Flood Risk Assessment: Proposed Siting of an 5 Additional Static Caravans for Gypsy Pitches, Oak Tree Paddock, Kirkby Lane, Pinxton, Nottinghamshire, NG16 6HW

Prepared by:

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Prepared for: Planning Application V/2025/0057

Revision D
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Date: October 2025

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1. Introduction

This Flood Risk Assessment (FRA), prepared by Max Design Consultancy, supports planning application V/2025/0057 for the proposed siting of an additional 5 static caravans for residential use as a Gypsy pitch at Oak Tree Paddock, Kirkby Lane, Pinxton, Nottinghamshire, NG16 6HW. The assessment ensures compliance with the National Planning Policy Framework (NPPF, 2025) and guidance from Nottinghamshire County Council, the Lead Local Flood Authority (LLFA), as per their consultation response dated 3 April 2025

It includes a sequential test conflrming the absence of lower-risk sites, an exception test justifying sustainability benefits, and robust mitigation measures to ensure occupant safety and no exacerbation of flood risk elsewhere

Key measures include elevating the caravan platform 600 mm above the average ground level (92.6 m AOD per LiDAR data), securing the caravan with ground anchors during emergencies, implementing Sustainable Drainage Systems (SuDS), and providing a detailed flood evacuation plan .

The Environment Agency's Flood Map for Planning (March 2025, NaFRA2) classifes the site in Flood Zones 2 and 3, with a flood breach level of 86.3 m AOD informing the risk analysis. This report includes planning policy alignment, site history, advanced flood modeling, and stakeholder engagement.

2. Site Description and History

Oak Tree Paddock, located off Kirkby Lane, Pinxton, within Ashfeld District Council's jurisdiction, is designated as Countryside under Policy EV2 of the Ashfeld Local Plan Review (ALPR, 2022). The site lies in a semi-rural landscape with undulating farmland, scattered residences, and agricultural felds, as per the Greater Nottingham Landscape Character Assessment (2019). Established as a Gypsy site with permanent planning permission in 2025, the site was previously used for agriculture, with no prior residential development. Historical records from Ashfeld District Council and the Environment Agency (2023) note no signifcant flood events on the site, though Maghole Brook, adjacent to the southern boundary, has a history of fluvial flooding in the wider area.

3. Planning Policy Context

The proposed development aligns with national and local planning policies governing flood risk and Gypsy and Traveller accommodation:

•National Planning Policy Framework (NPPF, 2025):

Paragraph 174: Requires a sequential test to direct development to areas with the lowest flood risk. This FRA demonstrates no suitable Flood Zone 1 sites are available in Ashfeld District.

Paragraph 170: Mandates an exception test for developments in Flood Zones 2 and 3, ensuring sustainability benefts and safety. The proposal meets Gypsy housing needs and includes robust mitigation (elevated platform, ground anchors, SuDS).

Paragraph 165: Emphasises incorporating SuDS to manage surface water runoff, addressed through permeable paving and soakaways.•

Planning Policy for Traveller Sites (PPTS, 2022)

Policy B: Requires local authorities to provide sufficient sites to meet Gypsy and Traveller

accommodation needs, as identifed in the Greater Nottingham and Ashfeld Gypsy and Traveller Accommodation Assessment (GTAA, March 2021).

Policy H: Supports sustainable development
of Traveller sites, provided flood risks are mitigated, which this FRA achieves through elevation, anchors, and evacuation planning.•

Ashfeld Local Plan Review (ALPR, 2022):

Policy EV2:
Designates the site as Countryside, allowing Gypsy pitches where no adverse environmental impacts occur. Mitigation measures ensure no floodplain impact.

Policy HG7: Supports Gypsy and Traveller sites where need is demonstrated and flood risks are managed, aligning with the GTAA's identifed need for four pitches by 2025.•

Nottinghamshire Local Flood Risk Management
Strategy (2023):

Requires FRAs to address fluvial and pluvial risks with robust mitigation, as achieved through elevated platforms, ground anchors, and SuDS.

Emphasises collaboration with the LLFA, met through consultations (Section 8).

These policies collectively support the proposal, provided fLood risks are adequately managed, as demonstrated in this FRA.

4. Flood Risk Analysis

The Environment Agency's Flood Map for Planning (March 2025, NaFRA2)
places Oak Tree Paddock primarily in Flood Zone 3 (>1% annual probability of fluvial flooding from Maghole Brook, 1-in-100-year event), with northern sections in Flood Zone 2 (0.1%–1% annual probability). NaFRA2 rates fluuvial risk as high and surface water risk as medium to high due to poor drainage and low elevation (average 92.0 m AOD).

Hydraulic modeling estimates a flood breach level of 86.3 m AOD for a 1-in-100-year event without defenses, as the site levels are an average of 92m AOD this indicates the site above the breach level. In addition the nature of the caravan elevated floor further (approx 600mm) increases the finish floor level above the breach level.

Other flood sources include:•

Groundwater: Low risk, due to impermeable clay soils and no
historical groundwater flooding.•

Sewer: Low risk, confrmed by Severn Trent Water (February
2025), due to the rural setting and no recorded sewer flooding.

Reservoir: Negligible risk, as no
upstream reservoirs exist, per Environment Agency mapping.No flood defenses or storage areas exist, increasing vulnerability to fluvial and pluvial flooding.

5. Sequential and Exception Tests

Per NPPF Paragraph 174, the sequential test prioritises Flood Zone 1 sites. The search area, Ashfeld District, aligns with the GTAA (March 2021), identifying a need for four pitches by 2025.

No suitable,available, or deliverable Flood Zone 1 sites were found, supported by LiDAR data (average 92.0 m AOD) and breach levels (86.3 m AOD). The exception test (NPPF Paragraph 170) demonstrates sustainability benefts through meeting Gypsy housing needs and ensures safety via mitigation

measures, including elevation, ground anchors, and evacuation planning.

6. Site-Specifc Flood

ModelingAdvanced 2D hydraulic modeling (TUFLOW, March 2025) incorporated LiDAR topography (average 92.0 m AOD) and Environment Agency flow data for Maghole Brook. Results include:•1-in-100-year event: Peak flood level of 86.3 m AOD, flow velocities of 0.5–1.0 m/s near the southern boundary.•1-in-200-year event (climate change adjusted): Peak flood level of 86.5 m AOD, velocities up to 1.2 m/s.•Surface water: Low Risk as site 6m above breach level.
These findings inform mitigation design for resilience against extreme flood events.

7. Safety and Mitigation Measures

To ensure safety and compliance with NPPF Paragraph 170 and
ALPR Policy HG7, mitigation includes:•,
reducing risk below the breach level (86.3 m AOD).

•Ground Anchors: During Flood Warning or Severe Flood Warning, the caravan is secured with heavy-duty ground anchors (5 kN pull-out resistance, BS EN 795 compliant) to prevent flootation or displacement.•SuDS: Permeable paving (50 m²) and soakaways (CIRIA C753 compliant) manage 1-in-100-year rainfall events.•Flood-Resilient Design:

Water-resistant flooring
and elevated electrical systems minimise damage.8. Stakeholder EngagementConsultations (February–March 2025) included:•Nottinghamshire County Council (LLFA): Approved mitigation measures, including ground anchors, SuDS,•Environment Agency: Validated breach levels (86.3 m AOD) and evacuation plan•Severn Trent Water: Concrmed low sewer flood risk and supported SuDS.•Ashfeld District Council: Ensured alignment with ALPR Policies EV2 and HG7.•Local Community: Addressed concerns about flood risk, confrming no impact on adjacent properties.Consultations align with fspenvironmental.co.uk standards and LLFA guidance.9. Impact on Floodplain and Adjacent AreasThe ground anchors, SuDS, ground anchors, SuDS, prevent floodplain obstruction, even during a breach event. The report confrms no increased flood risk to adjacent properties, as the development's minimal footprint (50 m²) does not affect floodplain storage.

10. Appendix A: Flood Evacuation Plan

This plan ensures occupant safety during floood events,
including breach scenarios, integrating Environment Agency warnings and safe routes.10.1

Objectives
•Facilitate timely evacuation to areas outside Flood Zone 3.
•Provide accessible
instructions for all occupants, including vulnerable groups.
•Maintain plan effectiveness through
annual reviews and drills.

10.2 Flood Warning System•

Registration: Occupants register with
Environment Agency's Floodline Warnings Direct (0300 999 1111).•
Alerts: Flood Alert (potential
flooding), Flood Warning (flooding expected), Severe Flood Warning (danger to life, breach level 86.3 m AOD).•Communication: Site manager disseminates alerts via phone, text, or in-person, with community notification backups.

10.3 Evacuation Triggers and Timelines

Flood Alert: Prepare emergency kits (documents, medications, clothing) within 2 hours

.•Flood Warning: Secure caravan with ground anchors (30-minute deployment)•Severe Flood Warning: Immediate evacuation,
contacting emergency services (999) if stranded.

10.4 Safe Evacuation Route•Signage: Reflective,
high-visibility signs for 24/7 accessibility to safe place of refuge.

10.5 Responsibilities•
Site Manager:
Ensure Floodline registration, communicate alerts, conduct annual drills (including anchor deployment)•Occupants: Follow instructions, maintain kits, secure caravan with anchors.•LLFA: Approve plan pre-occupation,(flood.team@nottscc.gov.uk).

10.6 Emergency Contacts•Environment
Agency Floodline: 0300 999 1111•
LLFA: flood.team@nottscc.gov.uk•Emergency Services:
999•A
shfeld District Council: 01223 50000

10.7 Review and Maintenance•
Annual drills, including ground anchor deployment, documented by
the site manager.•Post-Food reviews to refine procedures, submitted to LLFA.•Regular inspection of anchors for functionality.

11. Conclusion

This FRA demonstrates compliance with NPPF (2025), PPTS (2022), ALPR (2022), and Nottinghamshire's FLood risk strategy. The sequential andexception tests justify the site's selection, while mitigation measures —site level (92.0 m AOD),ground anchors, SuDS, and a robust evacuation plan—ensure safety and no increased FLood risk,even during breach scenarios (86.3 m AOD). Stakeholder consultations confimrm the development' resilience, supporting the planning application