Strategic Flood Risk Assessment Level 2 Appendix A

Detailed Site Assessment Evidence

Contents

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Level 2 Strategic Flood Risk Assessment - COU046

Prepared for
Blaby District Council

Date
January 2026

Contents

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Peatling Road. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Blaby District Council Level 1 SFRA and read the Blaby District Council Level 2 SFRA Main Report and is therefore familiar with the terminology used in this report.

1.1 Site details

- Site Code: COU046
- Location: Land off Peatling Road, Countesthorpe.
- Site area: 17.6ha
- Existing site use: Greenfield
- Proposed site use: Residential

1.2 Topography

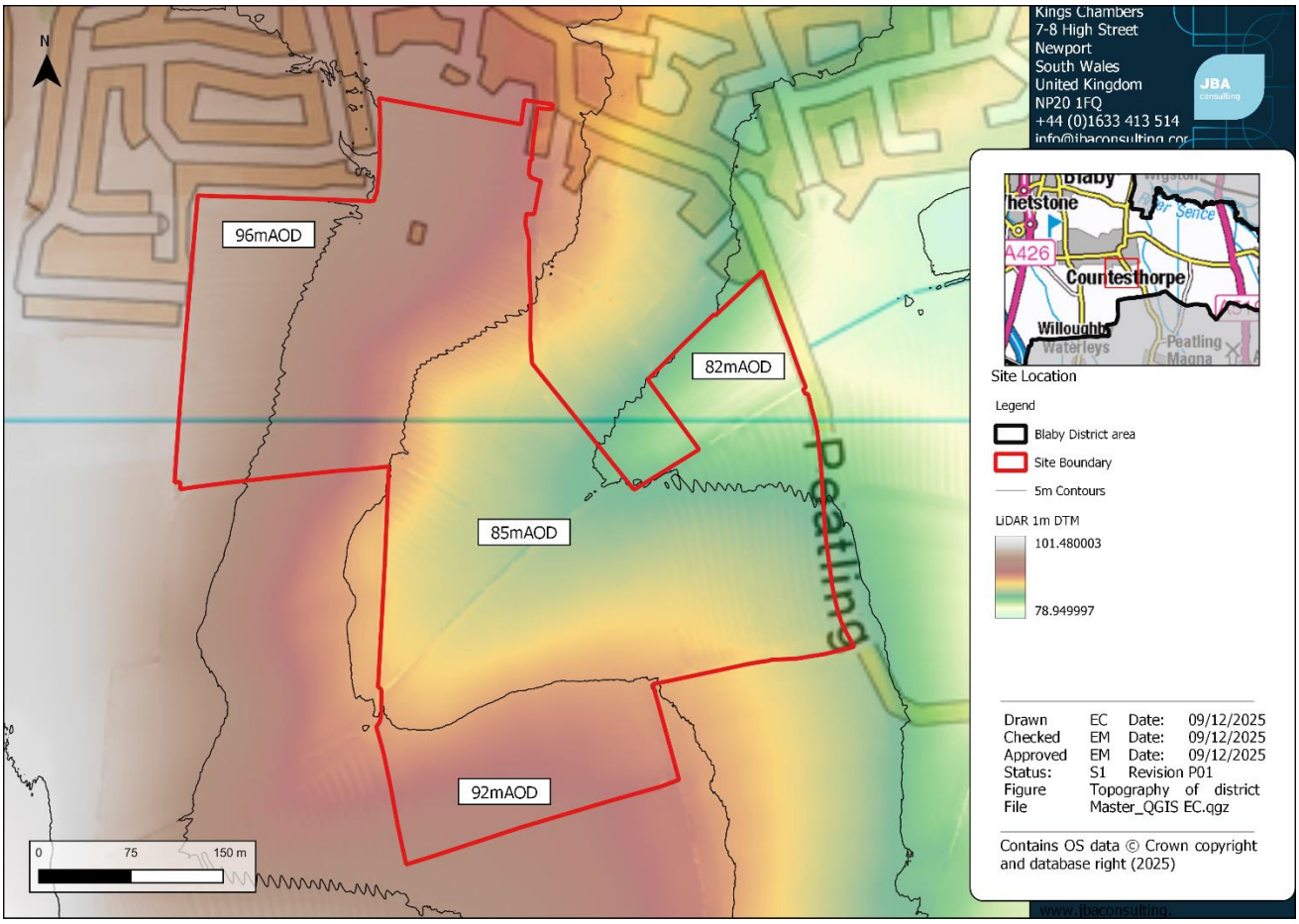

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR. The topography of the site is characterised by higher ground along the northern edge, the western boundary, and parts of the southern boundary, with elevations ranging from 92mAOD to 95mAOD. From these elevated areas, the land gently

slopes down towards the east, where the lowest elevations are located, these values range from 82m AOD to 86mAOD. This creates an overall downslope toward the east.

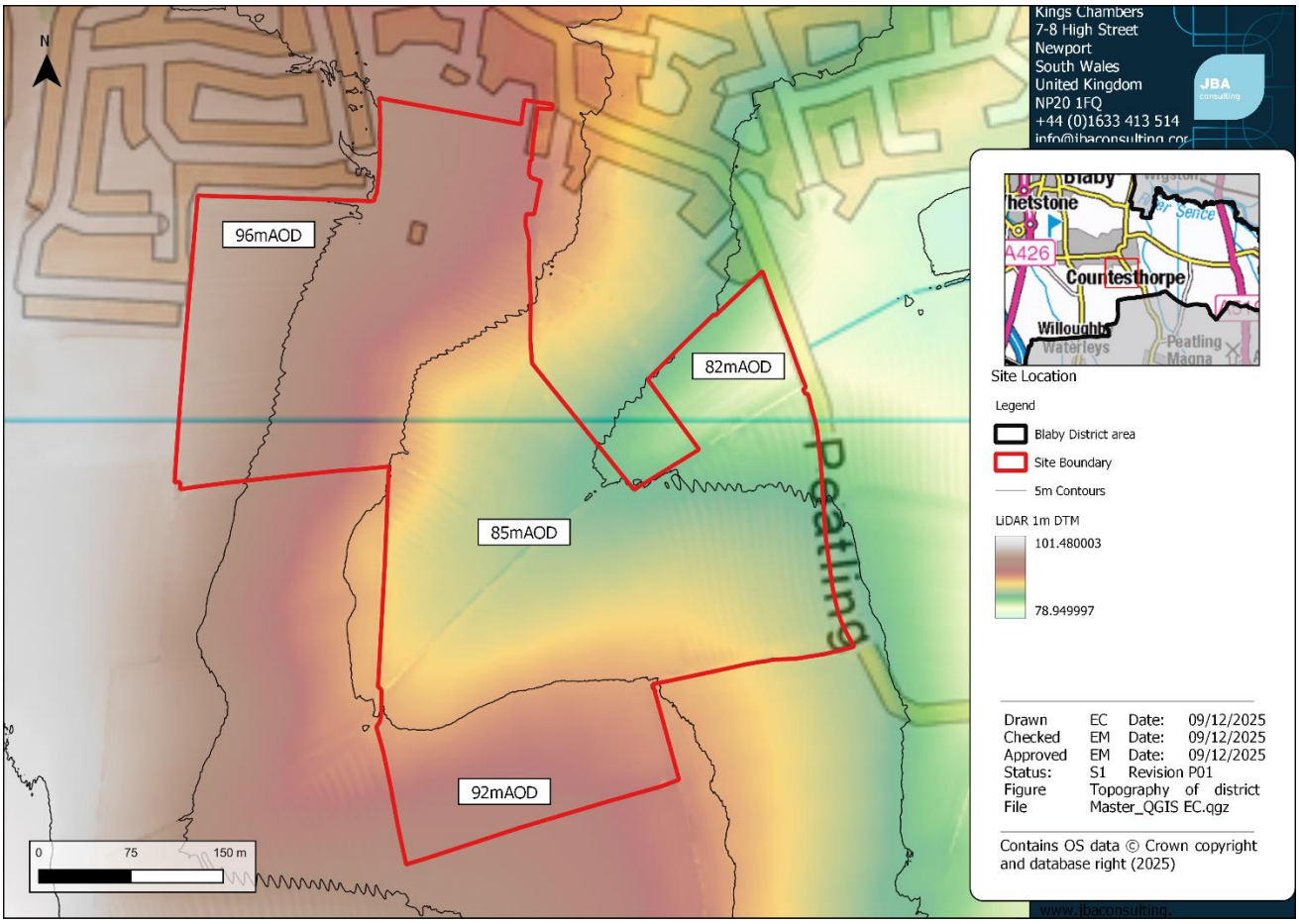

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Blue Lias Formation with mudstone and limestone interbedded.
- Superficial - Till Mid Pleistocene, Diamicton

Soils at the site consist of:

- Slowly permeable seasonally wet soils. Slightly acidic, base-rich, loamy and clayey.

2 Sources of flood risk

2.1 Location of site within the catchment

The site lies centrally within the Countesthorpe Brook catchment. It occupies a northern position in the catchment, draining directly into Countesthorpe Brook, which flows eastwards before joining the Sence Water Body. A tributary of the River Sence flows in a southerly direction approximately 0.5km east of the site. A land drain, visible in both the OS mapping and LiDAR is shown travelling in a westerly direction toward the site from the tributary, it appears to be culverted under Peatling Road, where it is again visible in the centre of the site, travelling from the eastern to the western boundary.

2.2 Fluvial

2.2.1 Available data

The EA's Flood Map for Planning (FMfP) has been used within this assessment. No detailed modelling is available at this location.

2.2.2 Description of risk to the site

The site is located entirely within Flood Zone 1 of the Flood Map for Planning, meaning that the site has less than 0.1% annual probability of flooding, therefore the site is at a very low risk of fluvial flooding.

Table 2-1: Existing fluvial flood risk based on EA FMfP

Flood Zone 1 (%)	Flood Zone 2 (%)	Flood Zone 3a (%)	Flood Zone 3b (%)
100	0	0	0

**The percentage flood zones quoted show the percentage of the site at flood risk from that particular flood zone or event, including the percentage of the site at flood risk at a higher risk zone, e.g. Flood Zone 2 includes the Flood Zone 3 percentage. Flood Zone 1 is the remaining area outside Flood Zone 2 (Flood Zone 2 + Flood Zone 1 = 100%).*

2.3 Surface water

2.3.1 Available data

The EA's Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment.

2.3.2 Description of risk to the site

Error! Reference source not found. shows the extent of the site at risk in the 3.3%, 1%, and 0.1% AEP events, as well as the maximum depths within the site boundary.

The majority of the site is at a very low risk of flooding from surface water. The extent of surface water flooding is mostly located in and around the area of the land drain in the centre of the site, travelling from the southwestern boundary toward the northeastern boundary. Additionally, a flow path is present in the northeastern extent of the site, which appears to connect to the central land drain. Areas of localised surface water flooding are present across the site. These areas are located in the central and northern extent of the site.

During the 3.3% AEP event (high risk), flooding extends across 1.8% of the site, and is limited to the central land drain, with a small amount of ponding occurring along the eastern boundary, where the land drain exits the site. The depth of flooding is between 0.6m and 0.9m in all areas, with velocities between 0.5m/s and 1m/s and a maximum hazard of Significant.

During the 1% AEP event (medium risk), flooding extends across 2.9% of the site, flooding is again limited to the central land drain. The depth of flooding ranges between 0.6m and 0.9m in all areas, and velocities between 1m/s and 2m/s, with a maximum hazard classification of Significant.

During the 0.1% AEP (low risk) event, flooding extends across 8.6% of the site, with most flooding occurring in the central land drain, and small localised areas in the central area of the site. The depth of flooding remains between 0.6 and 0.9m in all areas, with velocities between 1m/s and 2m/s. The maximum hazard classification of the flooding is Significant.

Table 2-2: Existing surface water flood risk based on the RoFSW map

Event	3.3% AEP	1% AEP	0.1% AEP
Percentage of site at risk* (%)	1.8	2.9	8.6
Maximum depth (m)	0.6-0.9	0.6-0.9	0.6-0.9
Maximum velocity (m/s)	0.5-1	1-2	1-2
Maximum hazard classification	Significant	Significant	Significant

** The percentage surface water extents quoted show the percentage of the site at surface water risk from that particular event, including the percentage of the site at flood risk at a higher risk zone (e.g. 1% AEP includes the 3.3% AEP percentage).*

2.4 Reservoir

The site is not shown to be at risk of reservoir flooding during the 'dry day' or 'wet day' scenario from the EA reservoir flood maps.

2.5 Groundwater

The JBA Groundwater Emergence Map shows that most of the site has a very low risk of groundwater flooding. A small section along the northern boundary in the eastern extent of

the site shows that groundwater levels are between 0.5m and 5m below the ground surface.

Based on the RoFSW and topography of the site it is likely that any groundwater that emerges will flow south toward the southern boundary of the site. Due to the increased elevations along the southern and eastern boundaries of the site water is likely to pool in the central and eastern areas of lower topography.

This assessment does not negate the requirement that an appropriate assessment of the groundwater regime should be carried out at the site-specific Flood Risk Assessment (FRA) stage.

2.6 Sewers

The site lies within the Countesthorpe wastewater catchment, which is assessed as Band 0 for internal sewer flooding risk in Severn Trent's Soar Strategic Planning Area Drainage and Wastewater Management Plan, indicating that sewer flooding is not a strategic issue within the catchment.

2.7 Flood history

There are no recorded flood extents within the site area. Additionally, no flood events were noted for this area in the L1 SFRA or the Leicestershire County Council Preliminary Flood Risk Assessment.

3 Climate Change

Increased storm intensities due to climate change may increase the extent, depth, velocity, hazard, and frequency of both fluvial and surface water flooding. Please the Level 1 SFRA for information on climate change allowances.

Development proposals at the site must address the potential changes associated with climate change and be designed to be safe for the intended lifetime. The provisions for safe access and egress must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

The Environment Agency's Risk of Flooding from Rivers and the Sea plus Climate Change (RoFRS+CC) dataset was used for this assessment. The central allowance for the 2050s epoch (20%) has been applied to the 3.3%, 1%, and 0.1% AEP events.

3.1.2 Description of risk to the site

The RoFRS plus climate change dataset shows that the site is flood free in all events, therefore, fluvial flooding is very low on the site in the climate change scenario.

Table 3-1: Comparison of fluvial flood risk to the site between the 1% AEP and 1% AEP plus 20% climate change extents.

Event	1% AEP	1% AEP plus 20% CC
Percentage of site at risk (%)	0	0
Maximum depth (m)	N/A	N/A
Maximum velocity (m/s)	N/A	N/A
Maximum hazard classification	N/A	N/A

3.2 Surface water

3.2.1 Available data

The Environment Agency's Risk of Flooding from Surface Water plus Climate Change (RoFSW+CC) dataset was used to inform this assessment. The central climate change allowance for the 2050s epoch has been applied to the 3.3%, 1%, and 0.1% AEP surface water flood events. This is not suitable for informing site-specific assessments as the lifetime of residential of residential development is 100-years but is used here in absence of better data. Developers should apply the upper end allowance for the 2070s epoch as part of their site-specific FRAs.

3.2.2 Description of risk to the site

The RoFSW plus Climate Change mapping shows that the site is moderately sensitive to increases in rainfall due to climate change. Compared with the baseline scenario, the flood extent has increased in multiple areas such as the main flooding extent on the land drain, the localised areas of flooding, and a new localised area of flooding in the western extent of the site. However, these increases in extent are relatively minor.

The results for the climate change scenarios are consistent with the baseline, indicating low sensitivity to climate change. In all events, the depths, velocities and hazard classifications all remain the same as the present-day scenario. In the 3.3% AEP + CC event the flooding extent increases to 2.3%, in the 1% AEP + CC event the extent increases to 4.23%, and in the 0.1% AEP + CC event, the flooding extent increases to 10.6% of the site.

Table 3-2: Comparison of surface water flood risk to the site between the 1% AEP and 1% AEP plus 20% climate change extents.

Event	1% AEP	1% AEP plus 20% CC
Percentage of site at risk (%)	2.9	4.2
Maximum depth (m)	0.6-0.9	0.6-0.9
Maximum velocity (m/s)	1-2	1-2
Maximum hazard classification	Significant	Significant

4 Flood risk management infrastructure

4.1 Defences

The EA AIMS dataset shows that the site is not protected by any formal flood defences.

4.2 Residual risk

The site contains a land drain running from the western to the eastern boundary. Based on LiDAR data and OS mapping, it is likely that sections of this drain are culverted. One probable culvert location is in the northeastern part of the site, where a gate and path lead into the northern field, the drain appears to pass beneath this area. Another potential culvert is along the eastern boundary, where the drain ends, it seems to continue beneath Peatling Road into the next field. Potential for residual risk is present if culverts become blocked by debris, sediment, or vegetation. Blockages may cause widespread flooding in the site. A site-specific FRA supported by detailed modelling should assess the risk to the site from blockage. Ideally any culverts would be opened up and integrated into SuDS for the site as part of any development plans.

5 Emergency planning

5.1 Flood warnings and alerts

The site is not located in an EA Flood Warning or Flood Alert Area.

5.2 Access and egress

Safe access and egress will need to be demonstrated in the 1% AEP plus climate change surface water events. Site drainage proposals should address the requirements for access routes, avoid impeding surface water flows and preserve the storage of surface water to avoid exacerbation of flood risk elsewhere on the site and in the wider catchment.

5.2.1 Potential access

The site is bordered by Peatling Road to the east, this is the only road accessible to the site so would be the only access route.

5.2.2 Fluvial

Safe access and egress are available from Peatling road in all events.

5.2.3 Surface water

Safe access and egress are available from Peatling road in all events.

5.3 Dry islands

The site is not located on a dry island.

6 Requirements for drainage control and impact mitigation

6.1 Broadscale assessment of possible SuDS

- The site is considered to have very low susceptibility to groundwater flooding, this should be confirmed through additional site investigation work. Below ground development such as basements may still be susceptible to groundwater flooding.
- A small area on the northern border of the eastern extent, groundwater levels are indicated to be between 0.5 and 5m below ground level and there is a risk of flooding to subsurface assets and below ground development such as basements. Groundwater monitoring is recommended to determine the seasonal variability of groundwater levels, as this may affect the design of the surface water drainage system.
- Most of the site has groundwater levels that are indicated to be at least 5m below ground level and groundwater flooding is not likely, however below ground development such as basements may still be susceptible to groundwater flooding.
- BGS data indicates that the underlying geology is the Blue Lias Formation and is likely to be poorly draining. Any proposed use of infiltration should be supported by infiltration testing. Off-site discharge in accordance with the SuDS hierarchy is required to discharge surface water runoff.
- The site is not located within a Groundwater Source Protection Zone and there are no restrictions over the use of infiltration techniques with regard to groundwater quality.
- The site is not located within a historic landfill site.

6.2 Opportunities for wider sustainability benefits and integrated flood risk management

- Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, water quality, amenity and biodiversity. This could provide wider sustainability benefits to the site and surrounding area. Proposals to use SuDS techniques should be discussed with relevant stakeholders (Local Planning Authority, Lead Local Flood Authority, and the EA) at an early stage to understand possible constraints.
- The central land drain should be integrated into the site drainage strategy as blue-green infrastructure.
- Development at this site should not increase flood risk either on or off site. The design of the surface water management proposals should take into account the impacts of future climate change over the projected lifetime of the development.

- Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered.
- Consideration should be made to the existing condition of the River Sence and its Water Framework Directive objectives for water quality. The use of multistage SuDS treatment will improve water quality of surface water runoff discharged from the site and reduce the impact on receiving water bodies.
- Opportunities to incorporate source control techniques such as green roofs, permeable surfaces and rainwater harvesting must be considered in the design of the site.
- The potential to utilise conveyance features such as swales to intercept and convey surface water runoff should be considered. Conveyance features should be located on common land or public open space to facilitate ease of access. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.

7 NPPF and planning implications

7.1 Exception Test requirements

The Local Planning Authority will need to confirm that the Sequential Test has been carried out in line with national guidelines. The Sequential Test will need to be passed before the Exception Test is applied.

The NPPF classifies residential development as More Vulnerable.

The Exception Test is not required for development at this site because the site does not contain Flood Zones 2, 3, or 3b.

7.2 Requirements and guidance for site-specific Flood Risk Assessment

At the planning application stage, a site-specific FRA will be required as the proposed development site:

- Is within Flood Zone 1 with a site area of 1 hectare or more

All sources of flooding should be considered as part of a site-specific FRA.

Consultation with the Local Authority, Lead Local Flood Authority, Water Company, and the EA should be undertaken at an early stage.

Any FRA should be carried out in line with latest guidance including the National Planning Policy Framework (NPPF), Flood Risk and Coastal Change Planning Practice Guidance (PPG), and Blaby District Council Local Plan Policies.

The development should be designed with mitigation measures in place where required.

7.3 Guidance for site design and making development safe

Development should be steered outside of the centre of the site, near the land drainage channel.

Developers should consider utilising the central drainage channel as a green corridor or as a location for SuDS.

A detailed hydraulic model of surface water flooding may be required at FRA stage to accurately represent the risk surface water.

The risk from surface water flow routes should be quantified as part of a site-specific FRA, including a drainage strategy, so runoff magnitudes from the development are not increased by development across any ephemeral surface water flow routes. A drainage strategy should help inform site layout and design to ensure runoff rates are as close as possible to pre-development greenfield rates, with areas of surface water ponding used as open space and SuDS or water compatible/essential infrastructure uses only.

Arrangements for safe access and egress will need to be provided for the 1% surface events with an appropriate allowance for climate change, considering depth, velocity, and

hazard. Design and access arrangements will need to incorporate measures, so development and occupants are safe.

Provisions for safe access and egress should not impact on surface water flow routes or contribute to loss of floodplain storage. Consideration should be given to the siting of access points with respect to areas of surface water flood risk.

8 Conclusions

The following points should be considered in development of this site:

- The majority of the site is at a very low risk of flooding from all sources.
- The Risk of Flooding from Surface Water model may not accurately represent the site's surface water risk. The predicted flow paths do not appear to follow the existing drainage channel and instead indicate water spreading across the main land area. This is likely due to LiDAR data limitations, where vegetation has caused inconsistencies in elevation, resulting in an inaccurate depiction of the land drainage. It is recommended that detailed site-specific modelling be undertaken to provide a more accurate assessment of surface water flood risk.
- Large extents of surface water flooding are present on the site in the RoFSW mapping.
- Climate change mapping shows only a marginal increase in extent, with no depths, speeds, or hazard classifications changing.
- It is recommended that SuDS are incorporated to the development of this site, and it is recommended that drainage ditch is integrated into blue-green infrastructure.
- Development is likely to be able to proceed provided a site-specific Flood Risk Assessment (FRA) is completed.

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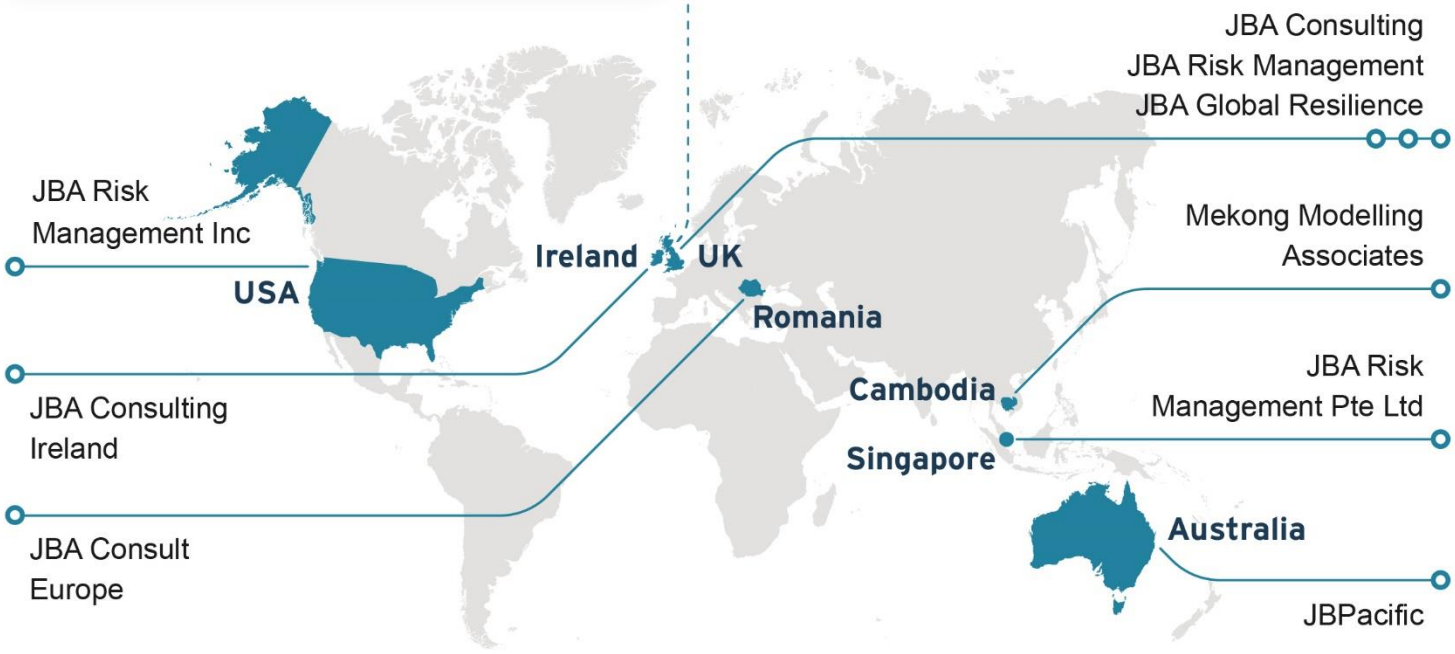

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Level 2 Strategic Flood Risk Assessment - Site END028

Prepared for
Blaby District Council

Date
January 2026

Blaby District Council
the heart of Leicestershire

Contents

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Hayes Gardens. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Blaby District Council Level 1 SFRA and read the Blaby District Council Level 2 SFRA Main Report and is therefore familiar with the terminology used in this report.

1.1 Site details

- Site code: END028
- Location: Carlton Park and Enderby Golf Course
- Site area: 56.97ha
- Existing site use: Greenfield with existing buildings onsite
- Proposed site use: Residential

1.2 Topography

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR. The site has a varied topography, with the highest elevations located in the west and the lowest in the east. The south-west corner near has small areas reaching elevations of 100mAOD, while most of the western areas sits around 96mAOD. Moving west to east elevations decrease. Toward the north-east, levels drop further to around 89mAOD, and the eastern boundary near the B4114 has the lowest elevation at 69.27mAOD.

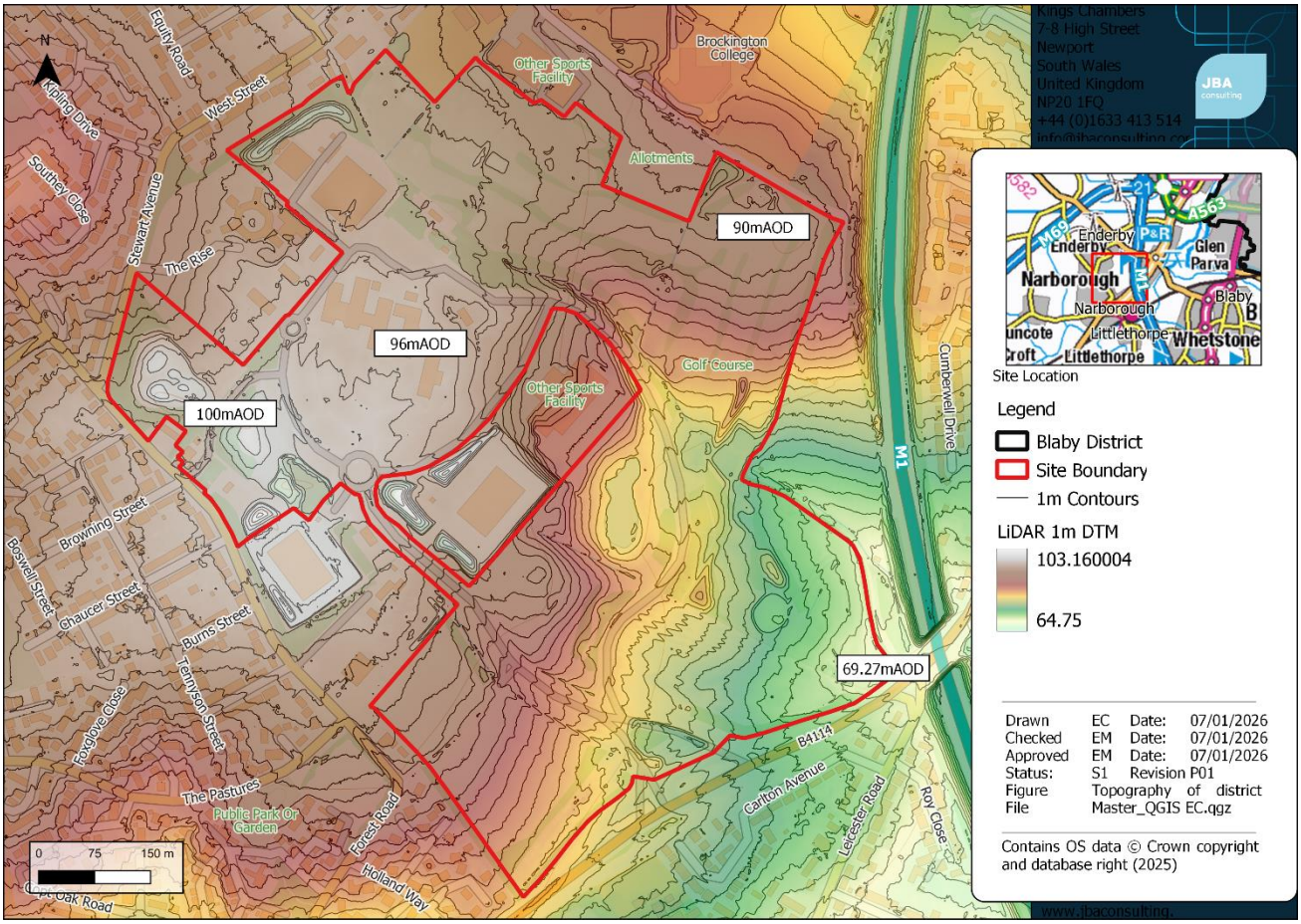

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Edwalton Mudstone Member
- Superficial - Oadby Till Member and Glaciofluvial deposits with sand and gravel

Soils at the site consist of:

- Slowly permeable, seasonally wet, slightly acid but base-rich loamy and clayey soils.

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located within the Soar from Thurlaston Brook to Sence Water Body. It occupies a northern position in the water body catchment, draining toward the River Soar.

2.2 Existing drainage features

The site contains a pond in the south-eastern section within the golf course. There are also drainage ditches or swales across the golf course and green areas, following paths likely to manage runoff.

2.3 Fluvial

2.3.1 Available data

The EA's Flood Map for Planning (FMfP) has been used within this assessment.

2.3.2 Description of risk to the site

The site is located entirely within Flood Zone 1 of the Flood Map for Planning, meaning that the site has less than 0.1% annual probability of flooding, therefore the site is at a very low risk of fluvial flooding.

Table 2-1: Existing fluvial flood risk based on EA FMfP *

Flood Zone 1 (%)	Flood Zone 2 (%)	Flood Zone 3a (%)	Flood Zone 3b (%)
100	0	0	0

**The percentage flood zones quoted show the percentage of the site at flood risk from that particular flood zone or event, including the percentage of the site at flood risk at a higher risk zone, e.g. Flood Zone 2 includes the Flood Zone 3 percentage. Flood Zone 1 is the remaining area outside Flood Zone 2 (Flood Zone 2 + Flood Zone 1 = 100%).*

2.4 Surface water

2.4.1 Available data

The EA's Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment.

2.4.2 Description of risk to the site

Surface water flood risk across the site is generally low, with many areas unaffected, however, several locations on site are at risk. A significant area is in the north-west corner near West Street, where extensive pooling occurs within large depressions. Additionally, risk is present in the north-eastern area of the site along the drainage feature, extending into lower-lying areas in the central east where pooling is shown. Similar conditions occur in

the south-eastern section, along another drainage feature. Localised areas of pooling are found in the central eastern and western areas, while scattered areas of risk also occur along both the western and southern boundaries.

During the 3.3% AEP event (high risk), flooding extends across 2.4% of the site. The maximum depth of flooding predicted for this event between 0.9m and 1.2m, with a maximum velocity between 1m/s to 2m/s. The maximum hazard classification of this event is 'Significant'.

During the 1% AEP event (low risk), flood extents cover 3.6% of the site, with a maximum depth of 0.9m - 1.2m. The maximum velocity for this event is 1m/s - 2m/s with a maximum hazard classification of 'Significant'.

During the 1% AEP event (low risk), flooding extends across 8.7% of the site. The depth of flooding predicted for this event is 1.2m and above, with a velocity of 2m/s and above. The maximum hazard classification for this event is 'Significant'.

Table 2-2: Existing surface water flood risk based on the RoFSW map

Event	3.3% AEP	1% AEP	0.1% AEP
Percentage of site at risk* (%)	2.4	3.6	8.7
Maximum depth (m)	0.9-1.2	0.9-1.2	=>1.2
Maximum velocity (m/s)	1-2	1-2	=>2
Maximum hazard classification	Significant	Significant	Significant

** The percentage surface water extents quoted show the percentage of the site at surface water risk from that particular event, including the percentage of the site at flood risk at a higher risk zone (e.g. 1% AEP includes the 3.3% AEP percentage).*

2.5 Reservoir

The site is not shown to be at risk of reservoir flooding during the 'dry day' or 'wet day' scenario from the EA reservoir flood maps.

2.6 Groundwater

The JBA Groundwater Emergence Map shows that most of the site is at a very low risk of groundwater flooding. Toward the north of the, along the northern boundary shows an area where ground water levels are at least 5m below the ground surface meaning ground water flooding here is still low. However, a small action in the northeast area of the site shows ground water levels are between 0.5m and 5m below the ground surface.

Based on the RoFSW and topography of the site it is likely that any groundwater that emerges will flow southeast and pool along the eastern border of the site.

This assessment does not negate the requirement that an appropriate assessment of the groundwater regime should be carried out at the site-specific Flood Risk Assessment (FRA) stage.

2.7 Sewers

The Drainage and Wastewater Management Plan does not identify this area as being at risk of sewer flooding.

2.8 Flood history

There are no recorded flood extents within the site area. Additionally, no flood events were noted for this area in the L1 SFRA or the Leicestershire County Council Preliminary Flood Risk Assessment.

3 Climate change

Increased storm intensities due to climate change may increase the extent, depth, velocity, hazard, and frequency of both fluvial and surface water flooding. Please see Section 5.1 of the Level 1 SFRA report for information on climate change allowances.

Development proposals at the site must address the potential changes associated with climate change and be designed to be safe for the intended lifetime. The provisions for safe access and egress must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

The Environment Agency's Risk of Flooding from Rivers and the Sea plus Climate Change (RoFRS+CC) dataset was used for this assessment. The central allowance for the 2050s epoch (21%) has been applied to the 3.3%, 1%, and 0.1% AEP events.

3.1.2 Description of risk to the site

The RoFRS plus climate change dataset shows that the site is flood free in all events, therefore, fluvial flood risk is very low on the site in the climate change scenario.

Table 3-1: Comparison of fluvial flood risk to the site between the 1% AEP and 1% AEP plus 21% climate change extents.

Event	1% AEP	1% AEP plus 21% CC
Percentage of site at risk (%)	0	0
Maximum depth (m)	N/A	N/A
Maximum velocity (m/s)	N/A	N/A
Maximum hazard classification	N/A	N/A

3.2 Surface water

3.2.1 Available data

The Environment Agency's Risk of Flooding from Surface Water plus Climate Change (RoFSW+CC) dataset was used to inform this assessment. The central climate change allowance for the 2050s epoch has been applied to the 3.3%, 1%, and 0.1% AEP surface water flood events. This is not suitable for informing site-specific assessments as the lifetime of residential of residential development is 100-years but is used here in absence of

better data. Developers should apply the upper end allowance for the 2070s epoch as part of their site-specific FRAs.

3.2.2 Description of risk to the site

The RoFSW +CC mapping indicates that the site is only marginally sensitive to increased rainfall. New, small, and localised areas of surface water flooding appear sporadically across the site, but these are limited in extent. Existing areas of flooding generally remain unchanged, with the exception of the drainage feature along the eastern boundary, which shows minor increases in its extent.

The climate change scenario results are broadly consistent with the baseline, indicating relatively low sensitivity to climate change impacts. For all events the maximum depth, velocity, and hazard classification remain unchanged. The extents increase in the climate change scenario. During the 3.3% AEP + CC event, the flooding extent is 3.1%, in the 1% AEP + CC event the extent is 4.6%, and during the 0.1% AEP + CC event, the flooding extent covers 5.6% of the site

Table 3-2: Comparison of surface water flood risk to the site between the 1% AEP and 1% AEP plus 20% climate change extents.

Event	1% AEP	1% AEP plus 20% CC
Percentage of site at risk (%)	3.6	4.6
Maximum depth (m)	0.9-1.2	0.9-1.2
Maximum velocity (m/s)	1-2	=>2
Maximum hazard classification	Significant	Significant

4 Flood risk management infrastructure

4.1 Defences

The EA AIMS dataset shows that the site is not protected by any formal flood defences.

4.2 Residual risk

There is no residual risk to the site from flood risk management structures.

5 Emergency planning

5.1 Flood warnings and alerts

The site is not located in an EA Flood Warning or Flood Alert Area.

5.2 Access and egress

Safe access and egress will need to be demonstrated in the 1% AEP plus climate change fluvial and surface water events. Site drainage proposals should address the requirements for access routes, avoid impeding surface water flows and preserve the storage of surface water to avoid exacerbation of flood risk elsewhere on the site and in the wider catchment.

5.2.1 Potential access

Potential access to the site is likely to be provided via the B4114, which forms the south-eastern boundary, the M1 along the eastern boundary, and Forest Road and Stewart Avenue, which border the south-western corner of the site.

5.2.2 Fluvial

Safe access is possible during the 1% AEP fluvial event.

5.2.3 Surface water

Safe access to the site is achievable during the 1% AEP rainfall event. While some flooding occurs on the M1 and B4114 toward the south-east of the site, these areas do not experience significant depths, and alternative access routes remain available.

5.3 Dry islands

The site is not located on a dry island.

6 Requirements for drainage control and impact mitigation

6.1 Broadscale assessment of possible SuDS

- The site is considered to have very low susceptibility to groundwater flooding, this should be confirmed through additional site investigation work. Below ground development such as basements may still be susceptible to groundwater flooding.
- Groundwater levels are indicated to be between 0.5 and 5m below ground level in a small area toward the north of the site, and there is a risk of flooding to subsurface assets and below ground development such as basements. Groundwater monitoring is recommended to determine the seasonal variability of groundwater levels, as this may affect the design of the surface water drainage system.
- Most of the site is not considered to be susceptible to groundwater flooding, due to the nature of the local geological conditions. This should be confirmed through additional site investigation work.
- BGS data indicates that the underlying geology is Edwalton Member Mudstone and is likely to be poorly draining. Any proposed use of infiltration should be supported by infiltration testing. Off-site discharge in accordance with the SuDS hierarchy is required to discharge surface water runoff.
- The site is not located within a Groundwater Source Protection Zone and there are no restrictions over the use of infiltration techniques with regard to groundwater quality.
- The site has a small area on the eastern boundary designated by the Environment Agency as being a historic landfill site. A thorough ground investigation will be required as part of a detailed site-specific FRA, to determine potential mitigation for contamination and the impact this may have on SuDS. As such, proposed SuDS should be discussed with the relevant stakeholders (LPA, LLFA and EA) at an early stage to understand possible constraints.

6.2 Opportunities for wider sustainability benefits and integrated flood risk management

- Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, water quality, amenity and biodiversity. This could provide wider sustainability benefits to the site and surrounding area. Proposals to use SuDS techniques should be discussed with relevant stakeholders (Local Planning Authority, Lead Local Flood Authority, and the EA) at an early stage to understand possible constraints.
- The drainage features and pond should be integrated into the site drainage strategy as blue-green infrastructure.

- Development at this site should not increase flood risk either on or off site. The design of the surface water management proposals should take into account the impacts of future climate change over the projected lifetime of the development.
- Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered.
- Consideration should be made to the existing condition of the River Soar and its Water Framework Directive objectives for water quality. The use of multistage SuDS treatment will improve water quality of surface water runoff discharged from the site and reduce the impact on receiving water bodies.
- Opportunities to incorporate source control techniques such as green roofs, permeable surfaces and rainwater harvesting must be considered in the design of the site.
- The potential to utilise conveyance features such as swales to intercept and convey surface water runoff should be considered. Conveyance features should be located on common land or public open space to facilitate ease of access. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.

7 NPPF and planning implications

7.1 Exception Test requirements

The Local Planning Authority will need to confirm that the Sequential Test has been carried out in line with national guidelines. The Sequential Test will need to be passed before the Exception Test is applied.

The NPPF classifies Residential development as More Vulnerable.

The Exception Test is not required for this site as it is entirely within Flood Zone 1, however development should be steered away from the areas of surface water risk.

7.2 Requirements and guidance for site-specific Flood Risk Assessment

At the planning application stage, a site-specific FRA will be required as the proposed development site:

- is within Flood Zone 1 with a site area of 1 hectare or more
- is within Flood Zone 1 and the flood map for planning shows it is at risk of flooding from surface water

All sources of flooding should be considered as part of a site-specific FRA.

Consultation with the Local Authority, Lead Local Flood Authority, Water Company, and the EA should be undertaken at an early stage.

Any FRA should be carried out in line with latest guidance including the National Planning Policy Framework (NPPF), Flood Risk and Coastal Change Planning Practice Guidance (PPG), and Blaby District Council Local Plan Policies.

The development should be designed with mitigation measures in place where required.

7.3 Guidance for site design and making development safe

Development should be steered outside of the areas of significant surface water ponding and drainage features.

The risk from surface water flow routes should be quantified as part of a site-specific FRA, including a drainage strategy, so runoff magnitudes from the development are not increased by development across any ephemeral surface water flow routes. A drainage strategy should help inform site layout and design to ensure runoff rates are as close as possible to pre-development greenfield rates, with areas of surface water ponding used as open space and SuDS or water compatible/essential infrastructure uses only.

Arrangements for safe access and egress will need to be provided for the 1% AEP fluvial and surface events with an appropriate allowance for climate change, considering depth, velocity, and hazard. Design and access arrangements will need to incorporate measures, so development and occupants are safe.

Provisions for safe access and egress should not impact on surface water flow routes or contribute to loss of floodplain storage. Consideration should be given to the siting of access points with respect to areas of surface water flood risk.

8 Conclusions

The following points should be considered in development of this site:

- The majority of the site is at a low risk of flooding from all sources.
- The site is located in Flood Zone 1, therefore is at a very low risk of fluvial flooding.
- Surface water flood risk is present on the site during all modelled events. For the 3.3% AEP event, flood depths reach 0.9m, velocities reach 1m/s, with a hazard classification of 'Significant'. During the 1% AEP event, has a similar maximum depth of 0.9m and velocity of 1m/s, maintaining a 'Significant' hazard rating. In the 0.1% AEP event, the maximum depth is 1.2m, velocity increases up to 2m/s, with a hazard classification of 'Significant'.
- The RoFSW plus Climate Change mapping shows a moderate increase in surface water extent across the site, additional areas of localised flooding and a small expansion of flooding from the land drain.
- It is recommended that SuDS are incorporated to the development of this site, it is recommended that the drainage features and pond are integrated into blue-green infrastructure.
- Development is likely to be able to proceed provided a site-specific FRA is completed.

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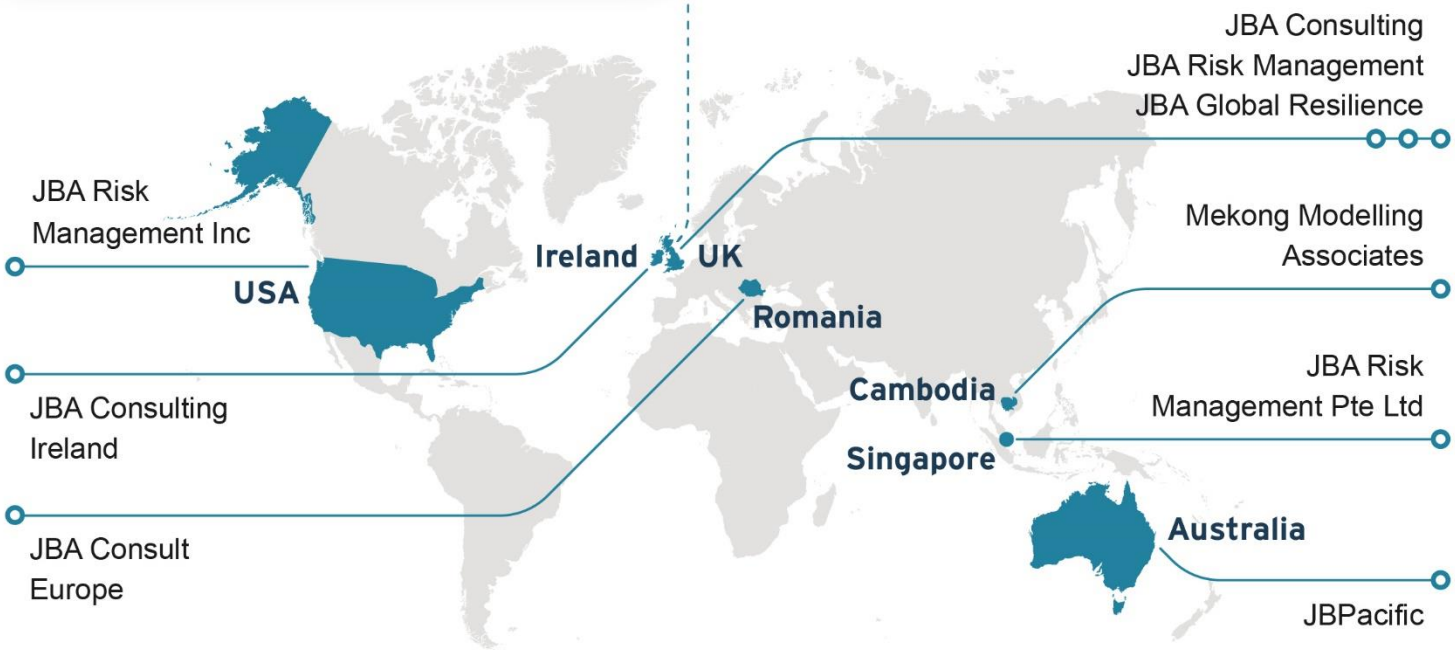

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Level 2 Strategic Flood Risk Assessment - Site KMU025

Prepared for
Blaby District Council

Date
January 2026

Contents

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for the Land North of Hinckley Road. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Blaby District Council Level 1 SFRA and read the Blaby District Council Level 2 SFRA Main Report and is therefore familiar with the terminology used in this report.

1.1 Site details

- Site code: KMU025
- Location: Land North of Hinckley Road, Sapcote
- Site area: 47.07ha
- Existing site use: Greenfield
- Proposed site use: Residential

1.2 Topography

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR. The topography of the site is characterised by the highest elevations along the southern boundary, at 116.6mAOD. The land slopes downward toward the north and northeast, where a noticeable depression occurs where a watercourse is present. The northern boundary has elevations typically around 96mAOD to 98mAOD, with the lowest point of the site along the northeastern boundary at 94.6mAOD. The eastern and western areas of the site also descend from the central ridge, creating steep gradients in those directions.

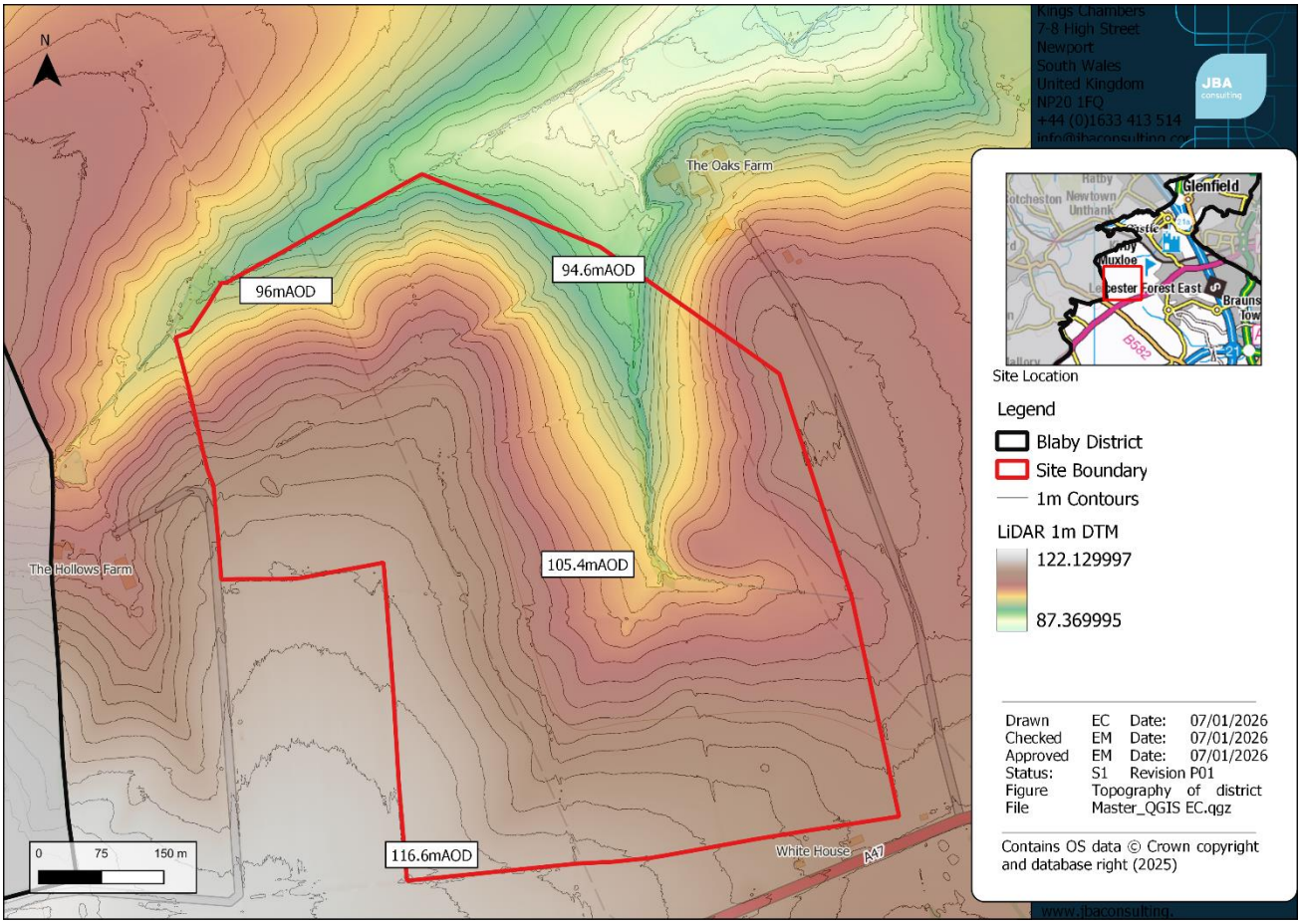

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - The majority of the site is Edwalton Member Mudstone, whereas the topographical depression on the site consists of Gunthorpe Member Mudstone.
- Superficial - The central area of the site shows no results for superficial geology. The southern boundary of the site consists of Oadby Till Member, and the western boundary of the site consists of Thrussington Till Member. The area of the topographical depression consists of Alluvium Clay, Silt and Gravel which extends long the northwest boundary.

Soils at the site consist of:

- Slowly permeable, seasonally wet, slightly acid but base-rich loamy and clayey soils

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located within the Rothley Brook catchment, which is a tributary of the of the River Soar. The site occupies a southern position within the catchment and drains directly toward Rothley Brook, which flows north before joining the River Soar. The River Soar is a major tributary of the River Trent, placing the site within the wider Trent catchment.

2.2 Existing drainage features

A drainage feature is present on the site, beginning at the eastern boundary and extending westward toward the centre, where it curves and continues north along the topographic low, ultimately exiting through the northern boundary.

2.3 Fluvial

2.3.1 Available data

The EA's Flood Map for Planning (FMfP) has been used within this assessment. No detailed modelling is available at this location.

2.3.2 Description of risk to the site

The site is located entirely within Flood Zone 1 of the Flood Map for Planning, meaning that the site has less than 0.1% annual probability of flooding, therefore the site is at a very low risk of fluvial flooding. Whilst there is an ordinary watercourse on site, the catchment area is too small to be included in Flood Zones, however the Environment Agency's Risk of Flooding from Surface Water dataset can give an indication of the risk from this watercourse, described in the 'Surface Water' section below.

Table 2-1: Existing fluvial flood risk based on EA FMfP *

Flood Zone 1 (%)	Flood Zone 2 (%)	Flood Zone 3a (%)	Flood Zone 3b (%)
100	0	0	0

**The percentage flood zones quoted show the percentage of the site at flood risk from that particular flood zone or event, including the percentage of the site at flood risk at a higher risk zone, e.g. Flood Zone 2 includes the Flood Zone 3 percentage. Flood Zone 1 is the remaining area outside Flood Zone 2 (Flood Zone 2 + Flood Zone 1 = 100%).*

2.4 Surface water

2.4.1 Available data

The EA's Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment.

2.4.2 Description of risk to the site

Surface water flood risk on the site is primarily concentrated along the main drainage feature located in the eastern part of the site, extending northwards toward the northern boundary. Additional minor flow paths are present, one distinctively originating from the southwestern area and converging toward the main drainage route. Another distinct flow path is present along the northern boundary, indicating localised conveyance of surface water. In addition to these linear features, the site contains small, isolated areas of surface water flood risk, notably near the southeastern corner and toward the northwestern section of the site.

During the 3.3% AEP event (high risk), flooding extends across 0.9% of the site and is present along the main drainage feature and three small, localised areas of flooding located in the southeast, central, and northwest of the site. The depth during this event is 1.2m and above, located within the drainage feature. The maximum velocity in this event is 1m/s, with a maximum hazard of 'Significant'.

During the 1% AEP event (medium risk), flooding extends across 1.2% of the site and is located along the main drainage feature and a small, localised area of flooding, below the drainage feature in the centre of the site. The maximum depth during this event is =>1.2m, located within the drainage feature. The maximum velocity of flow is 2m/s, with a maximum hazard of 'Significant'.

During the 0.1% AEP (low risk) event, flooding extends across 3.3% of the site, with most flooding occurring in the central drainage feature, and small localised areas across the site. The maximum flood depth remains at =>1.2m, with the maximum velocity of 2m/s or above. The maximum hazard classification of the flooding is 'Significant'.

Table 2-2: Existing surface water flood risk based on the RoFSW map

Event	3.3% AEP	1% AEP	0.1% AEP
Percentage of site at risk* (%)	0.9	1.2	3.3
Maximum depth (m)	=>1.2	=>1.2	=>1.2
Maximum velocity (m/s)	1-2	=>2	=>2
Maximum hazard classification	Significant	Significant	Significant

** The percentage surface water extents quoted show the percentage of the site at surface water risk from that particular event, including the percentage of the site at flood risk at a higher risk zone (e.g. 1% AEP includes the 3.3% AEP percentage).*

2.5 Reservoir

The site is not shown to be at risk of reservoir flooding during the 'dry day' or 'wet day' scenario from the EA reservoir flood maps.

2.6 Groundwater

The JBA Groundwater Emergence Map shows that the majority of the site is at a very low risk of flooding, however there is a band where groundwater levels are much closer to the surface (<0.5m) snaking through the centre of the site, covering approximately 16.4% of the site area.

Based on the RoFSW and topography of the site it is likely that any groundwater that emerges will flow/pool toward the northern boundary where topography is lowest on the site.

Given the significant areas of risk identified across the site, an appropriate assessment of the groundwater regime including ground investigations should be carried out as part of a site-specific Flood Risk Assessment (FRA) stage.

2.7 Sewers

The site falls within the Broughton Astley wastewater catchment, which is assessed as Band 0 for internal sewer flooding risk, indicating that sewer flooding is not a strategic issue at catchment scale

2.8 Flood history

There are no recorded flood extents within the site area. Additionally, no flood events were noted for this area in the L1 SFRA, or the Leicestershire County Council Preliminary Flood Risk Assessment.

3 Climate change

Increased storm intensities due to climate change may increase the extent, depth, velocity, hazard, and frequency of both fluvial and surface water flooding. Please see Level 1 SFRA report for information on climate change allowances.

Development proposals at the site must address the potential changes associated with climate change and be designed to be safe for the intended lifetime. The provisions for safe access and egress must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

The Environment Agency's Risk of Flooding from Rivers and the Sea plus Climate Change (RoFRS+CC) dataset was used for this assessment. The central allowance for the 2050s epoch (21%) has been applied to the 3.3%, 1%, and 0.1% AEP events.

3.1.2 Description of risk to the site

The RoFRS plus climate change dataset shows that the site is flood free in all events, therefore, fluvial flooding is very low on the site in the climate change scenario.

Table 3-1: Comparison of fluvial flood risk to the site between the 1% AEP and 1% AEP plus 21% climate change extents.

Event	1% AEP	1% AEP plus 21% CC
Percentage of site at risk (%)	0	0
Maximum depth (m)	N/A	N/A
Maximum velocity (m/s)	N/A	N/A
Maximum hazard classification	N/A	N/A

3.2 Surface water

3.2.1 Available data

The Environment Agency's Risk of Flooding from Surface Water plus Climate Change (RoFSW+CC) dataset was used to inform this assessment. The central climate change allowance for the 2050s epoch has been applied to the 3.3%, 1%, and 0.1% AEP surface water flood events. This is not suitable for informing site-specific assessments as the lifetime of residential of residential development is 100-years but is used here in absence of

better data. Developers should apply the upper end allowance for the 2070s epoch as part of their site-specific FRAs.

3.2.2 Description of risk to the site

The RoFSW plus Climate Change mapping shows that the site is moderately sensitive to increases in rainfall due to climate change. Compared to the baseline scenario, the flood extent has expanded across the drainage feature. New flow paths have formed, directing water toward the land drain, and existing flow paths have extended in length.

The results for the climate change scenarios are consistent with the baseline, indicating a lower sensitivity to climate change. For the 3.3% AEP + climate change event, maximum depths remain at =>1.2m, although the maximum velocity increases to =>2m/s, and hazard classification remains Significant, the extent of flooding increases to 1%. Similarly, during the 1% and 0.1% AEP (+CC) events, depths remain at =>1.2m, the velocity remains at =>2m/s, and hazard classification continues as Significant. During the 1% AEP event, the flood extent increases to 1.7%, while during the 0.1% AEP event, it increases to 4.7%.

Table 3-2: Comparison of surface water flood risk to the site between the 1% AEP and 1% AEP plus 20% climate change extents.

Event	1% AEP	1% AEP plus 20% CC
Percentage of site at risk (%)	1.2	1.7
Maximum depth (m)	=>1.2	=>1.2
Maximum velocity (m/s)	=>2	=>2
Maximum hazard classification	Significant	Significant

4 Flood risk management infrastructure

4.1 Defences

The EA AIMS dataset shows that the site is not protected by any formal flood defences.

4.2 Residual risk

There is no residual risk to the site from flood risk management structures.

5 Emergency planning

5.1 Flood warnings and alerts

The site is not located in an EA Flood Warning or Flood Alert Area.

5.2 Access and egress

Safe access and egress will need to be demonstrated in the 1% AEP plus climate change surface water events. Site drainage proposals should address the requirements for access routes, avoid impeding surface water flows and preserve the storage of surface water to avoid exacerbation of flood risk elsewhere on the site and in the wider catchment.

5.2.1 Potential access

Access to the site will likely be via Hinckley Road, and the eastern access path.

5.2.2 Fluvial

Safe access and egress is available via Hinckley Road in the 1% AEP plus climate change event.

5.2.3 Surface water

Safe access and egress is available via Hinckley Road in the 1% AEP plus climate change event.

5.3 Dry islands

The site is not located on a dry island.

6 Requirements for drainage control and impact mitigation

6.1 Broadscale assessment of possible SuDS

- Most of the site is not considered to be susceptible to groundwater flooding, due to the nature of the local geological conditions. This should be confirmed through additional site investigation work. However, approximately 16% of the site has groundwater levels that are indicated to be at or very near (within 0.5m) ground level and there is a risk of groundwater flooding at the surface during a 1% AEP event, which may flow to and pool within topographic low spots. Detention and attenuation features should be designed to prevent groundwater ingress from impacting hydraulic capacity and structural integrity. Additional site investigation work may be required to support the detailed design of the drainage system. This may include groundwater monitoring to demonstrate that a sufficient unsaturated zone has been provided above the highest occurring groundwater level. Below ground development such as basements are not appropriate at this area of the site.
- BGS data indicates that the underlying geology consists of Edwalston and Gunthorpe Member Mudstone groups and is likely to be poorly draining. Any proposed use of infiltration should be supported by infiltration testing. Off-site discharge in accordance with the SuDS hierarchy is required to discharge surface water runoff.
- The site is not located within a Groundwater Source Protection Zone and there are no restrictions over the use of infiltration techniques with regard to groundwater quality.
- The site is not located within a historic landfill site.

6.2 Opportunities for wider sustainability benefits and integrated flood risk management

- Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, water quality, amenity and biodiversity. This could provide wider sustainability benefits to the site and surrounding area. Proposals to use SuDS techniques should be discussed with relevant stakeholders (Local Planning Authority, Lead Local Flood Authority, and the EA) at an early stage to understand possible constraints.
- The central drainage feature should be integrated into the site drainage strategy as blue-green infrastructure.
- Development at this site should not increase flood risk either on or off site. The design of the surface water management proposals should take into account the impacts of future climate change over the projected lifetime of the development.

- Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered.
- Consideration should be made to the existing condition of receiving waterbodies, in this case the Rothley Brook and the River Soar, and their Water Framework Directive objectives for water quality. The use of multistage SuDS treatment will improve water quality of surface water runoff discharged from the site and reduce the impact on receiving water bodies.
- Opportunities to incorporate source control techniques such as green roofs, permeable surfaces and rainwater harvesting must be considered in the design of the site.
- The potential to utilise conveyance features such as swales to intercept and convey surface water runoff should be considered. Conveyance features should be located on common land or public open space to facilitate ease of access. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.

7 NPPF and planning implications

7.1 Exception Test requirements

The Local Planning Authority will need to confirm that the Sequential Test has been carried out in line with national guidelines. The Sequential Test will need to be passed before the Exception Test is applied.

The NPPF classifies Residential development as More Vulnerable.

The Exception Test is not required for this site because the site is entirely within Flood Zone 1.

7.2 Requirements and guidance for site-specific Flood Risk Assessment

At the planning application stage, a site-specific FRA will be required as the proposed development site:

- Is within Flood Zone 1 with a site area of 1 hectare or more
- Is within Flood Zone 1 and the Flood Map for Planning shows it is at risk of flooding from surface water
- Has areas identified to be at significant risk from groundwater flooding.

All sources of flooding should be considered as part of a site-specific FRA.

Consultation with the Local Authority, Lead Local Flood Authority, Water Company, and the EA should be undertaken at an early stage.

Any FRA should be carried out in line with latest guidance including the National Planning Policy Framework (NPPF), Flood Risk and Coastal Change Planning Practice Guidance (PPG), and Blaby District Council Local Plan Policies.

The FRA should be supported by robust ground investigations to quantify the risk posed to the site by groundwater.

The development should be designed with mitigation measures in place where required.

7.3 Guidance for site design and making development safe

Development should be steered outside of areas of surface water risk specifically the main drainage feature.

Developers should consider utilising the topographical lows on site as a green corridor or as a location for SuDS.

The risk from surface water flow routes should be quantified as part of a site-specific FRA, including a drainage strategy, so runoff magnitudes from the development are not increased by development across any ephemeral surface water flow routes. A drainage strategy should help inform site layout and design to ensure runoff rates are as close as possible to pre-development greenfield rates, with areas of surface water ponding used as open space and SuDS or water compatible/essential infrastructure uses only.

Arrangements for safe access and egress will need to be provided for the 1% AEP surface events with an appropriate allowance for climate change, considering depth, velocity, and hazard. Design and access arrangements will need to incorporate measures, so development and occupants are safe.

Provisions for safe access and egress should not impact on surface water flow routes or contribute to loss of floodplain storage. Consideration should be given to the siting of access points with respect to areas of surface water flood risk.

8 Conclusions

The following points should be considered in development of this site:

- The majority of the site is at a low risk of flooding from all sources and Development is likely to be able to proceed provided a site-specific Flood Risk Assessment (FRA) is completed which shows users of the site will be safe throughout the lifetime of the development.
- Parts of the site are identified to be at significant risk of groundwater flooding and this will need to be quantified as part of a site-specific FRA.
- Surface water flood risk is present on site in all events. Flood depths reach up to 1.2m, with velocities of 2m/s and a hazard classification of 'Significant' in the 1% and 0.1% AEP events.
- The RoFSW plus Climate Change mapping shows a moderate increase in surface water extent across the site, showing longer flow paths and the formation of new flow paths to the main drainage feature.
- It is recommended that SuDS are incorporated to the development of this site, and that the drainage feature is integrated into blue-green infrastructure.

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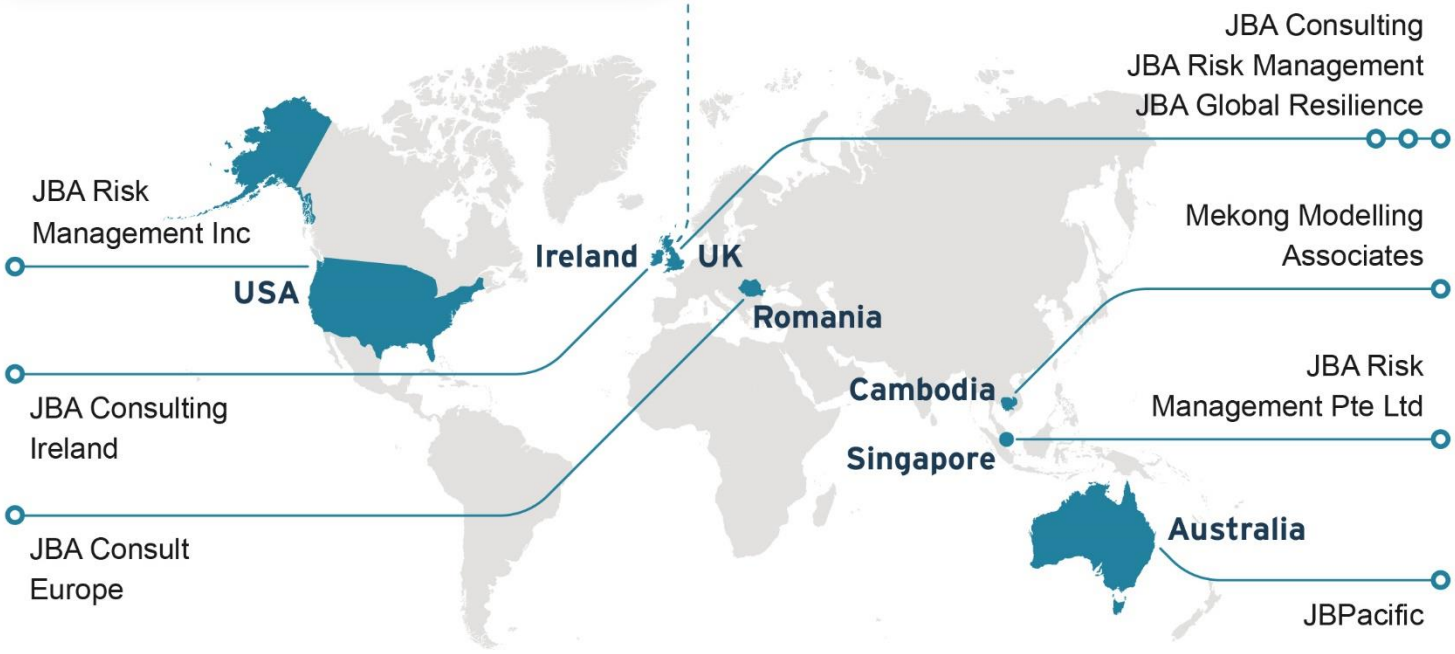

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Level 2 Strategic Flood Risk Assessment - Site GLE032

Prepared for
Blaby District Council

Date
January 2026

Contents

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Hayes Gardens. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Blaby District Council Level 1 SFRA and read the Blaby District Council Level 2 SFRA Main Report and is therefore familiar with the terminology used in this report.

1.1 Site details

- Site code: GLE032
- Location: Land North of Glenfield
- Site area: 74.4 ha
- Existing site use: Greenfield
- Proposed site use: Residential

1.2 Topography

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR. The site's topography slopes from higher elevations in the east and west toward lower ground in the central and southern areas. The eastern corner reaches the highest elevation at approximately 84.2mAOD, while the southern boundary near the industrial buildings lies around 73mAOD. The drainage feature in the eastern extent of the site represents the lowest elevation at 70.7mAOD.

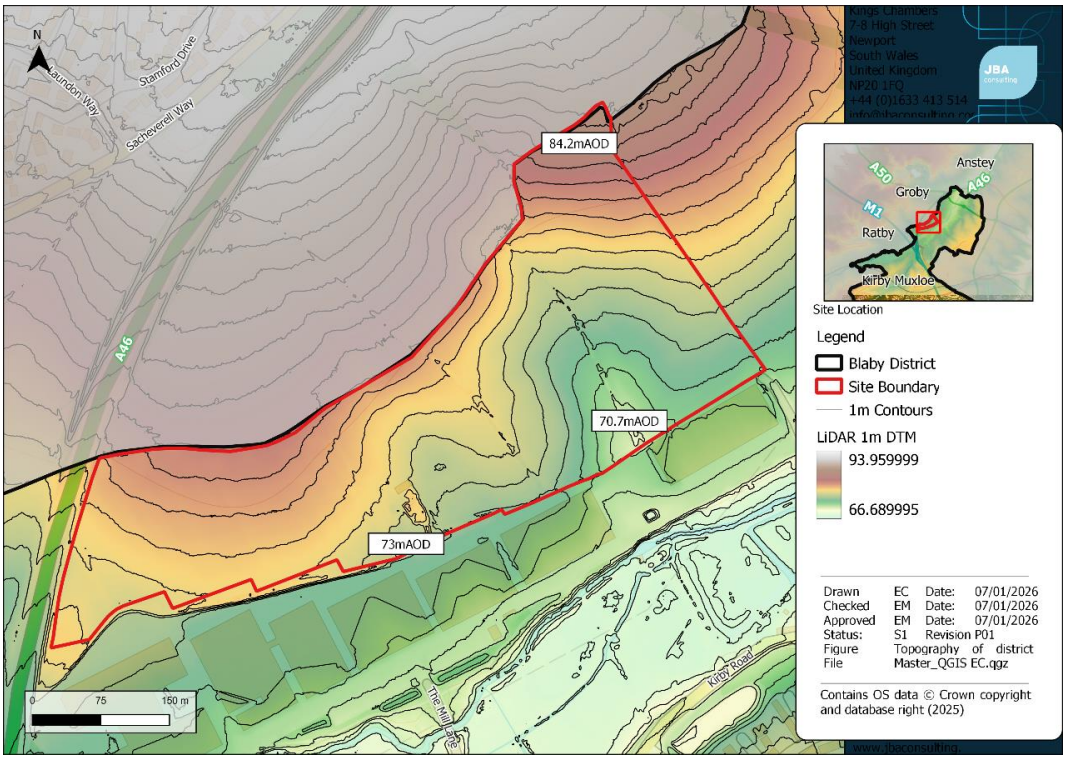

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Gunthorpe Member Mudstone
- Superficial - Thrussington Till member

Soils at the site consist of:

- Slowly permeable, seasonally wet, slightly acid but base-rich loamy and clayey soils

2 Sources of flood risk

2.1 Location of site within the catchment

The site lies within the mid-catchment of Rothley Brook, which forms part of the Upper Soar catchment. It occupies a western position in the catchment, draining directly towards Rothley Brook, a tributary of the River Soar that flows northwards along the eastern and southern boundaries of the site. The landform is highest in the northwest, gradually sloping down towards Rothley Brook on the eastern side.

2.2 Existing drainage features

A drainage feature in the form of a land ditch is present in the eastern extent of the site, starting at the northern boundary travelling down to the southern boundary.

2.3 Fluvial

2.3.1 Available data

The EA's Flood Map for Planning (FMfP) has been used within this assessment. No detailed modelling is available at this location.

2.3.2 Description of risk to the site

The site is located entirely within Flood Zone 1 of the Flood Map for Planning, meaning that the site has less than 0.1% annual probability of flooding, therefore the site is at a very low risk of fluvial flooding.

Table 2-1: Existing fluvial flood risk based on EA FMfP *

Flood Zone 1 (%)	Flood Zone 2 (%)	Flood Zone 3a (%)	Flood Zone 3b (%)
100	0	0	0

**The percentage flood zones quoted show the percentage of the site at flood risk from that particular flood zone or event, including the percentage of the site at flood risk at a higher risk zone, e.g. Flood Zone 2 includes the Flood Zone 3 percentage. Flood Zone 1 is the remaining area outside Flood Zone 2 (Flood Zone 2 + Flood Zone 1 = 100%).*

2.4 Surface water

2.4.1 Available data

The EA's Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment.

2.4.2 Description of risk to the site

Areas of surface water flood risk are present across the site during all rainfall events. The eastern extent experiences significant pooling near the southern boundary, where the land

drain exits the site. The land drain itself, along with surrounding areas, is susceptible to surface water flooding. Additional localised flooding occurs in the form of ponding within the central part of the site and in the southwest corner within a topographical low.

During the 3.3% AEP event (high risk), flooding extends across 3.5% of the site, with most flooding occurring in the southern area of ponding. The depth of flooding is 1.2m or greater, with a maximum velocity between 0.5-1m/s. Overall, the maximum hazard classification during this event is 'Significant'.

During the 1% AEP event (medium risk), flooding extends across 3.9% of the site, with a maximum depth of =>1.2m. The maximum velocity of flood water during this event is between 1-1m/s, with a maximum hazard classification of 'Significant'.

During the 0.1% AEP (low risk) event, flooding extends across 6.2% of the site, with a maximum depth of =>1.2m. The maximum velocity during this event is 2m/s or greater, with a maximum hazard classification of 'Significant'.

Table 2-2: Existing surface water flood risk based on the RoFSW map

Event	3.3% AEP	1% AEP	0.1% AEP
Percentage of site at risk* (%)	3.5	3.9	6.2
Maximum depth (m)	1.2	1.2	1.2
Maximum velocity (m/s)	0.5	1	2
Maximum hazard classification	Significant	Significant	Significant

** The percentage surface water extents quoted show the percentage of the site at surface water risk from that particular event, including the percentage of the site at flood risk at a higher risk zone (e.g. 1% AEP includes the 3.3% AEP percentage).*

2.5 Reservoir

The site is not shown to be at risk of reservoir flooding during the 'dry day' or 'wet day' scenario from the EA reservoir flood maps.

2.6 Groundwater

The JBA Groundwater Emergence Map shows that most of the site has a very low risk of groundwater flooding. Although, along the northern boundary it shows that some areas have groundwater levels between 0.025m and 0.5m below the ground level. Areas at groundwater flood risk make up 6.1% of the site.

Based on the RoFSW and topography of the site it is likely that any groundwater that emerges will flow southwards toward the topographical low point of the site.

This assessment does not negate the requirement that an appropriate assessment of the groundwater regime should be carried out at the site-specific Flood Risk Assessment (FRA) stage.

2.7 Sewers

The Drainage and Wastewater Management Plan does not identify this area as being at risk of sewer flooding.

2.8 Flood history

The site is not within the EA's Historic Flood Map, although it should be noted that approximately 160m south of the site is the extent of the 1977 Rothley Brook flood.

3 Climate change

Increased storm intensities due to climate change may increase the extent, depth, velocity, hazard, and frequency of both fluvial and surface water flooding. Please see Section 5.1 of the Level 1 SFRA report for information on climate change allowances.

Development proposals at the site must address the potential changes associated with climate change and be designed to be safe for the intended lifetime. The provisions for safe access and egress must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

The Environment Agency's Risk of Flooding from Rivers and the Sea plus Climate Change (RoFRS+CC) dataset was used for this assessment. The central allowance for the 2050s epoch (21%) has been applied to the 3.3%, 1%, and 0.1% AEP events. Additionally, the Rothley Brook model was used which models the river during a 1 in 100-year event with a 50% climate change uplift.

3.1.2 Description of risk to the site

The RoFRS plus climate change dataset shows that the site is flood free in all events, therefore, fluvial flood risk is very low on the site in the climate change scenario. The Rothley Brook model also showed the site to be flood free.

Table 3-1: Comparison of fluvial flood risk to the site between the 1% AEP and 1% AEP plus 21% climate change extents.

Event	1% AEP	1% AEP plus 21% CC
Percentage of site at risk (%)	0	0
Maximum depth (m)	N/A	N/A
Maximum velocity (m/s)	N/A	N/A
Maximum hazard classification	N/A	N/A

3.2 Surface water

3.2.1 Available data

The Environment Agency's Risk of Flooding from Surface Water plus Climate Change (RoFSW+CC) dataset was used to inform this assessment. The central climate change allowance for the 2050s epoch has been applied to the 3.3%, 1%, and 0.1% AEP surface

water flood events. This is not suitable for informing site-specific assessments as the lifetime of residential of residential development is 100-years but is used here in absence of better data. Developers should apply the upper end allowance for the 2070s epoch as part of their site-specific FRAs.

3.2.2 Description of risk to the site

The RoFSW mapping with climate change allowances indicates that the site is sensitive to increased rainfall. Areas of localised surface water flooding has increased, with additional areas now evident in the central part of the site and along the eastern boundary. Flooding associated with the land ditch has also increased, with surrounding areas showing greater susceptibility.

The climate change scenario results are broadly consistent with the baseline, indicating relatively low sensitivity to climate change impacts. For all events the maximum depth, velocity, and hazard classification remain unchanged. However, flood extents increase under climate change allowances. During the 3.3% AEP + CC event, the extent increases to 3.75%. For the 1% AEP + CC event, the extent increases to 4%, and during the 0.1% AEP + CC event, the extent expands to 8.4%.

Table 3-2: Comparison of surface water flood risk to the site between the 1% AEP and 1% AEP plus 20% climate change extents.

Event	1% AEP	1% AEP plus 20% CC
Percentage of site at risk (%)	3.9	4
Maximum depth (m)	1.2	1.2
Maximum velocity (m/s)	1	1
Maximum hazard classification	Significant	Significant

4 Flood risk management infrastructure

4.1 Defences

The EA AIMS dataset shows that the site is not protected by any formal flood defences.

4.2 Residual risk

There is no residual risk to the site.

5 Emergency planning

5.1 Flood warnings and alerts

The site is not located in an EA Flood Warning or Flood Alert Area.

5.2 Access and egress

Safe access and egress will need to be demonstrated in the 1% AEP plus climate change fluvial/surface water events. Site drainage proposals should address the requirements for access routes, avoid impeding surface water flows and preserve the storage of surface water to avoid exacerbation of flood risk elsewhere on the site and in the wider catchment.

5.2.1 Potential access

The site can be accessed from the west by the A46 and from the east by a small access path that leads on to Barrow Lane, then Kirby Road and Main Street.

5.2.2 Fluvial

During the 1% AEP plus climate change event, access and egress is safe via the A46. The eastern access path and its connecting roads are predicted to flood, meaning safe access and egress via this path is not possible.

5.2.3 Surface water

During the 1% AEP plus climate change event, access and egress is flood free via the A46. Access and egress along the eastern access path is mostly flood free. Surface water depths of up to 0.3 m are predicted on Barrow Lane but as this depth is relatively shallow, safe access and egress remain possible.

5.3 Dry islands

The site is not located on a dry island.

6 Requirements for drainage control and impact mitigation

6.1 Broadscale assessment of possible SuDS

- The site is considered to have a low susceptibility to groundwater. Detention and attenuation features should be designed to prevent groundwater ingress from impacting hydraulic capacity and structural integrity. Groundwater monitoring is recommended to determine the seasonal variability of groundwater levels, as this may affect the design of the surface water drainage system. Below ground development such as basements may not be appropriate at this site.
- Approximately 6% of the site has groundwater levels that are indicated to be less than 1m below ground level during a 1% AEP event. Detention and attenuation features should be designed to prevent groundwater ingress from impacting hydraulic capacity and structural integrity. Additional site investigation work may be required to support the detailed design of the drainage system. This may include groundwater monitoring to demonstrate that a sufficient unsaturated zone has been provided above the highest occurring groundwater level. Below ground development such as basements are not appropriate at this site.
- The site is not located within a Groundwater Source Protection Zone and there are no restrictions over the use of infiltration techniques with regard to groundwater quality.
- The site is not located within a historic landfill site.

6.2 Opportunities for wider sustainability benefits and integrated flood risk management

- Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, water quality, amenity and biodiversity. This could provide wider sustainability benefits to the site and surrounding area. Proposals to use SuDS techniques should be discussed with relevant stakeholders (Local Planning Authority, Lead Local Flood Authority, and the EA) at an early stage to understand possible constraints.
- Development at this site should not increase flood risk either on or off site. The design of the surface water management proposals should take into account the impacts of future climate change over the projected lifetime of the development, such as the main land drain.
- Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered.
- Consideration should be made to the existing condition of the Rothley Brook and their Water Framework Directive objectives for water quality. The use of multistage SuDS treatment will improve water quality of surface water runoff discharged from the site and reduce the impact on receiving water bodies.

- Opportunities to incorporate source control techniques such as green roofs, permeable surfaces and rainwater harvesting must be considered in the design of the site.
- The potential to utilise conveyance features such as swales to intercept and convey surface water runoff should be considered. Conveyance features should be located on common land or public open space to facilitate ease of access. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.

7 NPPF and planning implications

7.1 Exception Test requirements

The Local Planning Authority will need to confirm that the Sequential Test has been carried out in line with national guidelines. The Sequential Test will need to be passed before the Exception Test is applied.

The NPPF classifies Residential development as More Vulnerable.

The Exception Test is not required for this site because the site is entirely within Flood Zone 1.

7.2 Requirements and guidance for site-specific Flood Risk Assessment

At the planning application stage, a site-specific FRA will be required as the proposed development site:

- is within Flood Zone 1 with a site area of 1 hectare or more
- is within Flood Zone 1 and the flood map for planning shows it is at risk of flooding from surface water

All sources of flooding should be considered as part of a site-specific FRA.

Consultation with the Local Authority, Lead Local Flood Authority, Water Company, and the EA should be undertaken at an early stage.

Any FRA should be carried out in line with latest guidance including the National Planning Policy Framework (NPPF), Flood Risk and Coastal Change Planning Practice Guidance (PPG), and Blaby District Council Local Plan Policies.

The development should be designed with mitigation measures in place where required.

7.3 Guidance for site design and making development safe

Development should be steered outside of the areas of significant surface water flooding such as the land drain, and areas toward the south of the site where surface water may pool.

Developers should consider utilising the area of pooling at the southern end of the land drain as a green corridor or as a location for SuDS.

The risk from surface water flow routes should be quantified as part of a site-specific FRA, including a drainage strategy, so runoff magnitudes from the development are not increased by development across any ephemeral surface water flow routes. A drainage strategy should help inform site layout and design to ensure runoff rates are as close as possible to pre-development greenfield rates, with areas of surface water ponding used as open space and SuDS or water compatible/essential infrastructure uses only.

Arrangements for safe access and egress will need to be provided for the 1% AEP fluvial and surface events with an appropriate allowance for climate change, considering depth,

velocity, and hazard. Design and access arrangements will need to incorporate measures, so development and occupants are safe.

Provisions for safe access and egress should not impact on surface water flow routes or contribute to loss of floodplain storage. Consideration should be given to the siting of access points with respect to areas of surface water flood risk.

8 Conclusions

The following points should be considered in development of this site:

- The majority of the site is at a low risk of flooding from all sources.
- The site is located in flood zone 1, therefore is at a very low risk of fluvial flooding.
- Surface water flood risk is present on site in all events. Flood depths reach up to 1.2m, with velocities of 2m/s and a hazard classification of 'Significant' in the 1% and 0.1% AEP events.
- The RoFSW plus Climate Change mapping shows a moderate increase in surface water extent across the site, additional areas of localised flooding and expansion of flooding from the land drain.
- Development is likely to be able to proceed provided a site-specific FRA is completed.

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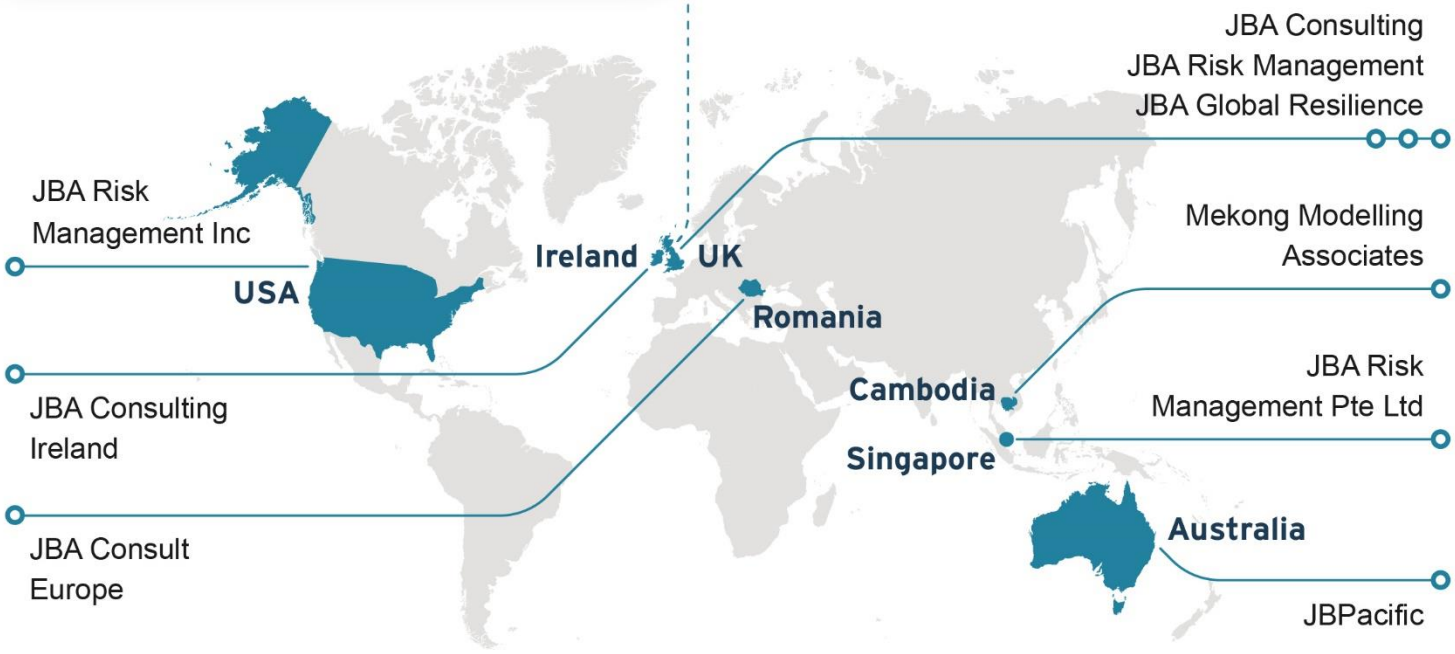

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Level 2 Strategic Flood Risk Assessment - Site LFE020

Prepared for
Blaby District Council

Date
January 2026

Contents

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for LFE020. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Level 1 SFRA and read the Level 2 SFRA Main Report and is therefore familiar with the terminology used in this report.

1.1 Site details

- Site code: LFE020
- Location: Land at Kingstand Golf Course, Leicester Forest East
- Site area: 13.37ha
- Existing site use: Brownfield
- Proposed site use: Residential

1.2 Topography

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR. The site gently slopes downward from the northern boundary with elevations ranging from 110.4 to 112mAOD to the southern boundary with elevations ranging from 107.4 to 109.6mAOD. Areas of elevation and depressions are scattered across the site, forming the ditches, ponds and mounds of the golf course. The elevations of the ditches range from 108.8 to 109.9 mAOD, where the mounds reach elevations of 113.5mAOD.

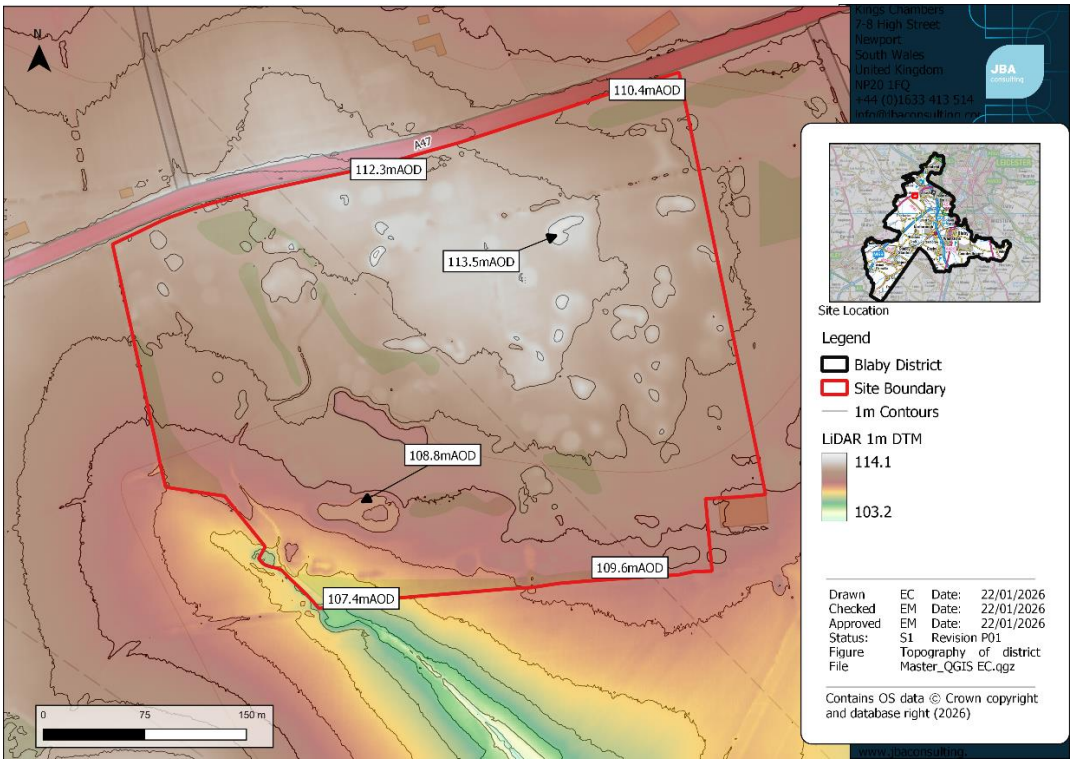

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Edwalton Member, Mudstone
- Superficial - Oadby Till Member and Thrussington Till Member

Soils at the site consist of:

- Slowly permeable, seasonally wet, slightly acidic but base-rich loamy and clayey soils

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located within the Lubbesthorpe catchment, which is a tributary of the of the River Soar. The site occupies a northeastern position within the catchment and drains toward Lubbesthorpe Brook, which flows south before joining the River Soar. The River Soar is a major tributary of the River Trent, placing the site within the wider Trent catchment.

2.2 Existing drainage features

A small section of an unnamed ordinary watercourse is present in the southwest corner of the site. There is also a pond present in the southwestern corner of the site.

2.3 Fluvial

2.3.1 Available data

The EA's Flood Map for Planning (FMfP) has been used within this assessment. No detailed modelling is available at this location.

2.3.2 Description of risk to the site

The site is located entirely within Flood Zone 1 of the Flood Map for Planning, meaning that the site has less than 0.1% annual probability of flooding, therefore the site is at a very low risk of fluvial flooding.

Table 2-1: Existing fluvial flood risk based on EA FMfP*

Flood Zone 1 (%)	Flood Zone 2 (%)	Flood Zone 3a (%)	Flood Zone 3b (%)
100	0	0	0

**The percentage flood zones quoted show the percentage of the site at flood risk from that particular flood zone or event, including the percentage of the site at flood risk at a higher risk zone, e.g. Flood Zone 2 includes the Flood Zone 3 percentage. Flood Zone 1 is the remaining area outside Flood Zone 2 (Flood Zone 2 + Flood Zone 1 = 100%).*

2.4 Surface water

2.4.1 Available data

The EA's Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment.

2.4.2 Description of risk to the site

The RoFSW mapping shows small, localised patches of surface water flood risk are present near the northern boundary adjacent to the A47. A prominent, elongated area of surface

water flooding extends through the centre, running southwards reaching the southern boundary. This feature is likely a flow path influenced by the site's topography. Along the southwestern boundary, a large area of pooled surface water indicates significant water accumulation originating from the flow path and the small ordinary watercourse. Additional localised patches of flooding are observed near the southern edge, particularly toward the southeastern boundary.

During the 3.3% AEP event (high risk), flooding extends across 2.1% of the site. The maximum flood depths are indicated to be 0.9-1.2m, with the maximum velocity between 0.5-1m/s, located along the southwest border. The maximum hazard classification for this event is 'Significant'.

During the 1% AEP event (medium risk), flooding extends across 2.7% of the site. The maximum flood depths are between 0.9-1.2m, with the maximum velocity between 0.5-1m/s. The maximum hazard classification remains as 'Significant'.

During the 0.1% AEP event (low risk), flooding extends across 5% of the site. The maximum flood depths are indicated to be =>1.2m, with the maximum velocity between 1-2m/s, the maximum hazard classification remains as 'Significant'.

Table 2-2: Existing surface water flood risk based on the RoFSW map

Event	3.3% AEP	1% AEP	0.1% AEP
Percentage of site at risk* (%)	2.1	2.7	5
Maximum depth (m)	0.9-1.2	0.9-1.2	=>1.2
Maximum velocity (m/s)	0.5-1	0.5-1	1-2
Maximum hazard classification	Significant	Significant	Significant

** The percentage surface water extents quoted show the percentage of the site at surface water risk from that particular event, including the percentage of the site at flood risk at a higher risk zone (e.g. 1% AEP includes the 3.3% AEP percentage).*

2.5 Reservoir

The site is not shown to be at risk of reservoir flooding during the 'dry day' or 'wet day' scenario from the EA reservoir flood maps.

2.6 Groundwater

The JBA Groundwater Emergence Map shows that most of the site is at a very low risk of groundwater flooding. However, in the southeast corner there is an area which has groundwater levels between 0.5m and 5m below the ground surface.

Based on the RoFSW and topography of the site it is likely that any groundwater that emerges will flow in the southerly or westerly direction and pool in the topographical low point south of the site.

This assessment does not negate the requirement that an appropriate assessment of the groundwater regime should be carried out at the site-specific Flood Risk Assessment (FRA) stage.

2.7 Sewers

The site lies within the Wanlip wastewater catchment, which is assessed as Band 0 for internal sewer flooding risk in Severn Trent's Soar Strategic Planning Area Drainage and Wastewater Management Plan, indicating that sewer flooding is not a strategic issue within the area.

2.8 Flood history

There are no recorded flood extents within the site area. Additionally, no flood events were noted for this area in the L1 SFRA, or the Leicestershire County Council Preliminary Flood Risk Assessment.

3 Climate change

Increased storm intensities due to climate change may increase the extent, depth, velocity, hazard, and frequency of both fluvial and surface water flooding. Please see the Level 1 SFRA report for information on climate change allowances.

Development proposals at the site must address the potential changes associated with climate change and be designed to be safe for the intended lifetime. The provisions for safe access and egress must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

The Environment Agency's Risk of Flooding from Rivers and the Sea plus Climate Change (RoFRS+CC) dataset was used for this assessment. The central allowance for the 2050s epoch (21%) has been applied to the 3.3%, 1%, and 0.1% AEP events.

3.1.2 Description of risk to the site

The RoFRS plus climate change dataset shows that the site is flood free in all events, therefore, fluvial flooding is very low on the site in the climate change scenario.

Table 3-1: Comparison of fluvial flood risk to the site between the 1% AEP and 1% AEP plus 21% climate change extents.

Event	1% AEP	1% AEP plus 21% CC
Percentage of site at risk (%)	0	0
Maximum depth (m)	N/A	N/A
Maximum velocity (m/s)	N/A	N/A
Maximum hazard classification	N/A	N/A

3.2 Surface water

3.2.1 Available data

The Environment Agency's Risk of Flooding from Surface Water plus Climate Change (RoFSW+CC) dataset was used to inform this assessment. The central climate change allowance for the 2050s epoch has been applied to the 3.3%, 1%, and 0.1% AEP surface water flood events. This is not suitable for informing site-specific assessments as the lifetime of residential of residential development is 100-years but is used here in absence of

better data. Developers should apply the upper end allowance for the 2070s epoch as part of their site-specific FRAs.

3.2.2 Description of risk to the site

The RoFSW + CC mapping indicates that the site is partially sensitive to increased rainfall associated with climate change. The mapping shows an increase in small areas localised flooding across the site, along with the emergence of a new flow path in the eastern extent. Additionally, some existing areas of flood have increased in extent. Although, these increases in surface water flooding are mostly minor and not extensive.

In the 3.3% AEP + CC event (high risk), flooding now extends across 2.5% of the site. The maximum depths, velocity and hazard remain the same as the present-day scenario.

During the 1% AEP + CC event (medium risk), flooding now extends across 3.1% of the site. The maximum depths remain the same, however the velocity increases to 1-2m/s, with a hazard classification of 'Significant'.

In the 0.1% AEP event (low risk), the flood extent has increased to 6.3%. The maximum depths, velocity and hazard remain the same as the present-day scenario.

Table 3-2: Comparison of surface water flood risk to the site between the 1% AEP and 1% AEP plus 20% climate change extents.

Event	1% AEP	1% AEP plus 20% CC
Percentage of site at risk (%)	2.5	3.1
Maximum depth (m)	0.9-1.2	0.9-1.2
Maximum velocity (m/s)	0.5-1	1-2
Maximum hazard classification	Significant	Significant

4 Flood risk management infrastructure

4.1 Defences

The EA AIMS dataset shows that the site is not protected by any formal flood defences.

4.2 Residual risk

There is no residual risk to the site from flood risk management structures.

5 Emergency planning

5.1 Flood warnings and alerts

The site is not located in an EA Flood Warning or Flood Alert Area.

5.2 Access and egress

Safe access and egress will need to be demonstrated in the 1% AEP plus climate change fluvial/surface water events. Site drainage proposals should address the requirements for access routes, avoid impeding surface water flows and preserve the storage of surface water to avoid exacerbation of flood risk elsewhere on the site and in the wider catchment.

5.2.1 Potential access

Access to the site will likely be from the A47.

5.2.2 Fluvial

The A47 is flood free during the 1% AEP plus climate change event.

5.2.3 Surface water

The A47 is flood free during the 1% AEP plus climate change event.

5.3 Dry islands

The site is not located on a dry island.

6 Requirements for drainage control and impact mitigation

6.1 Broadscale assessment of possible SuDS

- The vast majority site is considered to have a low susceptibility to groundwater. Detention and attenuation features should be designed to prevent groundwater ingress from impacting hydraulic capacity and structural integrity. Groundwater monitoring is recommended to determine the seasonal variability of groundwater levels, as this may affect the design of the surface water drainage system. Below ground development such as basements may not be appropriate at this site.
- The southeast corner of the site has groundwater levels that are indicated to be between 0.5 and 5m below ground level and there is a risk of flooding to subsurface assets and below ground development such as basements.
- BGS data indicates that the underlying geology is Edwalton Member Mudstone and is likely to be poorly draining. Any proposed use of infiltration should be supported by infiltration testing. Off-site discharge in accordance with the SuDS hierarchy is required to discharge surface water runoff.
- The site is not located within a Groundwater Source Protection Zone and there are no restrictions over the use of infiltration techniques with regard to groundwater quality.
- The site is not located within a historic landfill site.

6.2 Opportunities for wider sustainability benefits and integrated flood risk management

- Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, water quality, amenity and biodiversity. This could provide wider sustainability benefits to the site and surrounding area. Proposals to use SuDS techniques should be discussed with relevant stakeholders (Local Planning Authority, Lead Local Flood Authority, and the EA) at an early stage to understand possible constraints.
- The two ponds on site as well as the flow path visible in the eastern extent of the site should be integrated into the site drainage strategy as blue-green infrastructure.
- Development at this site should not increase flood risk either on or off site. The design of the surface water management proposals should take into account the impacts of future climate change over the projected lifetime of the development.
- Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered.
- Consideration should be made to the existing condition of receiving waterbodies, in this case the Lubbesthorpe Brook Water Framework Directive objectives for water quality. The use of multistage SuDS treatment will improve water quality of

surface water runoff discharged from the site and reduce the impact on receiving water bodies.

- Opportunities to incorporate source control techniques such as green roofs, permeable surfaces and rainwater harvesting must be considered in the design of the site.
- The potential to utilise conveyance features such as swales to intercept and convey surface water runoff should be considered. Conveyance features should be located on common land or public open space to facilitate ease of access. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.

7 NPPF and planning implications

7.1 Exception Test requirements

The Local Planning Authority will need to confirm that the Sequential Test has been carried out in line with national guidelines. The Sequential Test will need to be passed before the Exception Test is applied.

The NPPF classifies Residential development as More Vulnerable.

The Exception Test is not required for this site because it is entirely within Flood Zone 1, however development should be steered away from the areas of surface water and groundwater flood risk.

7.2 Requirements and guidance for site-specific Flood Risk Assessment

At the planning application stage, a site-specific FRA will be required as the proposed development site:

- is within Flood Zone 1 with a site area of 1 hectare or more
- is within Flood Zone 1 and the Flood Map for Planning shows it is at risk pf flooding from surface water

All sources of flooding should be considered as part of a site-specific FRA.

Consultation with the Local Authority, Lead Local Flood Authority, Water Company, and the EA should be undertaken at an early stage.

Any FRA should be carried out in line with latest guidance including the National Planning Policy Framework (NPPF), Flood Risk and Coastal Change Planning Practice Guidance (PPG), and Blaby District Council Local Plan Policies.

The development should be designed with mitigation measures in place where required.

7.3 Guidance for site design and making development safe

Development should be steered outside of the area of the flow path, the area of the watercourse, and areas with significant surface water pooling, as well as the area of groundwater risk in the southeastern corner.

The risk from surface water flow routes should be quantified as part of a site-specific FRA, including a drainage strategy, so runoff magnitudes from the development are not increased by development across any ephemeral surface water flow routes. A drainage strategy should help inform site layout and design to ensure runoff rates are as close as possible to pre-development greenfield rates, with areas of surface water ponding used as open space and SuDS or water compatible/essential infrastructure uses only.

Arrangements for safe access and egress will need to be provided for the 1% AEP fluvial and surface events with an appropriate allowance for climate change, considering depth,

velocity, and hazard. Design and access arrangements will need to incorporate measures, so development and occupants are safe.

Provisions for safe access and egress should not impact on surface water flow routes or contribute to loss of floodplain storage. Consideration should be given to the siting of access points with respect to areas of surface water flood risk.

8 Conclusions

The following points should be considered in development of this site:

- The majority of the site is at a low risk of flooding from all sources.
- There are a number of drainage features/areas of ponding shown to be at risk of surface water flooding. Development should be steered away from these areas and where possible these should be integrated into SuDS as blue-green infrastructure.
- The RoFSW plus Climate Change mapping shows that climate change increases surface water flooding across the site, with some existing flood areas expanding and a new flow path emerging in the eastern extent.
- Groundwater flood risk is generally low except in the southeast corner of the site (0.5-5 m depth). This should be confirmed through ground investigations, and development steered away from the southeastern corner.

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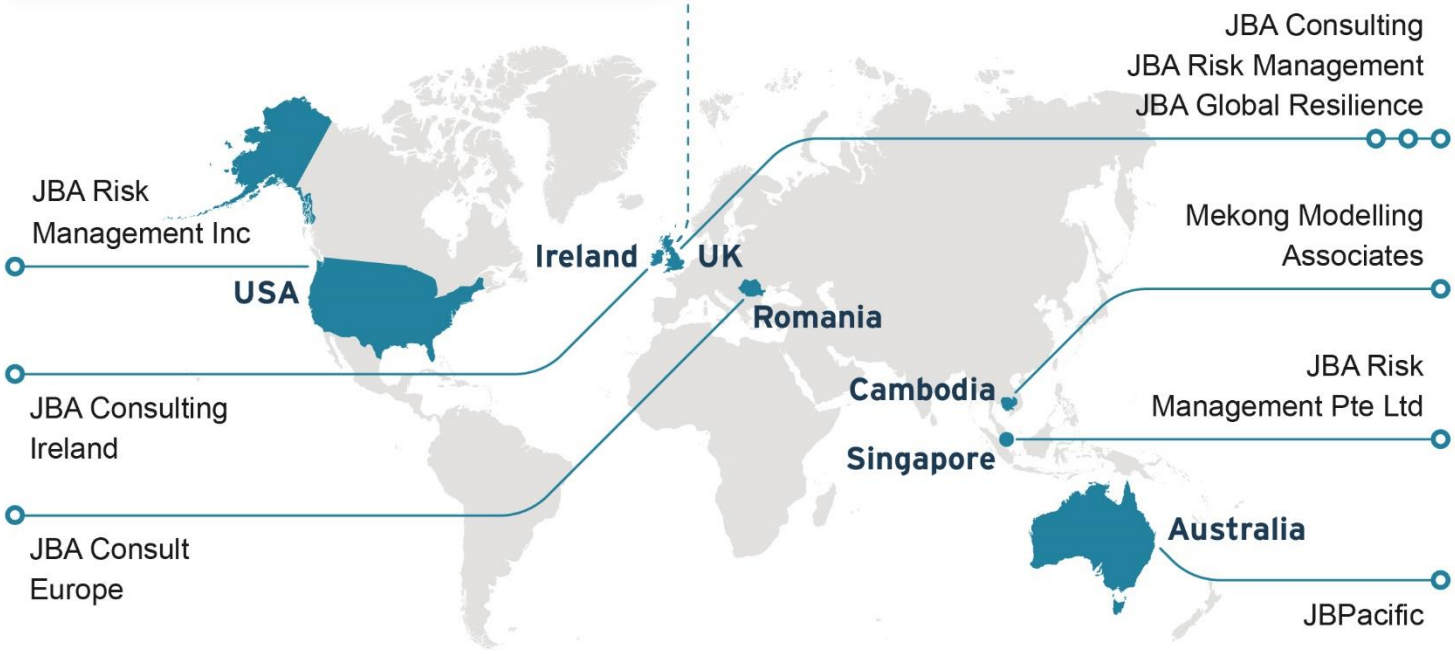

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Level 2 Strategic Flood Risk Assessment - Site STO025

Prepared for
Blaby District Council

Date
January 2026

Blaby District Council
the heart of Leicestershire

Contents

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for the Land South of Broughton Road, Stoney Stanton. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Blaby District Council Level 1 SFRA and read the Blaby District Council Level 2 SFRA Main Report and is therefore familiar with the terminology used in this report.

1.1 Site details

- STO025
- Location: Land South of Broughton Road, Stoney Stanton
- Site area: 8.86ha
- Existing site use: Greenfield
- Proposed site use: Residential

1.2 Topography

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR. The topography of the site steeply slopes downward from the southeast corner of the site to the northwest. The southeastern corner has the highest elevation of the site at 95.7mAOD. The northern and western extent of the site, at the lowest elevations, are relatively flat ranging from 76.2mAOD to 78.4mAOD.

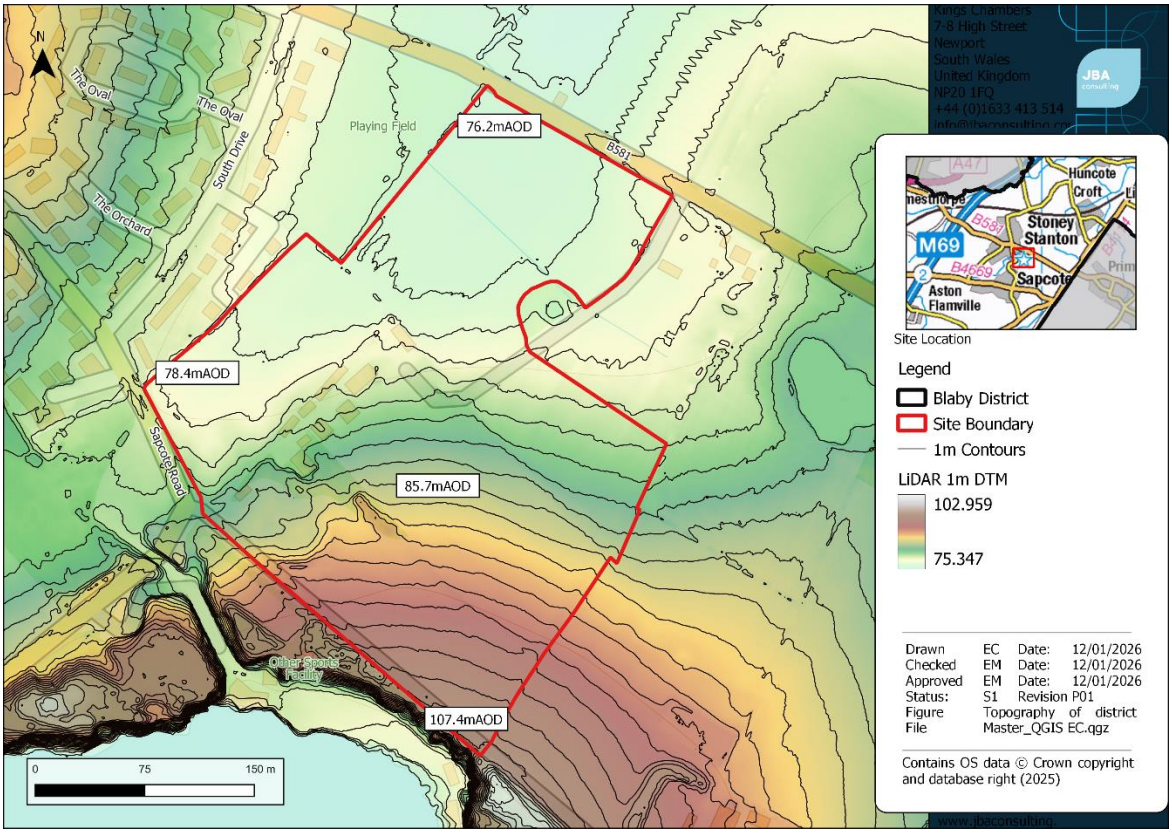

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Mercia Mudstone group
- Superficial - The western extent consists of Alluvium - Clay, Silt, Sand and Gravel. The eastern extent consists of Thrussington member - Diamicton.

Soils at the site consist of:

- Slowly permeable, seasonally wet, slightly acidic but base-rich loamy and clayey soils

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located in the northern area of the Soar from Soar Brook to Thurlaston Brook Water Body. The northwest of the site is bound by an unnamed ordinary watercourse which is a tributary to the River Soar, in the Upper Soar catchment. The unnamed watercourse converges with the River Soar 1.5km to the northeast of the site.

2.2 Existing drainage features

The Environment Agency's Detailed River Network shows drainage features at this site are associated with the unnamed ordinary watercourse along the western boundary, and across the north of the site which is a tributary to the River Soar. A large lake, Stoney Cove, is located 50m to the south, upslope of the site.

2.3 Fluvial

2.3.1 Available data

The EA's Flood Map for Planning (FMfP) has been used within this assessment.

2.3.2 Description of risk to the site

The site is located entirely within Flood Zone 1 of the Flood Map for Planning, meaning that the site has less than 0.1% annual probability of flooding, therefore the site is at a very low risk of fluvial flooding. Although, to the north of the site, on the other side of the B581 Flood Zones 2, 3a, and 3b are present. Additionally, the site may be at risk from the unmodelled ordinary watercourse. There is no detailed hydraulic modelling available for the ordinary for the ordinary watercourse on this site however the Environment Agency's Risk of Flooding from Surface Water dataset can give an indication of the risk from this watercourse (described in the Surface Water section below).

Table 2-1: Existing fluvial flood risk based on EA FMfP *

Flood Zone 1 (%)	Flood Zone 2 (%)	Flood Zone 3a (%)	Flood Zone 3b (%)
100	0	0	0

**The percentage flood zones quoted show the percentage of the site at flood risk from that particular flood zone or event, including the percentage of the site at flood risk at a higher risk zone, e.g. Flood Zone 2 includes the Flood Zone 3 percentage. Flood Zone 1 is the remaining area outside Flood Zone 2 (Flood Zone 2 + Flood Zone 1 = 100%).*

2.4 Surface water

2.4.1 Available data

The EA's Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment.

2.4.2 Description of risk to the site

A significant area of surface water flooding is present along the northwestern boundary and northwestern extent of the site, associated with the ordinary watercourse and low-lying topography. Areas of pooling are present in the northeastern extent of the site. The areas of higher elevation, in the south and east of the site are flood free.

During the 3.3% AEP event (high risk), flooding extends across 16.5% of the site. The maximum depth of flooding, outside of the watercourse channel is between 0.3m and 0.6m, located along the watercourse and the northern boundary. The velocity of surface water flow reaches speeds between 1m/s and 2m/s. This gives a maximum hazard classification of 'Significant'.

During the 1% AEP event (medium risk), flooding extends across 21% of the site. The maximum depth of flooding is between 0.3m and 0.6m, located in areas of topographical low and along the watercourses. The maximum velocity is between 1m/s and 2m/s, with a maximum hazard classification of 'Significant'.

During the 0.1% AEP event (low risk), flooding extends across 25.2% of the site. The maximum depth of flooding is 0.3m and 0.6m, covering most of the western and northwestern area. The maximum velocity of flow is 2m/s or greater, with a maximum hazard classification of 'Significant'.

Table 2-2: Existing surface water flood risk based on the RoFSW map

Event	3.3% AEP	1% AEP	0.1% AEP
Percentage of site at risk* (%)	16.5	21	25.2
Maximum depth (m)	0.3-0.6	0.3-0.6	0.3-0.6
Maximum velocity (m/s)	1-2	1-2	1-2
Maximum hazard classification	Significant	Significant	Significant

** The percentage surface water extents quoted show the percentage of the site at surface water risk from that particular event, including the percentage of the site at flood risk at a higher risk zone (e.g. 1% AEP includes the 3.3% AEP percentage).*

2.5 Reservoir

The site is not shown to be at risk of reservoir flooding during the 'dry day' or 'wet day' scenario from the EA reservoir flood maps.

2.6 Groundwater

The JBA Groundwater Emergence Map shows that the entirety of the site is at a very low risk of groundwater flooding.

This assessment does not negate the requirement that an appropriate assessment of the groundwater regime should be carried out at the site-specific Flood Risk Assessment (FRA) stage.

2.7 Sewers

The site lies within the Stoney Stanton wastewater catchment, which is assessed as Band 0 for internal sewer flooding risk in Severn Trent's Soar Strategic Planning Area Drainage and Wastewater Management Plan, indicating that sewer flooding is not a strategic issue within the catchment.

2.8 Flood history

There are no recorded flood extents within the site area. Additionally, no flood events were noted for this area in the L1 SFRA, or the Leicestershire County Council Preliminary Flood Risk Assessment.

3 Climate change

Increased storm intensities due to climate change may increase the extent, depth, velocity, hazard, and frequency of both fluvial and surface water flooding. Please see Section 5.1 of the Level 1 SFRA report for information on climate change allowances.

Development proposals at the site must address the potential changes associated with climate change and be designed to be safe for the intended lifetime. The provisions for safe access and egress must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

The Environment Agency's Risk of Flooding from Rivers and the Sea plus Climate Change (RoFRS+CC) dataset was used for this assessment. The central allowance for the 2050s epoch (21%) has been applied to the 3.3%, 1%, and 0.1% AEP events.

3.1.2 Description of risk to the site

The site is not at an increased risk of fluvial flooding from climate change, according to the RoFRS + CC mapping. The ordinary watercourses on site should be modelled with climate change uplift included, to fully understand fluvial flood risk to the site.

Table 3-1: Comparison of fluvial flood risk to the site between the 1% AEP and 1% AEP plus 21% climate change extents.

Event	1% AEP	1% AEP plus 21% CC
Percentage of site at risk (%)	0	0
Maximum depth (m)	N/A	N/A
Maximum velocity (m/s)	N/A	N/A
Maximum hazard classification	N/A	N/A

3.2 Surface water

3.2.1 Available data

The Environment Agency's Risk of Flooding from Surface Water plus Climate Change (RoFSW+CC) dataset was used to inform this assessment. The central climate change allowance for the 2050s epoch has been applied to the 3.3%, 1%, and 0.1% AEP surface water flood events. This is not suitable for informing site-specific assessments as the

lifetime of residential of residential development is 100-years but is used here in absence of better data. Developers should apply the upper end allowance for the 2070s epoch as part of their site-specific FRAs.

3.2.2 Description of risk to the site

In the RoFSW + CC mapping, the areas affected by surface water flooding remain the same, although the extent increases slightly, showing that the site is less sensitive to increased rainfall due to climate change.

The depth, velocity and hazard classification remain the same as the baseline conditions with depths between 0.3m and 0.6m, velocity between 1m/s and 2m/s, and a hazard classification of 'Significant' for all events.

Table 3-2: Comparison of surface water flood risk to the site between the 1% AEP and 1% AEP plus 20% climate change extents.

Event	1% AEP	1% AEP plus 20% CC
Percentage of site at risk (%)	21	22.4
Maximum depth (m)	0.3-0.6	0.3-0.6
Maximum velocity (m/s)	1-2	1-2
Maximum hazard classification	Significant	Significant

4 Flood risk management infrastructure

4.1 Defences

The EA AIMS dataset shows that the site is not protected by any formal flood defences.

4.2 Residual risk

There is no residual risk to the site from flood risk management structures. There is a culvert under Broughton Road, and the site may be at risk in the event of a blockage. The risk from blockage should be assessed as part of a site-specific FRA.

5 Emergency planning

5.1 Flood warnings and alerts

The site is not located in an EA Flood Warning or Flood Alert Area.

5.2 Access and egress

Safe access and egress will need to be demonstrated in the 1% AEP plus climate change fluvial/surface water events. Site drainage proposals should address the requirements for access routes, avoid impeding surface water flows and preserve the storage of surface water to avoid exacerbation of flood risk elsewhere on the site and in the wider catchment.

5.2.1 Potential access

The site is likely to be primarily accessed via the B581, which forms its northern boundary. An additional access path from the B581 provides entry along the eastern edge. The southern boundary is defined by Sapcote Road, which, along with an access path, offers further access points.

5.3 Fluvial

All access points are flood free during the 1% AEP plus Climate Change scenario.

5.3.1 Surface water

Sapcote road to the southwest of the site experiences surface water flooding, although depths are maximum 0.3m in this area, so safe access is still possible from this route. An area of pooling with depths of under 0.2m occurs on the B581, therefore safe access is still possible from this route.

5.4 Dry islands

The site is not located on a dry island.

6 Requirements for drainage control and impact mitigation

6.1 Broadscale assessment of possible SuDS

- The site is not considered to be susceptible to groundwater flooding, due to the nature of the local geological conditions. This should be confirmed through additional site investigation work. Below ground development such as basements may still be susceptible to groundwater flooding.
- BGS data indicates that the underlying geology is Mercia Mudstone Group and is likely to be poorly draining. Any proposed use of infiltration should be supported by infiltration testing. Off-site discharge in accordance with the SuDS hierarchy is required to discharge surface water runoff.
- The site is not located within a Groundwater Source Protection Zone and there are no restrictions over the use of infiltration techniques with regard to groundwater quality.
- Part of the site has areas within its boundary designated by the Environment Agency as being a historic landfill site. A thorough ground investigation will be required as part of a detailed site-specific FRA, to determine potential mitigation for contamination and the impact this may have on SuDS. As such, proposed SuDS should be discussed with the relevant stakeholders (LPA, LLFA and EA) at an early stage to understand possible constraints.

6.2 Opportunities for wider sustainability benefits and integrated flood risk management

- Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, water quality, amenity and biodiversity. This could provide wider sustainability benefits to the site and surrounding area. Proposals to use SuDS techniques should be discussed with relevant stakeholders (Local Planning Authority, Lead Local Flood Authority, and the EA) at an early stage to understand possible constraints.
- The two ordinary watercourses on site should be integrated into the site drainage strategy as blue-green infrastructure.
- Development at this site should not increase flood risk either on or off site. The design of the surface water management proposals should take into account the impacts of future climate change over the projected lifetime of the development.
- Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered.
- Consideration should be made to the existing condition of receiving waterbodies and their Water Framework Directive objectives for water quality. The use of multistage SuDS treatment will improve water quality of surface water runoff discharged from the site and reduce the impact on receiving water bodies.

- Opportunities to incorporate source control techniques such as green roofs, permeable surfaces and rainwater harvesting must be considered in the design of the site.
- The potential to utilise conveyance features such as swales to intercept and convey surface water runoff should be considered. Conveyance features should be located on common land or public open space to facilitate ease of access. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.

7 NPPF and planning implications

7.1 Exception Test requirements

The Local Planning Authority will need to confirm that the Sequential Test has been carried out in line with national guidelines. The Sequential Test will need to be passed before the Exception Test is applied.

The NPPF classifies Residential development as More Vulnerable.

The Exception Test is not required for this site because it is entirely within Flood Zone 1, however the ordinary watercourse on the site should be modelled as part of site-specific flood risk assessment to confirm the risk posed to the site.

7.2 Requirements and guidance for site-specific Flood Risk Assessment

At the planning application stage, a site-specific FRA will be required as the proposed development site:

- is within Flood Zone 1 with a site area of 1 hectare or more
- is within Flood Zone 1 and the Flood Map for Planning shows it is at significant risk of flooding from surface water

All sources of flooding should be considered as part of a site-specific FRA.

A detailed hydraulic model of the ordinary watercourse along the western boundary and along the northern extent of the site will be essential at FRA stage to accurately represent the risk from this watercourse and set the height of any mitigation measures. This should include an assessment of the risk form blockage of the Broughton Road culvert.

Consultation with the Local Authority, Lead Local Flood Authority, Water Company, and the EA should be undertaken at an early stage.

Any FRA should be carried out in line with latest guidance including the National Planning Policy Framework (NPPF), Flood Risk and Coastal Change Planning Practice Guidance (PPG), and Blaby District Council Local Plan Policies.

The development should be designed with mitigation measures in place where required.

7.3 Guidance for site design and making development safe

Development should be steered outside of the western and northwestern extents of the site, these areas of low topography have significant surface water flood risk.

The risk from surface water flow routes should be quantified as part of a site-specific FRA, including a drainage strategy, so runoff magnitudes from the development are not increased by development across any ephemeral surface water flow routes. A drainage strategy should help inform site layout and design to ensure runoff rates are as close as possible to pre-development greenfield rates, with areas of surface water ponding used as open space and SuDS or water compatible/essential infrastructure uses only.

Arrangements for safe access and egress will need to be provided for the 1% AEP fluvial and surface events with an appropriate allowance for climate change, considering depth, velocity, and hazard. Design and access arrangements will need to incorporate measures, so development and occupants are safe.

Provisions for safe access and egress should not impact on surface water flow routes or contribute to loss of floodplain storage. Consideration should be given to the siting of access points with respect to areas of surface water flood risk.

8 Conclusions

- The following points should be considered in development of this site:
- The site is located in flood zone 1 for fluvial flood risk, however there is an ordinary watercourse along the northern boundary, and the risk will need to be quantified via detailed modelling as part of a site-specific FRA.
- Significant surface water flood risk associated with the ordinary watercourse is present on site in all events.
- The RoFSW plus Climate Change mapping shows an increase in surface water extent across the site.
- Part of the site has been identified as a historic landfill site, requiring ground investigation to assess contamination and SuDS constraints. Early engagement with LPA, LLFA, and EA is recommended.

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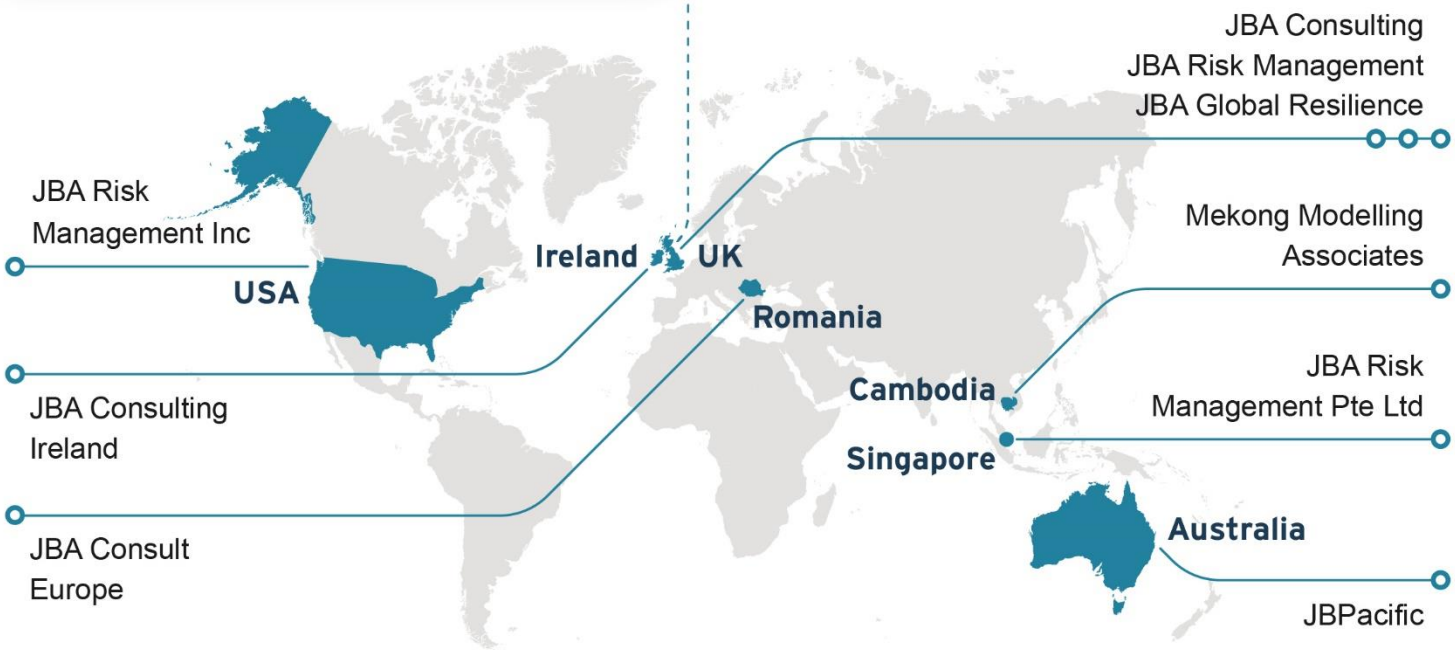

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Level 2 Strategic Flood Risk Assessment - Site WHE027

Prepared for
Blaby District Council

Date
January 2026

Contents

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for WHE027. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Level 1 SFRA and read the Level 2 SFRA Main Report and is therefore familiar with the terminology used in this report.

1.1 Site details

- Site Code: WHE027
- Location: Whetstone Pastures
- Site area: 379.05ha
- Existing site use: Greenfield
- Proposed site use: Residential and Commercial

1.2 Topography

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR. Ground levels are highest in the south eastern corner and the western area of the site and fall towards the centre of the site, towards the Whetstone Brook. The highest ground level on the site is 112.91mAOD and the lowest is 74.91mAOD.

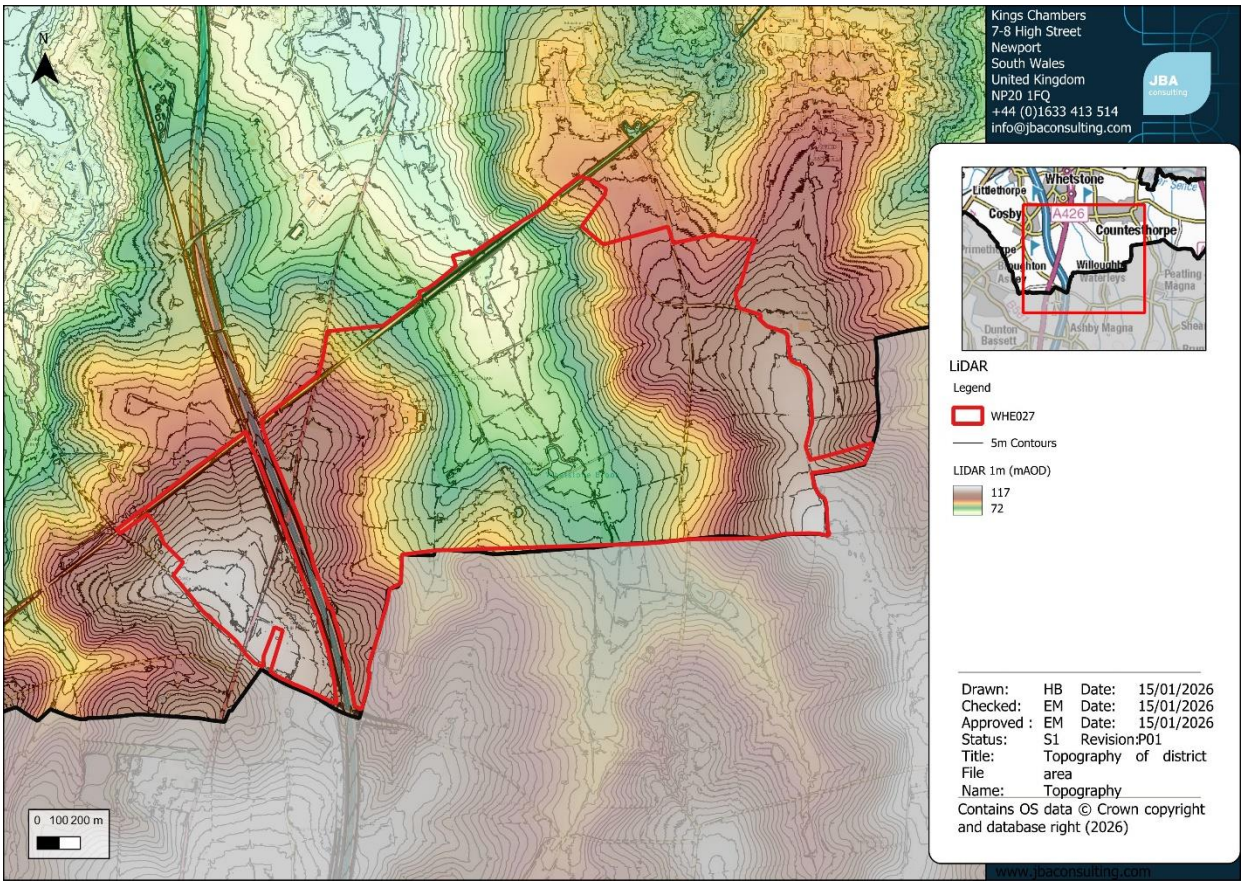

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Blue Lias Formation-Mudstone and limestone, Penarth Group-Mudstone, Mercia Mudstone Group-Mudstone.
- Superficial - Head-Clay, silt, sand and gravel, Till, Mid Pleistocene-Diamicton, Alluvium-Clay, silt, sand and gravel, River Terrace Deposits, Sand and gravel

Soils at the site consist of:

- Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils.

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located in the catchment of the Whetstone Brook and the Countesthorpe Brook.

The Whetstone Brook flows through the centre of the site, and its catchment occupies the majority of the site. Several drainage features are present within the site and flow into the Whetstone Brook. The Whetstone Brook flows in open channel in a northerly direction before flowing through an embankment in the north of the site, it is not known as to whether this is culverted and should be confirmed during a site specific FRA.

An unnamed ordinary watercourse is also associated with this site, which flows from the south-west of the site and joins the Whetstone Brook.

The Countesthorpe Brook is located 1.5km east of the site, and its catchment forms the eastern area of the site.

2.2 Fluvial

2.2.1 Available data

The EA's Flood Map for Planning (FMfP) has been used within this assessment. No detailed modelling is available at this location.

2.2.2 Description of risk to the site

The site is shown to be predominantly situated within Flood Zone 1 of the Flood Map for Planning. The Flood Zone data for this site indicates that the flood risk at this site is restricted to the floodplain of the Whetstone Brook, located in the centre of the site.

Flood Zone 3b is located in the central area of the site. The extent of Flood Zone 3a is marginally bigger than Flood Zone 3b, extending slightly further into the centre and north of the site. Flood Zone 2 follows the same pattern as Flood Zone 3a but extends further into the site at the north-eastern end of the floodplain where ground levels are flatter.

Table 2-1: Existing fluvial flood risk based on EA FMfP*

Flood Zone 1 (%)	Flood Zone 2 (%)	Flood Zone 3a (%)	Flood Zone 3b (%)
92	4	1	3

**The percentage flood zones quoted show the percentage of the site at flood risk from that particular flood zone or event, including the percentage of the site at flood risk at a higher risk zone, e.g. Flood Zone 2 includes the Flood Zone 3 percentage. Flood Zone 1 is the remaining area outside Flood Zone 2 (Flood Zone 2 + Flood Zone 1 = 100%).*

The Risk of Flooding from Rivers and Sea dataset shows that, in the high-risk event (≥3.3% AEP), flood depths are up to 0.3m, with flooding predicted to occur in topographic depressions within the floodplain.

In the medium-risk event (greater than or equal to 1% AEP but less than 3.3%), the flood extent increases as watercourse flows are constricted at the embankment at the northern site boundary, causing water to back up and overtop the banks of the Whetstone Brook. Flood depths in this area are at least 1.2m. Upstream, flood extents slightly increase from the 3.3% AEP event, with depths remaining up to 0.3m across the floodplain.

In the low-risk event (greater than or equal to 0.1% AEP but less than 1%), large increases in the floodplain occur at the northern extent of the floodplain as the increase in flows in the watercourse back up where the Whetstone Brook flows through the watercourse, causing the extent of flooding to increase. In the southern area of the site, there is a marginal increase in flood extent. As in the other events, flood depths in the north of the site are significant and are at least 1.2m in a large area. Upstream, flood depths also increase and are up to 0.6m.

Development should be steered away from the area at risk. A site-specific flood risk assessment supported by detailed modelling (including blockage scenarios) should be prepared to confirm the area at risk should any development be sited within the vicinity of the area at risk.

2.3 Surface water

2.3.1 Available data

The EA's Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment.

2.3.2 Description of risk to the site

The site is shown to be at risk from surface water in all modelled events.

The 30-year surface water event covers 4% of the site, with most of the site area coverage located along the Whetstone Brook floodplain and flow paths from the south-east and south-west flowing north along lower topography to meet the floodplain. The ordinary watercourse to the west of the Whetstone Brook identifies a surface water flow path flowing from the south-west of the site to the confluence of the Whetstone Brook. The western most area of the site identifies small areas of surface water ponding; these are located along the northbound M1 boundary, though surface water risk in this land parcel is generally very low in all events. The centre of the site shows small areas of surface water ponding within topographic low points within in the northern portion of the site. The eastern portion of the site similarly identifies small areas of surface water ponding. At the southernmost portion of the site, four surface water ponds are located west of the Whetstone Brook.

The 100-year surface water flood event is very similar in extent to the 30-year event, spreading slightly wider across the Whetstone Brook floodplain and with new small flow paths emerging.

The 1,000-year event identifies a development in both the size and amount of surface water ponds and flow paths leading to the main surface water flow path in the centre of the site.

There is a surface water flow path flowing north out of the site. The centre of the site is interlaid with multiple surface water flow paths and surface water ponds. This event is generally wider than the lower order events.

Overall, the surface water depth remains consistent throughout all three surface water events, remaining between 0.3m and below in depth. Similarly, the surface water max velocity is consistent across all three food events, with velocity recorded at 0.5m/s and below. Velocities are marginally higher in small areas in the 0.1% AEP event and are up to 1m/s.

Table 2-2: Existing surface water flood risk based on the RoFSW map

Event	3.3% AEP	1% AEP	0.1% AEP
Percentage of site at risk* (%)	3	4.3	9.9
Maximum depth (m)	0.3	0.3	0.3
Maximum velocity (m/s)	0.5	0.5	1
Maximum hazard classification	Dangerous for most	Dangerous for most	Dangerous for most

** The percentage surface water extents quoted show the percentage of the site at surface water risk from that particular event, including the percentage of the site at flood risk at a higher risk zone (e.g. 1% AEP includes the 3.3% AEP percentage).*

2.4 Reservoir

The site is not shown to be at risk of reservoir flooding during the 'dry day' or 'wet day' scenario from the EA reservoir flood maps.

2.5 Groundwater

The JBA Groundwater Emergence Map shows that the majority of the site is in the 'very low risk' zone for groundwater flooding.

Isolated areas of the floodplain of the Whetstone Brook show groundwater levels are either at or very near (within 0.025m of) the ground surface. Other isolated areas in close proximity to the Whetstone Brook show that groundwater levels are between 0.025m and 0.5m below the ground surface and between 0.5m and 5m below the ground surface.

This assessment does not negate the requirement that an appropriate assessment of the groundwater regime should be carried out at the site-specific Flood Risk Assessment (FRA) stage.

2.6 Sewers

The site falls within the Whetstone wastewater catchment, which is assessed as Band 0 for internal sewer flooding risk, indicating that sewer flooding is not a strategic issue at catchment scale.

2.7 Flood history

The EA's historic flooding and recorded flood outline datasets do not have a record of any flooding on or surrounding the site. Additionally, no flood events were noted for this area in the L1 SFRA or the Leicestershire County Council Preliminary Flood Risk Assessment.

3 Climate change

Increased storm intensities due to climate change may increase the extent, depth, velocity, hazard, and frequency of both fluvial and surface water flooding. Please see Section 5.1 of the Level 1 SFRA report for information on climate change allowances.

Development proposals at the site must address the potential changes associated with climate change and be designed to be safe for the intended lifetime. The provisions for safe access and egress must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

The Environment Agency's Risk of Flooding from Rivers and the Sea plus Climate Change (RoFRS+CC) dataset was used for this assessment. The central allowance (16%) for the 2050s epoch has been applied to the 3.3%, 1%, and 0.1% AEP events.

3.1.2 Description of risk to the site

The RoFRS + CC dataset indicates that the site is sensitive to climate change, with increases in flood extent during all events predicted. This increase is most significant in the northeastern area of the site.

The high-risk event (≥3.3% AEP) indicates a small increase in the extent of areas across the floodplain. Depths up to 0.3m are predicted in this event and are the same as the maximum depths predicted in the present-day event.

In the medium-risk event (greater than or equal to 1% AEP but less than 3.3%), small, localised areas of flood extent increase are predicted across the southeastern area of the site. Depths are similar in both events and are up to 1.2m.

In the low-risk event (greater than or equal to 0.1% AEP but less than 1%), small increases in the floodplain occur across the southern area of flood extent, with significant increases predicted in the northern area of the floodplain. The areas of extent increase in the climate change event have similar depths to those in the present-day scenario, with the greatest depths predicted in the northern area of the floodplain.

Table 3-1: Comparison of fluvial flood risk to the site between the 1% AEP and 1% AEP plus 30% and 50% climate change extents.

Event	1% AEP	1% AEP plus 16% CC
Percentage of site at risk (%)	3.9	4.9
Maximum depth (m)	1.2	1.2
Maximum velocity (m/s)	N/A	N/A

Event	1% AEP	1% AEP plus 16% CC
Maximum hazard classification	N/A	N/A

3.2 Surface water

3.2.1 Available data

The Environment Agency's Risk of Flooding from Surface Water plus Climate Change (RoFSW+CC) dataset was used to inform this assessment. The central climate change allowance for the 2050s epoch has been applied to the 3.3%, 1%, and 0.1% AEP surface water flood events. This is not suitable for informing site-specific assessments as the lifetime of residential of residential development is 100-years but is used here in absence of better data. Developers should apply the upper end allowance for the 2070s epoch as part of their site-specific FRAs.

3.2.2 Description of risk to the site

The ROFSW + Climate Change mapping shows that the site is not notably sensitive to increases in rainfall. Compared with the baseline scenario, both flood extents and maximum depths only marginally increase, indicating only a limited additional surface water hazard under future climate conditions.

Changes in flood depths are minimal, with no significant increase in flood depths predicted during the climate change event. The spatial pattern and speed of velocities also mirrors present-day conditions, with no significant new flow routes or increase in speeds emerging.

Hazard classifications show very little change across return periods. For the 3.3% 1% and 0.1% AEP events, the maximum hazard remains dangerous for most.

Table 3-2: Comparison of surface water flood risk to the site between the 1% AEP and 1% AEP climate change extents.

Event	1% AEP	1% AEP plus CC
Percentage of site at risk (%)	4.4	5.7
Maximum depth (m)	0.6	0.6
Maximum velocity (m/s)	1	1
Maximum hazard classification	Dangerous for most	Dangerous for most

4 Flood risk management infrastructure

4.1 Defences

The EA AIMS dataset shows that the site is not protected by any formal flood defences.

4.2 Residual risk

There is no residual risk to the site from flood risk management structures.

5 Emergency planning

5.1 Flood warnings and alerts

The site is not located in an EA Flood Warning or Flood Alert Area.

5.2 Access and egress

Safe access and egress will need to be demonstrated in the 1% AEP plus climate change fluvial/surface water events. Site drainage proposals should address the requirements for access routes, avoid impeding surface water flows and preserve the storage of surface water to avoid exacerbation of flood risk elsewhere on the site and in the wider catchment.

5.2.1 Potential access

The western land parcel is accessed from Shuttleworth Lane, Cosby Lane and Lutterworth Road is accessed from Cosby Lane running along the southern boundary and Lutterworth Road running along the western boundary of the site. The eastern land parcel is accessed from Lutterworth Road, Whetstone Gorse Lane, Willougby Road and Hill Lane.

There are various areas with significant flow paths and ponding on Whetstone Gorse Lane and Willougby Road. Depths are likely to be shallow over the roads.

Access will not be affected by fluvial flooding.

5.3 Dry islands

The site is not located on a dry island.

6 Requirements for drainage control and impact mitigation

6.1 Broadscale assessment of possible SuDS

- BGS data indicates that the underlying geology is Blue Lias Formation comprising Mudstone and limestone, Penarth Group comprising Mudstone and Mercia Mudstone Group comprising Mudstone. This geology is likely to have highly variable permeability. This should be confirmed through infiltration testing. Off-site discharge in accordance with the SuDS hierarchy may be required to discharge surface water runoff from the site.
- The majority of the site is not considered to be susceptible to groundwater flooding, due to the nature of the local geological conditions. This should be confirmed through additional site investigation work. Parts of the site shown to have groundwater close to the surface, which will impact the suitability of infiltration SuDS in these areas, and may require the use of liners.
- The site is not located within a Groundwater Source Protection Zone and there are no restrictions over the use of infiltration techniques with regard to groundwater quality.
- The site is not located within a historic landfill site.
- Where possible, proposed attenuation features such as basins, ponds and tanks should be located outside of Flood Zones 2 and 3 to avoid the potential risks to the hydraulic capacity or structural integrity of these features. Surface water outfalls that discharge into the Whetstone Brook may be susceptible to surcharging due to water levels in the Whetstone Brook watercourse. The impacts of flood flows will need to be considered in terms of the attenuation storage requirements of the site and placement of the outfalls.

6.2 Opportunities for wider sustainability benefits and integrated flood risk management

- Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, water quality, amenity and biodiversity. This could provide wider sustainability benefits to the site and surrounding area. Proposals to use SuDS techniques should be discussed with relevant stakeholders (Local Planning Authority, Lead Local Flood Authority, and the EA) at an early stage to understand possible constraints
- Development at this site should not increase flood risk either on or off site. The design of the surface water management proposals should take into account the impacts of future climate change over the projected lifetime of the development.
- Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered.

- Opportunities to incorporate source control techniques such as green roofs, permeable surfaces and rainwater harvesting must be considered in the design of the site.
- The potential to utilise conveyance features such as swales to intercept and convey surface water runoff should be considered. Conveyance features should be located on common land or public open space to facilitate ease of access. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.
- Surface water discharge rates should not exceed the existing greenfield runoff rates for the site. Opportunities to further reduce discharge rates should be considered and agreed with the LLFA. It may be possible to reduce site runoff by maximising the permeable surfaces on site using a combination of permeable surfacing and soft landscaping techniques.
- If it is proposed to discharge runoff to a watercourse or sewer system, the condition and capacity of the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the asset owner.

7 NPPF and planning implications

7.1 Exception Test requirements

The Local Planning Authority will need to confirm that the Sequential Test has been carried out in line with national guidelines. The Sequential Test will need to be passed before the Exception Test is applied.

The NPPF classifies residential development as More Vulnerable and commercial development as Less Vulnerable

The Exception Test would be required if development is located in Flood Zones 2 or 3.

7.2 Requirements and guidance for site-specific Flood Risk Assessment

At the planning application stage, a site-specific FRA will be required as the proposed development site:

- Is greater than one hectare in Flood Zone 1
- Is located in Flood Zone 2 and 3 and 3b
- Is at risk from surface water flooding
- Has areas at significant risk of groundwater flooding

All sources of flooding should be considered as part of a site-specific FRA.

The FRA should be supported by detailed modelling of the Whetstone Brook to confirm the risk to the site, and ground investigations to confirm the risk to the site from groundwater.

Consultation with the Local Authority, Lead Local Flood Authority, Water Company, and the EA should be undertaken at an early stage.

Any FRA should be carried out in line with latest guidance including the National Planning Policy Framework (NPPF), Flood Risk and Coastal Change Planning Practice Guidance (PPG), and Blaby District Council Local Plan Policies.

The development should be designed with mitigation measures in place where required.

7.3 Guidance for site design and making development safe

Development should be steered away from the flood zones associated with Whetstone brook, and away from the significant surface water flow paths associated with it's unnamed tributaries..

Developers should consider utilising the floodplain and significant areas of surface water risk surrounding the Whetstone Brook as a green corridor or as a location for SuDS.

The risk from surface water flow routes should be quantified as part of a site-specific FRA, including a drainage strategy, so runoff magnitudes from the development are not increased by development across any ephemeral surface water flow routes. A drainage strategy should help inform site layout and design to ensure runoff rates are as close as

possible to pre-development greenfield rates, with areas of surface water ponding used as open space and SuDS or water compatible/essential infrastructure uses only.

Arrangements for safe access and egress will need to be provided for the 1% AEP surface events with an appropriate allowance for climate change, considering depth, velocity, and hazard. Design and access arrangements will need to incorporate measures so that development and occupants are safe.

Provisions for safe access and egress should not impact on surface water flow routes or contribute to loss of floodplain storage. Consideration should be given to the siting of access points with respect to areas of surface water flood risk.

8 Conclusions

- The majority of the site is at low risk of flooding from all sources, and the site would not require the Exception Test provided all development is located outside of Flood Zones 2 and 3.
- Development should be steered away from the areas of the site at risk from flooding, notably the area at risk of fluvial flood risk around the Whetstone Brook and surface water flooding around the site.
- Climate change mapping shows an increase in flood extent, predominantly at the northern end of the site, where flood water is constricted as it flows through the site.
- Development is likely to be able to proceed provided a site-specific Flood Risk Assessment (FRA) demonstrates that users of the site will be safe throughout its lifetime.
- It is recommended that SuDS be incorporated into the development of this site.

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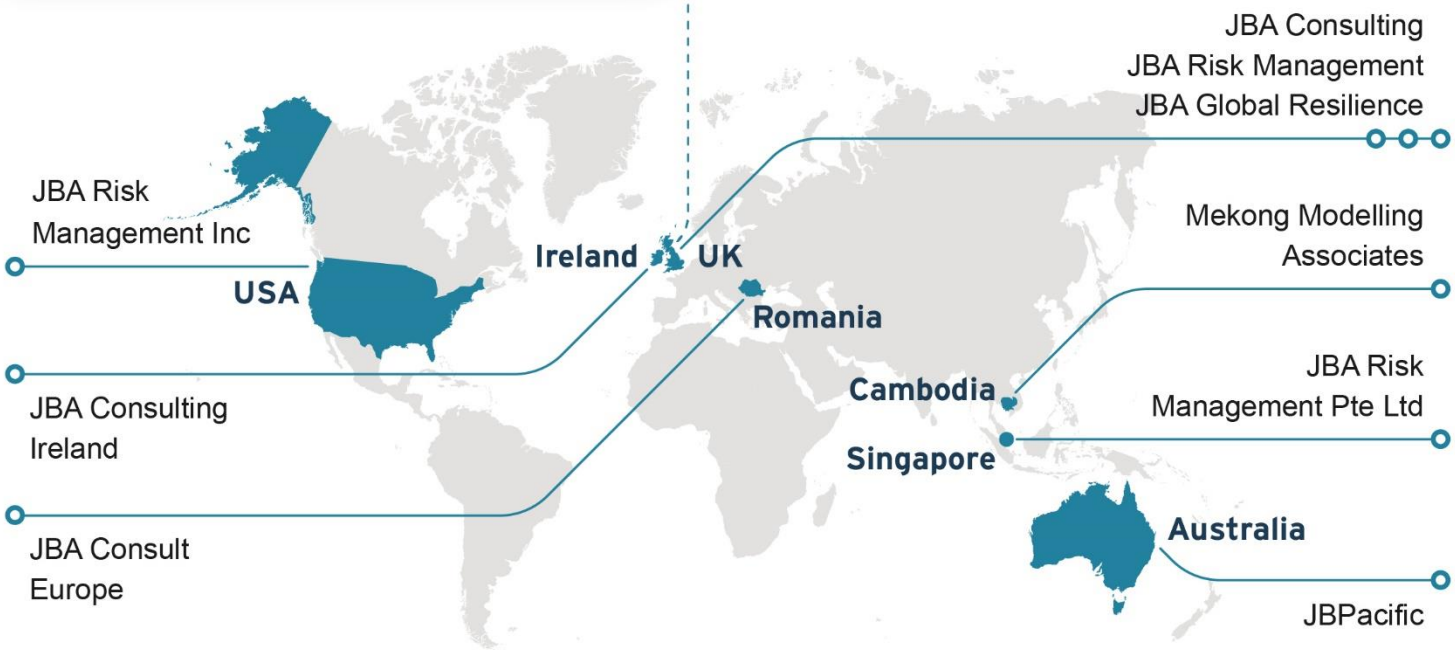

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Level 2 Strategic Flood Risk Assessment - Site COS010

Prepared for
Blaby District Council

Date
January 2026

Blaby District Council
the heart of Leicestershire

Contents

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for WHE031. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Level 1 SFRA and read the Level 2 SFRA Main Report and is therefore familiar with the terminology used in this report.

1.1 Site details

- Site code: COS10
- Location: Land at Cosby Hill, Cosby
- Site area: 2.59ha
- Existing site use: Greenfield
- Proposed site use: Residential

1.2 Topography

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR. The site gently slopes in a south westerly direction from the northern boundary of the site. Elevations range from 109mAOD to 111mAOD in the northeastern area of the site.

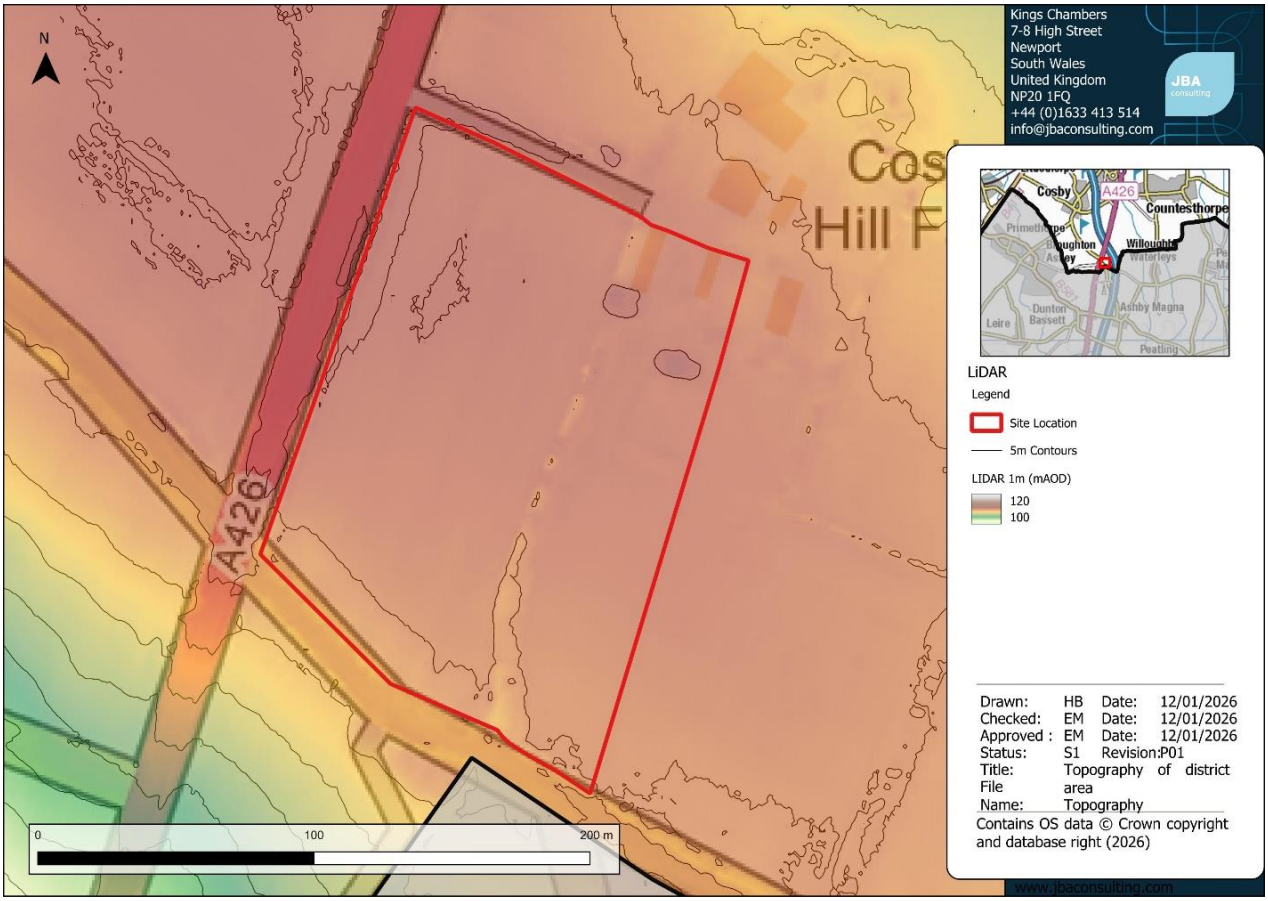

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Blue Lias Formation-Mudstone and limestone
- Superficial - Till, Mid Pleistocene-Diamicton

Soils at the site consist of:

- Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils.

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located south of Cosby. The site is located in the catchment of the Whetstone Brook. The Whetstone Brook flows 1.3km north east of the site. 15 metres south of the site, an unnamed ordinary drain flows west. No main rivers or other ordinary watercourses are located in close proximity to the proposed development site.

2.2 Fluvial

2.2.1 Available data

The EA's Flood Map for Planning (FMfP) has been used within this assessment. No detailed modelling is available at this location.

2.2.2 Description of risk to the site

The site is shown to be predominantly situated within Flood Zone 1 of the Flood Map for Planning.

Table 2-1: Existing fluvial flood risk based on EA FMfP*

Flood Zone 1 (%)	Flood Zone 2 (%)	Flood Zone 3a (%)	Flood Zone 3b (%)
100	0	0	0

**The percentage flood zones quoted show the percentage of the site at flood risk from that particular flood zone or event, including the percentage of the site at flood risk at a higher risk zone, e.g. Flood Zone 2 includes the Flood Zone 3 percentage. Flood Zone 1 is the remaining area outside Flood Zone 2 (Flood Zone 2 + Flood Zone 1 = 100%).*

2.3 Surface water

2.3.1 Available data

The EA's Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment.

2.3.2 Description of risk to the site

The site is affected by surface water flooding in all three events. The risk is more prominent in topographic depressions on the site where floodwater is predicted to pond. Flooding is predominantly predicted along the southern site boundary where ground levels are lowest. Smaller areas of ponding are present in the north of the site in localised topographic depressions.

The 3.3% AEP event shows several areas of surface water ponding along the southern boundary of the site and an area of ponding in the north of the site. Depths in this event are up to 0.6m in small areas and are generally between 0.2m and 0.6m. Flood water velocities

are generally less than 0.25m/s across the site, with some areas of the site predicted to have velocities of up to 0.25m/s. The maximum flood hazard rating is Dangerous for most.

The 1% AEP event identifies a marginal increase in flooding from the 3.3% AEP event with no new flow paths or areas of ponding predicted. Flood depths remain at a maximum of 0.6m and flood velocities are a maximum of 0.5m/s. The maximum flood hazard rating on the site is dangerous for most.

The 0.1% AEP surface water event results in a minor increase in the flood extent of the areas of ponding already present on the site during the 3.3% AEP and 1% AEP events. Two new areas of ponding are predicted to occur in the centre and north-western corner of the site. Depths generally remain predominantly up to 0.3m. Very small areas are predicted to flood up to depths of 0.6m. Velocities in this event remain up to 0.5m/s and remain consistent with the other three events. The maximum flood hazard rating is dangerous for most.

Table 2-2: Existing surface water flood risk based on the RoFSW map

Event	3.3% AEP	1% AEP	0.1% AEP
Percentage of site at risk* (%)	3.6	3.9	5.5
Maximum depth (m)	0.6	0.6	0.6
Maximum velocity (m/s)	0.25	0.25	0.5
Maximum hazard classification	Dangerous for most	Dangerous for some	Dangerous for most

** The percentage surface water extents quoted show the percentage of the site at surface water risk from that particular event, including the percentage of the site at flood risk at a higher risk zone (e.g. 1% AEP includes the 3.3% AEP percentage).*

2.4 Reservoir

The site is not shown to be at risk of reservoir flooding during the 'dry day' or 'wet day' scenario from the EA reservoir flood maps.

2.5 Groundwater

The JBA Groundwater Emergence Map shows that the majority of the site is in the 'very low risk' zone for groundwater flooding.

This assessment does not negate the requirement that an appropriate assessment of the groundwater regime should be carried out at the site-specific Flood Risk Assessment (FRA) stage.

2.6 Sewers

The site lies within the Whetstone wastewater catchment, which is assessed as Band 0 for internal sewer flooding risk in Severn Trent's Soar Strategic Planning Area Drainage and

Wastewater Management Plan, indicating that sewer flooding is not a strategic issue within the catchment.

2.7 Flood history

The EA's historic flooding and recorded flood outline datasets do not have a record of any flooding on or surrounding the site. Additionally, no flood events were noted for this area in the L1 SFRA or the Leicestershire County Council Preliminary Flood Risk Assessment.

3 Climate change

Increased storm intensities due to climate change may increase the extent, depth, velocity, hazard, and frequency of both fluvial and surface water flooding. Please see Section 5.1 of the Level 1 SFRA report for information on climate change allowances.

Development proposals at the site must address the potential changes associated with climate change and be designed to be safe for the intended lifetime. The provisions for safe access and egress must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

The Environment Agency's Risk of Flooding from Rivers and the Sea plus Climate Change (RoFRS+CC) dataset was used for this assessment. The central allowance (16%) for the 2050s epoch has been applied to the 3.3%, 1%, and 0.1% AEP events.

3.1.2 Description of risk to the site

The site is predicted to be flood free during all scenarios and is therefore not sensitive to the impacts of climate change.

Table 3-1: Comparison of fluvial flood risk to the site between the 1% AEP and 1% AEP plus 30% and 50% climate change extents.

Event	1% AEP	1% AEP plus 30% CC	1% AEP plus 50% CC
Percentage of site at risk (%)	0	0	0
Maximum depth (m)	N/A	N/A	N/A
Maximum velocity (m/s)	N/A	N/A	N/A
Maximum hazard classification	N/A	N/A	N/A

3.2 Surface water

3.2.1 Available data

The Environment Agency's Risk of Flooding from Surface Water plus Climate Change (RoFSW+CC) dataset was used to inform this assessment. The central climate change allowance for the 2050s epoch has been applied to the 3.3%, 1%, and 0.1% AEP surface water flood events. This is not suitable for informing site-specific assessments as the lifetime of residential of residential development is 100-years but is used here in absence of

better data. Developers should apply the upper end allowance for the 2070s epoch as part of their site-specific FRAs.

3.2.2 Description of risk to the site

The ROFSW + Climate Change mapping shows that the site is not notably sensitive to increases in rainfall. Compared with the baseline scenario, both flood extents and maximum depths only marginally increase, indicating only limited additional surface water hazard under future climate conditions.

The main difference from the present-day scenario is the additional of ponding areas in the 1% AEP plus climate change an 0.1% AEP plus climate change events.

Changes in flow velocity are minimal. During the 3.3% AEP event, maximum surface water speeds increase from the baseline and are up to 0.5m/s. For both the 1% and 0.1% AEP events, peak velocities remain 0.5m/s. The spatial pattern of higher velocities also mirrors present-day conditions, with no significant new flow routes emerging.

Hazard classifications show only modest change across return periods. For the 3.3% 1% and 0.1% AEP events, the maximum hazard remains dangerous for most.

Table 3-2: Comparison of surface water flood risk to the site between the 1% AEP and 1% AEP climate change extents.

Event	1% AEP	1% AEP plus CC
Percentage of site at risk (%)	3.9	4.3
Maximum depth (m)	0.3	0.6
Maximum velocity (m/s)	0.5	0.5
Maximum hazard classification	Dangerous for Most	Dangerous for Most

4 Flood risk management infrastructure

4.1 Defences

The EA AIMS dataset shows that the site is not protected by any formal flood defences.

4.2 Residual risk

There is no residual risk to the site from flood risk management structures.

5 Emergency planning

5.1 Flood warnings and alerts

The site is not located in an EA Flood Warning or Flood Alert Area.

5.2 Access and egress

Safe access and egress will need to be demonstrated in the 1% AEP plus climate change fluvial/surface water events. Site drainage proposals should address the requirements for access routes, avoid impeding surface water flows and preserve the storage of surface water to avoid exacerbation of flood risk elsewhere on the site and in the wider catchment.

5.2.1 Potential access

The site is accessed from Cosby Lane running along the southern boundary and Lutterworth Road running along the western boundary of the site.

There are various areas of significant ponding on Cosby Lane. Depths are likely to be shallow over the roads.

Access will not be affected by fluvial flooding.

5.3 Dry islands

The site is not located on a dry island.

6 Requirements for drainage control and impact mitigation

6.1 Broadscale assessment of possible SuDS

- BGS data indicates that the underlying geology is Blue Lias Formation-Mudstone and Limestone, which is likely to have highly variable permeability. This should be confirmed through infiltration testing. Off-site discharge in accordance with the SuDS hierarchy may be required to discharge surface water runoff from the site.
- The site is not considered to be susceptible to groundwater flooding, due to the nature of the local geological conditions. This should be confirmed through additional site investigation work.
- The site is not located within a Groundwater Source Protection Zone and there are no restrictions over the use of infiltration techniques with regard to groundwater quality.
- The site is not located within a historic landfill site.

6.2 Opportunities for wider sustainability benefits and integrated flood risk management

- Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, water quality, amenity and biodiversity. This could provide wider sustainability benefits to the site and surrounding area. Proposals to use SuDS techniques should be discussed with relevant stakeholders (Local Planning Authority, Lead Local Flood Authority, and the EA) at an early stage to understand possible constraints
- Development at this site should not increase flood risk either on or off site. The design of the surface water management proposals should take into account the impacts of future climate change over the projected lifetime of the development.
- Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered.
- Opportunities to incorporate source control techniques such as green roofs, permeable surfaces and rainwater harvesting must be considered in the design of the site.
- Opportunities to incorporate source control techniques such as green roofs, permeable surfaces and rainwater harvesting must be considered in the design of the site.
- The potential to utilise conveyance features such as swales to intercept and convey surface water runoff should be considered. Conveyance features should be located on common land or public open space to facilitate ease of access. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.

- Surface water discharge rates should not exceed the existing greenfield runoff rates for the site. Opportunities to further reduce discharge rates should be considered and agreed with the LLFA. It may be possible to reduce site runoff by maximising the permeable surfaces on site using a combination of permeable surfacing and soft landscaping techniques.
- If it is proposed to discharge runoff to a watercourse or sewer system, the condition and capacity of the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the asset owner.

7 NPPF and planning implications

7.1 Exception Test requirements

The Local Planning Authority will need to confirm that the Sequential Test has been carried out in line with national guidelines. The Sequential Test will need to be passed before the Exception Test is applied.

The NPPF classifies residential development as More Vulnerable

The Exception Test is not required for this site because the site is located in Flood Zone 1.

7.2 Requirements and guidance for site-specific Flood Risk Assessment

At the planning application stage, a site-specific FRA will be required as the proposed development site:

- Is greater than one hectare in Flood Zone 1
- Is at risk from surface water flooding

All sources of flooding should be considered as part of a site-specific FRA.

Consultation with the Local Authority, Lead Local Flood Authority, Water Company, and the EA should be undertaken at an early stage.

Any FRA should be carried out in line with latest guidance including the National Planning Policy Framework (NPPF), Flood Risk and Coastal Change Planning Practice Guidance (PPG), and Blaby District Council Local Plan Policies.

The development should be designed with mitigation measures in place where required.

7.3 Guidance for site design and making development safe

Development should be steered outside of the significant areas of surface water ponding.

Developers should consider utilising the southern area of the site as a green corridor or as a location for SuDS.

The risk from surface water flow routes should be quantified as part of a site-specific FRA, including a drainage strategy, so runoff magnitudes from the development are not increased by development across any ephemeral surface water flow routes. A drainage strategy should help inform site layout and design to ensure runoff rates are as close as possible to pre-development greenfield rates, with areas of surface water ponding used as open space and SuDS or water compatible/essential infrastructure uses only.

Arrangements for safe access and egress will need to be provided for the 1% AEP surface events with an appropriate allowance for climate change, considering depth, velocity, and hazard. Design and access arrangements will need to incorporate measures, so development and occupants are safe.

Provisions for safe access and egress should not impact on surface water flow routes or contribute to loss of floodplain storage. Consideration should be given to the siting of access points with respect to areas of surface water flood risk.

8 Conclusions

- The majority of the site is at low risk of flooding from all sources, and the site would not require the Exception Test as it is entirely in Flood Zone 1.
- Development is likely to be able to proceed provided a site-specific Flood Risk Assessment (FRA) demonstrates that users of the site will be safe throughout its lifetime.
- Development should be steered away from the areas of the site at risk from flooding, notably the area at risk of surface water flooding in the southern area of the site.
- Climate change mapping shows only marginal increases in flood extent and depth, although some velocity classifications increase under the 1% and 0.1% AEP events.
- It is recommended that SuDS be incorporated into the development of this site.

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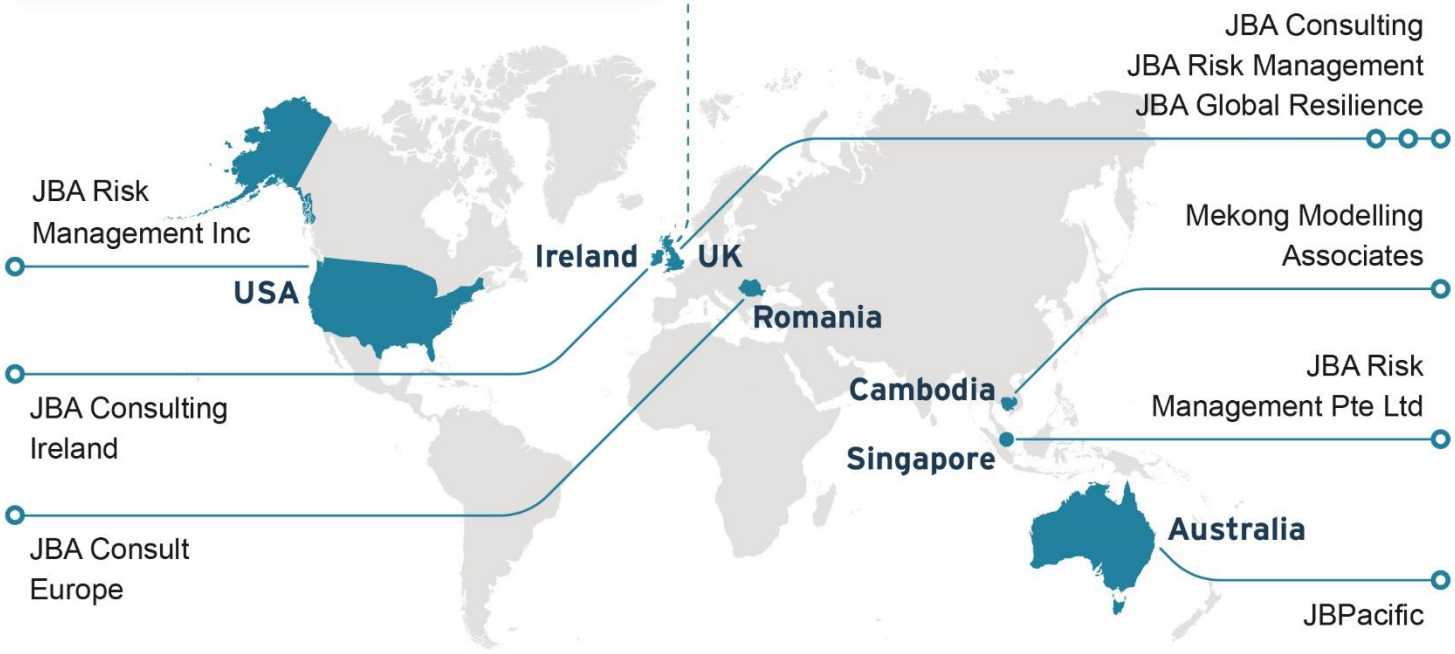

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Level 2 Strategic Flood Risk Assessment - Site WHE031

Prepared for
Blaby District Council

Date
January 2026

Blaby District Council
the heart of Leicestershire

Contents

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for WHE031. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Level 1 SFRA and read the Level 2 SFRA Main Report and is therefore familiar with the terminology used in this report.

1.1 Site details

- Site Code: WHE031
- Location: Land south of Whetstone
- Site area: 55.56ha
- Existing site use: Greenfield
- Proposed site use: Residential

The site is formed of two separate land parcels, which will be referred to separately (where required) as the east and western land parcels in this report.

1.2 Topography

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR. The site gently slopes in a north easterly direction from the south western corner of the site. Elevations range from 88.5mAOD to 69.8mAOD in the north eastern area of the site.

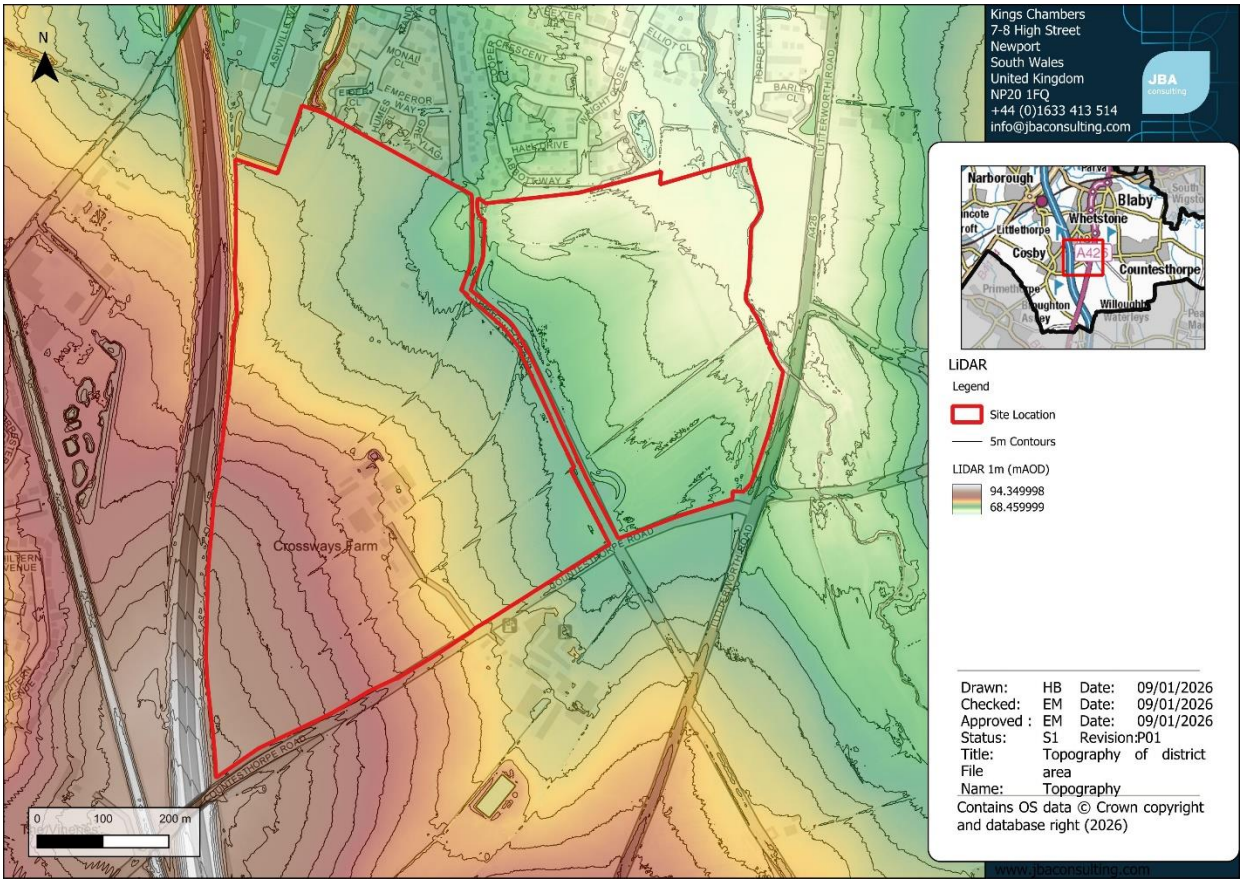

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Mercia Mudstone Group, Mudstone.
- Superficial - Till, Glaciofluvial deposits, Head, Syston Sand and Gravel Member, and Alluvium.

Soils at the site consist of:

- Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils.

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located south of Whetstone and south-east of Littlethorpe. The site is located within the catchment of the Whetstone Brook.

The Whetstone Brook forms the eastern boundary of the site's far eastern land parcel, which flows south to north along the site. 30 metres north of the north-eastern section of the site, an unnamed ordinary drain flows east towards the Whetstone Brook. Additionally, within the eastern land parcel, a small unnamed ordinary watercourse is located, flowing west to east through the site.

2.2 Fluvial

2.2.1 Available data

The detailed hydraulic model for the Whetstone Brook (created in 2018) was used in this assessment. This extent informs the FMFP and therefore there is no difference between the FMFP and the flood model extent.

2.2.2 Description of risk to the site

The modelled Flood Zones for this site indicate flood risk site is restricted to the floodplain of the Whetstone Brook, within the eastern land parcel. The western land parcel is predicted to be flood free in all events. Across all three Flood Zones, the flooding is confined to the topographic low points within the site, located within the floodplain of the Whetstone Brook.

Flood Zone 3b is located in the north-eastern area of the site. Flood Zone 3a is also concentrated on the north-eastern area of the site, extending slightly further down the eastern boundary. Fluvial Flood Zone 2 follows the same pattern as Flood Zone 3a but extends further into the site at the north-eastern and southern end of the floodplain.

Table 2-1: Existing fluvial flood risk based on EA FMfP*

Flood Zone 1 (%)	Flood Zone 2 (%)	Flood Zone 3a (%)	Flood Zone 3b (%)
96	3.7	0.55	2.1

**The percentage flood zones quoted show the percentage of the site at flood risk from that particular flood zone or event, including the percentage of the site at flood risk at a higher risk zone, e.g. Flood Zone 2 includes the Flood Zone 3 percentage. Flood Zone 1 is the remaining area outside Flood Zone 2 (Flood Zone 2 + Flood Zone 1 = 100%).*

The modelled defended 3.3% AEP extent affects the north eastern area of the site. Flood depths in this area are generally shallow (less than 0.3m) and are a maximum of 0.37m in small topographic depressions. Velocities are generally low, with speeds of less than 0.25m predicted across the majority of the site. Small areas of the site are predicted to have higher velocities of between 0.5 and 0.7m/s. Flood hazard ratings across the floodplain are

generally caution with higher hazard ratings predicted in the deeper areas in the centre of the floodplain.

The 100-year extent is marginally larger than the 3.3% AEP extent. Flood depths are similar and generally shallow across the floodplain and are below 0.3m. Greater depths occur in small topographic depressions across the floodplain of up to 0.46m. Higher velocities occur in closer proximity to the watercourse and in topographic depressions across the floodplain. The maximum velocity is 0.80m/s. The maximum hazard rating on the site is dangerous for most, within the central area of the floodplain.

In the 0.1% AEP event, flood depths are generally shallow with areas within the centre and edge of the floodplain at higher depths of up to 0.57m. Velocities across the site range, with lower velocities predicted at the edge of the floodplain and higher velocities occurring in closer proximity to the watercourse and in topographic depressions across the floodplain. The maximum velocity is 1.12m/s. The maximum hazard rating on the site is danger for most, within the central area of the floodplain.

Development should be steered away from the area at risk in the north east of the eastern land parcel. A site-specific flood risk assessment supported by detailed modelling should be prepared to confirm the area at risk, should any development be sited within the vicinity of the area at risk.

2.3 Surface water

2.3.1 Available data

The EA's Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment.

2.3.2 Description of risk to the site

The site is affected by surface water flooding in all modelled events. The risk is more prominent in topographic depressions where floodwater is predicted to pond. Flooding is predominantly predicted to affect the eastern land parcel. The 3.3% AEP event shows several areas of surface water ponding across both land parcels, the largest of which is located at the junction between Springwell Lane and Countesthorpe Road. The eastern portion of the site contains several large surface water ponds. Surface water flows towards the Whetstone Brook floodplain in the north-eastern portion of the site. Depths in this event are up to 0.3m. Flood water velocities are generally less than 0.25m/s across the site, with small flow paths in the northern and south eastern areas of the site predicted to have velocities of up to 0.25m/s. The maximum flood hazard rating is Caution.

The 1% AEP event shows a marginal increase in flooding relative to the 3.3% AEP event, with no new flow paths predicted. Flood depths remain at a maximum of 0.3m, and flood velocities are a maximum of 0.5m/s in the eastern part of the site. The maximum flood hazard rating on the site is dangerous for most.

The 0.1% AEP surface water event results in a significant increase in flooding on the site. Areas of ponding during the lower events are predicted to increase in extent. Depths generally remain shallow, with depths predominantly up to 0.3m. Very small areas are predicted to flood up to depths of 0.6m. Velocities in this event remain up to 0.5m/s and remain consistent with the other three events. The maximum flood hazard rating is dangerous for most.

Table 2-2: Existing surface water flood risk based on the RoFSW map

Event	3.3% AEP	1% AEP	0.1% AEP
Percentage of site at risk* (%)	3	4.8	13.1
Maximum depth (m)	0.3	0.3	0.6
Maximum velocity (m/s)	0.25	0.5	0.5
Maximum hazard classification	Caution	Dangerous for Most	Dangerous for Most

** The percentage surface water extents quoted show the percentage of the site at surface water risk from that particular event, including the percentage of the site at flood risk at a higher risk zone (e.g. 1% AEP includes the 3.3% AEP percentage).*

2.4 Reservoir

The site is not shown to be at risk of reservoir flooding during the 'dry day' or 'wet day' scenario from the EA reservoir flood maps.

2.5 Groundwater

The JBA Groundwater Emergence Map shows that the majority of the site is in the 'very low risk' zone for groundwater flooding.

In the north eastern area of the site, groundwater levels are within 0.5m of the ground surface, and there is significant risk of groundwater flooding. A site-specific FRA, supported by robust ground investigations, will need to be undertaken to confirm the risk to thesite.

This assessment does not negate the requirement that an appropriate assessment of the groundwater regime should be carried out at the site-specific Flood Risk Assessment (FRA) stage.

2.6 Sewers

The site falls within the Whetstone wastewater catchment, which is assessed as Band 0 for internal sewer flooding risk, indicating that sewer flooding is not a strategic issue at catchment scale.

2.7 Flood history

The EA's historic flooding and recorded flood outline datasets do not record any flooding on or around the site.

3 Climate change

Increased storm intensities due to climate change may increase the extent, depth, velocity, hazard, and frequency of both fluvial and surface water flooding. Please see Section 5.1 of the Level 1 SFRA report for information on climate change allowances.

Development proposals at the site must address the potential changes associated with climate change and be designed to be safe for the intended lifetime. The provisions for safe access and egress must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

The modelled extents from the Whetstone Brook Climate Change events dataset were used for this assessment. The closest corresponding percentages in the model have been used for the central and higher central allowance for the 1% AEP events. These are the 1% AEP plus 30% scenario for the central allowance and for the higher central 2080s epoch, the 1% plus 50% climate change scenario has been used as a proxy.

3.1.2 Description of risk to the site

In the modelled 1% plus 30% climate change scenario, the extent of flooding covers a larger area of the north-eastern part of the site, which is already predicted to flood in other events. The maximum flood depths are marginally higher than those in the 1% AEP event, with an increase in velocity predicted. There is no predicted change in flood hazard rating.

In the 1% AEP plus 50% climate change, there is a small increase in flooding across the floodplain. Depths remain shallow across the site, with a small increase predicted in the maximum flood depth. Flood velocities and the flood hazard rating remain similar in this event.

Table 3-1: Comparison of fluvial flood risk to the site between the 1% AEP and 1% AEP plus 30% and 50% climate change extents.

Event	1% AEP	1% AEP plus 30% CC	1% AEP plus 50% CC
Percentage of site at risk (%)	2.3	2.8	3.2
Maximum depth (m)	0.46	0.52	0.54
Maximum velocity (m/s)	0.8	1.18	0.91
Maximum hazard classification	Dangerous for Most	Dangerous for Most	Dangerous for Most

3.2 Surface water

3.2.1 Available data

The Environment Agency's Risk of Flooding from Surface Water plus Climate Change (RoFSW+CC) dataset was used to inform this assessment. The central climate change allowance for the 2050s epoch has been applied to the 3.3%, 1%, and 0.1% AEP surface water flood events. This is not suitable for informing site-specific assessments as the lifetime of residential of residential development is 100 years but is used here in absence of better data. Developers should apply the upper end allowance for the 2070s epoch as part of their site-specific FRAs.

3.2.2 Description of risk to the site

The ROFSW + Climate Change mapping shows that the site is not notably sensitive to increases in rainfall. Compared with the baseline scenario, both flood extents and maximum depths only marginally increase, indicating only a limited additional surface water hazard under future climate conditions.

The main difference from the present-day scenario is a slight increase in the extent of high-risk flooding, which occurs mainly in areas that already experience shallow ponding. These include parts of the southern boundary, sections of the central drainage channel, and short stretches of the central access path.

Changes in flow velocity are minimal. During the 3.3% AEP event, maximum surface water speeds increase from the baseline and are up to 0.5m/s. For both the 1% and 0.1% AEP events, peak velocities remain 0.5m/s, with a minor increase to 1m/s in very small, localised areas. The spatial pattern of higher velocities also mirrors present-day conditions, with no significant new flow routes emerging.

Hazard classifications show only modest change across return periods. Under the 3.3% AEP event, the maximum hazard remains Caution. For the 1% and 0.1% AEP events, the maximum hazard remains dangerous for most.

Table 3-2: Comparison of surface water flood risk to the site between the 1% AEP and 1% AEP climate change extents.

Event	1% AEP	1% AEP plus CC
Percentage of site at risk (%)	4.8	6.6
Maximum depth (m)	0.3	0.6
Maximum velocity (m/s)	0.5	0.5
Maximum hazard classification	Dangerous for Most	Dangerous for Most

4 Flood risk management infrastructure

4.1 Defences

The EA AIMS dataset shows that the site is not protected by any formal flood defences.

4.2 Residual risk

There is no residual risk to the site from flood risk management structures. Whetstone Brook is culverted under the A426, and there may be a risk to site if the culvert where to become blocked. The risk of blockage should be considered as part of a site-specific FRA.

5 Emergency planning

5.1 Flood warnings and alerts

The site is not located in an EA Flood Warning or Flood Alert Area.

5.2 Access and egress

Safe access and egress will need to be demonstrated in the 1% AEP plus climate change fluvial/surface water events. Site drainage proposals should address the requirements for access routes, avoid impeding surface water flows and preserve the storage of surface water to avoid exacerbation of flood risk elsewhere on the site and in the wider catchment.

5.2.1 Potential access

The site is bisected by Springwell Lane from north to south with Countesthorpe Road running along the southern boundary of the site from west to east. The A426 forms the eastern boundary of the site, running from north to south. The western boundary is formed by the M1.

There are various areas of significant ponding on either side of these roads, but the roads are raised, hence surface water flooding only affects these in localised areas in the 1% AEP and 0.1% AEP events, e.g., around the Countesthorpe/ Springwell Lane junction and Springwell Lane at the very northern boundary, where another flow path crosses. Depths are likely to be shallow over the roads, given the deeper ponding upstream of these. Flood hazard ratings are Caution.

Access will not be affected by fluvial flooding.

5.3 Dry islands

The site is not located on a dry island.

6 Requirements for drainage control and impact mitigation

6.1 Broadscale assessment of possible SuDS

- A significant area in the north of the eastern land parcel has groundwater level within 0.5m of the grounds surface and there is a risk of flooding to subsurface assets and below ground development such as basements. Groundwater monitoring is recommended to determine the seasonal variability of groundwater levels, as this may affect the design of the surface water drainage system.
- BGS data indicates that the underlying geology is Till, Glaciofluvial deposits, Head, Syston Sand and Gravel Member, and Alluvium which is likely to be with highly variable permeability. This should be confirmed through infiltration testing. Off-site discharge in accordance with the SuDS hierarchy may be required to discharge surface water runoff from the site.
- The site is not located within a Groundwater Source Protection Zone and there are no restrictions over the use of infiltration techniques with regard to groundwater quality.
- Where possible, proposed attenuation features such as basins, ponds and tanks should be located outside of Flood Zones 2 and 3 to avoid the potential risks to the hydraulic capacity or structural integrity of these features. Surface water outfalls that discharge into the Whetstone Brook may be susceptible to surcharging due to water levels in the River. The impacts of flood flows will need to be considered in terms of the attenuation storage requirements of the site and placement of the outfalls.

6.2 Opportunities for wider sustainability benefits and integrated flood risk management

- Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, water quality, amenity and biodiversity. This could provide wider sustainability benefits to the site and surrounding area. Proposals to use SuDS techniques should be discussed with relevant stakeholders (Local Planning Authority, Lead Local Flood Authority, and the EA) at an early stage to understand possible constraints
- The Whetstone Brook should be integrated into the site drainage strategy as blue-green infrastructure.
- Development at this site should not increase flood risk either on or off site. The design of the surface water management proposals should take into account the impacts of future climate change over the projected lifetime of the development.
- Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered.

- Opportunities to incorporate source control techniques such as green roofs, permeable surfaces and rainwater harvesting must be considered in the design of the site.
- The potential to utilise conveyance features such as swales to intercept and convey surface water runoff should be considered. Conveyance features should be located on common land or public open space to facilitate ease of access. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.

7 NPPF and planning implications

7.1 Exception Test requirements

The Local Planning Authority will need to confirm that the Sequential Test has been carried out in line with national guidelines. The Sequential Test will need to be passed before the Exception Test is applied.

The NPPF classifies residential development as More Vulnerable

The Exception Test is not required for this site provided development is steered away from the areas of severe surface water flooding and outside of Flood Zone 2/3, which should be possible based on the areas of the site affected.

7.2 Requirements and guidance for site-specific Flood Risk Assessment

At the planning application stage, a site-specific FRA will be required as the proposed development site:

- Is greater than one hectare
- Is located in Flood Zones 2, 3, and 3b
- Is at risk from surface water and groundwater flooding

All sources of flooding should be considered as part of a site-specific FRA.

Consultation with the Local Authority, Lead Local Flood Authority, Water Company, and the EA should be undertaken at an early stage.

The site-specific FRA should be informed by detailed modelling of the Whetstone Brook, including the latest climate change allowances, and a consideration of the impacts of blockage of the Lutterworth Road (A426) culvert.

The site-specific FRA should also be supported by robust ground investigations to determine the risk posed to the site by groundwater, particularly in the north of the eastern land parcel where groundwater levels are shown to be close to the surface.

Any FRA should be carried out in line with latest guidance including the National Planning Policy Framework (NPPF), Flood Risk and Coastal Change Planning Practice Guidance (PPG), and Blaby District Council Local Plan Policies

The development should be designed with mitigation measures in place where required.

7.3 Guidance for site design and making development safe

Development should be steered outside of the north eastern corner and significant areas of surface water ponding.

Developers should consider utilising the north eastern area of the site as a green corridor or as a location for SuDS.

A detailed hydraulic model of the Whetstone Brook will be required at FRA stage to accurately represent the risk from this watercourse and set the height of any mitigation measures.

The risk from surface water flow routes should be quantified as part of a site-specific FRA, including a drainage strategy, so runoff magnitudes from the development are not increased by development across any ephemeral surface water flow routes. A drainage strategy should help inform site layout and design to ensure runoff rates are as close as possible to pre-development greenfield rates, with areas of surface water ponding used as open space and SuDS or water compatible/essential infrastructure uses only.

Arrangements for safe access and egress will need to be provided for the 1% AEP fluvial and surface events with an appropriate allowance for climate change, considering depth, velocity, and hazard. Design and access arrangements will need to incorporate measures, so development and occupants are safe.

Provisions for safe access and egress should not impact on surface water flow routes or contribute to loss of floodplain storage. Consideration should be given to the siting of access points with respect to areas of surface water flood risk.

8 Conclusions

- The majority of the site is at low risk of flooding from all sources, and the site would not require the Exception Test provided all development is located outside of Flood Zones 2 and 3.
- Development is likely to be able to proceed provided a site-specific Flood Risk Assessment (FRA) supported by detailed modelling of the Whetstone Brook and ground investigations to confirm groundwater risk demonstrates that users of the site will be safe throughout its lifetime.
- Development should be steered away from the areas of the site at risk from flooding, notably Flood Zones 2 and 3 in the east of the site.
- Climate change mapping shows only marginal increases in flood extent and depth, although some velocity classifications increase under the 1% and 0.1% AEP events.
- It is recommended that SuDS are incorporated to the development of this site, including integrating the existing drainage ditches and watercourses into blue-green infrastructure.

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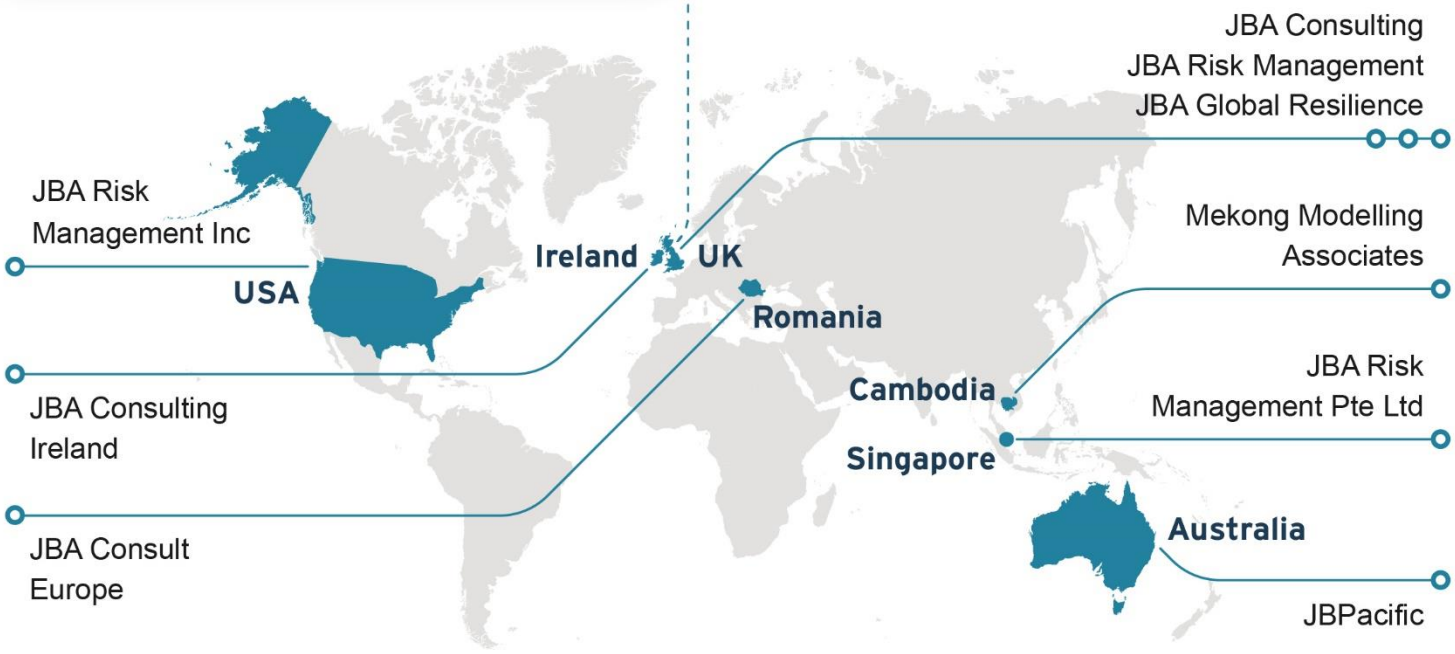

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Level 2 Strategic Flood Risk Assessment - Site EBLA004, BLA036, BLA038

Prepared for
Blaby District Council

Date
January 2026

Blaby District Council
the heart of Leicestershire

Contents

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Glebe Farm, the Land off the A246, and the Land to the East of Lutterworth Road. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Level 1 SFRA and read the Level 2 SFRA Main Report and is therefore familiar with the terminology used in this report.

1.1 Site details

- Site code: EBLA004, BLA036, BLA038
- Location: Glebe Farm, Land off the A246, Land to the East of Lutterworth Road
- Site area: 38ha
- Existing site use: Greenfield, existing buildings and carparks on site.
- Proposed site use: Residential

1.2 Topography

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR. The site exhibits a clear west to east gradient, with ground levels increasing steadily across the site. The west of the site, bordering the A426, comprises the lowest elevation at around 73mAOD. Additionally, a large depression is present toward the north of the western boundary at 71mAOD. The elevation rises progressively through the central part of the site to the highest elevation of 88mAOD along the eastern boundary. The LiDAR shows multiple drainage features associated with land drains along the edge of the existing fields in the centre of the site, two spanning from the western the eastern boundary, and three from north to south.

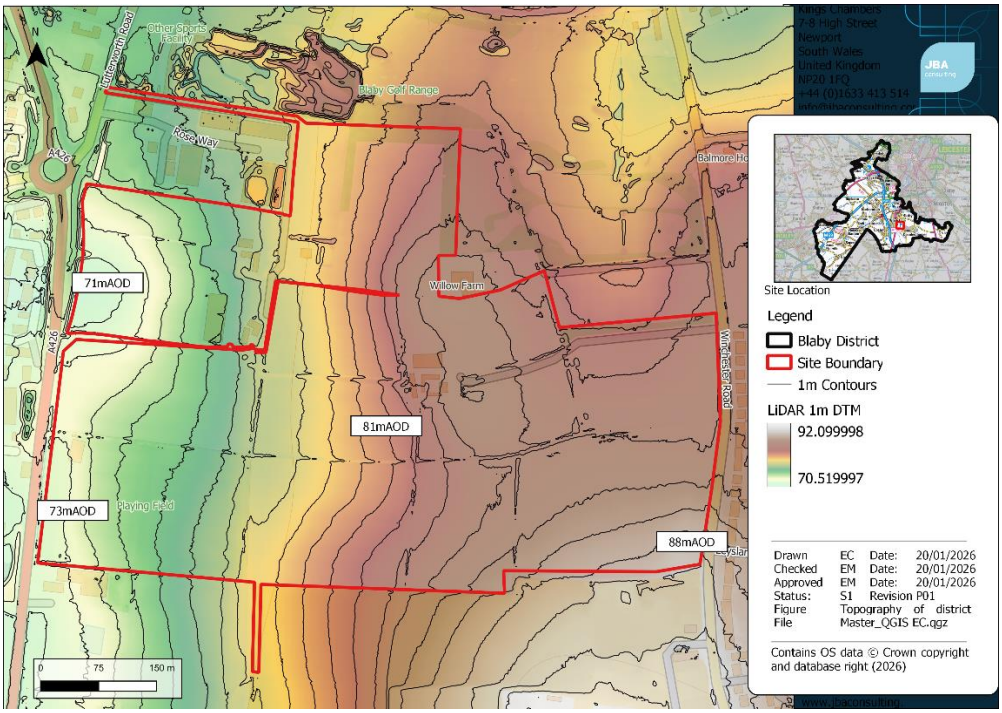

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Mercia Mudstone Group
- Superficial - Till, Mid-Pleistocene Diamicton

Soils at the site consist of:

- Slowly permeable, seasonally wet, slightly acidic but base-rich loamy and clayey soils.

2 Sources of flood risk

2.1 Location of site within the catchment

The west side of the site is in the Whetstone Brook Catchment (tributary of River Soar) water body, a small tributary catchment of the River Soar within the Soar operational catchment and the wider Humber River Basin District. The east side is within the Sence from Countesthorpe Brook to Soar water body which also forms part of the Soar catchment, ultimately feeding into the River Soar and the Humber system.

2.2 Existing drainage features

The site mas multiple drainage features present in the centre of the site. Two drainage features span from the eastern boundary to the western boundary, and three span southwards from the centre of the site to the southern boundary.

2.3 Fluvial

2.3.1 Available data

The EA's Flood Map for Planning (FMfP) has been used within this assessment.

2.3.2 Description of risk to the site

The site is located entirely within Flood Zone 1 of the Flood Map for Planning, meaning that the site has less than 0.1% annual probability of flooding, therefore the site is at a very low risk of fluvial flooding.

Table 2-1: Existing fluvial flood risk based on EA FMfP*

Flood Zone 1 (%)	Flood Zone 2 (%)	Flood Zone 3a (%)	Flood Zone 3b (%)
100	0	0	0

**The percentage flood zones quoted show the percentage of the site at flood risk from that particular flood zone or event, including the percentage of the site at flood risk at a higher risk zone, e.g. Flood Zone 2 includes the Flood Zone 3 percentage. Flood Zone 1 is the remaining area outside Flood Zone 2 (Flood Zone 2 + Flood Zone 1 = 100%).*

2.4 Surface water

2.4.1 Available data

The EA's Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment.

2.4.2 Description of risk to the site

An area of localised surface water accumulation is present near the north-western corner of the site, close to the properties off Rose Way, with further isolated areas of pooling east of

it. Additional areas of risk are present in the eastern part of the site, particularly around field boundaries and drainage features. Surface water is also shown along the central drainage features, with surface water flooding stretching from the western boundary to the western boundary, flowing westwards. A distinct area of pooling is located in the south-western corner of the site, while a large area of surface water flooding is evident along the north-western boundary, within a topographical depression.

During the 3.3% AEP event (high risk), flooding extends across 2.7% of the site, with maximum depths between 0.9m and 1.2m, and a velocity between 0.5m/s and 1m/s. The maximum hazard classification of this event is 'Significant'.

During the 1% AEP event (medium risk), flooding extends across 3.7% of the site, with maximum depths reaching 1.2m or greater, and a velocity between 1m/s and 2m/s. The maximum hazard classification of this event is 'Significant'.

During the 0.1% AEP event (low risk), flooding extends across 8.5% of the site, with maximum depths reaching 1.2m or greater, and a velocity between 1m/s and 2m/s. The maximum hazard classification of this event is 'Significant'.

Table 2-2: Existing surface water flood risk based on the RoFSW map

Event	3.3% AEP	1% AEP	0.1% AEP
Percentage of site at risk* (%)	2.7	3.7	8.5
Maximum depth (m)	0.9-1.2	=>1.2	=>1.2
Maximum velocity (m/s)	0.5-1	1-2	1-2
Maximum hazard classification	Significant	Significant	Significant

** The percentage surface water extents quoted show the percentage of the site at surface water risk from that particular event, including the percentage of the site at flood risk at a higher risk zone (e.g. 1% AEP includes the 3.3% AEP percentage).*

2.5 Reservoir

The site is not shown to be at risk of reservoir flooding during the 'dry day' or 'wet day' scenario from the EA reservoir flood maps.

2.6 Groundwater

The JBA Groundwater Emergence Map shows the entire sit is at a very low risk of groundwater emergence.

This assessment does not negate the requirement that an appropriate assessment of the groundwater regime should be carried out at the site-specific Flood Risk Assessment (FRA) stage.

2.7 Sewers

The site lies within the Whetstone wastewater catchment, which is assessed as Band 0 for internal sewer flooding risk in Severn Trent's Soar Strategic Planning Area Drainage and Wastewater Management Plan, indicating that sewer flooding is not a strategic issue within the catchment.

2.8 Flood history

There are no recorded flood extents within the site area. Additionally, no flood events were noted for this area in the L1 SFRA, or the Leicestershire County Council Preliminary Flood Risk Assessment.

3 Climate change

Increased storm intensities due to climate change may increase the extent, depth, velocity, hazard, and frequency of both fluvial and surface water flooding. Please see Section 5.1 of the Level 1 SFRA report for information on climate change allowances.

Development proposals at the site must address the potential changes associated with climate change and be designed to be safe for the intended lifetime. The provisions for safe access and egress must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

The Environment Agency's Risk of Flooding from Rivers and the Sea plus Climate Change (RoFRS+CC) dataset was used for this assessment. The central allowance for the 2050s epoch (21%) has been applied to the 3.3%, 1%, and 0.1% AEP events.

3.1.2 Description of risk to the site

The RoFRS + CC mapping shows that there is an increase in fluvial flood risk on the site, thus the site is sensitive to increased river flows from climate change, flooding extent increases to 0.08%.of the site in the 0.1% AEP plus climate change event.

Velocity and hazard have not been provided as the RoFRS does not provide this information for fluvial flood risk.

Table 3-1: Comparison of fluvial flood risk to the site between the 1% AEP and 1% AEP plus 21% climate change extents.

Event	0.1% AEP	0.1% AEP plus 21% CC
Percentage of site at risk (%)	0	0.08
Maximum depth (m)	0	>0.2
Maximum velocity (m/s)	N/A	N/A
Maximum hazard classification	N/A	N/A

3.2 Surface water

3.2.1 Available data

The Environment Agency's Risk of Flooding from Surface Water plus Climate Change (RoFSW+CC) dataset was used to inform this assessment. The central climate change allowance for the 2050s epoch has been applied to the 3.3%, 1%, and 0.1% AEP surface

water flood events. This is not suitable for informing site-specific assessments as the lifetime of residential of residential development is 100-years but is used here in absence of better data. Developers should apply the upper end allowance for the 2070s epoch as part of their site-specific FRAs.

3.2.2 Description of risk to the site

The RoFSW + CC mapping indicates that the site is mildly sensitive to increased rainfall associated with climate change, primarily due to the expansion of surface water flooding extents. Most of the increases in extent are in existing surface water flood areas, although some new patches of localised pooling are also shown, predominantly across the western part of the site. Additionally, a new flow path forms, flowing westward toward the large flooding extent on the western boundary.

During the 3.3% AEP + climate change (high risk) event, flooding covers 3.6% of the site, with depths reaching 1.2m or greater, and velocities between 1m/s and 2m/s. The maximum hazard classification for this event is 'Significant'.

During the 1% AEP + climate change (medium risk) event, flooding covers 4.8% of the site, with depths reaching 1.2m or greater, and velocities between 1m/s and 2m/s. The maximum hazard classification for this event is 'Significant'.

During the 0.1% AEP + climate change (low risk) event, flooding covers 10.8% of the site, with depths reaching 1.2m or greater, and velocities between 1m/s and 2m/s. The maximum hazard classification for this event is 'Significant'.

Table 3-2: Comparison of surface water flood risk to the site between the 1% AEP and 1% AEP plus 20% climate change extents.

Event	1% AEP	1% AEP plus 20% CC
Percentage of site at risk (%)	3.7	4.8
Maximum depth (m)	=>1.2	=>1.2
Maximum velocity (m/s)	1-2	1-2
Maximum hazard classification	Significant	Significant

4 Flood risk management infrastructure

4.1 Defences

The EA AIMS dataset shows that the site is not protected by any formal flood defences.

4.2 Residual risk

There is no residual risk to the site from flood risk management structures.

5 Emergency planning

5.1 Flood warnings and alerts

The site is not located in an EA Flood Warning or Flood Alert Area.

5.2 Access and egress

Safe access and egress will need to be demonstrated in the 1% AEP plus climate change fluvial/surface water events. Site drainage proposals should address the requirements for access routes, avoid impeding surface water flows and preserve the storage of surface water to avoid exacerbation of flood risk elsewhere on the site and in the wider catchment.

5.2.1 Potential access

The site is likely to be accessed from the access Lutterworth Road to the northwest and from Winchester Road to the east, providing two main entry points into the site.

5.2.2 Fluvial

Lutterworth Road is flooding in the 1% AEP plus climate change event to the south of the site. Depths are below 0.2m, which means the access route is still safe in this event.

5.2.3 Surface water

Lutterworth Road is flooded during the 1% AEP plus climate change event, to the north of the site. Flood depths reach between 0.2m and 0.3m with a hazard classification of 'Moderate - Dangerous for Some', therefore Lutterworth Road should be used in this event.

5.3 Dry islands

The site is not located on a dry island.

6 Requirements for drainage control and impact mitigation

6.1 Broadscale assessment of possible SuDS

- The site is considered to have very low susceptibility to groundwater flooding. This should be confirmed through additional site investigation work. Below ground development such as basements may still be susceptible to groundwater flooding.
- BGS data indicates that the underlying geology is Mercia Mudstone Group and is likely to be poorly draining. Any proposed use of infiltration should be supported by infiltration testing. Off-site discharge in accordance with the SuDS hierarchy is required to discharge surface water runoff.
- The site is not located within a Groundwater Source Protection Zone and there are no restrictions over the use of infiltration techniques with regard to groundwater quality.
- The site is not located within a historic landfill site.

6.2 Opportunities for wider sustainability benefits and integrated flood risk management

- Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, water quality, amenity and biodiversity. This could provide wider sustainability benefits to the site and surrounding area. Proposals to use SuDS techniques should be discussed with relevant stakeholders (Local Planning Authority, Lead Local Flood Authority, and the EA) at an early stage to understand possible constraints.
- The drainage features should be integrated into the site drainage strategy as blue-green infrastructure.
- Development at this site should not increase flood risk either on or off site. The design of the surface water management proposals should take into account the impacts of future climate change over the projected lifetime of the development.
- Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered.
- Consideration should be made to the existing condition of receiving waterbodies and their Water Framework Directive objectives for water quality. The use of multistage SuDS treatment will improve water quality of surface water runoff discharged from the site and reduce the impact on receiving water bodies.
- Opportunities to incorporate source control techniques such as green roofs, permeable surfaces and rainwater harvesting must be considered in the design of the site.
- The potential to utilise conveyance features such as swales to intercept and convey surface water runoff should be considered. Conveyance features should

be located on common land or public open space to facilitate ease of access. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.

7 NPPF and planning implications

7.1 Exception Test requirements

The Local Planning Authority will need to confirm that the Sequential Test has been carried out in line with national guidelines. The Sequential Test will need to be passed before the Exception Test is applied.

The NPPF classifies Residential development as More Vulnerable.

The Exception Test is not required for this site as the entire site is within Flood Zone 1, provided development is steered away from the areas of severe surface water flooding which should be possible based on the areas of the site affected.

7.2 Requirements and guidance for site-specific Flood Risk Assessment

At the planning application stage, a site-specific FRA will be required as the proposed development site:

- is entirely within Flood Zone 1 with a site area of 1 hectare or more
- is within Flood Zone 1 and the Flood Map for Planning shows it is at risk of flooding from surface water

All sources of flooding should be considered as part of a site-specific FRA.

Consultation with the Local Authority, Lead Local Flood Authority, Water Company, and the EA should be undertaken at an early stage.

Any FRA should be carried out in line with latest guidance including the National Planning Policy Framework (NPPF), Flood Risk and Coastal Change Planning Practice Guidance (PPG), and Blaby District Council Local Plan Policies.

The development should be designed with mitigation measures in place where required.

7.3 Guidance for site design and making development safe

Development should be steered outside of the areas of significant surface water risk such as the depression near the northwest boundary.

The risk from surface water flow routes should be quantified as part of a site-specific FRA, including a drainage strategy, so runoff magnitudes from the development are not increased by development across any ephemeral surface water flow routes. A drainage strategy should help inform site layout and design to ensure runoff rates are as close as possible to pre-development greenfield rates, with areas of surface water ponding used as open space and SuDS or water compatible/essential infrastructure uses only.

Arrangements for safe access and egress will need to be provided for the 1% AEP fluvial and surface events with an appropriate allowance for climate change, considering depth, velocity, and hazard. Design and access arrangements will need to incorporate measures, so development and occupants are safe.

Provisions for safe access and egress should not impact on surface water flow routes or contribute to loss of floodplain storage. Consideration should be given to the siting of access points with respect to areas of surface water flood risk.

8 Conclusions

The following points should be considered in development of this site:

- The site is generally at a low risk of flooding, and development should be able to proceed provided a site-specific flood risk assessment shows that users of the site will be safe for the lifetime of the development.
- Surface water flood risk is shown to increase in extent in the climate change scenario, showing that the site is sensitive to increased rainfall from climate change.
- It is recommended that SuDS are incorporated to the development of this site, it is recommended that the drainage features are integrated into blue-green infrastructure.

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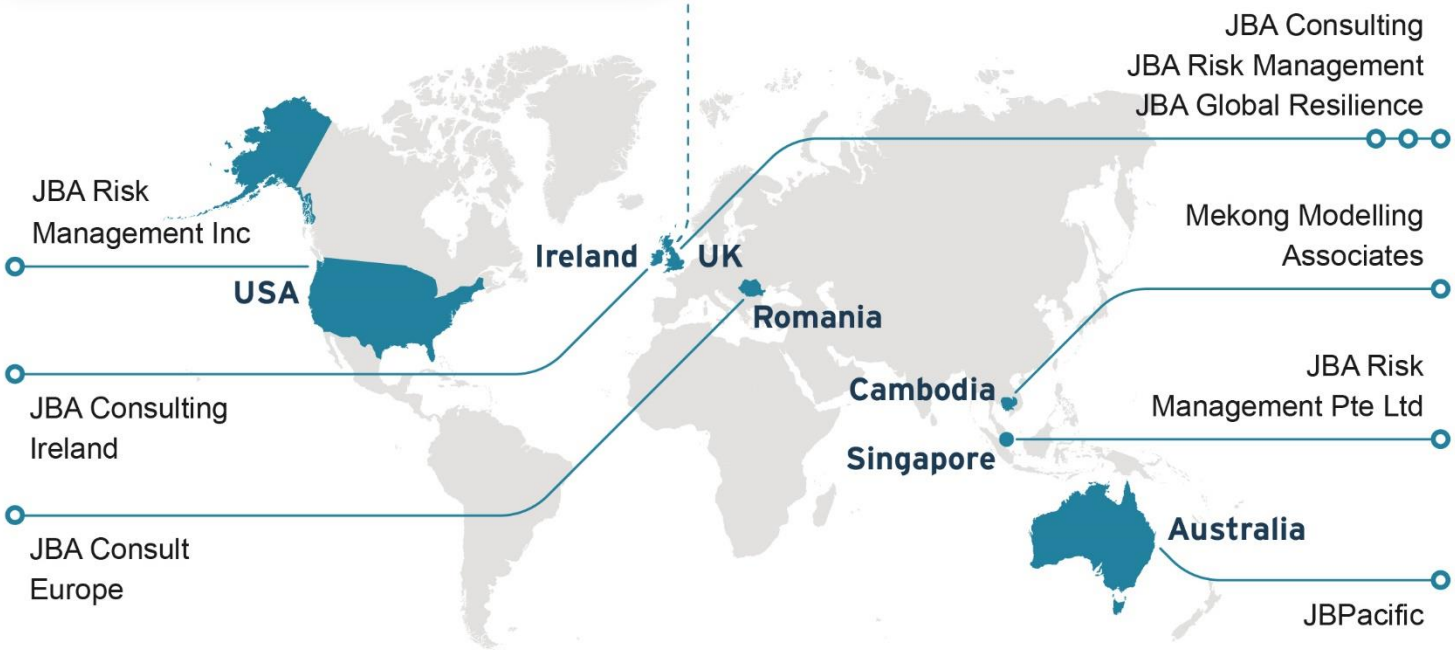

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Level 2 Strategic Flood Risk Assessment - Site STO026

Prepared for
Blaby District Council

Date
January 2026

Contents

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for the Land West of Stoney Stanton. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Blaby District Council Level 1 SFRA and read the Blaby District Council Level 2 SFRA Main Report and is therefore familiar with the terminology used in this report

1.1 Site details

- Site code: STO026
- Location: Land West of Stoney Stanton
- Site area: 400.1ha
- Existing site use: Greenfield
- Proposed site use: Residential, employment, mixed-use

1.2 Topography

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR. The site exhibits a varied topography characterised by significant elevation changes. The southwestern and central areas contain the highest elevations, reaching around 106mAOD. In contrast, the northeastern and southeastern portions of the site are situated at lower mostly in the range of 76mAOD to 82mAOD. The overall gradient increases from northeast to southwest, forming a pattern of hills and depressions.

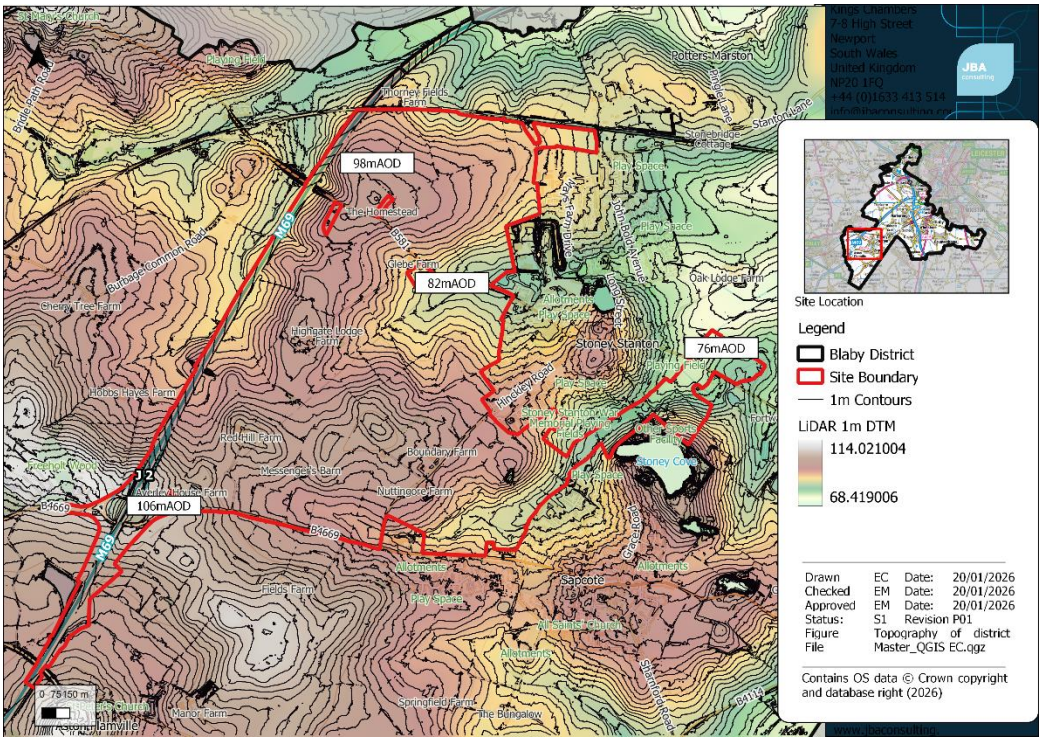

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Mercia Mudstone Group
- Superficial - Oadby Till Member and Bosworth Clay Member

Soils at the site consist of:

- Slowly permeable, seasonally wet, slightly acidic but base-rich loamy and clayey soils

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located in the northern area of the Soar from Soar Brook to Thurlaston Brook catchment. North of the main extent of the site is an unnamed ordinary watercourse travelling westwards, which converges with the Thurlaston Brook. Additionally, the northwest of the southeastern extent of the site is bound by an unnamed ordinary watercourse which is a tributary to the River Soar, in the Upper Soar catchment.

2.2 Existing drainage features

The Environment Agency's Detailed River Network shows drainage features at this site are associated with the unnamed ordinary watercourse along the western boundary of the southeastern extent of the site, and across the centre of this area, which is a tributary to the River Soar. Along the southern boundary of the main extent of the site is an ordinary watercourse, which travels from the eastern border, under Santon Lane to the centre of the site. Additionally, a small drainage path is present in the centre of the site stemming from the southern boundary, as well as in the southwest extent of the site..

2.3 Fluvial

2.3.1 Available data

The EA's Flood Map for Planning (FMfP) has been used within this assessment.

2.3.2 Description of risk to the site

The RoFRS indicates that fluvial flood risk affects the northern boundary of the site's eastern extent, where Flood Zones 2, 3a, and 3b encroach into the area. Additional areas in Flood Zones 2, 3a, and 3b include the eastern and western boundaries of the site's southwestern extent. Flood Zones 2, 3a, and 3b reach depths between 0.3m and 0.6m.

There may also be fluvial flood risk to the site from the unnamed ordinary watercourses on site whose catchments are too small to be included in the Environment Agency's Flood Zones. The Risk of Flooding from Surface Water dataset (described below) gives an indication of the risk from these watercourses, which should be confirmed as part of a site-specific flood risk assessment.

Table 2-1: Existing fluvial flood risk based on EA FMfP *

Flood Zone 1 (%)	Flood Zone 2 (%)	Flood Zone 3a (%)	Flood Zone 3b (%)
99.74	0.04	0.22	0.19

**The percentage flood zones quoted show the percentage of the site at flood risk from that particular flood zone or event, including the percentage of the site at flood risk at a higher risk zone, e.g. Flood Zone 2 includes the Flood Zone 3 percentage. Flood Zone 1 is the remaining area outside Flood Zone 2 (Flood Zone 2 + Flood Zone 1 = 100%).*

2.4 Surface water

2.4.1 Available data

The EA's Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment.

2.4.2 Description of risk to the site

Surface water flow paths are concentrated along natural topographical depressions, directing runoff toward low-lying areas. These paths are most prominent along the northern boundary near Glebe Farm and across the southwestern extent near Nuttingore Farm, with significant convergence within Stoney Stanton. Another prominent area is along the western boundary. Additionally, small areas of localised flooding are scattered across the site.

During the 3.3% AEP event (high risk) event, flooding extends across 3.9% of the site, with depths reaching 1.2m or more in the areas of pooling along the western boundary. The velocity of flood waters is between 0.5m/s and 1m/s, with a maximum hazard classification of 'Significant'.

During the 1% AEP event (medium risk) event, flooding extends across 5.3% of the site. The depths of surface water flooding reach =>1.2m, with velocities between 1m/s and 2m/s. The maximum hazard classification for this event is 'Significant'.

During the 0.1% AEP event (low risk), the flooding extends across 9.6% of the site, with depths reaching =>1.2m. The velocities of flood water are between 1m/s and 2m/s, with a maximum hazard classification of 'Significant'.

Table 2-2: Existing surface water flood risk based on the RoFSW map

Event	3.3% AEP	1% AEP	0.1% AEP
Percentage of site at risk* (%)	4	5.3	9.6
Maximum depth (m)	=>1.2	=>1.2	=>1.2
Maximum velocity (m/s)	0.5-1	1-2	1-2
Maximum hazard classification	Significant	Significant	Significant

** The percentage surface water extents quoted show the percentage of the site at surface water risk from that particular event, including the percentage of the site at flood risk at a higher risk zone (e.g. 1% AEP includes the 3.3% AEP percentage).*

2.5 Reservoir

The site is not shown to be at risk of reservoir flooding during the 'dry day' or 'wet day' scenario from the EA reservoir flood maps.

2.6 Groundwater

The JBA Groundwater Emergence Map shows that the majority of the site is at a very low risk of groundwater flooding. However, to the east of the site there are three areas of groundwater flood risk. The largest groundwater flood risk area shows an area where groundwater levels are between 0.5 and 5m below the ground surface. Another area, covering approximately 0.29% of the site shows that groundwater levels are between 0.025m and 0.5m below the ground surface in this area. Finally, a small area covering 0.08% of the site shows an area where groundwater levels are either at or very near (within 0.025m of) the ground surface.

Based on the RoFSW and topography of the site it is likely that any groundwater that emerges will flow east and southward and pool in the topographical low in the southeastern corner of the site.

This assessment does not negate the requirement that an appropriate assessment of the groundwater regime should be carried out at the site-specific Flood Risk Assessment (FRA) stage.

2.7 Sewers

The Drainage and Wastewater Management Plan (DWMP) states that Stoney Stanton wastewater catchment is assessed as Band 0 for internal sewer flooding risk in Severn Trent's Soar Strategic Planning Area DWMP. While the catchment is not a strategic priority, localised flooding hotspots may still exist and are managed through site-specific investigation.

2.8 Flood history

There are no recorded flood extents within the site area. Additionally, no flood events were noted for this area in the L1 SFRA, or the Leicestershire County Council Preliminary Flood Risk Assessment.

3 Climate change

Increased storm intensities due to climate change may increase the extent, depth, velocity, hazard, and frequency of both fluvial and surface water flooding. Please see Section 5.1 of the Level 1 SFRA report for information on climate change allowances.

Development proposals at the site must address the potential changes associated with climate change and be designed to be safe for the intended lifetime. The provisions for safe access and egress must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

The Environment Agency's Risk of Flooding from Rivers and the Sea plus Climate Change (RoFRS+CC) dataset was used for this assessment. The central allowance for the 2050s epoch (21%) has been applied to the 3.3%, 1%, and 0.1% AEP events.

3.1.2 Description of risk to the site

The RoFRS + CC mapping indicate that the site is not at increased risk of fluvial flooding and is therefore not considered sensitive to increased river flows associated with climate change.

Velocity and hazard have not been provided as the RoFRS does not provide this information for fluvial flood risk.

Table 3-1: Comparison of fluvial flood risk to the site between the 1% AEP and 1% AEP plus 21% climate change extents.

Event	1% AEP	1% AEP plus 21% CC
Percentage of site at risk (%)	0.03	0.03
Maximum depth (m)	0.3-0.6	0.3-0.6
Maximum velocity (m/s)	N/A	N/A
Maximum hazard classification	N/A	N/A

3.2 Surface water

3.2.1 Available data

The Environment Agency's Risk of Flooding from Surface Water plus Climate Change (RoFSW+CC) dataset was used to inform this assessment. The central climate change allowance for the 2050s epoch has been applied to the 3.3%, 1%, and 0.1% AEP surface

water flood events. This is not suitable for informing site-specific assessments as the lifetime of residential of residential development is 100-years but is used here in absence of better data. Developers should apply the upper end allowance for the 2070s epoch as part of their site-specific FRAs.

3.2.2 Description of risk to the site

The RoFSW + CC mapping indicates minor increases in surface water flooding, suggesting that the site is only marginally sensitive to increased rainfall under climate change scenarios. These increases are primarily characterised by small extensions of existing surface water extents observed in the present-day mapping. Some increases in surface water extent form as elongated flow paths, for example, along the southern boundary, while others are expansions of pooling in the southeastern corner. Additionally, the climate change mapping reveals several new, localised areas of surface water accumulation.

During the 3.3% AEP + CC event, surface water flood extent covers approximately 4.83% of the site. While the velocity increases to between 1m/s and 2m/s the depth and hazard classification remain the same as the present-day scenario.

During the 1% AEP + climate change event, the flood extent covers approximately 6.43% of the site, while the 0.1% AEP + climate change event affects around 11.44% of the site. The depth, velocity, and hazard classifications for these events remain consistent with those in the present-day scenario.

Table 3-2: Comparison of surface water flood risk to the site between the 1% AEP and 1% AEP plus 20% climate change extents.

Event	1% AEP	1% AEP plus 20% CC
Percentage of site at risk (%)	5.3	6.43
Maximum depth (m)	=>1.2	=>1.2
Maximum velocity (m/s)	1-2	1-2
Maximum hazard classification	Significant	Significant

4 Flood risk management infrastructure

4.1 Defences

The EA AIMS dataset shows that the site is not protected by any formal flood defences.

4.2 Residual risk

The watercourse along the southern boundary is culverted beneath Stanton Lane. This culvert poses a residual flood risk, as any blockage could result in water backing up and causing flooding in the surrounding area.

5 Emergency planning

5.1 Flood warnings and alerts

The site is not located in an EA Flood Warning or Flood Alert Area.

5.2 Access and egress

Safe access and egress will need to be demonstrated in the 1% AEP plus climate change fluvial/surface water events. Site drainage proposals should address the requirements for access routes, avoid impeding surface water flows and preserve the storage of surface water to avoid exacerbation of flood risk elsewhere on the site and in the wider catchment.

5.2.1 Potential access

Potential access to the site is available from several surrounding roads. To the north, Huncote Road and associated access paths provide access. Eastern access can be achieved via Station Road and Hinckley Road through Stoney Stanton. The southern boundary is served by the Hinckley Road and Stanton Lane. Western access is possible via Burbage Common Road, while the M69 motorway runs through the site, a junction would be needed to provide access.

5.2.2 Fluvial

The potential access routes are flood free during the 1% AEP plus climate change event.

5.2.3 Surface water

Some access routes face surface water flooding under the 1% AEP plus climate change event. Hinckley Road faces surface water flooding, both by Glebe Farm and along the southern boundary, but this flooding is below 0.2m, so it is likely still possible to use this access route safely. Stanton Lane faces surface water flooding near the southern boundary, the flooding depth is predicted to be a maximum of 0.6m, this route may not be safe to use in this event, as it has a hazard classification of 'Moderate - dangerous for some'. Overall, safe access and egress is possible during the 1% AEP plus climate change event.

5.3 Dry islands

The site is not located on a dry island.

6 Requirements for drainage control and impact mitigation

6.1 Broadscale assessment of possible SuDS

- The site is considered to have a low susceptibility to groundwater. Detention and attenuation features should be designed to prevent groundwater ingress from impacting hydraulic capacity and structural integrity. Groundwater monitoring is recommended to determine the seasonal variability of groundwater levels, as this may affect the design of the surface water drainage system. Below ground development such as basements may not be appropriate at this site.
- In the majority of the site groundwater levels are indicated to be at least 5m below ground level and groundwater flooding is not likely, however below ground development such as basements may still be susceptible to groundwater flooding.
- In a small area in the east of the site groundwater levels are indicated to be at or very near (within 0.025m) ground level and there is a risk of groundwater flooding at the surface during a 1% AEP event, which may flow to and pool within topographic low spots. Detention and attenuation features should be designed to prevent groundwater ingress from impacting hydraulic capacity and structural integrity. Additional site investigation work may be required to support the detailed design of the drainage system. This may include groundwater monitoring to demonstrate that a sufficient unsaturated zone has been provided above the highest occurring groundwater level. Below ground development such as basements are not appropriate at this site.
- BGS data indicates that the underlying geology is Mercia Mudstone Group and is likely to be poorly draining. Any proposed use of infiltration should be supported by infiltration testing. Off-site discharge in accordance with the SuDS hierarchy is required to discharge surface water runoff.
- The site is not located within a Groundwater Source Protection Zone and there are no restrictions over the use of infiltration techniques with regard to groundwater quality.
- The site has areas within its boundary designated by the Environment Agency as being a historic landfill site, to the north of Stoney Cove. A thorough ground investigation will be required as part of a detailed site-specific FRA, to determine potential mitigation for contamination and the impact this may have on SuDS. As such, proposed SuDS should be discussed with the relevant stakeholders (LPA, LLFA and EA) at an early stage to understand possible constraints.
- Proposed attenuation features such as basins, ponds and tanks should be located outside of Flood Zone 3 to avoid the potential risks to the hydraulic capacity or structural integrity of these features. Surface water outfalls that discharge into the River Soar may be susceptible to surcharging due to water

levels in the river. The impacts of flood flows will need to be considered in terms of the attenuation storage requirements of the site and placement of the outfalls.

6.2 Opportunities for wider sustainability benefits and integrated flood risk management

- Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, water quality, amenity and biodiversity. This could provide wider sustainability benefits to the site and surrounding area. Proposals to use SuDS techniques should be discussed with relevant stakeholders (Local Planning Authority, Lead Local Flood Authority, and the EA) at an early stage to understand possible constraints.
- The ordinary watercourses on site should be integrated into the site drainage strategy as blue-green infrastructure.
- Development at this site should not increase flood risk either on or off site. The design of the surface water management proposals should take into account the impacts of future climate change over the projected lifetime of the development.
- Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered.
- Consideration should be made to the existing condition of the River Soar and its Water Framework Directive objectives for water quality. The use of multistage SuDS treatment will improve water quality of surface water runoff discharged from the site and reduce the impact on receiving water bodies.
- Opportunities to incorporate source control techniques such as green roofs, permeable surfaces and rainwater harvesting must be considered in the design of the site.
- The potential to utilise conveyance features such as swales to intercept and convey surface water runoff should be considered. Conveyance features should be located on common land or public open space to facilitate ease of access. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.

7 NPPF and planning implications

7.1 Exception Test requirements

The Local Planning Authority will need to confirm that the Sequential Test has been carried out in line with national guidelines. The Sequential Test will need to be passed before the Exception Test is applied.

The NPPF classifies Residential development as More Vulnerable.

The Exception Test is not required for this site provided development is steered away from the areas of severe surface water flooding and outside of Flood Zone 2/3, which should be possible based on the areas of the site affected.

7.2 Requirements and guidance for site-specific Flood Risk Assessment

At the planning application stage, a site-specific FRA will be required as the proposed development site:

- is almost entirely within Flood Zone 1 with a site area of 1 hectare or more
- is within Flood Zone 1 and the Flood Map for Planning shows it is at risk of flooding from surface water

All sources of flooding should be considered as part of a site-specific FRA.

Consultation with the Local Authority, Lead Local Flood Authority, Water Company, and the EA should be undertaken at an early stage.

Any FRA should be carried out in line with latest guidance including the National Planning Policy Framework (NPPF), Flood Risk and Coastal Change Planning Practice Guidance (PPG), and Blaby District Council LPA Local Plan Policies.

The development should be designed with mitigation measures in place where required.

7.3 Guidance for site design and making development safe

Development should be steered outside of the of areas where surface water flow paths and pooling are concentrated, particularly along the northern boundary near Glebe Farm, the southwestern extent near Nuttingore Farm, the western boundary, and areas within Flood Zones 2, 3a, and 3b.

A detailed hydraulic model of the ordinary watercourses on site may be required at FRA stage to accurately represent the risk from this watercourse and set the height of any mitigation measures.

The risk from surface water flow routes should be quantified as part of a site-specific FRA, including a drainage strategy, so runoff magnitudes from the development are not increased by development across any ephemeral surface water flow routes. A drainage strategy should help inform site layout and design to ensure runoff rates are as close as

possible to pre-development greenfield rates, with areas of surface water ponding used as open space and SuDS or water compatible/essential infrastructure uses only.

Arrangements for safe access and egress will need to be provided for the 1% AEP fluvial and surface events with an appropriate allowance for climate change, considering depth, velocity, and hazard. Design and access arrangements will need to incorporate measures, so development and occupants are safe.

Provisions for safe access and egress should not impact on surface water flow routes or contribute to loss of floodplain storage. Consideration should be given to the siting of access points with respect to areas of surface water flood risk.

8 Conclusions

The following points should be considered in development of this site:

- The site is generally at a low risk of flooding, with most of the site being flood free. However, areas of topographic depressions face significant surface water flooding.
- The RoFRS shows that 0.26% of the site is at risk of fluvial flooding.
- Flood Zones 2, 3a, and 3b are present on the site.
- It is recommended that detailed modelling is undertaken on the ordinary watercourses on site to fully understand fluvial flood risk at the site.
- Surface water flood risk is present on site in all events. Flood depths reach =>1.2m, velocities reach between 1m/s and 2m/s, with the hazard classification as 'Significant'.
- The Stoney Stanton sewer catchment has been identified in Severn Trent's DWMP as at increased risk from sewer flooding, and developers should consult Severn Trent Water to understand the implications for the site.
- Part of the site north of stoney cove has been identified as a historic landfill site, requiring ground investigation to assess contamination and SuDS constraints. Early engagement with LPA, LLFA, and EA is recommended.

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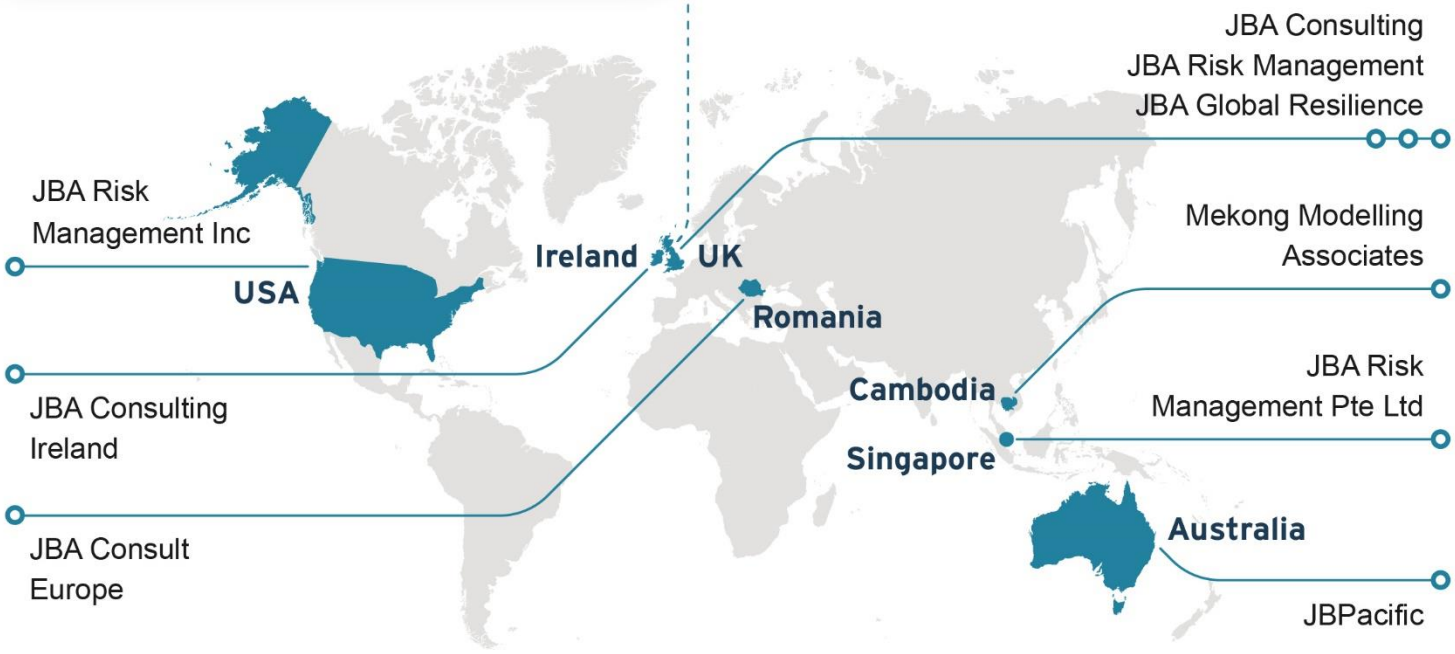

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Level 2 Strategic Flood Risk Assessment - Site COS009

Prepared for
Blaby District Council

Date
January 2026

Blaby District Council
the heart of Leicestershire

Contents

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for the Land West of Broughton Road. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Level 1 SFRA and read the Level 2 SFRA Main Report and is therefore familiar with the terminology used in this report.

1.1 Site details

- Site Code: COS009
- Location: Land West of Broughton Road, Cosby
- Site area: 18ha
- Existing site use: Greenfield
- Proposed site use: Residential

1.2 Topography

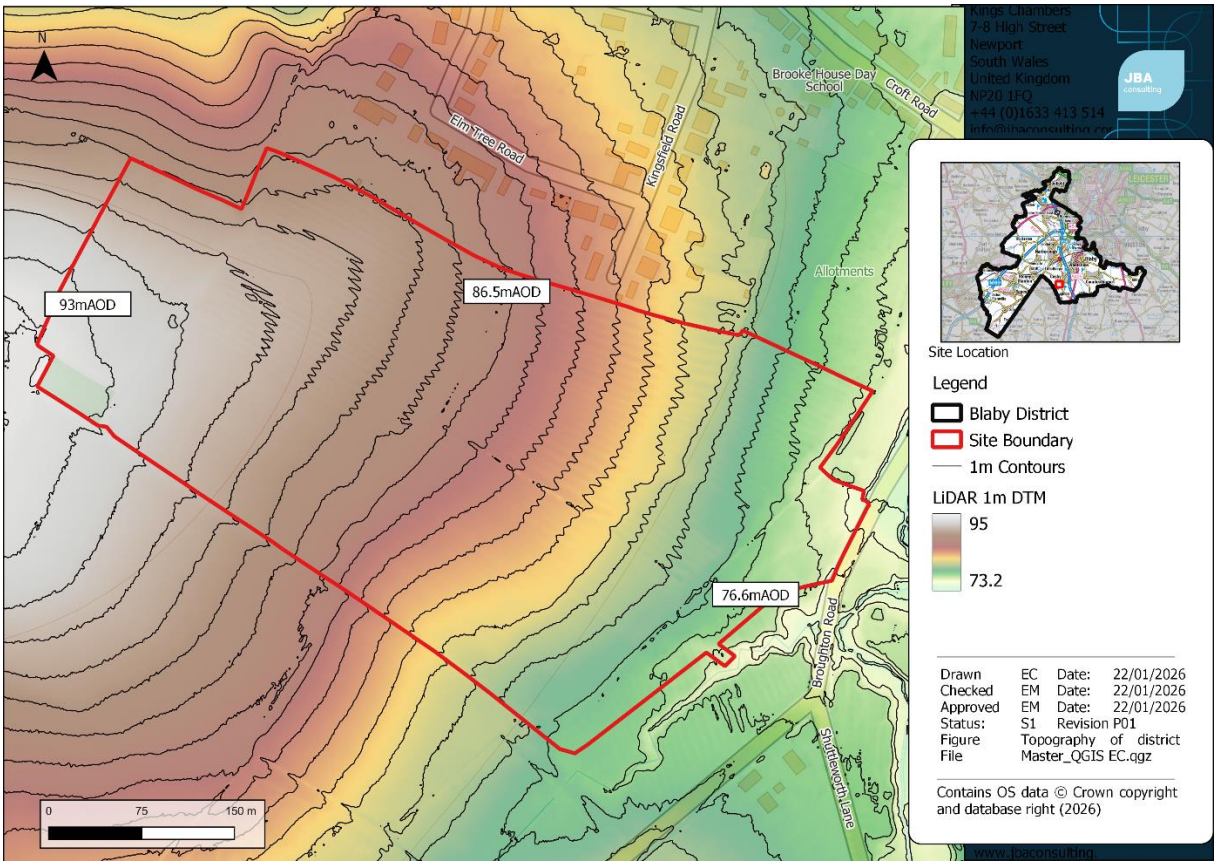

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR. The site slopes from west to east, with the highest elevations on the western side around 83.6mAOD and the lowest, flattest ground along the eastern boundary at around 76.6mAOD. In the centre of the site a land drain is visible which shows a channel depth of approximately 0.6m from LiDAR.

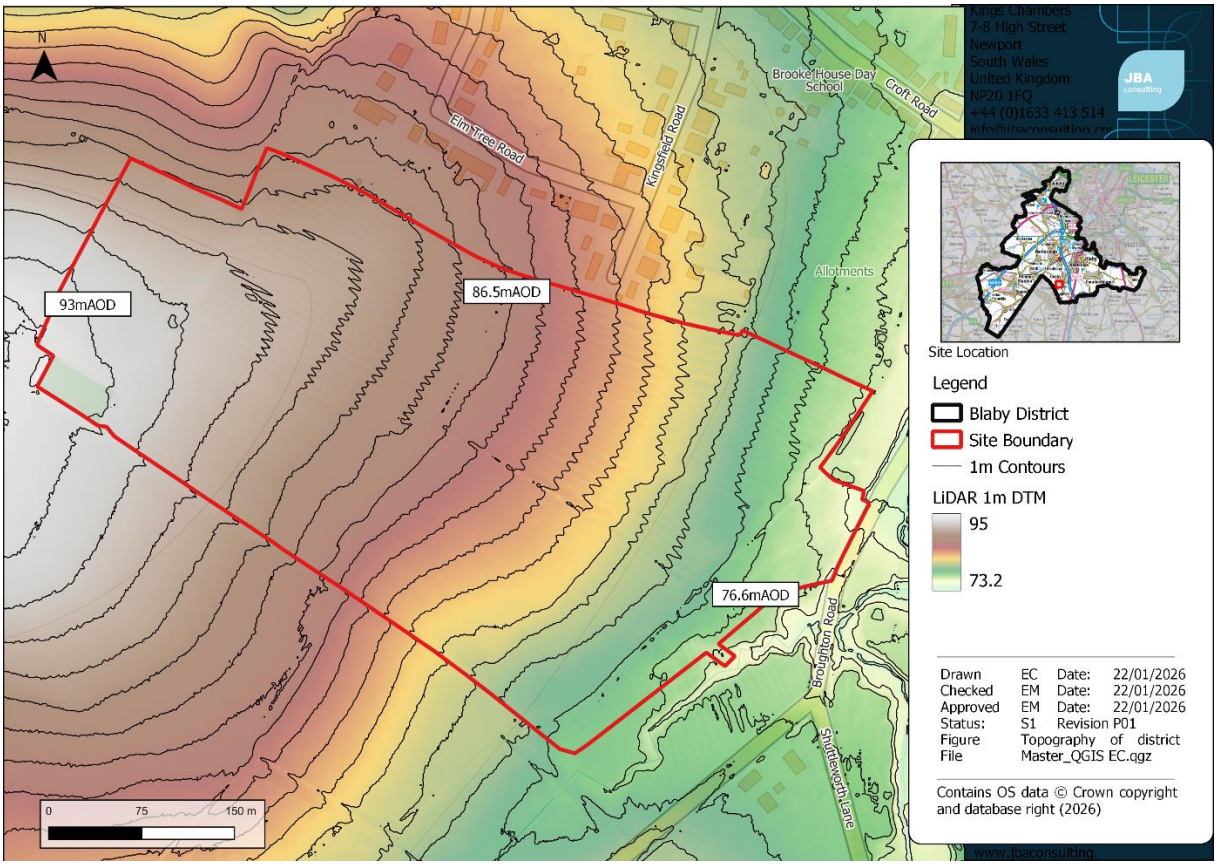

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Mercia Mudstone Group
- Superficial - Till, Mid Pleistocene, Diamicton

Soils at the site consist of:

- The northeast of the site has loamy soils with naturally high groundwater, where the rest of the site has slowly permeable, seasonally wet, slightly acidic but base-rich loamy and clayey soils.

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located centrally within the Soar from Thurlaston Brook to Sence Waterbody, which a part of the Soar operational catchment within the Humber river basin district.

2.2 Existing drainage features

The site features small land drains which flow eastwards and southwards, meeting the Cosby Brook, a tributary to the River Soar along the south-eastern boundary of the site.

2.3 Fluvial

2.3.1 Available data

The EA's Flood Map for Planning (FMfP) has been used within this assessment.

2.3.2 Description of risk to the site

The EA's FMfP shows that only a very small area of the site is at fluvial flood risk. Specifically, the areas affected include a small section in the southeastern corner of the site, as well as a small extent further north along the eastern boundary where the site borders Broughton Road. Flood Zone 2, 3a, and 3b are all present on the site.

During the 3.3% (Flood Zone 3b) and 1% AEP (Flood Zone 3a) event the depth of flooding reaches between 0.2m and 0.3m, in the 0.1% AEP (Flood Zone 2) event depths reach between 0.3m and 0.6m, and in the 0.1% AEP event depths reach between 0.6m and 0.9m.

There may also be fluvial flood risk to the site from the unnamed ordinary watercourses along the eastern boundary of the site whose catchments are too small to be included in the Environment Agency's Flood Zones. The Risk of Flooding from Surface Water dataset (described below) gives an indication of the risk from these watercourses, which should be confirmed as part of a site-specific flood risk assessment.

Table 2-1: Existing fluvial flood risk based on EA FMfP*

Flood Zone 1 (%)	Flood Zone 2 (%)	Flood Zone 3a (%)	Flood Zone 3b (%)
99.72	0.2	0.05	0.03

**The percentage flood zones quoted show the percentage of the site at flood risk from that particular flood zone or event, including the percentage of the site at flood risk at a higher risk zone, e.g. Flood Zone 2 includes the Flood Zone 3 percentage. Flood Zone 1 is the remaining area outside Flood Zone 2 (Flood Zone 2 + Flood Zone 1 = 100%).*

2.4 Surface water

2.4.1 Available data

The EA's Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment.

2.4.2 Description of risk to the site

The RoFSW mapping shows that surface water accumulation predominantly occurs along and around the land drains on the site. The most significant area of surface water flooding is located north of the eastern boundary, where pooling extends from overtopping of the adjacent land drain. Additional surface water flooding is associated with the central land drain that flows southwards through the site, as well as the land drain along the eastern boundary, which also flows southwards within a topographical low point. Localised areas of ponding are present around these features. A defined surface water flow path is also evident travelling eastwards across the site along the southern boundary, draining towards the topographical low along the eastern boundary.

During the 3.3% AEP event, surface water flooding extent covers 0.3% of the site, with flood depts reaching between 0.3m and 0.6m, and velocities between 0m/s and 0.25m/s. This event has a maximum hazard classification of 'Significant'.

During the 1% AEP event, the flooding extent covers 0.3% of the site, with depths reaching between 03m and 0.6m, and velocities between 0.25m/s and 0.5m/s. This vent has a maximum hazard classification of 'Significant'.

During the 0.1% AEP event, the flooding extent covers 1% of the site, with depths between 0.3m and 0.6m, and velocities between 0.5m/s and 1m/s. This event has a maximum hazard classification of 'Significant'.

Table 2-2: Existing surface water flood risk based on the RoFSW map

Event	3.3% AEP	1% AEP	0.1% AEP
Percentage of site at risk* (%)	0.3	0.3	1
Maximum depth (m)	0.3-0.6	0.3-0.6	0.3-0.6
Maximum velocity (m/s)	0-0.25	0.25-0.5	0.5-1
Maximum hazard classification	Significant	Significant	Significant

** The percentage surface water extents quoted show the percentage of the site at surface water risk from that particular event, including the percentage of the site at flood risk at a higher risk zone (e.g. 1% AEP includes the 3.3% AEP percentage).*

2.5 Reservoir

The site is not shown to be at risk of reservoir flooding during the 'dry day' or 'wet day' scenario from the EA reservoir flood maps.

2.6 Groundwater

The JBA Groundwater Emergence Map shows that the majority of the site has a very low risk of groundwater emergence. Along the entire eastern border of the site groundwater levels are either at or very near (within 0.25m of) the ground surface, and a smaller area has groundwater levels between 0.25m and 0.5m below the ground surface.

Based on the RoFSW and topography of the site it is likely that any groundwater that emerges will flow eastwards and pool in the topographical low along the eastern boundary of the site.

This assessment does not negate the requirement that an appropriate assessment of the groundwater regime should be carried out at the site-specific Flood Risk Assessment (FRA) stage.

2.7 Sewers

The site lies within the Whetstone wastewater catchment, which is assessed as Band 0 for internal sewer flooding risk in Severn Trent's Soar Strategic Planning Area Drainage and Wastewater Management Plan, indicating that sewer flooding is not a strategic issue within the catchment.

2.8 Flood history

The site is located outside of the EA's historic flood map.

3 Climate change

Increased storm intensities due to climate change may increase the extent, depth, velocity, hazard, and frequency of both fluvial and surface water flooding. Please see Section 4.6 of the Level 2 SFRA for information on climate change allowances.

Development proposals at the site must address the potential changes associated with climate change and be designed to be safe for the intended lifetime. The provisions for safe access and egress must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

The Environment Agency's Risk of Flooding from Rivers and the Sea plus Climate Change (RoFRS+CC) dataset was used for this assessment. The central allowance for the 2050s epoch (21%) has been applied to the 3.3%, 1%, and 0.1% AEP events.

3.1.2 Description of risk to the site

The RoFRS + CC mapping indicate that the site is not at increased risk of fluvial flooding and is therefore not considered sensitive to increased river flows associated with climate change.

Velocity and hazard have not been provided as the RoFRS does not provide this information for fluvial flood risk.

Table 3-1: Comparison of fluvial flood risk to the site between the 1% AEP and 1% AEP plus 21% climate change extents.

Event	1% AEP	1% AEP plus 21% CC
Percentage of site at risk (%)	0.05	0.05
Maximum depth (m)	0.3-0.6	0.3-0.6
Maximum velocity (m/s)	N/A	N/A
Maximum hazard classification	N/A	N/A

3.2 Surface water

3.2.1 Available data

The Environment Agency's Risk of Flooding from Surface Water plus Climate Change (RoFSW + CC) dataset was used to inform this assessment. The central climate change allowance for the 2050s epoch has been applied to the 3.3%, 1%, and 0.1% AEP surface

water flood events. This is not suitable for informing site-specific assessments as the lifetime of residential of residential development is 100-years but is used here in absence of better data. Developers should apply the upper end allowance for the 2070s epoch as part of their site-specific FRAs.

3.2.2 Description of risk to the site

The RoFSW + CC mapping shows small increases in the extent of surface water flooding across the site. The eastern land drain, which flows southwards, shows a greater extent of associated flooding, and additional new areas of localised surface water accumulation are present. Small pockets of localised flooding also appear in the southwestern corner of the site. Additionally, surface water flow path along the southern boundary increases in length under the climate change scenario.

Alongside marginal increases in flooding extent, the depth, velocity and hazard classifications remain the same, showing that the site is not particularly sensitive to increased rainfall from climate change.

Table 3-2: Comparison of surface water flood risk to the site between the 1% AEP and 1% AEP plus 20% climate change extents.

Event	1% AEP	1% AEP plus 20% CC
Percentage of site at risk (%)	0.3	0.4
Maximum depth (m)	0.3-0.6	0.3-0.6
Maximum velocity (m/s)	0.25-5	0.25-5
Maximum hazard classification	Significant	Significant

4 Flood risk management infrastructure

4.1 Defences

There is a culvert located to the southwest of the site through which Cosby Brook flows northwards and crosses under Broughton Road before continuing northeast

4.2 Residual risk

The culvert poses a residual flood risk, as any blockage could result in water backing up, causing flooding in the surrounding area.

5 Emergency planning

5.1 Flood warnings and alerts

The site is not located in an EA Flood Warning or Flood Alert Area.

5.2 Access and egress

Safe access and egress will need to be demonstrated in the 1% AEP plus climate change fluvial and surface water events. Site drainage proposals should address the requirements for access routes, avoid impeding surface water flows and preserve the storage of surface water to avoid exacerbation of flood risk elsewhere on the site and in the wider catchment.

5.2.1 Potential access

Access and egress at this site are possible from Broughton Road along the eastern boundary.

5.2.2 Fluvial

The northern area of Broughton Road is flooded during the 1% AEP plus climate change event. Access is recommended to the south, away from the Cosby Brook.

5.2.3 Surface water

The majority of Broughton Road is flood free during the 1% AEP plus climate change event. The area affected by surface water flooding is where Broughton Road meets Shuttleworth Lane. However, with predicted depths remaining below 0.2m, safe access is still possible.

5.3 Dry islands

The site is not located on a dry island.

6 Requirements for drainage control and impact mitigation

6.1 Broadscale assessment of possible SuDS

- The majority of the site is considered to have a low susceptibility to groundwater however the eastern boundary of the site has groundwater levels that are indicated to be at or very near (within 0.025m) ground level and there is a risk of groundwater flooding at the surface during a 1% AEP event, which may flow to and pool within topographic low spots. Detention and attenuation features in this area should be designed to prevent groundwater ingress from impacting hydraulic capacity and structural integrity. Additional site investigation work may be required to support the detailed design of the drainage system. This may include groundwater monitoring to demonstrate that a sufficient unsaturated zone has been provided above the highest occurring groundwater level. Below ground development such as basements are not appropriate at this site
- BGS data indicates that the underlying geology is mudstone and mid-Pleistocene till and is likely to be poorly draining. Any proposed use of infiltration should be supported by infiltration testing. Off-site discharge in accordance with the SuDS hierarchy is required to discharge surface water runoff.
- The site is not located within a Groundwater Source Protection Zone and there are no restrictions over the use of infiltration techniques with regard to groundwater quality.
- The site is not located within a historic landfill site.
- Proposed attenuation features such as basins, ponds and tanks should be located outside of Flood Zone 3 to avoid the potential risks to the hydraulic capacity or structural integrity of these features. Surface water outfalls that discharge into the Cosby Brook may be susceptible to surcharging due to water levels in the river. The impacts of flood flows will need to be considered in terms of the attenuation storage requirements of the site and placement of the outfalls.

6.2 Opportunities for wider sustainability benefits and integrated flood risk management

- Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, water quality, amenity and biodiversity. This could provide wider sustainability benefits to the site and surrounding area. Proposals to use SuDS techniques should be discussed with relevant stakeholders (Local Planning Authority, Lead Local Flood Authority, and the EA) at an early stage to understand possible constraints.
- The land drains should be integrated into the site drainage strategy as blue-green infrastructure.

- Development at this site should not increase flood risk either on or off site. The design of the surface water management proposals should take into account the impacts of future climate change over the projected lifetime of the development.
- Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered.
- Consideration should be made to the existing condition of the Cosby Brook and its Water Framework Directive objectives for water quality. The use of multistage SuDS treatment will improve water quality of surface water runoff discharged from the site and reduce the impact on receiving water bodies.
- Opportunities to incorporate source control techniques such as green roofs, permeable surfaces and rainwater harvesting must be considered in the design of the site.
- The potential to utilise conveyance features such as swales to intercept and convey surface water runoff should be considered. Conveyance features should be located on common land or public open space to facilitate ease of access. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.

7 NPPF and planning implications

7.1 Exception Test requirements

The Local Planning Authority will need to confirm that the Sequential Test has been carried out in line with national guidelines. The Sequential Test will need to be passed before the Exception Test is applied.

The NPPF classifies residential development as 'more vulnerable'.

The Exception Test is not required for this site provided development is steered away from the areas of severe surface water flooding and outside of Flood Zone 2/3, which should be possible based on the areas of the site affected.

7.2 Requirements and guidance for site-specific Flood Risk Assessment

At the planning application stage, a site-specific FRA will be required as the proposed development site:

- is almost entirely within Flood Zone 1 with a site area of 1 hectare or more
- is within Flood Zone 1 and the Flood Map for Planning shows it is at risk of flooding from surface water

All sources of flooding should be considered as part of a site-specific FRA, which should be supported by detailed modelling of the ordinary watercourse south of the site to confirm the risk posed by this watercourse.

Consultation with the Local Authority, Lead Local Flood Authority, Water Company, and the EA should be undertaken at an early stage.

The risk from groundwater flooding should also be confirmed as part of a site-specific FRA supported by robust ground investigations.

Any FRA should be carried out in line with latest guidance including the National Planning Policy Framework (NPPF), Flood Risk and Coastal Change Planning Practice Guidance (PPG), and Blaby District Council LPA Local Plan Policies.

The development should be designed with mitigation measures in place where required.

7.3 Guidance for site design and making development safe

Development should be directed away from the fluvial flood risk area along the eastern boundary and from areas influenced by the land drains where significant surface water flooding occurs.

A detailed hydraulic model of the Cosby Brook and the unnamed tributary to the south of the site will be required at FRA stage to accurately represent the risk from this watercourse and set the height of any mitigation measures.

The risk from surface water flow routes should be quantified as part of a site-specific FRA, including a drainage strategy, so runoff magnitudes from the development are not

increased by development across any ephemeral surface water flow routes. A drainage strategy should help inform site layout and design to ensure runoff rates are as close as possible to pre-development greenfield rates, with areas of surface water ponding used as open space and SuDS or water compatible/essential infrastructure uses only.

Arrangements for safe access and egress will need to be provided for the 1% AEP fluvial and surface events with an appropriate allowance for climate change, considering depth, velocity, and hazard. Design and access arrangements will need to incorporate measures, so development and occupants are safe.

Provisions for safe access and egress should not impact on surface water flow routes or contribute to loss of floodplain storage. Consideration should be given to the siting of access points with respect to areas of surface water flood risk.

8 Conclusions

The following points should be considered in development of this site:

- The site is generally at a low risk of flooding, with most of the site being flood free and development is likely to be able to proceed provided a site-specific FRA is completed which demonstrates users of the site will be safe throughout its lifetime. However, areas of topographic depressions and land drains face surface water flooding and small areas along the eastern boundary face fluvial flooding.
- Flood Zones 2, 3a, and 3b are present in the southern corner, and detailed hydraulic modelling will need to confirm the risk to the site and access routes.
- The eastern border of the site is at risk of groundwater emergence, and robust ground investigations will be required to confirm the risk.
- The site is subject to a residual flood risk associated with potential culvert blockage along the eastern boundary.

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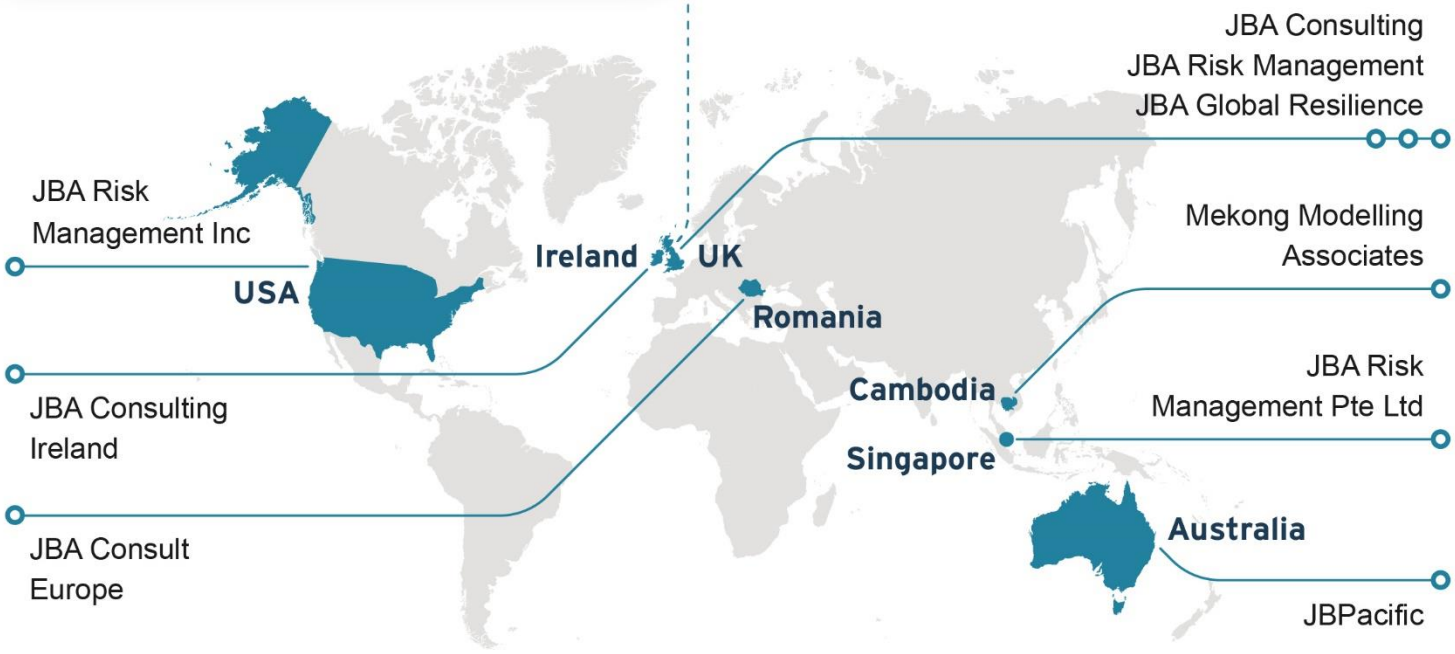

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Level 2 Strategic Flood Risk Assessment - Sites BLA031, BLA034, BLA039, BLA040

Prepared for
Blaby District Council

Date
January 2026

Contents

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for BLA031, BLA034, BLA039, BLA040. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Level 1 SFRA and read the Level 2 SFRA Main Report and is therefore familiar with the terminology used in this report.

1.1 Site details

- Site Code: BLA031, BLA034, BLA039, BLA040
- Location: Land North of Hospital Lane
- Site area: 47.99ha
- Existing site use: Greenfield
- Proposed site use: Residential

1.2 Topography

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR. Ground levels are highest in the north western and eastern areas of the site and form two valleys. The first in the western area of the site and the second in the eastern area of the site.

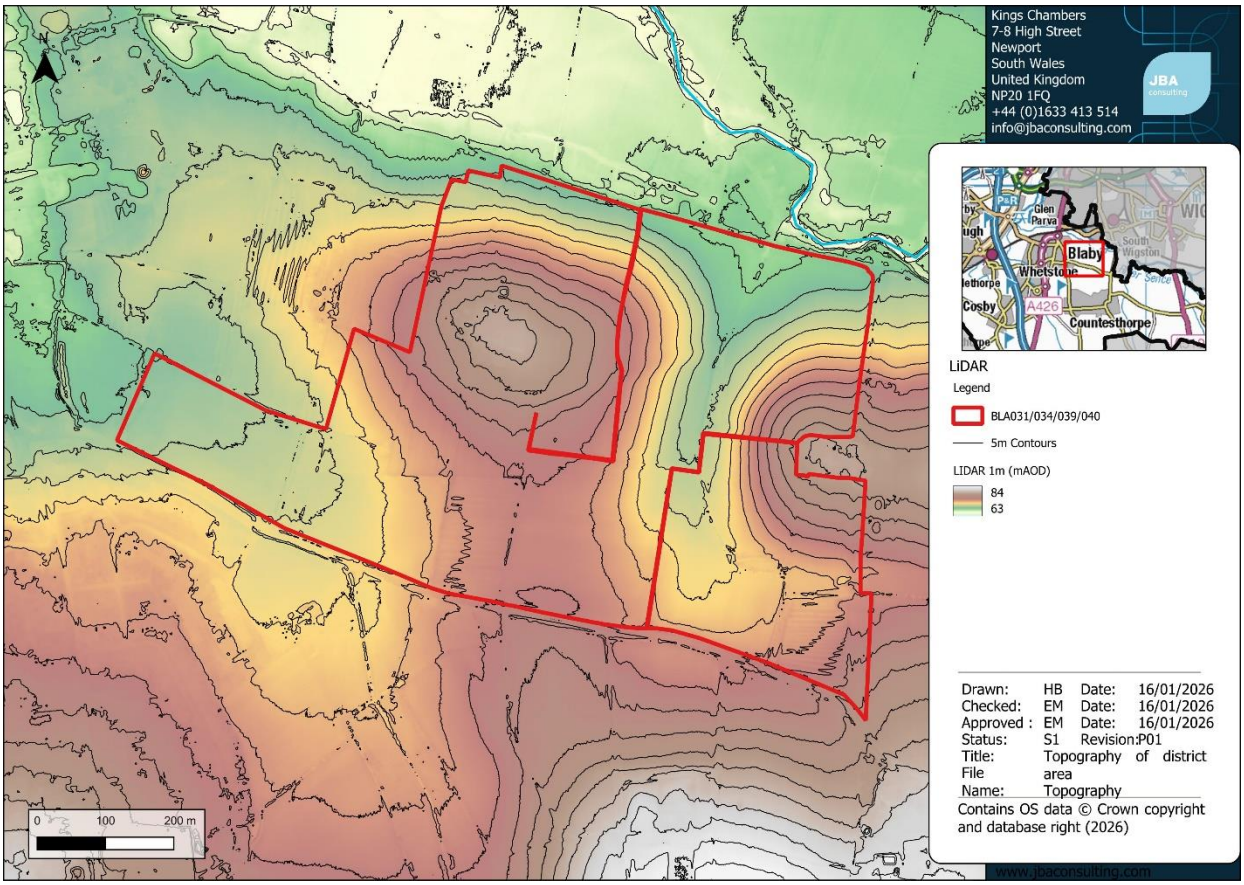

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Cotham Member-Mudstone, Westbury Formation-Mudstone, Blue Anchor Formation-Mudstone, Branscombe Mudstone Formation-Mudstone.
- Superficial - Thrussington Till Member-Diamicton, Wigston Sand and Gravel Member-Sand and gravel, Bosworth Clay Member-Clay, Alluvium-Clay, silt, sand and gravel.

Soils at the site consist of:

- Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils.

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located in the catchment of the River Sence.

An unnamed ordinary watercourse flows in a westerly and northerly direction through the site and under Mill Lane where it is presumed the watercourse is culverted. This should be confirmed during a site specific FRA. The unnamed ordinary watercourse continues to flow in a northerly direction into its confluence with the River Sence 50m north of the site.

The River Sence, an Environment Agency-designated main river, is located 20m from its closest point. No flood defences are present along its course.

2.2 Fluvial

2.2.1 Available data

The EA's Flood Map for Planning (FMfP) has been used within this assessment. No detailed modelling is available at this location.

2.2.2 Description of risk to the site

The site is shown to be predominantly situated within Flood Zone 1 of the Flood Map for Planning. The Flood Zone data for this site indicates that a small area along the northern boundary is predicted to fall within Flood Zone 2.

Table 2-1: Existing fluvial flood risk based on EA FMfP*

Flood Zone 1 (%)	Flood Zone 2 (%)	Flood Zone 3a (%)	Flood Zone 3b (%)
92	1.3	0.5	0.03

**The percentage flood zones quoted show the percentage of the site at flood risk from that particular flood zone or event, including the percentage of the site at flood risk at a higher risk zone, e.g. Flood Zone 2 includes the Flood Zone 3 percentage. Flood Zone 1 is the remaining area outside Flood Zone 2 (Flood Zone 2 + Flood Zone 1 = 100%).*

The Risk of Flooding from Rivers and Sea dataset shows that, in the high risk event (≥3.3% AEP) and medium risk event (greater than or equal to 1% AEP but less than 3.3%) the site is predicted to be flood free.

In the low-risk event (greater than or equal to 0.1% AEP but less than 1%), flood water is predicted to pond at the northern border of the site. Flood water is predicted to be shallow with depths of up to 0.3m.

Development should be steered away from the area at risk.

2.3 Surface water

2.3.1 Available data

The EA's Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment.

2.3.2 Description of risk to the site

All three surface water events are identified within this site and is much more significant than the fluvial flood risk.

The 30-year surface water event covers 4% of the site, with most of the site area coverage located along the course of the unnamed ordinary watercourse in the east of the site. Areas of localised surface water ponding are present in the western area of the site.

The 100-year surface water flood event is very similar in extent to the 30-year event along the unnamed ordinary watercourse floodplain, with the extent of flooding spreading slightly wider. In the west of the site, the areas of surface water ponding merge into a flowpath, flowing in a westerly direction.

The 1,000-year event identifies a development in the extent of surface water flow paths, leading to an increase in the extent of the floodplain of the ordinary watercourse, and connecting with small flowpaths to the south of the site.

Small isolated areas of ponding are present in the centre of the site in all events.

Overall, the surface water depth remains consistent throughout all three surface water events, remaining between 0.3m and below in depth. Similarly, the surface water max velocity is consistent across all three food events, with velocity recorded at 0.5m/s and below. Velocities are marginally higher in small areas in the 0.1% AEP event and are up to 1m/s.

Table 2-2: Existing surface water flood risk based on the RoFSW map

Event	3.3% AEP	1% AEP	0.1% AEP
Percentage of site at risk* (%)	4.4	8.2	15.2
Maximum depth (m)	0.3	0.3	0.6
Maximum velocity (m/s)	0.5	0.5	1
Maximum hazard classification	Dangerous for most	Dangerous for most	Dangerous for most

** The percentage surface water extents quoted show the percentage of the site at surface water risk from that particular event, including the percentage of the site at flood risk at a higher risk zone (e.g. 1% AEP includes the 3.3% AEP percentage).*

2.4 Reservoir

The site is not shown to be at risk of reservoir flooding during the 'dry day' or 'wet day' scenario from the EA reservoir flood maps.

2.5 Groundwater

The JBA Groundwater Emergence Map shows that the southern area of the site is in the 'very low risk' zone for groundwater flooding. In the north of the site, groundwater levels are generally between 0.5m and 5m below the ground surface. Groundwater levels in a small area in the north eastern corner are predicted to be between 0.025m and 0.5m below the ground surface. This will need to be confirmed by robust ground investigations as part of a site-specific Flood Risk Assessment.

This assessment does not negate the requirement that an appropriate assessment of the groundwater regime should be carried out at the site-specific Flood Risk Assessment (FRA) stage.

2.6 Sewers

The site falls within the Whetstone wastewater catchment, which is assessed as Band 0 for internal sewer flooding risk, indicating that sewer flooding is not a strategic issue at catchment scale.

2.7 Flood history

The EA's historic flood map shows that a small area in the north of the site has previously experienced flooding. The date of flooding is unknown. Additionally, no flood events were noted for this area in the L1 SFRA or the Leicestershire County Council Preliminary Flood Risk Assessment.

3 Climate change

Increased storm intensities due to climate change may increase the extent, depth, velocity, hazard, and frequency of both fluvial and surface water flooding. Please see Section 5.1 of the Level 1 SFRA report for information on climate change allowances.

Development proposals at the site must address the potential changes associated with climate change and be designed to be safe for the intended lifetime. The provisions for safe access and egress must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

The modelled extents from the Soar Brook Climate Change events dataset were used for this assessment. The closest corresponding percentages in the model have been used for the central and higher central allowance for the 1% AEP events. These are the 1% AEP plus 30% scenario for the central allowance and for the higher central 2080s epoch, the 1% plus 50% climate change scenario has been used as a proxy.

3.1.2 Description of risk to the site

The general extent of flooding is limited to the northern area of the site, where the unnamed ordinary watercourse flows under Mill Lane.

The RoFRS + CC dataset indicates that the site is sensitive to climate change, with increases in flood extent during all events predicted.

In the modelled 1% plus 30% climate change scenario, the extent of flooding covers a small area at the edge of Mill Lane where the unnamed ordinary watercourse flows underneath. The maximum flood depths are 0.56m with flood depths generally below 0.3m. marginally higher than those in the 1% AEP event, with an increase in velocity predicted. The flood hazard rating is dangerous for some.

In the 1% AEP plus 50% climate change, there is a small increase in flooding across the floodplain in comparison to the 1% AEP plus 30% event. Depths remain shallow across the site, with a small increase predicted in the maximum flood depth. The maximum flood hazard rating remains the same in this event.

Table 3-1: Comparison of fluvial flood risk to the site between the 1% AEP and 1% AEP plus 30% and 50% climate change extents.

Event	1% AEP	1% AEP plus 30% CC	1% AEP plus 50% CC
Percentage of site at risk (%)	0.53	1.0	1.2
Maximum depth (m)	0	0.56	0.65

Event	1% AEP	1% AEP plus 30% CC	1% AEP plus 50% CC
Maximum velocity (m/s)	N/A	N/A	N/A
Maximum hazard classification	N/A	Dangerous for some	Dangerous for some

3.2 Surface water

3.2.1 Available data

The Environment Agency's Risk of Flooding from Surface Water plus Climate Change (RoFSW+CC) dataset was used to inform this assessment. The central climate change allowance for the 2050s epoch has been applied to the 3.3%, 1%, and 0.1% AEP surface water flood events. This is not suitable for informing site-specific assessments as the lifetime of residential of residential development is 100-years but is used here in absence of better data. Developers should apply the upper end allowance for the 2070s epoch as part of their site-specific FRAs.

3.2.2 Description of risk to the site

The ROFSW + Climate Change mapping shows that the site is not notably sensitive to increases in rainfall. Compared with the baseline scenario, both flood extents and maximum depths only marginally increase, indicating only a limited additional surface water hazard under future climate conditions.

Changes in flood depths are minimal, with no significant increase in flood depths predicted during the climate change event. The spatial pattern and speed of velocities also mirrors present-day conditions, with no significant new flow routes or increase in speeds emerging.

Hazard classifications show very little change across return periods. For the 3.3% 1% and 0.1% AEP events, the maximum hazard remains dangerous for most.

Table 3-2: Comparison of surface water flood risk to the site between the 1% AEP and 1% AEP climate change extents.

Event	1% AEP	1% AEP plus CC
Percentage of site at risk (%)	10.3	14.4
Maximum depth (m)	0.3	0.3
Maximum velocity (m/s)	0.5	0.5
Maximum hazard classification	Dangerous for most	Dangerous for most

4 Flood risk management infrastructure

4.1 Defences

The EA AIMS dataset shows that the site is not protected by any formal flood defences.

4.2 Residual risk

There is no residual risk to the site from flood risk management structures.

5 Emergency planning

5.1 Flood warnings and alerts

The site is located in the River Sence in Leicestershire Flood Warning Area and the River Sence in Leicestershire Flood Alert Area.

5.2 Access and egress

Safe access and egress will need to be demonstrated in the 1% AEP plus climate change fluvial/surface water events. Site drainage proposals should address the requirements for access routes, avoid impeding surface water flows and preserve the storage of surface water to avoid exacerbation of flood risk elsewhere on the site and in the wider catchment.

5.2.1 Potential access

The western land parcel is accessed from Mill Lane, along the northern boundary and Hospital Road, running along the southern boundary of the site.

Fluvial flooding from the River Soar is likely to affect access to and from the site and should be avoided if a flood event was to occur.

There are various areas with significant flow paths and ponding on Hospital Lane. Depths are likely to be shallow over the roads.

Safe access and egress will need to be demonstrated in the 1% AEp fluvial and surface water events, including an appropriate allowance for climate change, as part of a site-specific FRA.

5.3 Dry islands

The site is not located on a dry island.

6 Requirements for drainage control and impact mitigation

6.1 Broadscale assessment of possible SuDS

- BGS data indicates that the underlying geology is Cotham Member-Mudstone, Westbury Formation-Mudstone, Blue Anchor Formation-Mudstone, Branscombe Mudstone Formation-Mudstone. This geology is likely to be impermeable. This should be confirmed through infiltration testing. Off-site discharge in accordance with the SuDS hierarchy may be required to discharge surface water runoff from the site.
- Groundwater is shown to be within 5m of the surface across much of the site, which will impact the suitability of certain types of suds including infiltration and attenuation features. This should be confirmed through additional site investigation work.
- The site is not located within a Groundwater Source Protection Zone and there are no restrictions over the use of infiltration techniques with regard to groundwater quality.
- The site is not located within a historic landfill site.
- Where possible, proposed attenuation features such as basins, ponds and tanks should be located outside of Flood Zones 2 and 3 to avoid the potential risks to the hydraulic capacity or structural integrity of these features. Surface water outfalls that discharge into the unnamed ordinary watercourse may be susceptible to surcharging due to water levels in the watercourse. The impacts of flood flows will need to be considered in terms of the attenuation storage requirements of the site and placement of the outfalls.

6.2 Opportunities for wider sustainability benefits and integrated flood risk management

- Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, water quality, amenity and biodiversity. This could provide wider sustainability benefits to the site and surrounding area. Proposals to use SuDS techniques should be discussed with relevant stakeholders (Local Planning Authority, Lead Local Flood Authority, and the EA) at an early stage to understand possible constraints.
- The significant surface water flow paths through the site should be incorporated into any SuDS design as part of blue-green infrastructure.
- Development at this site should not increase flood risk either on or off site. The design of the surface water management proposals should take into account the impacts of future climate change over the projected lifetime of the development.
- Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered.

- Opportunities to incorporate source control techniques such as green roofs, permeable surfaces and rainwater harvesting must be considered in the design of the site.
- The potential to utilise conveyance features such as swales to intercept and convey surface water runoff should be considered. Conveyance features should be located on common land or public open space to facilitate ease of access. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.
- Surface water discharge rates should not exceed the existing greenfield runoff rates for the site. Opportunities to further reduce discharge rates should be considered and agreed with the LLFA. It may be possible to reduce site runoff by maximising the permeable surfaces on site using a combination of permeable surfacing and soft landscaping techniques.
- If it is proposed to discharge runoff to a watercourse or sewer system, the condition and capacity of the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the asset owner.

7 NPPF and planning implications

7.1 Exception Test requirements

The Local Planning Authority will need to confirm that the Sequential Test has been carried out in line with national guidelines. The Sequential Test will need to be passed before the Exception Test is applied.

The NPPF classifies residential development as More Vulnerable.

The Exception Test would not be required provided development is located outside of the small area of the site within Flood Zones 2 and 3.

7.2 Requirements and guidance for site-specific Flood Risk Assessment

At the planning application stage, a site-specific FRA will be required as the proposed development site:

- Is greater than one hectare in Flood Zone 1
- Is partly located in Flood Zone 2 and 3
- Is partly located in Flood Zone 3b
- Is at risk from surface water flooding

All sources of flooding should be considered as part of a site-specific FRA.

Consultation with the Local Authority, Lead Local Flood Authority, Water Company, and the EA should be undertaken at an early stage.

Ground investigations to confirm the risk to the site from groundwater will be required as part of the site-specific flood risk assessment.

Any FRA should be carried out in line with latest guidance including the National Planning Policy Framework (NPPF), Flood Risk and Coastal Change Planning Practice Guidance (PPG), and Blaby District Council Local Plan Policies.

The development should be designed with mitigation measures in place where required.

7.3 Guidance for site design and making development safe

Development should be steered outside of the significant areas of surface water ponding/flowpaths.

Developers should consider utilising the floodplain and significant areas of surface water ponding of the unnamed ordinary watercourse as a green corridor or as a location for SuDS.

The risk from surface water flow routes should be quantified as part of a site-specific FRA, including a drainage strategy, so runoff magnitudes from the development are not increased by development across any ephemeral surface water flow routes. A drainage strategy should help inform site layout and design to ensure runoff rates are as close as

possible to pre-development greenfield rates, with areas of surface water ponding used as open space and SuDS or water compatible/essential infrastructure uses only.

Arrangements for safe access and egress will need to be provided for the 1% AEP surface water and fluvial events with an appropriate allowance for climate change, considering depth, velocity, and hazard. Design and access arrangements will need to incorporate measures so that development and occupants are safe.

Provisions for safe access and egress should not impact on surface water flow routes or contribute to loss of floodplain storage. Consideration should be given to the siting of access points with respect to areas of surface water flood risk.

8 Conclusions

- The majority of the site is at low risk of flooding from all sources, and the site would not require the Exception Test provided all development is located within Flood Zone 1.
- Development should be steered away from the areas of the site at risk from flooding, notably the area at risk of fluvial flood risk around the unnamed ordinary watercourse and surface water flooding around the site.
- Much of the site is identified to be at have groundwater close to the surface, and this should be confirmed through robust ground investigations as part of a site-specific FRA
- Climate change mapping shows only marginal increases in flood extent.
- Development is likely to be able to proceed provided a site-specific Flood Risk Assessment (FRA) demonstrates that users of the site will be safe throughout its lifetime.
- It is recommended that SuDS be incorporated into the development of this site.

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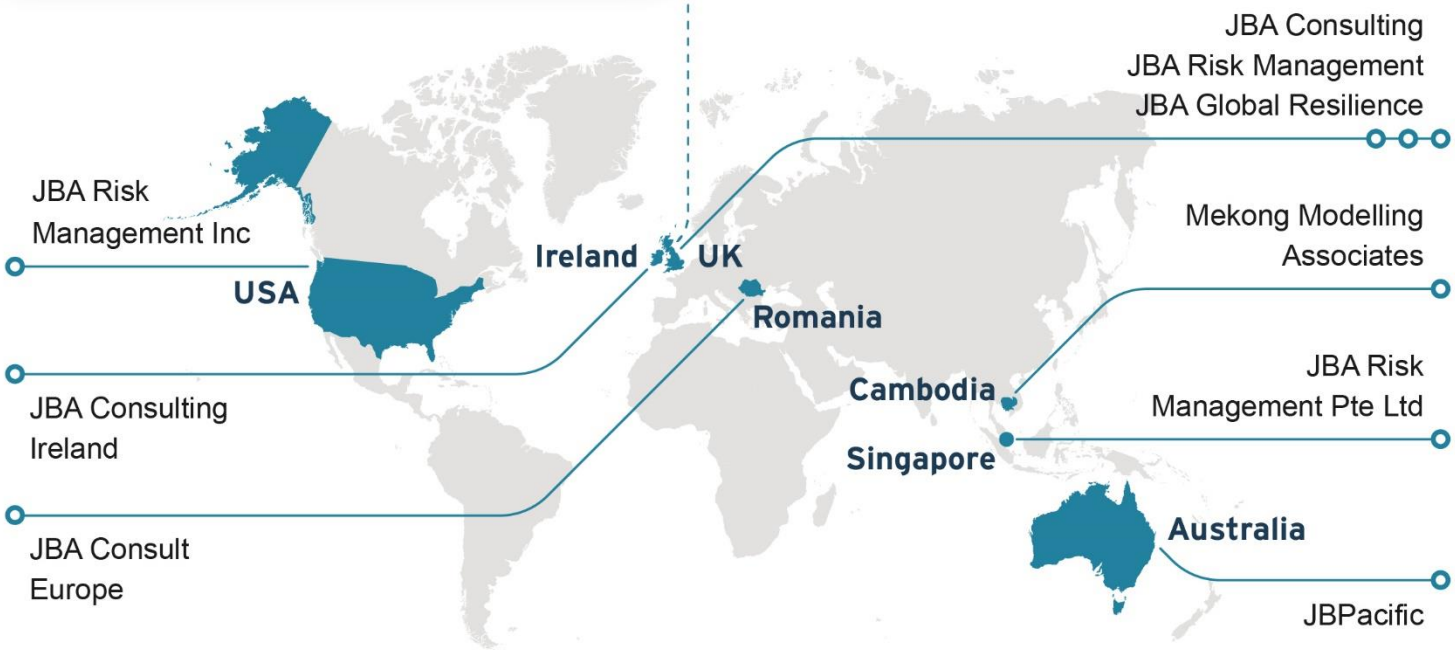

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