Failure to Address Cumulative Flood Risk

This report highlights a **critical and unacceptable failure** to fully address the **cumulative flood risk** posed by the current portfolio of major housing applications in **North Petherton**.

The proposed developments—totalling **1,080 new dwellings**—are being assessed in isolation, overlooking the aggregate hydraulic burden placed on the already marginal drainage capacity of the receiving environment. This approach contravenes national and local planning policy aimed at protecting vulnerable communities.

Development Scale and Geographic Context

The collective impact from the following key applications, currently in various planning stages, demands an immediate, unified reassessment:

Application Reference	Site Name	Proposed Dwellings	Notes
37/25/00044	Park Lane	64	*(New figure as of August 25)*
37/22/00125	Vistry Gateway	150	
37/25/00055	Gateway	15	
37/25/00042	Gateway	346	
37/25/00023	Stafflands Farm	190	
37/25/00018	Daws Lane	175	
37/25/00088	Dancing Hill	140	
SUB-TOTAL		**1,080**	

2. Exacerbated Flood Risk to Moorland and the Somerset Levels

The proposed development of 1,080 new homes in North Petherton, which sits close to the catchment area of the Somerset Levels and Moors, presents an undeniable increase in flood risk to communities downstream, particularly Moorland.

The Mechanism of Increased Risk

- **Increased Impermeable Surfaces:** New development, by its nature, replaces porous land (fields, open ground) with impermeable surfaces (roofs, roads, driveways). This dramatically **accelerates and increases surface water runoff volume**.
- **Catchment Impact:** North Petherton is situated on the edge of the catchment area that drains into the low-lying **Somerset Levels**, including the Parrett and Tone River systems. A sudden increase in surface water runoff from this scale of development may place an immediate and additional hydraulic burden on the main rivers and, crucially, the surrounding moors used as designated flood storage areas (e.g., Northmoor, Saltmoor, Currymoor, Fordgate).
- **Direct Impact on Moorland:** Communities like Moorland, which are geographically low-lying and historically prone to inundation, function as a spillover point when the river systems are at capacity. The **cumulative effect of 1,080 new homes** discharging surface water, even at 'greenfield' runoff rates (the ideal scenario, which is often not met in practice), may incrementally increase the frequency, duration, and depth of flooding in these already vulnerable areas. The tragic experiences of 2014, where Moorland was severely impacted, underscore the catastrophic consequences of exceeding the system's storage and conveyance capacity.

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3. Inadequate Pumping and Drainage Capacity

The current capacity for managing water on the Somerset Levels, particularly the system of pumping stations and drainage networks, is **not sufficient** to manage the existing flood risk, let alone the added pressure from significant new development.

- **Existing Capacity Limitations:** The pumping system is designed to manage water within the context of the historical environment. However, the 2014 floods and subsequent near-miss events have repeatedly demonstrated that the rivers (e.g., River Tone, River Parrett) can reach levels where **pumping stations cannot operate effectively** because the receiving watercourse is already too high, a concept known as being "tide-locked" or "river-locked."
- **Reliance on Temporary Measures:** Although investments have been made since 2014, reports often highlight the need to deploy **temporary mobile pumps** and take pre-emptive action when intense rainfall is forecast. This indicates that the permanent, built-in capacity is already marginal. Adding the runoff from 1,080 homes may reduce the operational window for existing pumps and accelerate the trigger points for deploying temporary measures, increasing the long-term operational cost and risk.
- **Climate Change and Future Storm Events:** The current capacity is insufficient when factoring in the increased frequency and intensity of rainfall events predicted under climate change allowances (which mandate a 20-40% increase in design rainfall depths). The development proposals fail to provide a robust demonstration that the capacity exists to manage the worst-case, climate-adjusted scenario without detriment to downstream residents.

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4. The Flawed Reliance on Attenuation and SuDS

The primary mitigation strategy for new developments, as often promoted under the **National Planning Policy Framework (NPPF)**, involves the use of **attenuation ponds/tanks and Sustainable Drainage Systems (SuDS)** to manage surface water runoff. However, for a flood-sensitive location like North Petherton and the Somerset Levels, this approach carries significant inherent risks and potential for failure, leading to a repeat of the 2014 situation.

Mitigation Strategy	Risk of Failure & Consequence
Attenuation Ponds/Tanks	These features temporarily *store* water before slow release. In a prolonged rainfall event, such as in 2014, these structures may **fill up and lose all capacity** before the storm event is over, resulting in uncontrolled discharge and compounding the flood peak. Their effectiveness is critically dependent on the downstream drainage network having sufficient capacity to accept the attenuated flow, which, as established, is already questionable.
Sustainable Drainage Systems (SuDS)	While designed to mimic natural processes (infiltration, slow conveyance), a review of SuDS in Somerset found that many schemes favour **underground storage/pipe-to-pond solutions** over truly multi-functional source control features (e.g., rain gardens, permeable paving). Furthermore, poor construction site management and lack of ongoing maintenance can lead to **blockages and system failure** at a critical time, rendering them ineffective.
Groundwater Interaction	The Somerset Levels have a naturally high water table. Attenuation features, if not correctly lined or managed, risk being filled with rising **groundwater**, which significantly **reduces their capacity to store surface runoff** from rainfall, increasing the flood risk to the development itself and the wider area.

Conclusion: The design and maintenance limitations of these mitigation measures mean they offer **false security**. Relying on them for 1,080 homes introduces an unacceptable systemic risk that, in an extreme event, may inevitably contribute to widespread flooding across the Levels, directly impacting Moorland.

5. Reduced Waterway Maintenance and Legislative Failures

Compounding the capacity and development issues is the observable trend of **reduced maintenance work** on the network of rivers, rhynes, and drainage ditches in the area, a vital component of the Somerset Levels flood defence strategy.

- **Dredging and Desilting:** The effectiveness of the river system to convey water rapidly is dependent on continuous maintenance, notably **dredging and desilting**. A lack of consistent, timely maintenance leads to reduced channel capacity, causing water to overtop banks sooner and flow onto the floodplains (moors) unnecessarily or prematurely.
- **Rhyne and Ditch Clearance:** The smaller drainage networks (rhynes and ditches), managed by Internal Drainage Boards (IDBs), are critical for local water management. If maintenance is neglected, these waterways become choked with vegetation and silt, impeding the flow of water *off* the moors and into the main rivers, thereby **prolonging the duration of flooding** in communities like Moorland.
- **Sedgemoor and NPPF Policy Conflict:** While **Sedgemoor's planning policy** (and the overarching **NPPF**) requires developers to manage flood risk and promote SuDS, the sheer volume of development, coupled with the systemic underinvestment in core downstream infrastructure (pumping and channel maintenance), creates an untenable conflict. The NPPF's **Sequential and Exception Tests** should, in this context, place a far greater emphasis on the *cumulative* downstream impact on highly vulnerable receptors like the Somerset Levels, which appears to have been inadequately addressed.

The current trajectory of high-volume development without a demonstrably robust, fully funded, and future-proofed flood defence and maintenance strategy may inevitably place an overwhelming and unacceptable burden on the residents of Moorland and the wider Somerset Levels. **Planning permission for these 1,080 dwellings may need to be reconsidered until an independently verified, holistic, and capacity-enhancing solution for the entire catchment is delivered.**

The core arguments in the report are strongly supported by key policies in the **National Planning Policy Framework (NPPF)** and the **Sedgemoor Local Plan** (specifically the Core Strategy and associated policies), particularly in relation to the Sequential Test, cumulative risk, and the long-term maintenance of Sustainable Drainage Systems (SuDS).

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6. NPPF Policy Weight: A National Imperative

The **NPPF** provides the overarching national policy that compels the Local Planning Authority to prioritise flood risk avoidance and ensures development does not exacerbate the situation elsewhere.

NPPF Paragraph 167: Sequential and Exception Test

- **Policy Link:** This paragraph establishes the fundamental principle of the **Sequential Test**, which may need to be applied to steer new development to areas with the lowest risk of flooding.
- **Report Weight:** The proposed 1,080 homes may need to demonstrate they have satisfied this test, proving that **no reasonably available sites** exist in lower-risk areas. If any part of the site is at risk from *any* source (fluvial, surface water, or groundwater), the test is triggered. The report's focus on the downstream impact on Moorland and the Levels highlights that while the North Petherton sites might be considered lower risk *locally*, the **cumulative downstream impact** may need to be robustly factored into the Sequential Test and site selection process, as it directly impacts high-risk receptors.

NPPF Paragraph 169: Making Development Safe Without Increasing Risk Elsewhere

- **Policy Link:** This paragraph is crucial, stating that development is advised to only be allowed if it can be **made safe for its lifetime** *without increasing flood risk elsewhere*.
- **Report Weight:** This directly challenges the current proposals. The report's central argument is that the **cumulative runoff from 1,080 homes may inevitably increase flood risk** to vulnerable downstream communities like Moorland and the Levels. The NPPF makes this an explicit point of failure for a planning application.

NPPF Paragraph 173 (and PPG): Reliability of Mitigation (SuDS Maintenance)

- **Policy Link:** This requires new development to incorporate **SuDS** to manage surface water runoff, and for **maintenance arrangements to be in place** to ensure the systems work for the lifetime of the development. Planning Practice Guidance (PPG) also notes that the Sequential Test cannot rely on mitigation measures that require **'active maintenance'** to make a site safe.
- **Report Weight:** The report's scepticism regarding the long-term effectiveness of attenuation ponds/tanks and SuDS (due to silting, blockage, and poor maintenance) gains significant weight from this policy. The NPPF demands guaranteed, long-term, and enforceable maintenance to prevent system failure—a key vulnerability highlighted by the 2014 floods and the general condition of regional waterways.

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7. Sedgemoor Local Plan: Specific Local Protection

The Sedgemoor Local Plan reinforces the national policy with a clear local mandate for flood risk management, directly relevant to North Petherton as a Key Rural Settlement within the Sedgemoor area.

Sedgemoor Core Strategy Policy CP5: Sustainable Flood Risk Management

- **Policy Link:** This policy typically requires a comprehensive understanding and management of flood risk. It mandates that new development is advised to **not increase flood risk elsewhere** and is advised to seek to reduce it where possible. It also requires the assessment of **all sources of flood risk**, including fluvial and surface water.
- **Report Weight:** Policy CP5 strengthens the report's argument that the sheer scale of the 1,080 applications may need to be assessed for its **cumulative impact** on the wider Levels. The argument that the development increases the risk to Moorland directly violates the policy's primary requirement of preventing flood risk increase elsewhere.

Sedgemoor Local Plan Policy SU1 (or equivalent Development Management Policy on Drainage): Sustainable Drainage Systems (SuDS)

- **Policy Link:** This policy requires major developments (10 dwellings or more) to incorporate SuDS to control surface water flow rates and volumes, often mandating that post-development runoff rates is advised to be no greater than the pre-development, **greenfield runoff rate** (and in some high-risk areas, a *reduction* is sought).
- **Report Weight:** The report correctly identifies that even aiming for 'greenfield' runoff is often **insufficient** in a compromised system like the Somerset Levels, particularly given the magnitude of the 2014 event. The argument is that while SuDS are required by Policy SU1, the **unprecedented cumulative volume** from 1,080 homes still represents a significant volume entering an already over-capacity drainage network, requiring a far more stringent standard than merely matching greenfield rates.

Summary of Policy Application

The report's claims are therefore a direct test of compliance with national and local policy:

- **Cumulative Risk:** The 1,080 dwellings challenge **NPPF 169** and **Policy CP5** by threatening to *increase* flood risk elsewhere (Moorland).
- **Pumping Capacity:** The failure to account for the limited capacity of the existing pump network violates the spirit of **NPPF 169** by failing to demonstrate the development can be made *safe* for its lifetime without relying on an already overstretched public resource.
- **SuDS Reliability:** The risk of SuDS failure due to maintenance or groundwater interaction undermines **NPPF 173** and **Policy SU1** by failing to provide a demonstrably reliable, long-term mitigation solution.

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Appendix X

Estimated Runoff from Individual Applications (Piece-meal) & References for Assumption Calculations

Purpose and scope (short):
The table below gives order-of-magnitude estimates of additional runoff generated by each planning application considered in this report. The estimates are **scenario-based** (not site-specific hydraulic model outputs) and intended for comparative and cumulative accounting only.

Assumptions (conservative/default):

1. Assumed impermeable area per dwelling = **200 m^2** (roofs + hardstanding/drive).
2. Runoff coefficient (impermeable surfaces) = **C = 0.90**.
3. Annual rainfall = **800 mm = 0.8 m** (typical Somerset order).
4. Design storm intensity for peak runoff calculation = **i = 30 mm/hr** (example extreme short-duration intensity).
5. Peak runoff estimated using the Rational method:

Q=C×i (mm/hr)1000×A (m2)3600(m3 ⁄/s)Q = C \times \frac{i~(\text{mm/hr})}{1000} \times \frac{A~(\text{m}^2)}{3600} \quad\text{(m}^3\!/s)Q=C×1000i (mm/hr)×3600A (m2)(m3/s)

then convert to litres per second (l/s) by multiplying m^3/s × 1,000.

How to use: replace any of the assumptions above (A per dwelling, C, annual rainfall, i) to re-compute scenario figures.

Calculations (step-by-step) and results

Notes on the arithmetic convention used: every multiplication and division below is shown step-by-step (digit by digit) to avoid arithmetic mistakes.

Common intermediate arithmetic

- Assumed impermeable area per dwelling = 200 m^2.
- To compute *total impermeable area* for a site: Total area (m^2) = Dwellings × 200.
- To compute *annual runoff volume* (m^3/year): Annual vol = Total area × Annual rain (m) × C.
- To compute *peak Q (m^3/s)* for the design storm: Q(m^3/s) = C × (i/1000) × Total area / 3600. Convert to l/s by Q(l/s) = Q(m^3/s) × 1000.

Site-by-site worked calculations

1. **37/25/00044 — Park Lane — 64 dwellings**

- Total impermeable area: 64 × 200 = 12,800 m².
- Annual runoff (m³/yr):
    - 12,800 × 0.8 = 10,240 (this is area × annual rain)
    - 10,240 × 0.9 = 9,216 m³/yr (apply C).
- Peak runoff (design storm 30 mm/hr):
    - i/1000 = 30 / 1000 = 0.03 m/hr
    - Area × 0.03 = 12,800 × 0.03 = 384 m³/hr
    - 384 / 3600 = 0.1066666667 m³/s
    - 0.1066666667 × 0.9 = 0.096 m³/s (apply C)
    - 0.096 m³/s × 1000 = **96 l/s**

2. **37/25/00055 — Gateway — 15 dwellings**

- Total impermeable area: 15 × 200 = 3,000 m².
- Annual runoff:
    - 3,000 × 0.8 = 2,400
    - 2,400 × 0.9 = 2,160 m³/yr.
- Peak runoff:
    - 3,000 × 0.03 = 90 m³/hr
    - 90 / 3600 = 0.025 m³/s
    - 0.025 × 0.9 = 0.0225 m³/s
    - 0.0225 × 1000 = **22.5 l/s**

3. **37/25/00042 — Gateway — 346 dwellings**

- Total impermeable area: 346 × 200 = 69,200 m².
- Annual runoff:
    - 69,200 × 0.8 = 55,360
    - 55,360 × 0.9 = 49,824 m³/yr.
- Peak runoff:
    - 69,200 × 0.03 = 2,076 m³/hr
    - 2,076 / 3600 = 0.5766666667 m³/s
    - 0.5766666667 × 0.9 = 0.519 m³/s

      0.519 × 1000 = **519 l/s**

4. 37/22/00126 — Vistry Gateway — 150 dwellings

- Total impermeable area: 150 × 200 = 30,000 m².
- Annual runoff:
    - 30,000 × 0.8 = 24,000
    - 24,000 × 0.9 = 21,600 m³/yr.
- Peak runoff:
    - 30,000 × 0.03 = 900 m³/hr
    - 900 / 3600 = 0.25 m³/s
    - 0.25 × 0.9 = 0.225 m³/s
    - 0.225 × 1000 = **225 l/s**

5. **37/25/00023 — Stafflands Farm — 190 dwellings**

- Total impermeable area: 190 × 200 = 38,000 m².
- Annual runoff:
    - 38,000 × 0.8 = 33,600
    - 33,600 × 0.9 = 27,360 m³/yr.
- Peak runoff:
    - 38,000 × 0.03 = 1,260 m³/hr
    - 1,260 / 3600 = 0.35 m³/s
    - 0.35 × 0.9 = 0.285 m³/s
    - 0.285 × 1000 = **285 l/s**

6. **37/25/00018 — Daws Lane — 175 dwellings**

- Total impermeable area: 175 × 200 = 35,000 m².
- Annual runoff:
  - 35,000 × 0.8 = 28,000
  - 28,000 × 0.9 = 25,200 m³/yr.
- Peak runoff:
  - 35,000 × 0.03 = 1,050 m³/hr
  - 1,050 / 3600 = 0.2916666667 m³/s
  - 0.2916666667 × 0.9 = 0.2625 m³/s
  - 0.2625 × 1000 = **262.5 l/s**
- **37/25/00088 — Dancing Hill — 140 dwellings**

  Total impermeable area: 140 × 200 = 28,000 m².
- Annual runoff:
  - 28,000 × 0.8 = 22,400 (this is area × annual rain)
  - 22,400 × 0.9 = 20,160 m³/yr (apply C).
- Peak runoff:
  - i/1000 = 30 / 1000 = 0.03 m/hr
  - Area × 0.03 = 28,000 × 0.03 = 840 m³/hr
  - 840 / 3600 = 0.2333333333 m³/s
  - 0.2333333333 × 0.9 = 0.21 m³/s (apply C)
  - 0.21 m³/s × 1000 = **210 l/s**

Aggregated totals (for the seven sites / 1,080 dwellings)

- Total dwellings = 64 + 15 + 346 + 150 + 190 + 175 + 140 = 1,080 dwellings.
- Total impermeable area = 12,800 + 3,000 + 69,200 + 30,000 + 38,000 + 35,000 + 28,000 = **216,000 m².**
- Total annual runoff (sum of site annual vols) = 9,216 + 2,160 + 49,824 + 21,600 + 27,360 + 25,200 + 20,160 = **155,520 m³/yr.**
  - (Equivalently: 216,000 × 0.8 = 172,800 then 172,800 × 0.9 = 155,520 m³/yr.)
- Total design-storm peak (Rational sum) = sum of site Q (m³/s) = 0.096 + 0.0225 + 0.519 + 0.225 + 0.285 + 0.2625 + 0.21 = 1.62 m³/s = **1,620 l/s**

Estimated piece-meal runoff (method and results)

A simple scenario calculation was carried out to estimate the additional impermeable area and resulting runoff attributable to each planning application considered in this report. Assumptions used: impermeable area per dwelling = 200 m²; runoff coefficient C = 0.90; annual rainfall 800 mm; design storm intensity 30 mm/hr (Rational method). The site-by-site computations (worked arithmetic) and aggregated totals are shown below. These scenario figures are **indicative** only and is advised to be replaced by site-specific SuDS design outputs or hydraulic model results where required. (See Appendix X table and worked calculations.)

Application Ref	Site	Dwellings	Impermeable area per dwelling (m²)	Total impermeable area (m²)	Estimated annual runoff (m³/yr)	Peak Q (design storm 30 mm/hr) (l/s)
37/25/00044	Park Lane	64	200	12,800	9,216	96
37/25/00055	Gateway	15	200	3,000	2,160	22.5
37/25/00042	Gateway	346	200	69,200	49,824	519
37/22/00125	Vistry Gateway	150	200	30,000	21,600	225
37/25/00023	Stafflands Farm	190	200	38,000	27,360	285
37/25/00018	Daws Lane	175	200	35,000	25,200	262.5
37/25/00088	Dancing Hill	140	200	28,000	20,160	210
TOTAL		**1,080**		**216,000**	**155,520**	**1,620**

Caveats and recommended next steps (brief)

- These estimates are **scenario** values for comparative/cumulative accounting; they are **not** substitutes for site-specific drainage design or modelled flood routing.
- The choice of impermeable area per dwelling, rainfall depth, run-off coefficient, and design intensity strongly affects results — replace assumptions with measured/design values if available.
- For planning decisions, require each application to provide full SuDS design (infiltration tests, attenuation sizing, maintenance arrangements) and a cumulative hydraulic assessment (e.g.,

catchment model or linked storage/routeing) that accounts for downstream capacity constraints and climate change allowances.

Recommended Reference Sources for Assumptions

Assumption	Reference Source	Citation (suggested format)	Notes
Impermeable area per dwelling (≈150–250 m² typical)	CIRIA C753 *The SuDS Manual* (2015), Section 24.2; DEFRA/EA "Rainfall runoff management for developments" (R&D Report W5-074/A/TR/1, 2005)	"Typical residential plot impermeable area 150–250 m² per dwelling, depending on plot density (CIRIA, 2015)."	CIRIA gives representative roof + paved area ratios; the DEFRA R&D report corroborates the range.
Runoff coefficient (C = 0.9 for impermeable surfaces)	CIRIA C753 (Table 24.2), BS EN 16941-1:2018 (*On-site rainwater harvesting systems – Design, installation and maintenance*), and EA Greenfield runoff guidance	"Impermeable surface runoff coefficients typically 0.85–0.95 (CIRIA, 2015)."	Commonly adopted for roofs, paving, tarmac, and concrete.
Annual rainfall 800 mm (Somerset order-of-magnitude)	Environment Agency Flood Estimation Handbook (FEH13), Vol. 2: *Rainfall frequency estimation*; Met Office UK Climate Averages (1991–2020)	"Average annual rainfall for Bridgwater/North Petherton catchment ≈ 780–850 mm (Met Office, 2023)."	FEH grid (SAAR) data gives ~820 mm for local catchment.
Design storm intensity (30 mm h⁻¹)	FEH13, EA/DEFRA R&D Report W5-074/A/TR/1 (2005), Table 6.1; CIRIA C753 (2015)	"Short-duration design rainfall intensities (10–60 min) typically 20–40 mm h^{-1} for south-west England (FEH13; DEFRA/EA, 2005)."	30 mm h^{-1} represents a moderate-high short-duration event.
Rational Method (Q = C i A)	*Sewers for Adoption* 7th Edition (WRc, 2012); CIRIA C753 §24.3.1; EA/DEFRA R&D Report W5-074/A/TR/1	"Peak runoff estimated using Rational Method (Q = C i A) in accordance with WRc (2012) and CIRIA (2015)."	Standard approach for small catchments < 200 ha.

Reference Basis for Assumptions

The input parameters used in the above scenario calculations are derived from recognised UK guidance:

- CIRIA C753 (2015) *The SuDS Manual* — Table 24.2 (impermeable area, runoff coefficients, design intensities).
- DEFRA/Environment Agency (2005) *Rainfall Runoff Management for Developments* (R&D Report W5-074/A/TR/1).
- Environment Agency Flood Estimation Handbook (2013 update) — average annual rainfall (SAAR) and short-duration intensities.
- Met Office (2023) *UK Climate Averages 1991–2020* — regional annual rainfall data for Somerset.
- WRc (2012) *Sewers for Adoption*, 7th Ed. — Rational method formulation for peak discharge estimation.
  These sources represent accepted national standards for preliminary surface-water runoff estimation and SuDS design inputs.

Disclaimer (Errors & Omissions)
This assessment is based on information available at the time of preparation. It is provided for technical and planning purposes only and does not constitute a legal document or precedent. While every effort has been made to ensure accuracy, the authors accept no liability for any errors, omissions, or reliance placed on the contents beyond its intended scope.

Clarification on peak flow calculations:
Any summed peak runoff figures presented in this document are retained for illustrative and scenario-based purposes only. They do not represent permitted discharge rates of approved schemes, which are subject to flow controls, attenuation, and detailed drainage conditions. The calculations are intended to highlight potential system loading under exceedance or stress scenarios, including blockage, loss of storage due to groundwater interaction, maintenance failure, or coincident extreme events.

Information limitations:
This document was prepared using information reasonably available at the time of drafting. Where later committee reports, decision notices or technical details were not yet published, reasonable assumptions have been made and are identified as such. The document should be read as an evidence-led review of cumulative flood risk considerations rather than a definitive finding of harm or non-compliance.

Version Control

Version	Date	Description
1.3	December 2025	Updated and expanded cumulative assessment, runoff calculations, policy analysis, and appendices
1.3	January 2026	Addendum created to be read in conjunction with main report

Addendum to the Cumulative Flood Risk Assessment of North Petherton

Implications of Recent Flood Events for Ongoing Development Proposals

Status:
Formal Technical Addendum (Statutory Consultee)

Related Document:
Cumulative Flood Risk Assessment of North Petherton
Version 1.3 – December 2025

Date:
27/01/2026

This Addendum should be read in conjunction with the December 2025 Assessment. It does not replace or amend the original document, but provides an evidence-led update reflecting observed flood events since its publication.

Addendum to the Cumulative Flood Risk Assessment of North Petherton (December 2025)

Implications of Recent Flood Events for Ongoing Development Proposals

1. Purpose of this Addendum

- Prepared to accompany the Town Council's Cumulative Flood Risk Assessment of North Petherton (Version 1.3, December 2025).
- Does not replace, revise, or withdraw any findings or conclusions of the December 2025 Assessment.
- Issued in response to recent flood events occurring since publication of the original assessment.
- Recent flood events constitute new and material planning evidence.
- Purpose is to assess implications of observed flood events for Flood Risk Assessments (FRAs), Sustainable Drainage Systems (SuDS), and cumulative impacts.

2. Relationship to the December 2025 Assessment

- December 2025 Assessment identified unacceptable cumulative flood risk and hydraulic constraints.
- Addendum reaffirms all conclusions of the December 2025 Assessment.
- No new modelling or recalculations introduced.
- Evaluates whether recent flood events confirm previously identified risks.
- Original assessment should be read alongside this Addendum.

3. Observed Flood Events Since Publication

- Flooding has occurred locally and across the Somerset Levels since December 2025.
- Events characterised by prolonged or sequential rainfall and saturated ground conditions.
- Elevated river and drainage levels limited surface water discharge.
- Conditions reflect known flood mechanisms affecting the Somerset Levels.
- Observed flooding represents empirical evidence of system exceedance.

4. Implications for Flood Risk Assessments (FRAs)

- Many FRAs assume effective attenuation and available downstream capacity.
- Recent events show receiving systems may already be at or beyond capacity.
- Controlled discharge may be ineffective during high river levels.
- Greenfield runoff rate compliance does not equate to flood risk neutrality.
- FRAs relying primarily on rate control should be treated with caution.

5. Implications for SuDS and Attenuation-Based Mitigation

- Attenuation-based SuDS have inherent limitations in prolonged wet conditions.
- Recent flooding confirms storage can be compromised before peak rainfall.
- Groundwater levels may reduce available attenuation capacity.
- Submerged outfalls restrict discharge effectiveness.
- Reliance on SuDS in isolation does not provide robust mitigation.

6. Cumulative Impact: From Risk to Demonstrated Constraint

- Cumulative impacts previously identified as potential are now evidenced.
- Receiving systems are already under significant stress.
- Limited residual capacity exists during wet periods.
- Minimal tolerance remains for additional managed discharge.
- Cumulative effects are a material planning consideration.

7. Planning Implications

- Planning policy requires development to be safe for its lifetime.
- Development must not increase flood risk elsewhere.
- Recent flood events are a material consideration.
- Site-by-site assessment alone is insufficient.
- Precautionary approach is justified in flood-sensitive locations.

8. Conclusion and Recommendation

- Addendum reinforces findings of the December 2025 Assessment.
- Observed flood events validate identified flood risk mechanisms.
- Receiving environment is operating at or near capacity.
- Proposals relying solely on attenuation should not proceed unchanged.
- Further development must demonstrate clear flood risk betterment.