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Level 2 Strategic Flood Risk Assessment

Site 18/002

Prepared for:

Tamworth Borough Council

Contents

1 Background 4
1.1 Site details 4
1.2 Topography 4
1.3 Geology and soils 5

2 Sources of flood risk 6
2.1 Location of site within the catchment 6
2.2 Existing drainage features 6
2.3 Fluvial 6
2.4 Surface water 7
2.5 Reservoir 8
2.6 Groundwater 8
2.7 Sewers 8
2.8 Flood history 9

3 Climate change 10
3.1 Fluvial 10
3.2 Surface water 10

4 Flood risk management infrastructure 12
4.1 Defences 12
4.2 Residual risk 12

5 Emergency planning 13
5.1 Flood warnings and alerts 13
5.2 Access and Escape 13
5.3 Dry islands 13

6 Requirements for drainage control and impact mitigation 14
6.1 Broadscale assessment of possible SuDS 14
6.2 Opportunities for wider sustainability benefits and integrated flood risk management 15

7 NPPF and planning implications 16
7.1 Exception Test requirements 16

7.2 Requirements and guidance for site-specific Flood Risk Assessment 16
7.3 Guidance for site design and making development safe 16

8 Conclusions 18

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Site 18/002. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Tamworth Borough Level 1 SFRA (June 2025). The reader should also familiarise themselves with the Tamworth Borough Level 2 SFRA Main Report, where there is further explanation of the terminology used in this report.

1.1 Site details

- Location: Ashlands Farm Land, Ashby Road, Tamworth, B79 0BY
- Site area: 7.93ha
- 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 (updated in 2025). Elevations across the site are highest in the north at approximately 79.7mAOD and slope downhill towards the southern site boundary, where the lowest elevations of approximately 58.5mAOD are located.

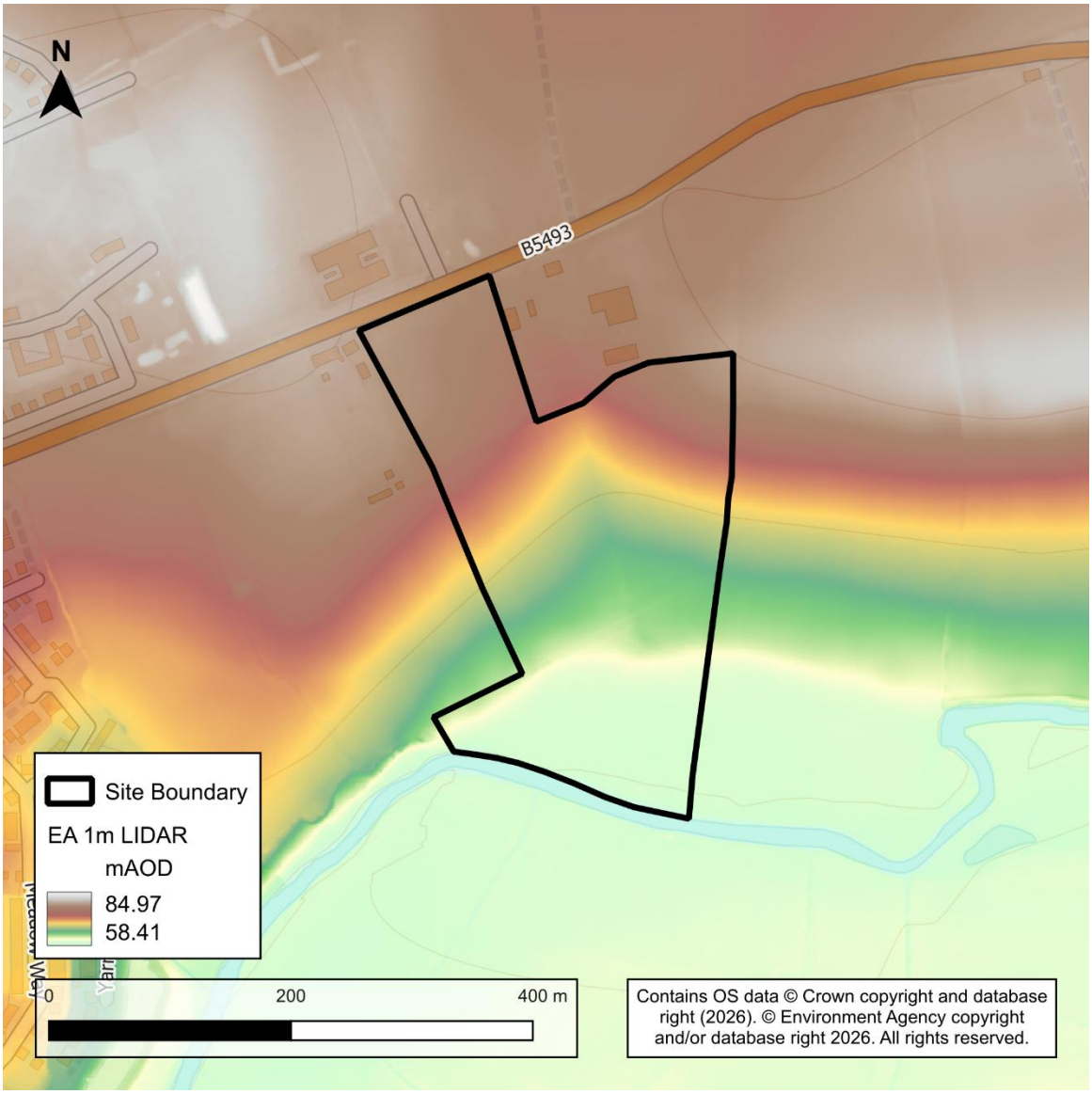

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - comprised predominantly of mudstone with a band of sandstone through the centre of the site, and a combination of siltstone, sandstone, and mudstone along the southern site boundary.
- Superficial - there are no superficial deposits present at the site.

Soils at the site predominantly consist of slightly acid loamy and clayey soils with impeded drainage, with loamy and clayey floodplain soils with naturally high groundwater along the southern site boundary.

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located within the downstream reaches of the 'Anker from River Sence to River Tame Water Body' catchment. The River Anker flows adjacent to the southern site boundary. The upstream catchment draining to the site is approximately 94km^2 and is predominantly rural but also encompasses several settlements, including Atherstone and Polesworth, and the northeast side of Tamworth.

2.2 Existing drainage features

The River Anker, an EA designated Main River, flows in an easterly direction adjacent to the southern site boundary. There are no other known drainage features present within the site boundary.

2.3 Fluvial

2.3.1 Available data

The EA's Flood Map for Planning (FMfP) has been used within this assessment as the EA's existing River Anker hydraulic model (2006) has been superseded by the New National Modelling. Flood Zone 3b has been represented using the Rivers and Sea 3.3% AEP defended extent, as defined within the Tamworth Level 1 SFRA Main Report. No depth, velocity, or hazard information is currently available. Therefore, updates to the EA's detailed hydraulic modelling of the River Anker or new modelling are likely to be required as part of a site-specific Flood Risk Assessment.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.3.2 Description of risk to the site

Fluvial risk is concentrated in the south of the site. Flood Zone 3b covers 21% percent of the site area, and there are small increases in extent shown in Flood Zone 3a and Flood Zone 2, which extend further north into the site.

Table 2-1: Present day fluvial flood risk based on the EA FMfP *

Flood Zone 3b (%)	Flood Zone 3a (%)	Flood Zone 2 (%)	Flood Zone 1 (%)
20	23	24	76

**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 3a and Flood Zone 3b percentage. Flood Zone 1 + Flood Zone 2 = 100%.*

2.4 Surface water

2.4.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk. Velocity and hazard data is not currently available within this dataset, therefore the Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment to inform the velocity and hazard of surface water risk.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.4.2 Description of risk to the site

The site is not shown to be at surface water risk during the 3.3% AEP event.

In the 1% AEP event, most of the site is not shown to be at surface water risk but a small area of ponding develops in the south of the site. Depths remain below 0.15m, velocities remain below 0.25m/s and the hazard classification is 'Very Low Hazard'.

In the 0.1% AEP event, the extent of the area of ponding in the south of the site increases and a small flow path develops through the centre of the site. Depths mostly remain below 0.15m. Maximum velocities are found along the flow path in the centre of the site where they exceed 1.0m/s in the northernmost extent of the flow path. Velocities in the southern area of ponding remain below 0.25m/s. There is a small area classified as 'Danger for Some' along the flow path but otherwise the hazard classification remains as 'Very Low Hazard' across the site.

Table 2-2: Present day surface water flood risk based on the EA's FMfP Surface Water Spatial Planning dataset (extent, depth) and RoFSW dataset (velocity, hazard).

Assessment category	High risk (3.3% AEP)	Medium risk (1% AEP)	Low risk (0.1% AEP)
Percentage of site at risk* (%)	0	1	4
Maximum depth (m)	N/A	<0.15	0.15 - 0.30
Maximum velocity (m/s)	N/A	<0.25	0.50 - 1.00
Maximum hazard classification	N/A	Very Low Hazard	Danger for Some

** 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

Reservoir flood mapping shows the southern edge of the site to be affected by the Dry Day flood extent from Chasewater (Cannock Chase) reservoir which follows the low-lying topography of the River Anker.

The southern area of the site is affected by seven reservoirs in the Wet Day scenario:

- Bartley
- Belfry
- Chasewater (Cannock Chase)
- Earlswood Lakes - Engine Pool
- Earlswood Lakes - Windmill Pool
- Middleton Hall Lake
- Minworth Curdworth

The Chasewater (Cannock Chase) reservoir affects the largest area of the site, showing a similar extent to Flood Zone 3a. The Bartley extent is the smallest, only affecting a small area in the south of the site. The remaining reservoirs all show similar extents, aligning most closely with the Flood Zone 3b extent.

The Wet Day event seeks to estimate the effect of a breach at the same time as a 0.1% AEP river flood is occurring and suggests that the consequences of such a breach are similar to the modelled 0.1% AEP event river flood event but probably would be associated with a much lower probability.

2.6 Groundwater

The JBA Groundwater Emergence Map shows the entire site is deemed to be at negligible risk based on the nature of the underlying local geological deposits.

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 Severn Trent Drainage and Wastewater Management Plan (DWMP23) shows the site is not located within a Severn Trent sewer wastewater treatment works catchment, as such no further information can be ascertained at this time.

Severn Trent Water provided their Hydraulic Sewer Flooding Risk Register for the borough which includes a list of properties which have reported at least one incidence of external or internal sewer flooding between June 1997 and August 2024. Based on the data provided there have been no properties that have reported flooding within the site boundary, or in areas immediately surrounding the site. However, further incidents of sewer flooding may have occurred which have not been recorded. Therefore, the risk of sewer flooding should be assessed further at the site-specific Flood Risk Assessment stage.

2.8 Flood history

The EA's Historic Flood Mapping and Recorded Flood outlines datasets show one record of historic flooding in the south of the site. This is indicated to be a fluvial flooding incident from December 1992 associated with a large fluvial event along the River Trent catchment. No further information is known.

Historic incident data provided by Staffordshire County Council show no records of historic flooding on or surrounding 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 4.6 of the Tamworth Level 2 SFRA Main 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 escape must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

As the fluvial risk at this site is represented by the New National Modelling, the Rivers and Sea fluvial climate change extents have been used. These use the Central allowance for the 2080s epoch and are available for the 3.3% AEP (Flood Zone 3b), 1% AEP (Flood Zone 3a) and 0.1% AEP (Flood Zone 2) events.

3.1.2 Description of risk to the site

The site is not shown to be sensitive to increased fluvial risk with climate change. Fluvial risk is shown to remain in the south of the site with minimal change in the extent of each Flood Zone with climate change.

3.2 Surface water

3.2.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk with climate change. Climate change outputs are available for the 3.3%, 1%, and 0.1% AEP events with the Upper End climate change allowance for the 2070s epoch. There is currently no available velocity or hazard information to use within this assessment.

3.2.2 Description of risk to the site

The surface water risk on the site remains within the southern and central areas during all modelled climate change events.

There is a small area of ponding which develops in the south of the site in the 3.3% AEP climate change event which is not present in the 3.3% AEP event. Depths on the site remain below 0.15m.

The area of ponding in the south of the site increases in extent between the 1% AEP and 1% AEP climate change events and the flow path in the centre of the site (present in the 0.1% AEP event) begins to form. However, depths across the site remain below 0.15m in both events.

The extent of the flow path through the centre of the site increases between the 0.1% AEP and 0.1% AEP climate change events to bisect the site, with a considerable increase in the area of ponding in the south of the site. Whilst depths are still shown to remain below 0.15m there are larger areas where depths are between 0.15m and 0.3m, particularly in the southern area of ponding.

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

Assessment category	1% AEP	1% AEP + Upper End CC
Percentage of site at risk (%)	1	3
Maximum depth (m)	<0.15	<0.15

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 is at residual risk of reservoir flooding as a result of a breach of several reservoirs, as detailed in Section 2.5.

5 Emergency planning

5.1 Flood warnings and alerts

The site is not located in an EA Flood Warning Area. The southern end of the site is located within the 'River Anker and River Sence' Flood Alert Area (033WAF307).

5.2 Access and Escape

Safe access and escape 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 to the site is likely to be from Ashby Road (B5493) which runs along the northern site boundary.

5.2.2 Fluvial

Access and escape are not shown to be impeded by fluvial risk, which remains within the south of the site and does not affect the surrounding roads.

5.2.3 Surface water

There is a surface water flow path which crosses Ashby Road (B5493) to the west of the site in all modelled surface water events. However, in the 1% AEP plus climate change event, depths along the road mostly remain below 0.15m and all remain below 0.3m, which are unlikely to impede access and escape from the west.

There is also an area of surface water ponding which develops along Ashby Road (B5493) to the east of the site where the EA LiDAR data shows a topographic low spot. Depths are shown to 0.6m in the 1% AEP plus climate change event which is likely to impede access and escape from the east.

Further assessment of velocity and hazard is likely to be required as part of a site-specific FRA as this data is currently not available within the EA's FMfP Surface Water Spatial Planning dataset.

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

Surface water at the site should be discharged in accordance with the drainage hierarchy as set out in the National standards for SuDS (gov.uk). SuDS that provide opportunities to deliver multiple benefits including volume control, water quality, amenity, and biodiversity should be prioritised. SuDS proposals should be discussed with relevant stakeholders (Local Planning Authority (LPA), Lead Local Flood Authority (LLFA), and the EA) at an early stage to understand possible constraints. Where the national standards allow for local policy interpretation or discretion, applicants should refer to the Staffordshire County Council Flood Risk Management Team guidance and policies (staffordshire.gov.uk).

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.

The following factors should be considered when assessing whether infiltration is suitable at 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.
- BGS data indicates that the underlying geology is predominantly 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.

If it is proposed to discharge runoff to a watercourse or sewer system, the condition and capacity or the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the asset owner.

The area of fluvial risk associated with the River Anker in the south of the site should be used as public open space to provide wider amenity benefits.

Proposed attenuation features such as basins, ponds and tanks should be located outside of the areas of fluvial risk to avoid the potential risks to the hydraulic capacity or structural integrity of these features. Surface water outfalls that discharge into the River Anker may be

susceptible to surcharging due to water levels in the River Anker. 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

The following are opportunities for wider sustainability benefits and integrated flood risk management at the site:

- 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.
- 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 Anker 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. The River Anker from River Sence to River Tame is considered to be of 'Poor' ecological status.
- Given the proximity of the River Anker to the site, which is a Main River, opportunities to integrate flood risk management opportunities along this watercourse into the site design to reduce downstream flood risk in the wider catchment should be considered.

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 will be required for this site if 'More Vulnerable' development is proposed within Flood Zone 3a. 'More Vulnerable' development is not permitted within Flood Zone 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:

- Greater than one hectare
- In Flood Zones 3b, 3a, and 2
- At risk of fluvial flooding with climate change
- At risk of surface water and reservoir 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 Tamworth Borough 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

The site layout must adopt a sequential approach by steering more vulnerable aspects of the development away from the area of fluvial risk in the south of the site.

A detailed hydraulic model of the River Anker may be required at FRA stage to accurately represent the risk from this watercourse, including latest climate change allowances.

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 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. In particular Staffordshire County Council as LLFA will require the drainage strategy to address:

- The drainage hierarchy and preference for infiltration where feasible.
- Use of source control measures at the earliest opportunity.
- Rainwater harvesting and reuse measures where practicable.
- Management of the first 5mm of rainfall (everyday rainfall).
- Above-ground, multifunctional SuDS that deliver water quality, biodiversity and amenity benefits.
- Reduction of runoff volumes and peak discharge rates.

Arrangements for safe access and escape 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 escape 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.

The residual risk of reservoir flooding at the site will need to be considered further at the site-specific FRA stage. An emergency plan may be required, demonstrating that the residual risks to the site can be safely managed and that appropriate evacuation plans are in place.

8 Conclusions

The south of the site is at fluvial risk from the River Anker which flows adjacent to the southern site boundary. Flood Zones 3b, 3a, and 2 all impact the site and there is evidence of historic fluvial flooding in the south of the site. The south of the site is also at residual risk of a reservoir breach. Surface water risk on the site is limited to ponding in the south and a small flow path in the centre.

Access and escape from the north is likely to be possible in both fluvial and surface water events along Ashby Road (B5493) from the west, however, further assessment of surface water velocity and hazard is likely to be required as part of a site-specific FRA as this data is currently not available within the EA's FMfP Surface Water Spatial Planning dataset.

The Exception Test may be required for this site if 'More Vulnerable' development is proposed within Flood Zone 3a. 'More Vulnerable' development is not permitted within Flood Zone 3b. A site-specific FRA will be required for this site.

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

- A sequential approach to development layout should be taken, steering more vulnerable aspects of the development away from the area of highest risk in the south of the site. A buffer of 8m should be maintained between the River Anker and any built development.
- A site-specific FRA should be undertaken, which assesses all sources of flood risk. This should include detailed hydraulic modelling of the River Anker.
- Opportunities to provide wider sustainability benefits and decrease downstream flood risk along the River Anker should be considered within the site design.
- A carefully considered and integrated flood resilient and sustainable drainage design should be put forward, including a site-specific Surface Water Drainage Strategy, and SuDS maintenance and management plan and supported by detailed modelling.
- Flood mitigation measures should be implemented then tested to check that they will not displace water elsewhere (for example, if land is raised to permit development in one area, compensatory flood storage will be required in another).
- Surface water flood risk and associated flow pathways have been identified across the site, generally following low-lying topographical features. These routes should be retained and accommodated within the site layout.
- Consideration should be given to locating public open space within areas of floodplain, thereby maximising opportunities for flood storage, biodiversity enhancement and recreational amenity.
- Severn Trent Water should be consulted at an early stage on drainage proposals for the site to identify any potential constraints or existing sewer flooding issues that may not have been identified through this high level assessment.

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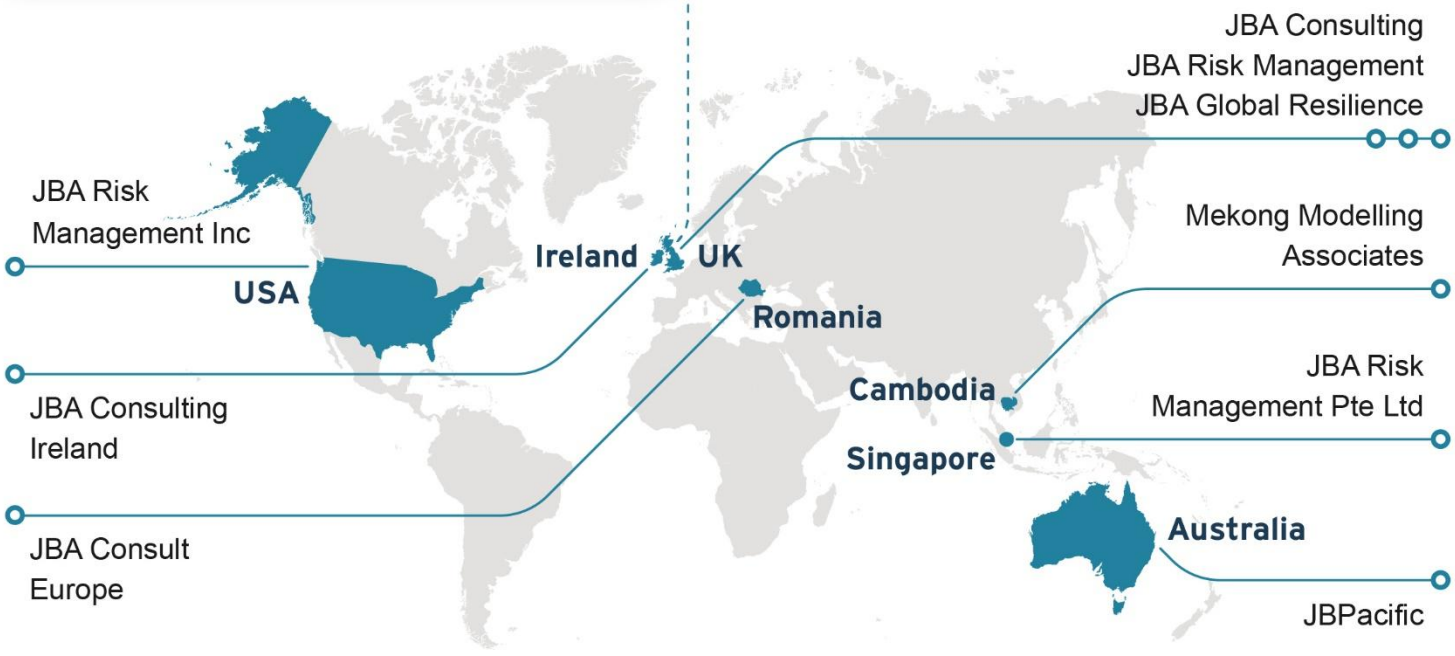

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Level 2 Strategic Flood Risk Assessment

Site 18/007

Prepared for:

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Contents

1 Background 4
1.1 Site details 4
1.2 Topography 4
1.3 Geology and soils 5

2 Sources of flood risk 6
2.1 Location of site within the catchment 6
2.2 Existing drainage features 6
2.3 Fluvial 6
2.4 Surface water 8
2.5 Reservoir 10
2.6 Groundwater 10
2.7 Sewers 11
2.8 Flood history 11

3 Climate change 12
3.1 Fluvial 12
3.2 Surface water 13

4 Flood risk management infrastructure 15
4.1 Defences 15
4.2 Residual risk 15

5 Emergency planning 16
5.1 Flood warnings and alerts 16
5.2 Access and Escape 16
5.3 Dry islands 16

6 Requirements for drainage control and impact mitigation 17
6.1 Broadscale assessment of possible SuDS 17
6.2 Opportunities for wider sustainability benefits and integrated flood risk management 18

7 NPPF and planning implications 19
7.1 Exception Test requirements 19

7.2 Requirements and guidance for site-specific Flood Risk Assessment 19
7.3 Guidance for site design and making development safe 19

8 Conclusions 21

1 Background

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1.1 Site details

- Location: Land off Tamworth Road / Wigford Road
- Site area: 26.84ha
- 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 eastern site boundary borders a housing estate, and maximum elevations are 83.5mAOD adjacent to this development. Land slopes downhill westwards across the site towards a tributary of the River Tame which flows northbound along the western site boundary. Minimum elevations across the site are 60.1mAOD on the right bank of this watercourse. Two further tributaries of the River Tame are present in the north of the site, and the banks of these watercourses also show low elevations of approximately 62.0mAOD.

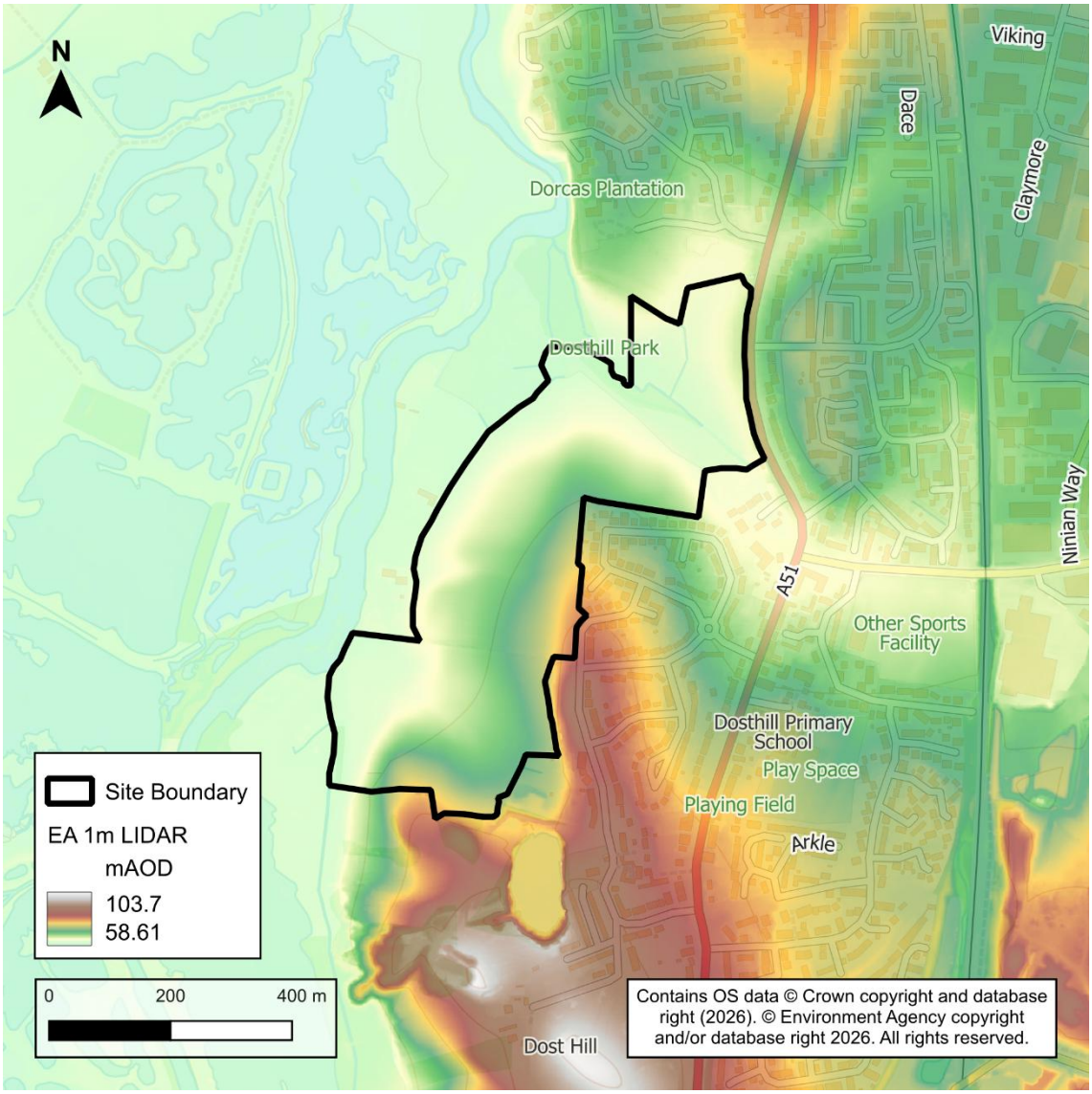

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock: Millstone Grit Group bedrock comprised of sandstone in the east of the site. Land adjacent to the western site boundary is Gunthorpe Member comprised of mudstone.
- Superficial: Land at the west of the site is underlain by alluvium comprised of clay, silt, sand and gravel. There are no superficial deposits in the east of the site.

Soils at the site consist of:

- Loamy and clayey floodplain soils with naturally high groundwater in the west of the site.
- Slightly acid loamy and clayey soils with impeded drainage in the east of the site.

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located in the downstream end of the River Tame from River Blythe to River Anker Water Body Catchment, which lies in the Tame Lower Rivers and Lakes operational catchment. The upper reaches of the catchment are predominantly rural and comprised of open green space on the banks of the River Tame. The downstream end of the catchment is predominantly urban and hosts urban settlements such as Belgrave, Wilnecote, Fazeley and Dotshill, which borders the site from the east.

The River Tame flows adjacent to the western site boundary and is joined by the River Anker approximately 3km north of the site.

2.2 Existing drainage features

Based on online mapping and asset data provided by Staffordshire County Council there is an unnamed culverted watercourse which flows in a westerly direction through the settlement of Dosthill. This watercourse becomes an open channel within the north of this site and bisects the site from the eastern boundary to the western boundary. The tributary converges with the River Tame at the confluence approximately 200m northeast of the site.

A further watercourse flows in a northerly direction along the western site boundary for approximately 400m before converging with the River Tame at the same confluence.

Another tributary flows from the northeast corner of the site and follows the northern site boundary for approximately 140m before converging with another tributary approximately 70m from the western site boundary in the centre of the site.

A further tributary flows from approximately 2km south of the site in a northern direction before converging with the River Tame at a confluence approximately 10m adjacent to the southwest corner of the site.

2.3 Fluvial

2.3.1 Available data

The EA's Flood Map for Planning (FMfP) and the EA's detailed hydraulic model for the River Tame have been used in this assessment. Flood Zone 3b has been represented using the Rivers and Sea 3.3% AEP defended extent, as defined within the Tamworth Level 1 SFRA Main Report.

Available depth, velocity, and hazard information has been used to inform the risk from the River Tame for the 1% AEP undefended event (Flood Zone 3a) and the defended 1% and 0.1% AEP events. No data is currently available for the 3.3% AEP defended or 0.1% AEP undefended events, therefore, updates to the River Tame modelling may be required as part of a site-specific Flood Risk Assessment.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.3.2 EA Flood Zones

Fluvial risk to the site is shown to be from the River Tame and the unnamed watercourse within the north of the site. Fluvial risk is shown to impact the north of the site along the path of the unnamed watercourse and the western site boundary.

Flood Zone 3b is present on the site. The extent of Flood Zone 3b follows the path of the northeastern tributary affecting a small area in the north of the site. Flood Zone 3b also impacts a small section of the southwestern site boundary.

The extent of Flood Zone 3a encroaches along the entire western site boundary and shows a larger flow path along the lowered topography in the north of the site.

The extent of Flood Zone 2 increases along the entire western site boundary extending further into the site. There is also a small increase in extent along the flow path in the north of the site.

Table 2-1: Present day fluvial flood risk based on the EA FMfP *

Flood Zone 3b (%)	Flood Zone 3a (%)	Flood Zone 2 (%)	Flood Zone 1 (%)
5	17	33	67

**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 3a and Flood Zone 3b percentage. Flood Zone 1 + Flood Zone 2 = 100%.*

2.3.3 Modelled risk - River Tame (undefended)

The 1% AEP undefended model extent from the River Tame shows a slightly larger extent than the EA FMfP Flood Zone 3a (as described in Section 2.3.2) and has been used to assess depth, velocity, and hazard across the sites within this event.

Maximum depths, velocities, and hazard are shown in Table 2-2 and are found in the southwest of the site.

The greatest flood depths are found in the southwest of the site in the north of the site along the lowered topography of the unnamed watercourse which bisects the site. Depths in these areas exceed 1.2m. Velocities are also greatest in these areas, largely between 0.5m/s and 1.0m/s. Velocities across the remainder of the areas of risk remain below 0.25m/s. Hazard classification is largely 'Danger for Most' across the areas of risk, with 'Danger for All' in the southwest.

Table 2-2: Present day fluvial flood risk based on the River Tame model undefended outputs.

Assessment category	1% AEP
Percentage of site at risk (%)	25
Maximum depth (m)	2.60
Maximum velocity (m/s)	2.32
Maximum hazard classification	Danger for All (2.67)

2.3.4 Modelled risk - River Tame (defended)

The site is not protected by any formal flood defences. The 1% AEP defended extent shows similar risk to the 1% AEP undefended extent, as described in Section 2.3.3. The extents are shown to increase marginally, and depth, velocity, and hazard are all shown to increase slightly across the areas of risk.

The 0.1% AEP defended extent shows a similar extent to the FMfP Flood Zone 2 along the western side of the site but shows significantly increased risk in the north of the site.

The maximum flood depth and hazard recorded in Table 2-3 are predicted along the southwest site boundary. The flood extent in the north of the site shows flood depths which exceed 2.30m. Velocities increase in the north of the site to most between 1.0m/s and 2.0m/s along the northwestern site boundary. The northwest corner of the site shows the maximum flood velocity shown in Table 2-3. Hazard is classified as 'Danger for All' across most of the site but new areas of risk in the north of the site show a lower hazard classification of 'Danger for Most'.

Table 2-3: Present day fluvial flood risk based on the River Tame model defended outputs.

Assessment category	1% AEP	0.1% AEP
Percentage of site at risk (%)	26	44
Maximum depth (m)	2.71	4.10
Maximum velocity (m/s)	2.32	4.12
Maximum hazard classification	Danger for All (2.71)	Danger for All (17.39)

2.4 Surface water

2.4.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk. Velocity and hazard data is not currently available within this dataset, therefore the Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment to inform the velocity and hazard of surface water risk.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.4.2 Description of risk to the site

The main areas of surface water risk are in the north of the site and along the western boundary. Most of the site is not shown to be at surface water risk.

During the 3.3% AEP event, surface water flow paths follow the path of the tributaries of the River Tame in the northeast and southwest of the site. There are also isolated areas of ponding present in the southwest and north of the site. The maximum flood depth, hazard and velocity recorded in Table 2-4 are found in the southwest of the site. Flood depths within the areas of ponding in the north and southwest are not shown to exceed 0.30m, velocities remain below 0.25m/s, and hazard is classified as 'Very Low Hazard'.

The flood extent increases during the 1% AEP event, mainly in the northeast of the site where the flow path extent increases slightly and new areas of ponding emerge. Areas of ponding in the north of the site show depths which remain below 0.30m, maximum velocities between 0.25m/s and 0.5m/s, and hazard classification of 'Very Low Hazard'. The maximum velocity recorded in Table 2-4 is found in the southwest. Maximum hazard is classified as 'Danger for Most' in the southwest of the site and along the lowered topography of the watercourse in the northeast. Maximum flood depths are between 0.90m and 1.20m along the path of the northeastern watercourse.

The flood extent increases significantly during the 0.1% AEP event in the north of the site to form two large flow paths following the lowered topography of the unnamed watercourses. Maximum flood depths increase to between 1.20m and 2.30m along the path of the northern watercourse and the maximum hazard classification increases to 'Danger for All'. However, most of the flood extent within the site shows predicted flood depths of between 0.15m and 0.30m, velocities below 0.5m/s, and hazard classification of 'Danger for Most'.

Table 2-4: Present day surface water flood risk based on the EA's FMfP Surface Water Spatial Planning dataset (extent, depth) and RoFSW dataset (velocity, hazard).

Assessment category	High risk (3.3% AEP)	Medium risk (1% AEP)	Low risk (0.1% AEP)
Percentage of site at risk* (%)	2	5	8
Maximum depth (m)	0.60 - 0.90	0.90 - 1.20	1.20 - 2.30
Maximum velocity (m/s)	1.00 - 2.00	1.00 - 2.00	1.00 - 2.00
Maximum hazard classification	Danger for Most	Danger for Most	Danger for All

** 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

Reservoir flood mapping shows the western edge of the site to be affected by the Dry Day flood extents from Chasewater (Cannock Chase) and Bartley reservoirs which follow the path of the River Tame. The Chasewater (Cannock Chase) reservoir extent also affects the northwest corner of the site.

The areas of lowered topography in the west and north of the site are affected by several reservoirs during the Wet Day scenario:

- Belfry, Chasewater (Cannock Chase), Middleton Hall Lake, and Shustoke Lower show the largest extents.
- Canwell Estate, Earlswood Lakes - Engine Pool, Earlswood Lakes - Windmill Pool, Minworth Curdworth, and Rotton Park show slightly smaller extents in the north of the site, and similar extents along the west.
- Bartley remains mostly along the western boundary, with a narrow extent channelled along the path of the unnamed watercourse in the north of the site.
- Geary's Packington, Great Pool Packington, Hall Pool Packington, and Pendigo Lake only impact the western site boundary.

The Wet Day event seeks to estimate the effect of a breach at the same time as a 0.1% AEP river flood is occurring and suggests that the consequences of such a breach are similar to the modelled 0.1% AEP event river flood event but probably would be associated with a much lower probability.

2.6 Groundwater

The JBA Groundwater Emergence Map shows a high risk of groundwater emergence across the site. 64% of the site shows groundwater levels predicted within 0.5m of the ground surface within a 1% AEP flood event. Land adjacent to the western site boundary and land at the northwest corner the site show groundwater levels predicted to lie either at or within 0.025m of the ground surface.

Based on the surface water mapping and topography of the site it is likely that any groundwater that emerges will flow in a westerly direction towards the lowered elevations of the River Tame.

Areas adjacent to the northeast and southwest site boundaries are shown to be at negligible risk of groundwater emergence due to the nature of local geological deposits.

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 Severn Trent Drainage and Wastewater Management Plan (DWMP23) shows the site is not located within a Severn Trent sewer wastewater treatment works catchment.

Using data from the Severn Trent Water Sewer flooding database there have been no incidents of sewer flooding reported within the site boundary, or in areas immediately surrounding the site. However, further incidents of sewer flooding may have occurred which have not been recorded. Therefore, the risk of sewer flooding should be assessed further at the site-specific Flood Risk Assessment stage.

2.8 Flood history

The EA's Historic Flood Mapping and Recorded Flood outlines datasets show one record of flooding along the western site boundary. This is recorded to have been a fluvial flood event in December 1992.

Historic incident data provided by Staffordshire County Council show no records of historic flooding on or surrounding 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 4.6 of the Tamworth Level 2 SFRA Main 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 escape must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

Fluvial climate change extents have been taken from the EA's detailed River Tame hydraulic model. The defended extents for the 1% AEP plus 22% and 30% climate change have been used which represent the Central and Higher Central allowances for the 2080s epoch. These have been compared with the 1% AEP defended present day extent to assess the implications of climate change.

3.1.2 Description of risk to the site

The flood extent in the 1% AEP plus climate change events increases at the periphery of the 1% AEP (Flood Zone 3a) model extent, extending between approximately 5m and 50m further into the site.

Depth, velocity and hazard increase across the existing areas of flood risk present at the site; depths mostly increase to between 1.20 and 2.30m, velocities increase to mostly exceed 0.25m/s and hazard is classified as 'Danger for All'.

The area most sensitive to climate change is the northwest corner of the site, where depths increase to exceed 2.3m and the hazard classification increases to 'Danger for All' across most of the flood extent present at this northwest corner.

Fluvial risk in the north of the site mostly shows depths between 0.30m and 0.60m, velocities between 0.25m/s and 0.50m/s and are classified as 'Very Low Hazard'. New areas of flooding southwest of the site show increased risk, with flood depths of between 0.90m and 1.20m and velocities between 0.50m/s and 1.00m/s. These areas are classified as having a hazard of 'Danger for Most'.

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

Assessment category	1% AEP	1% AEP plus 22% CC	1% AEP plus 30% CC
Percentage of site at risk (%)	26	32	34
Maximum depth (m)	2.71	3.27	3.47
Maximum velocity (m/s)	2.32	2.36	2.37
Maximum hazard classification	Danger for All (2.71)	Danger for All (3.53)	Danger for All (3.68)

3.2 Surface water

3.2.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk with climate change. Climate change outputs are available for the 3.3%, 1%, and 0.1% AEP events with the Upper End climate change allowance for the 2070s epoch. There is currently no available velocity or hazard information to use within this assessment.

3.2.2 Description of risk to the site

Most of the site is not shown to be at risk of surface water flooding in future, with the 0.1% AEP climate change extent covering 12% of the site. However, the risk across the existing areas of surface water risk is shown to increase.

New areas of surface water ponding emerge between the 3.3% AEP present day and climate change events adjacent to the southwestern site boundary. This ponding shows flood depths below 0.15m. The greatest increase in extent is shown to the south of the northeastern tributary, which shows predicted flood depths of between 0.90m and 1.20m.

Between the 1% AEP present day and climate change events the extent increases at the southwestern site boundary, the northwestern site boundary and the banks of the northeastern tributary. Additional areas of flood risk in the southwest and northwest boundaries shows maximum depths remain below 0.15m. Additional areas which emerge to the north and south of the northeastern tributary show maximum depths of between 0.15m and 0.30m. Flood depths along existing areas of flood risk are shown to increase to between 0.60m and 0.90m at the southwest boundary and between 0.90m and 1.20m north and south of the northeastern tributary.

The 0.1% AEP climate change extent affects similar areas as the 0.1% AEP present day extent with a marginal increase in extent. The greatest increase in extent shown in the southwest of the site where an additional flow path forms adjacent to the southwestern site

boundary, showing depths below 0.15m. Additional areas of risk in the north of the site shows depths of between 0.15m and 0.30m.

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

Assessment category	1% AEP	1% AEP + Upper End CC
Percentage of site at risk (%)	5%	6%
Maximum depth (m)	0.90 - 1.20	0.90 - 1.20

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 northeastern watercourse is culverted before it enters the site, but the exact path of the culvert is unknown. There is a residual risk of blockage of the culvert increasing risk downstream within the site.

Asset data provided by Staffordshire County Council shows a number of bridge assets within the site along the northeastern watercourse which present a residual risk of increased risk due to blockages.

The site is at residual risk of reservoir flooding in the event of a breach from several reservoirs, as detailed in Section 2.5.

5 Emergency planning

5.1 Flood warnings and alerts

The west of the site is located in the Middle Tame EA Flood Alert Area (033WAF304). The site is not located within an EA Flood Warning Area.

5.2 Access and Escape

Safe access and escape 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

The site can currently be accessed via Wigford Road, adjacent to the southeast site boundary. There is also potential access from the northeast along the A51.

The site is bisected by both fluvial and surface water risk therefore access and escape to the northern end of the site will need to be considered separately to the rest of the site.

5.2.2 Fluvial

Access and escape to the south of the site via Wigford Road is not likely to be impeded in the 1% AEP plus climate change fluvial flood event.

However, as fluvial risk bisects the site, access and escape to the north of the site needs to be considered separately. Access and escape to the north is possible via the A51.

5.2.3 Surface water

The southern stretch of the A51 shows minimal surface water ponding in the 1% AEP climate change event. This ponding shows flood depths remain less than 0.15m. There is also minimal surface water ponding present at the housing estate which borders the east of the site and provides access to Wigford Road. Ponding present on Wigford Road also does not exceed 0.15m. Therefore, access and escape via the southeast of the site is likely to remain viable during the 1% AEP pus climate change surface water flood event.

A surface water flow path bisects the A51 approximately 80m north of the site. However, flood depths are predicted to be remain below 0.30m along the road which is unlikely to impede access and escape from the north and south of the site. However, a further flow path impacts Hedging Lane, where predicted flood depths between 0.90m and 1.20m, which would likely impact access and escape from the northeast of the site.

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

Surface water at the site should be discharged in accordance with the drainage hierarchy as set out in the National standards for SuDS (gov.uk). SuDS that provide opportunities to deliver multiple benefits including volume control, water quality, amenity, and biodiversity should be prioritised. SuDS proposals should be discussed with relevant stakeholders (Local Planning Authority (LPA), Lead Local Flood Authority (LLFA), and the EA) at an early stage to understand possible constraints. Where the national standards allow for local policy interpretation or discretion, applicants should refer to the Staffordshire County Council Flood Risk Management Team guidance and policies (staffordshire.gov.uk).

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.

The following factors should be considered when assessing whether infiltration is suitable at the site:

- Groundwater levels are indicated to be at or very near (within 0.025m) ground level along the western site boundary and land to the north and south of the northeastern watercourse 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 in these areas of the site
- BGS data indicates that the underlying geology in the west of the site is mudstone and is likely to be poorly draining whereas the underlying geology in the east of the site is sandstone which is likely to be free draining. Any proposed use of infiltration should be supported by infiltration testing. Off-site discharge in accordance with the SuDS hierarchy may be required to discharge surface water runoff subject to testing.
- 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.

If it is proposed to discharge runoff to a watercourse or sewer system, the condition and capacity or the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the asset owner.

The watercourses within the north of the site and along the western boundary should be integrated into the site drainage strategy as blue-green infrastructure and public open space.

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 Tame 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

The following are opportunities for wider sustainability benefits and integrated flood risk management at the site:

- 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.
- 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 Tame 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. The River Tame is considered to be of poor ecological status.

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 will be required for this site if 'More Vulnerable' development is proposed within Flood Zone 3a. 'More Vulnerable' development is not permitted within Flood Zone 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:

- Greater than one hectare
- In Flood Zones 2, 3a, and 3b
- At increased fluvial risk in future
- At risk of flooding from surface water and reservoirs
- At high risk of groundwater emergence

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 Tamworth 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

A buffer of at least 8m should be maintained between the watercourses within the site and any built development.

A sequential approach to the site layout should be adopted with the most vulnerable parts of the development steered away from the areas of fluvial and surface water risk along the western boundary and in the north of the site.

Developers should consider utilising the watercourses along the western boundary and in the north of the site as green corridors or as locations for SuDS.

Updates to the River Tame detailed hydraulic model are likely to be required at FRA stage, including to accurately represent the risk from this watercourse. This should include

modelling of the watercourses present within the site to accurately represent the risk from these watercourses.

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 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. In particular Staffordshire County Council as LLFA will require the drainage strategy to address:

- The drainage hierarchy and preference for infiltration where feasible.
- Use of source control measures at the earliest opportunity.
- Rainwater harvesting and reuse measures where practicable.
- Management of the first 5mm of rainfall (everyday rainfall).
- Above-ground, multifunctional SuDS that deliver water quality, biodiversity and amenity benefits.
- Reduction of runoff volumes and peak discharge rates.

Arrangements for safe access and escape 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 escape 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.

The residual risk of reservoir flooding at the site will need to be considered further at the site-specific FRA stage. An emergency plan may be required, demonstrating that the residual risks to the site can be safely managed and that appropriate evacuation plans are in place.

8 Conclusions

There is significant fluvial risk associated with the River Tame in the north of the site and along the western boundary. These areas also show surface water risk.

There are additional unnamed watercourses that flow through the northern and southern boundaries, shown to be at risk, represented in the surface water mapping.

There are areas of high groundwater emergence risk across the site and residual risk of flooding from reservoirs and culvert blockages.

The Exception Test will be required for this site if 'More Vulnerable' development is proposed within Flood Zone 3a. 'More Vulnerable' development is not permitted within Flood Zone 3b.

A site-specific FRA will be required for this site.

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

- A site-specific FRA should be undertaken, which assesses all sources of flood risk. This may require updates to the River Tame hydraulic model including modelling of the watercourses within the site and detailed surface water modelling to determine flood extents and inform the developable area and site layout.
- A sequential approach should be taken to the site layout with the most vulnerable aspects of the development steered away from the areas of highest risk in the west and north of the site.
- Safe access and escape should be considered in the design fluvial and surface water events. Access and escape to the north of the site should be considered separately due to the fluvial and surface water risk which are shown to bisect the site. Developers should demonstrate that safe access and escape routes can be achieved; however, any raising of access and escape routes must make sure that floodwater is not displaced elsewhere.
- A carefully considered and integrated flood resilient and sustainable drainage design should be put forward, including a site-specific Surface Water Drainage Strategy, and SuDS maintenance and management plan and supported by detailed modelling. Infiltration testing should be undertaken to confirm the groundwater levels and appropriateness of SuDS, to inform a sustainable drainage strategy in line with the SuDS hierarchy. Attenuation basins and other SuDS features should be located outside areas at risk of flooding.
- Opportunities should be explored to integrate biodiversity and amenity corridors alongside watercourse features.
- Severn Trent Water should be consulted at an early stage on drainage proposals for the site to identify any potential constraints or existing sewer flooding issues that may not have been identified through this high level assessment.

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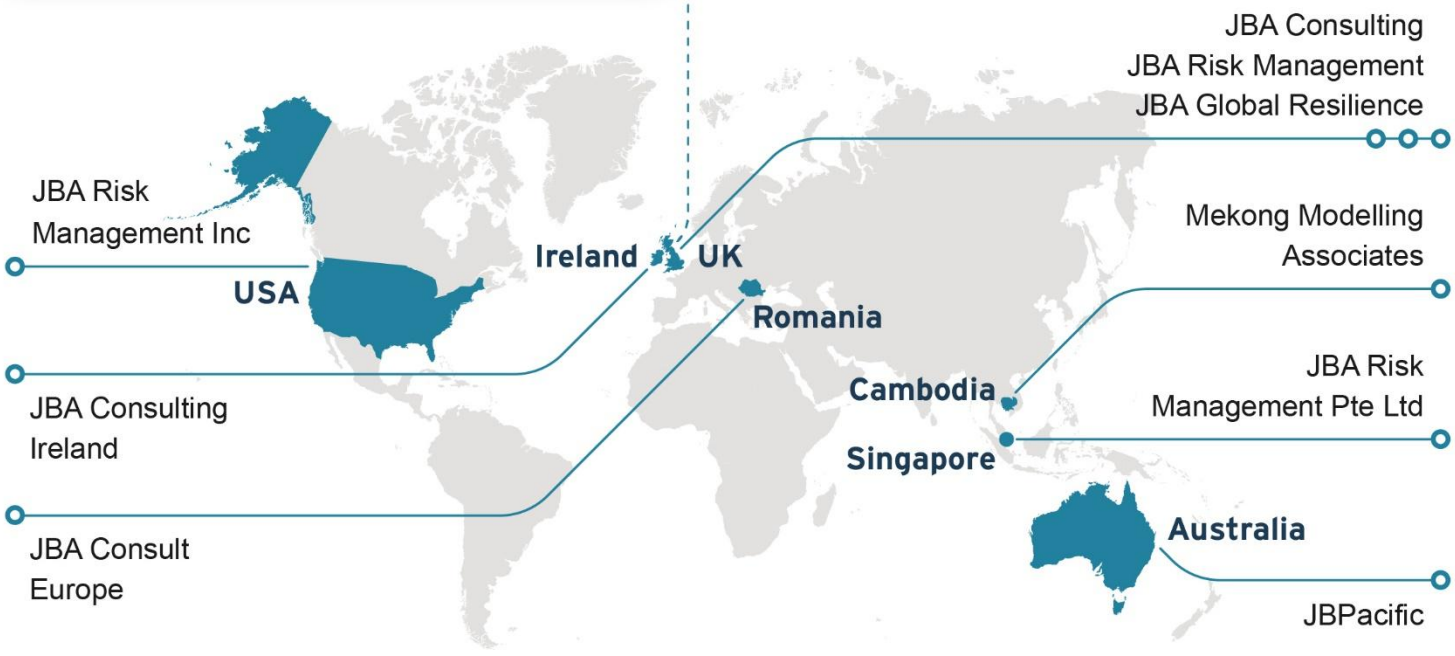

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Level 2 Strategic Flood Risk Assessment

Site 18/011

Prepared for:

Tamworth Borough Council

Contents

1 Background 4
1.1 Site details 4
1.2 Topography 4
1.3 Geology and soils 5

2 Sources of flood risk 6
2.1 Location of site within the catchment 6
2.2 Existing drainage features 6
2.3 Fluvial 6
2.4 Surface water 8
2.5 Reservoir 9
2.6 Groundwater 9
2.7 Sewers 10
2.8 Flood history 10

3 Climate change 11
3.1 Fluvial 11
3.2 Surface water 12

4 Flood risk management infrastructure 13
4.1 Defences 13
4.2 Residual risk 13

5 Emergency planning 14
5.1 Flood warnings and alerts 14
5.2 Access and Escape 14
5.3 Dry islands 14

6 Requirements for drainage control and impact mitigation 15
6.1 Broadscale assessment of possible SuDS 15
6.2 Opportunities for wider sustainability benefits and integrated flood risk management 16

7 NPPF and planning implications 17
7.1 Exception Test requirements 17

7.2 Requirements and guidance for site-specific Flood Risk Assessment 17
7.3 Guidance for site design and making development safe 17

8 Conclusions 19

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Site 18/011. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Tamworth Borough Level 1 SFRA (June 2025). The reader should also familiarise themselves with the Tamworth Borough Level 2 SFRA Main Report, where there is further explanation of the terminology used in this report.

1.1 Site details

- Location: The Alders and Tame House, Lichfield Road, Tamworth, B79 7SF
- Site area: 0.64ha
- 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 (updated in 2025). The site is mostly flat. Elevations range between 57.9mAOD and 59.0mAOD. The highest elevations are in the centre and north of the site and along the southern boundary. The lowest elevations are in a topographic depression in the west of the site.

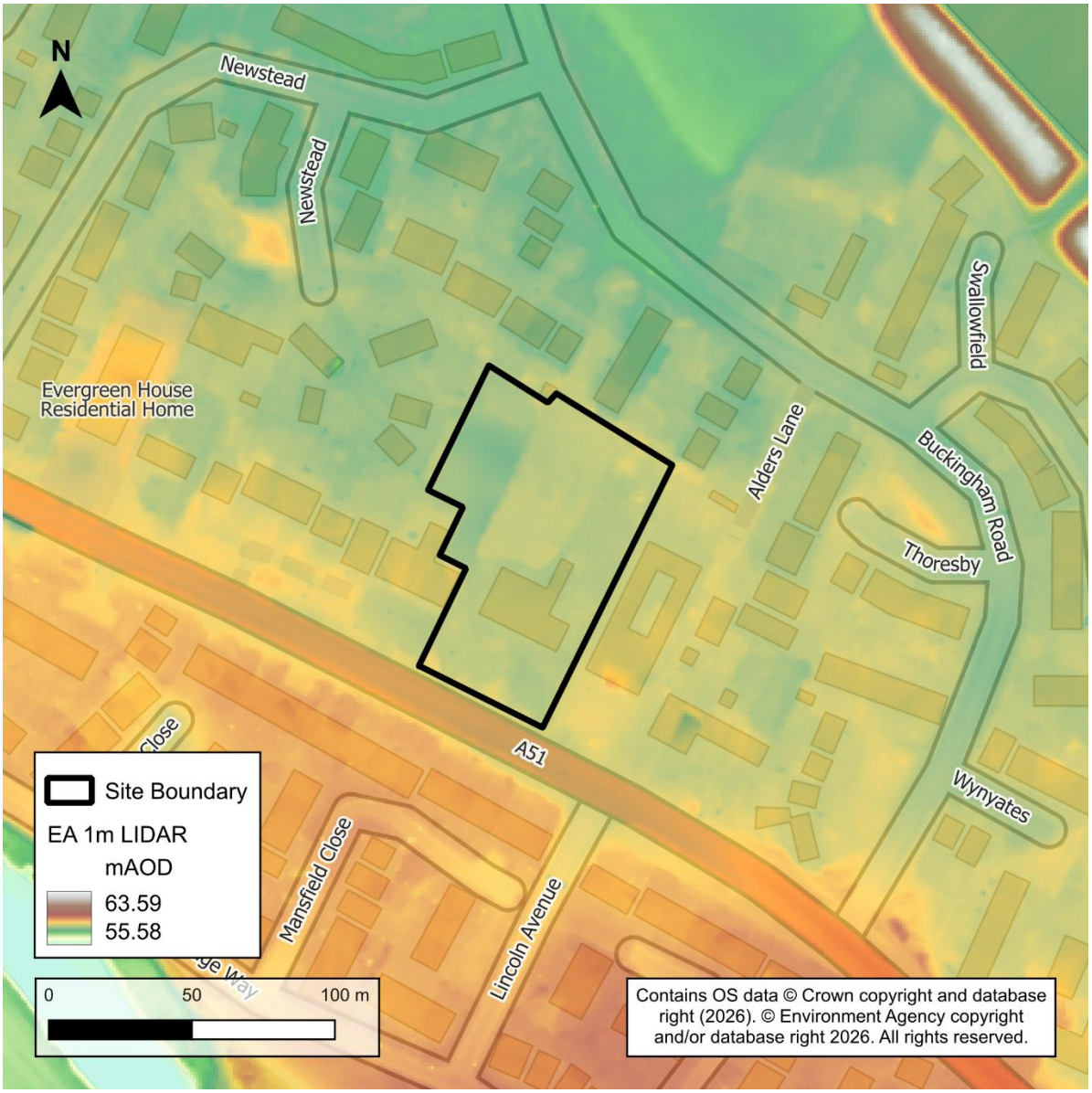

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Gunthorpe Member comprised of mudstone.
- Superficial - River Terrace Deposits comprised of sand and gravel.

Soils at the site consist of loamy soils with naturally high groundwater.

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located within the upstream reaches of the Tame from River Anker to River Trent Water Body within the Tame Lower Rivers and Lakes Operational Catchment. The catchment upstream of the site is urbanised, comprising the western side of Tamworth.

The River Tame flows in a westerly direction 150m southwest of the site and then continues in a northerly direction to join the River Tame approximately 10km north of the site.

2.2 Existing drainage features

Online mapping shows no existing drainage features within the site, however, based on its brownfield land use there is likely to be existing drainage infrastructure present within the site.

The River Tame flows in a westerly direction 150m southwest of the site.

2.3 Fluvial

2.3.1 Available data

The EA's Flood Map for Planning (FMfP) and the EA's detailed hydraulic model for the River Tame have been used in this assessment. Flood Zone 3b has been represented using the Rivers and Sea 3.3% AEP defended extent, as defined within the Tamworth Level 1 SFRA Main Report.

Available depth, velocity, and hazard information has been used to inform the risk from the River Tame for the 1% AEP undefended event (Flood Zone 3a) and the defended 1% and 0.1% AEP events. No depth velocity, or hazard data is currently available for the 3.3% AEP defended or 0.1% AEP undefended events (which have been inform by the EA national mapping), therefore, updates to the River Tame modelling to provide depth, velocity, and hazard data for these events may be required as part of a site-specific Flood Risk Assessment.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.3.2 EA Flood Zones

The site is at significant fluvial risk from the River Anker and River Tame.

Flood Zone 3b is not present on the site. Within Flood Zone 3a, floodwater is predicted to approach the site from the north and west and cover the west and parts of the south and east of the site. In this event, floodwater is not predicted to approach the site from the River Tame to the south as the flood extent remains south of the A51.

Flood Zone 2 inundates the entire site. In this event, floodwater is predicted to also approach directly from the River Tame from the south.

Table 2-1: Present day fluvial flood risk based on the EA FMfP *

Flood Zone 3b (%)	Flood Zone 3a (%)	Flood Zone 2 (%)	Flood Zone 1 (%)
0	57	100	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 3a and Flood Zone 3b percentage. Flood Zone 1 + Flood Zone 2 = 100%.*

2.3.3 Modelled risk - River Tame (undefended)

The 1% AEP undefended model extent from the River Tame shows a similar extent to Flood Zone 3a from the EA FMfP (as described in Section 2.3.2) and has been used to assess depth, velocity, and hazard across the sites within this event.

The maximum depths and hazard classification, detailed in Table 2-2, are found in the west of the site. Maximum depths across the centre of the site mostly remain below 0.15m and this risk is classified as 'Very Low Hazard'. Maximum velocities across the site are shown to remain below 0.11m/s.

Table 2-2: Present day fluvial flood risk based on the River Tame model undefended outputs.

Assessment category	1% AEP
Percentage of site at risk (%)	46
Maximum depth (m)	0.15
Maximum velocity (m/s)	0.10
Maximum hazard classification	Danger for Most (1.26)

2.3.4 Modelled risk - River Tame (defended)

The site is located within an area which benefits from defences, which is discussed further in Section 4.1. The defended model outputs from the EA's River Tame model show that the defences upstream of the site first overtop in the 5% AEP event and the defences downstream of the site first overtop in the 2% AEP event.

The 1% AEP defended scenario shows most of the site is at fluvial risk. Maximum depths are between 0.60m and 0.90m in the west of the site and between 0.30m and 0.60m across larger parts of the site. Maximum hazard classification reaches 'Danger for Most' in the west of the site and varies between 'Danger for Some' and 'Very Low Hazard' across the rest of the site. Maximum velocities across the site are shown to remain below 0.25m/s.

The 0.1% AEP defended scenario shows the entire site to be at fluvial risk. Maximum depths exceed 1.20m in the west of the site and exceed 0.60m across most of the site. There are small areas with maximum velocities between 0.25m/s and 0.50m/s around the

site boundary and in the southwest of the site. Otherwise, maximum velocities remain below 0.25m/s. Risk across the site is classified as 'Danger for Most'.

Table 2-3: Present day fluvial flood risk based on the River Tame model defended outputs.

Assessment category	1% AEP	0.1% AEP
Percentage of site at risk (%)	98	100
Maximum depth (m)	0.87	1.40
Maximum velocity (m/s)	0.43	0.49
Maximum hazard classification	Danger for Most (1.44)	Danger for Most (1.91)

2.4 Surface water

2.4.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk. Velocity and hazard data is not currently available within this dataset, therefore the Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment to inform the velocity and hazard of surface water risk.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.4.2 Description of risk to the site

Surface water flood risk on the site is primarily concentrated in the south of the site and within the topographic depression in the west of the site.

In the 3.3% AEP event a small area of ponding emerges in the southeast corner of the site. The highest depth, velocity, and hazard are shown in Table 2-4.

In the 1% AEP event the area of ponding in the southeast corner increases in extent and an area of ponding emerges in the topographic depression in the west of the site. Depths are mostly between 0.15m and 0.30m with velocities mostly remaining below 0.25m/s. Hazard classification mostly remains 'Very Low Hazard' with small areas of 'Danger for Some' in both areas of ponding.

In the 0.1% AEP there is a significant increase in the extent of surface water risk. The area of ponding in the southeast increases to cover most of the southern half of the site. The area of ponding in the west also increases in extent. Depths increase from the 1% AEP event to between 0.30m and 0.60m in large parts of the ponding in the west of the site and small areas in the southeast. The new area of risk across the south of the site mostly has maximum depths which remain below 0.15m. Whilst velocities largely remain below 0.25m/s there are some areas of higher velocities in the centre and southeast of the site. Larger areas of risk are shown to have a hazard classification of 'Danger for Some' than in the 1% AEP event.

Table 2-4: Present day surface water flood risk based on the EA's FMfP Surface Water Spatial Planning dataset (extent, depth) and RoFSW dataset (velocity, hazard).

Assessment category	High risk (3.3% AEP)	Medium risk (31% AEP)	Low risk (0.1% AEP)
Percentage of site at risk* (%)	3	15	44
Maximum depth (m)	0.15 - 0.30	0.15 - 0.30	0.30 - 0.60
Maximum velocity (m/s)	<0.25	0.25 - 0.50	1.00 - 2.00
Maximum hazard classification	Very Low Hazard	Danger for Some	Danger for Some

** 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 scenario from the EA reservoir flood maps.

During the West Day scenario, the site is shown to be at risk of reservoir flooding from four reservoirs. This risk from these reservoirs follows the path of the River Tame through Tamworth:

- Chasewater (Cannock Chase) and Shustoke Lower reservoir extents impact the entire site.
- Belfry and Middleton Hall Lake reservoir extents impact areas of lowered topography in the west and around the centre of the site, forming a small dry island in the centre of the site.

The Wet Day event seeks to estimate the effect of a breach at the same time as a 0.1% AEP river flood is occurring and suggests that the consequences of such a breach are similar to the modelled 0.1% AEP event river flood event but probably would be associated with a much lower probability.

2.6 Groundwater

The JBA Groundwater Emergence Map shows groundwater levels are predicted to lie within 0.025m of the ground surface in a 1% AEP groundwater flood event. This means that there is a risk of groundwater flooding to both surface and subsurface assets. Groundwater may emerge at significant rates and has the capacity to flow overland and/or pond within any topographic low spots.

Based on the topography of the site it is likely that any groundwater that emerges will pool within any topographic depressions.

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 Severn Trent Drainage and Wastewater Management Plan (DWMP23) shows the site is located within the Tamworth Water Treatment Works catchment. A high-level risk based screening did not identify internal or external sewer flooding as a key catchment risk or vulnerability.

Severn Trent Water provided their Hydraulic Sewer Flooding Risk Register for the borough which includes a list of properties which have reported at least one incidence of external or internal sewer flooding between June 1997 and August 2024. Based on the data provided there have been no properties that have reported flooding within the site boundary, or in areas immediately surrounding the site. However, further incidents of sewer flooding may have occurred which have not been recorded. Therefore, the risk of sewer flooding should be assessed further at the site-specific Flood Risk Assessment stage.

2.8 Flood history

The EA's Historic Flood Mapping and Recorded Flood outlines datasets do not have records of any flooding on the site. However, there are records of fluvial flooding nearby in June 1955 and December 1992 as a result of the River Tame overtopping. The extents for these events extend from the River Tame to the south of the A51, approximately 15m south of the site.

Historic incident data provided by Staffordshire County Council show no records of historic flooding on or surrounding 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 4.6 of the Tamworth Level 2 SFRA Main 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 escape must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

Fluvial climate change extents have been taken from the EA's detailed River Tame hydraulic model. The defended extents for the 1% AEP plus 22% and 30% climate change have been used which represent the Central and Higher Central allowances for the 2080s epoch.

3.1.2 Description of risk to the site

While most of the site is shown to be at fluvial risk in the 1% AEP present day event, in the climate change events, the entire site is shown to be at risk. Maximum depths are shown to increase across the entire site and hazard increases to 'Danger for Most' across most of the site. Maximum velocities increase but are still mostly shown to remain below 0.25m/s.

Table 3-1: Comparison of fluvial flood risk to the site between the 1% AEP and 1% AEP plus 22% defended climate change extents.

Assessment category	1% AEP	1% AEP plus 22% CC	1% AEP plus 30% CC
Percentage of site at risk (%)	98	100	100
Maximum depth (m)	0.87	1.21	1.25
Maximum velocity (m/s)	0.43	0.46	0.46
Maximum hazard classification	Danger for Most (1.44)	Danger for Most (1.71)	Danger for Most (1.74)

3.2 Surface water

3.2.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk with climate change. Climate change outputs are available for the 3.3%, 1%, and 0.1% AEP events with the Upper End climate change allowance for the 2070s epoch. There is currently no available velocity or hazard information to use within this assessment.

3.2.2 Description of risk to the site

Most of the site is shown to be at increased risk of surface water flooding with climate change, although the northern area of the site is not shown to be at risk until the 0.1% AEP climate change event.

Between the 3.3% AEP present day and climate change events the area and depth of ponding in the southeast increases in extent and ponding emerges in the west of the site.

Between the 1% AEP present day and climate change events the existing areas of ponding increase in extent and a new area of ponding forms in the southeast of the site. Depths increase to between 0.30m and 0.60m in the west of the site.

Between the 0.1% AEP present day and climate change events the existing areas of ponding increase in extent and depth, with a new area of risk which emerges in the north of the site.

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

Assessment category	1% AEP	1% AEP + Upper End CC
Percentage of site at risk (%)	15	26
Maximum depth (m)	0.15 - 0.30	0.30 - 0.60

4 Flood risk management infrastructure

4.1 Defences

The EA AIMS dataset shows there are a series of embankments and walls along the right bank of the River Tame upstream and downstream of the site.

Along the River Tame adjacent to the site, between approximately 600m upstream of the site and 280m downstream of the site, there are no formal flood defences however, the land along this river bank is naturally higher than the surrounding land.

The site is located within an area that is designed to benefit from the defences along the River Tame, which were built to a design standard of protection to protect against the 1% AEP event. The detailed River Tame modelling shows the defences do not overtop within the 10% AEP event. However, the defences upstream of the site first overtop within the 5% AEP event to the east of the A51 and B5493 roundabout, although the extent of fluvial risk only extends a short way north of the river. Downstream of the site the fluvial defences first overtop in the 2% AEP event with this fluvial extent reaching the site.

The EA have a project within the Flood and Coast Risk Management programme to improve the flood defences along the River Tame. There are currently no further details or timescales for this work, although the EA reported some early development work has been undertaken.

4.2 Residual risk

There is a residual risk of breach of the defences detailed in Section 4.1 increasing the risk to the site.

The site is at residual risk of flooding from several reservoirs, detailed in Section 2.5.

5 Emergency planning

5.1 Flood warnings and alerts

The site is located in the River Tame at Lichfield Road Tamworth EA Flood Warning Area (033FWF3TAME021) and the Middle Tame Flood Alert Area (033WAF304).

5.2 Access and Escape

Safe access and escape 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

Existing access to the site is from the A51 to the south.

5.2.2 Fluvial

Access and escape to the site is likely to be impeded in the 1% AEP plus climate change events. The entire site including the A51 adjacent to the site is shown to be at fluvial risk, with depths exceeding 0.30m and a hazard classification of 'Danger for All'.

5.2.3 Surface water

Access and escape are likely to be viable during all modelled AEP events. Although there are areas of surface water risk which emerge along the A51 within the vicinity of the site and considerable ponding within the site, depths largely remain below 0.30m in all modelled AEP events. However, this should be confirmed within a site-specific FRA including assessment of velocity and hazard at and surrounding the site.

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

Surface water at the site should be discharged in accordance with the drainage hierarchy as set out in the National standards for SuDS (gov.uk). SuDS that provide opportunities to deliver multiple benefits including volume control, water quality, amenity, and biodiversity should be prioritised. SuDS proposals should be discussed with relevant stakeholders (Local Planning Authority (LPA), Lead Local Flood Authority (LLFA), and the EA) at an early stage to understand possible constraints. Where the national standards allow for local policy interpretation or discretion, applicants should refer to the Staffordshire County Council Flood Risk Management Team guidance and policies (staffordshire.gov.uk).

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 following factors should be considered when assessing whether infiltration is suitable at 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 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.

If it is proposed to discharge runoff to a watercourse or sewer system, the condition and capacity or the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the asset owner.

SuDS assets should, where practicable, be located outside areas of flood risk in the 1% AEP plus climate change fluvial event. As the entire site is shown to be at fluvial risk within this event, this presents a significant constraint to the placement and design of sustainable

drainage options at this site. The LLFA should be consulted at an early stage to discuss appropriate drainage options, and the acceptability of SuDS features for the site.

Surface water outfalls that discharge into the River Tame may be susceptible to surcharging due to water levels in the River Tame. 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

The following are opportunities for wider sustainability benefits and integrated flood risk management at the site:

- Surface water discharge rates should not exceed pre-development discharge rates for the site and should be designed to be as close to greenfield runoff rates as reasonably practical in consultation 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.
- Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered.

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 required for this site because most of the site lies within Flood Zone 3a.

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:

- In Flood Zones 2 and 3a
- At increased risk of fluvial flooding in future
- At risk of flooding from surface water and reservoirs
- At high risk of groundwater emergence

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 Tamworth Borough 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

The entire site is shown to be at significant fluvial risk, and extensive mitigation will be required to make development safe at this site. Updates to the River Tame hydraulic model will be required at FRA stage including to accurately represent the risk from this watercourse for Flood Zone 3b and test mitigation measures. The modelling will be required to show that any land raising at the sites does not increase flood risk elsewhere.

Developers should consult the EA at an early stage to discuss proposals for the site, and options for improvements to the River Tame defences to increase the protection afforded to the site. Overtopping and breach of any defences will also need to be considered.

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 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. The significant fluvial risk at the site may affect the viability of sustainable drainage options, along with the predicted high groundwater levels and low permeability geology. The LLFA should therefore be consulted at an early stage to discuss a suitable approach to surface water management and drainage design. In particular Staffordshire County Council as LLFA will require the drainage strategy to address:

- The drainage hierarchy and preference for infiltration where feasible.
- Use of source control measures at the earliest opportunity.
- Rainwater harvesting and reuse measures where practicable.
- Management of the first 5mm of rainfall (everyday rainfall).
- Above-ground, multifunctional SuDS that deliver water quality, biodiversity and amenity benefits.
- Reduction of runoff volumes and peak discharge rates.

A CCTV survey and site investigations should be undertaken to establish the location, condition and connectivity of existing drainage infrastructure. Confirmation of the proposed discharge location, available capacity, and any required third-party permissions should be secured at an early stage.

Arrangements for safe access and escape have not currently been demonstrated for the fluvial climate change event and will therefore need to be considered further within a site-specific FRA, using depth, velocity, and hazard outputs. Provisions for safe access and escape 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.

Due to the fluvial risk surrounding the site, a Flood Warning and Evacuation Plan will be required to be prepared which considers the likely onset and duration of flooding and demonstrates how residents can safely be evacuated and/or shelter safely in situ during the design events.

The residual risk of reservoir flooding at the site will need to be considered further at the site-specific FRA stage. An emergency plan may be required, demonstrating that the residual risks to the site can be safely managed and that appropriate evacuation plans are in place.

8 Conclusions

The site is at significant fluvial risk both now and in the future, with the entire site at fluvial risk within the 1% AEP plus 22% climate change event. This will also impede access and escape to the site. Whilst the site is located within an area benefiting from the flood defences along the River Tame, detailed modelling shows these defences are overtopped in the 2% AEP event.

The west and south of the site are at significant surface water risk. The site is also at risk of flooding from reservoirs and high risk of groundwater emergence.

The Exception Test will be required for this site as it is predominantly located within Flood Zone 3a. If built development is proposed at this site, significant mitigation will be required to ensure the development is safe for its lifetime and does not increase flood risk elsewhere.

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

- A site-specific FRA should be undertaken, which assesses all sources of flood risk. This may require updates to the River Tame hydraulic model and detailed surface water modelling.
- Early consultation should be undertaken with the EA to understand proposed works to improve the fluvial flood defences on the River Tame and potential to reduce the fluvial risk to the site. Assessment of the residual risk to the site, including from breach or overtopping of any proposed flood defences would also need to be considered.
- Significant surface water flood risk has been identified across parts of the site, and suitable mitigation measures will be required. Source control measures should be prioritised including rainwater reuse and harvesting, blue-green roofs, smart water butts, rain gardens, tree pits, and other nature-based drainage solutions.
- Existing surface water flow pathways should be maintained and incorporated into the site design, potentially through the use of swales or other above-ground conveyance features.
- Safe access and escape should be considered in the design fluvial and surface water events. Developers should demonstrate that safe access and escape routes can be achieved; however, any raising of access and escape routes must make sure that floodwater is not displaced elsewhere. Where safe access and escape is not possible, other means of safe refuge and evacuation must be considered. Due to the fluvial risk surrounding the site, a Flood Warning and Evacuation Plan will be required to be prepared which considers the likely onset and duration of flooding and demonstrates how residents can safely be evacuated and/or shelter safely in situ during the design events.
- Habitable areas of residential ('More Vulnerable') development must be set above the design flood level (1% AEP plus a suitable climate change allowance).

- A carefully considered and integrated flood resilient and sustainable drainage design should be put forward, including a site-specific Surface Water Drainage Strategy, and SuDS maintenance and management plan and supported by detailed modelling. Infiltration testing should be undertaken to confirm the groundwater levels and appropriateness of SuDS, to inform a sustainable drainage strategy in line with the SuDS hierarchy. The fluvial risk at the site may present a significant constraint to the implementation of SuDS at the site and will require early consultation with the LLFA to identify viable options.
- Severn Trent Water should be consulted at an early stage on drainage proposals for the site to identify any potential constraints or existing sewer flooding issues that may not have been identified through this high level assessment.

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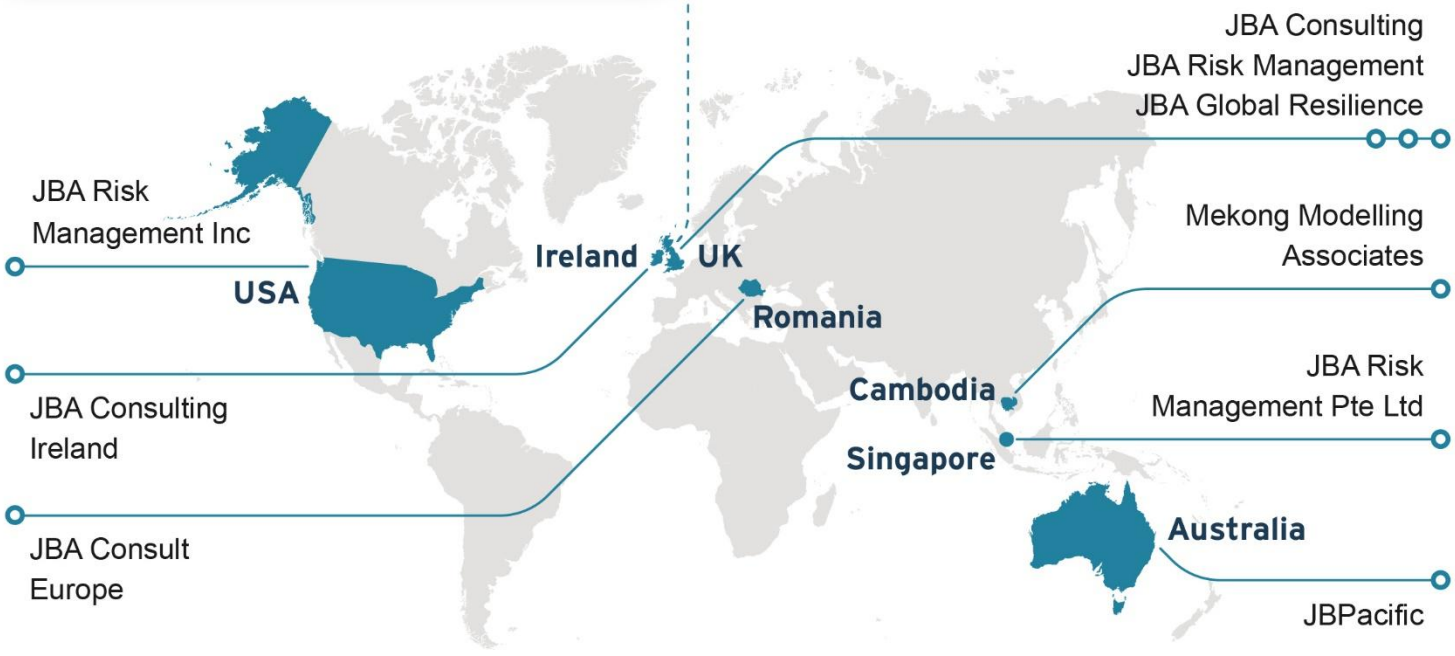

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Level 2 Strategic Flood Risk Assessment

Site 18/018

Prepared for:

Tamworth Borough Council

Contents

1 Background 4
1.1 Site details 4
1.2 Topography 4
1.3 Geology and soils 5

2 Sources of flood risk 6
2.1 Location of site within the catchment 6
2.2 Existing drainage features 6
2.3 Fluvial 6
2.4 Surface water 6
2.5 Reservoir 7
2.6 Groundwater 7
2.7 Sewers 8
2.8 Flood history 8

3 Climate change 9
3.1 Fluvial 9
3.2 Surface water 9

4 Flood risk management infrastructure 11
4.1 Defences 11
4.2 Residual risk 11

5 Emergency planning 12
5.1 Flood warnings and alerts 12
5.2 Access and Escape 12
5.3 Dry islands 12

6 Requirements for drainage control and impact mitigation 13
6.1 Broadscale assessment of possible SuDS 13
6.2 Opportunities for wider sustainability benefits and integrated flood risk management 13

7 NPPF and planning implications 15
7.1 Exception Test requirements 15

7.2 Requirements and guidance for site-specific Flood Risk Assessment 15
7.3 Guidance for site design and making development safe 15

8 Conclusions 17

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for 18/018. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Tamworth Borough Level 1 SFRA (June 2025). The reader should also familiarise themselves with the Tamworth Borough Level 2 SFRA Main Report, where there is further explanation of the terminology used in this report.

1.1 Site details

- Location: Arriva Bus Depot
- Site area: 0.40ha
- Existing site use: Brownfield
- Proposed site use: Unconfirmed (likely to be promoted for residential use)

1.2 Topography

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR.

The site is shown to be mostly flat, with lower elevations than the surrounding land to the east, south, and west. Average elevations across the site are 67.0mAOD and the maximum elevation is 68.3mAOD in the southeast corner of the site.

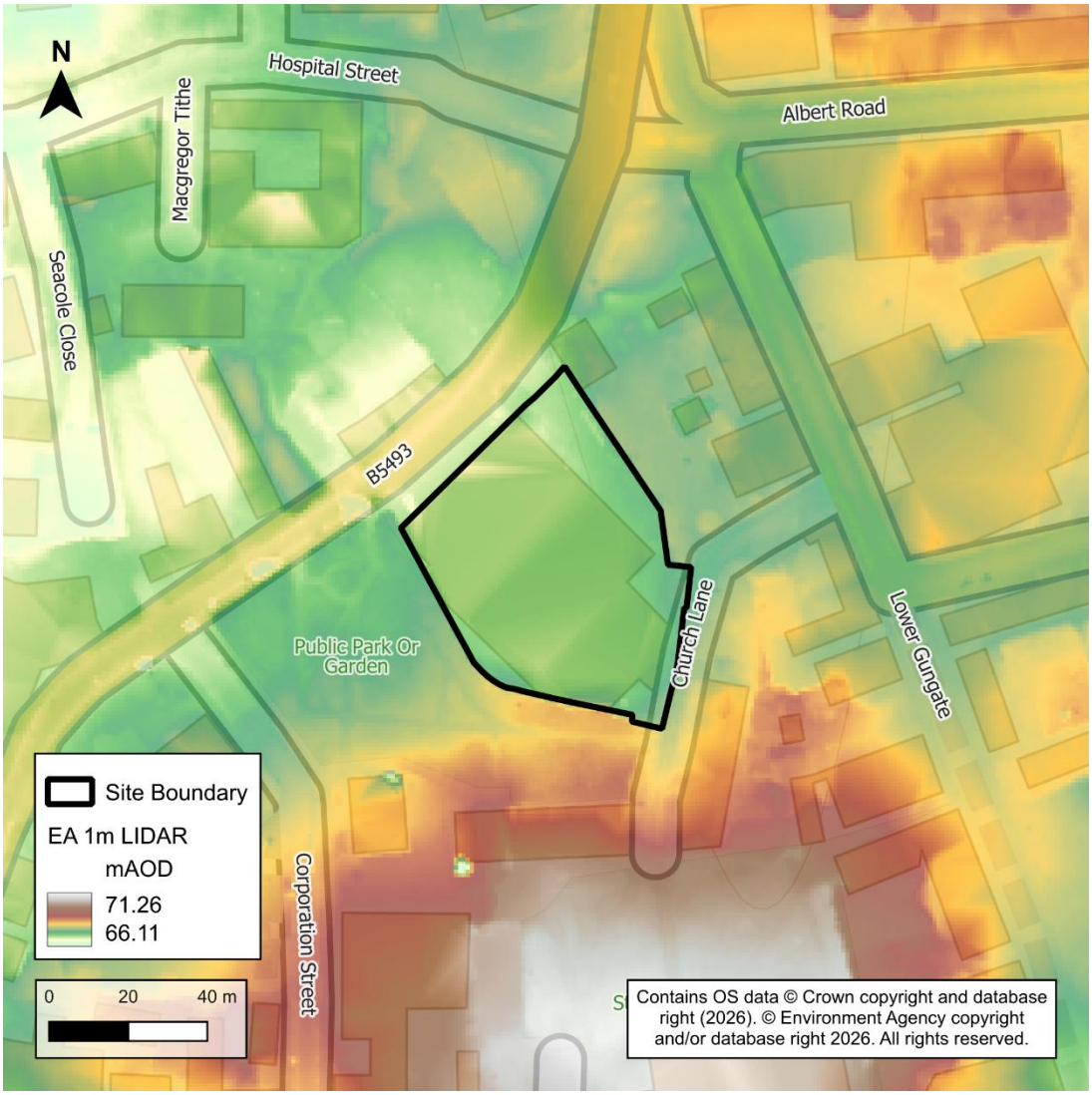

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Gunthorpe Member comprised of mudstone.
- Superficial - Till comprised of diamicton.

Soils at the site consist of loamy soils with naturally high groundwater.

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located in the Tame from River Anker to River Trent Water Body catchment, which lies in the Tame Lower Rivers and Lakes operational catchment. The site is located in west Tamworth in the upper reaches of the catchment. The upstream area of the catchment is predominantly urban, and the downstream end of the catchment is mostly rural with some small settlements on the banks of the River Tame.

The River Tame is located approximately 400m south of the site and converges with the River Trent approximately 10km north of the site.

2.2 Existing drainage features

Online mapping shows no existing drainage features within the site, however, based on its brownfield land use there is likely to be existing drainage infrastructure present within 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 lies wholly within Flood Zone 1 and is not shown to be at fluvial flood risk based on the EA FMfP.

2.4 Surface water

2.4.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk. Velocity and hazard data is not currently available within this dataset, therefore the Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment to inform the velocity and hazard of surface water risk.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.4.2 Description of risk to the site

In the 3.3% AEP event, there is a surface water flow path which forms on the B5493 approximately 5m northwest of the site. However, the extent of this flow path does not encroach on the site.

During the 1% AEP event, the extent of the flow path on the B5493 increases and reaches the northwestern site boundary but does not encroach further into the site. Flood depths do not exceed 0.15m, and velocities mostly do not exceed 0.25m/s. Hazard is classified as 'Very Low Hazard'.

During the 0.1% AEP event, the flood extent increases to cover most of the site. The flood extent aligns with the extent of the existing bus depot building present in the site. Undeveloped areas adjacent to the northern site boundary are not shown to be at risk. Across the site, flood depths are mostly between 0.15m and 0.30m and flood velocities mostly remain below 0.25m/s. However, depths are predicted to reach between 0.60m and 0.90m in the southwest of the site. Flood velocity increases to exceed 0.5m/s along the northern periphery of the flood extent. Hazard classification is mostly 'Very Low Hazard' with 'Danger for Some' in the areas of increased depths in the southwest of the site and small areas of 'Danger for Most' in the southeast of the site.

Table 2-1: Present day surface water flood risk based on the EA's FMfP Surface Water Spatial Planning dataset (extent, depth) and RoFSW dataset (velocity, hazard).

Assessment category	High risk (3.3% AEP)	Medium risk (1% AEP)	Low risk (0.1% AEP)
Percentage of site at risk* (%)	0	<1	89
Maximum depth (m)	N/A	<0.15	0.60 - 0.90
Maximum velocity (m/s)	N/A	0.25 - 0.5	0.5 - 1.0
Maximum hazard classification	N/A	Very Low Hazard	Danger 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).*

2.5 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 site to be at negligible risk of groundwater flooding due to the nature of local geological deposits.

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 Severn Trent Drainage and Wastewater Management Plan (DWMP23) shows the site is located in the Tamworth Wastewater Treatment Works catchment. The high-level risk based screening did not identify internal or external sewer flooding as a key catchment risk or vulnerability.

Severn Trent Water provided their Hydraulic Sewer Flooding Risk Register for the borough which includes a list of properties which have reported at least one incidence of external or internal sewer flooding between June 1997 and August 2024. Based on the data provided there have been no properties that have reported flooding within the site boundary, or in areas immediately surrounding the site. However, further incidents of sewer flooding may have occurred which have not been recorded. Therefore, the risk of sewer flooding should be assessed further at the site-specific Flood Risk Assessment stage.

2.8 Flood history

The EA's Historic Flood Mapping and Recorded Flood outlines datasets do not have records of any flooding on or surrounding the site.

Historic incident data provided by Staffordshire County Council show no records of historic flooding on or surrounding 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 4.6 of the Tamworth Level 2 SFRA Main 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 escape must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

Fluvial climate change extents have been taken from existing detailed models where they are available, where not available the NaFRA2 Flood Zones plus climate change layer has been used this uses the Central allowance for the 2080s epoch.

3.1.2 Description of risk to the site

The site is not shown to be at fluvial risk in the future.

3.2 Surface water

3.2.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk with climate change. Climate change outputs are available for the 3.3%, 1%, and 0.1% AEP events with the Upper End climate change allowance for the 2070s epoch. There is currently no available velocity or hazard information to use within this assessment.

3.2.2 Description of risk to the site

Between the 3.3% AEP and 3.3% AEP plus climate change events, the flood extent increases along the B5493 to minorly encroach on the northwestern site boundary. Flood depths do not exceed 0.15m.

Between the 1% AEP and the 1% AEP plus climate change event, there is a large increase in the flood extent which inundates most of the site. The flood extent which follows the extent of the existing bus depot building shows depths which remain below 0.15m. The southern periphery of the flood extent shows depths of between 0.30m and 0.60m in undeveloped areas at the southern site boundary.

The flood extent inundates most of the site in the 0.1% AEP event. Between the 0.1% AEP and 0.1% AEP plus climate change event there is a small increase in the extent which encroaches further towards the northern site boundary. Additional areas of risk in the north of the site show flood depths of between 0.15m and 0.30m in the northwest corner but most of the additional areas of ponding shows depths which do not exceed 0.15m. Depths across the rest of the site are shown to remain predominantly between 0.15m and 0.30m.

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

Assessment category	1% AEP	1% AEP + Upper End CC
Percentage of site at risk (%)	<1	85
Maximum depth (m)	<0.15	0.30 - 0.60

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 Escape

Safe access and escape will need to be demonstrated in the 1% AEP plus climate change surface water event. 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 currently be accessed from the entry point in the northwest corner of the site. Additionally, Church Lane runs along the southeast of the site.

5.2.2 Fluvial

The site and surrounding roads are not shown to be at fluvial risk.

5.2.3 Surface water

During the 1% AEP plus climate change surface water flood event, a flow path emerges on the B5493 immediately northwest of the site. Predicted flood depths are between 0.30m and 0.60m adjacent to the northwest site boundary which may impede vehicular access and escape.

Predicted surface water ponding on Church Lane reaches maximum depths of between 0.15m and 0.30m at the junction with Spinning School Lane and similar depths at the junction of Spinning School Lane and Marmion Street. Therefore, safe access and escape may be possible via this route but will need to be further assessed as part of a site-specific FRA including consideration of predicted velocity and hazard.

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

Surface water at the site should be discharged in accordance with the drainage hierarchy as set out in the National standards for SuDS (gov.uk). SuDS that provide opportunities to deliver multiple benefits including volume control, water quality, amenity, and biodiversity should be prioritised. SuDS proposals should be discussed with relevant stakeholders (Local Planning Authority (LPA), Lead Local Flood Authority (LLFA), and the EA) at an early stage to understand possible constraints. Where the national standards allow for local policy interpretation or discretion, applicants should refer to the Staffordshire County Council Flood Risk Management Team guidance and policies (staffordshire.gov.uk).

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 following factors should be considered when assessing whether infiltration is suitable at the site:

- BGS data indicates that the underlying geology is 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 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.

If it is proposed to discharge runoff to a sewer system, the condition and capacity or the receiving asset should be confirmed through surveys and the discharge rate agreed with the asset owner.

6.2 Opportunities for wider sustainability benefits and integrated flood risk management

The following are opportunities for wider sustainability benefits and integrated flood risk management at the site:

- Surface water discharge rates should not exceed pre-development discharge rates for the site and should be designed to be as close to greenfield runoff rates as reasonably practical in consultation 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.

- Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered.

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 Exception Test is not required for this site because the site is not shown to be at fluvial flood risk based on the EA FMfP.

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 at risk of flooding from surface water, now and in future.

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 Walsall 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

Detailed surface water modelling will be required within a site-specific FRA to quantify the volume of surface water on the site and demonstrate that appropriate mitigations can be put in place to make the development safe for its lifetime. Detailed modelling will also be required to demonstrate that safe access and escape can be achieved.

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 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. In particular Staffordshire County Council as LLFA will require the drainage strategy to address:

- The drainage hierarchy and preference for infiltration where feasible.
- Use of source control measures at the earliest opportunity.
- Rainwater harvesting and reuse measures where practicable.
- Management of the first 5mm of rainfall (everyday rainfall).
- Above-ground, multifunctional SuDS that deliver water quality, biodiversity and amenity benefits.
- Reduction of runoff volumes and peak discharge rates.

A CCTV survey and targeted site investigations should be undertaken to determine the location and condition of existing drainage assets. Evidence should be provided to demonstrate available downstream capacity and confirmation obtained from the relevant asset owner where discharge is proposed to an existing sewer or watercourse. The proposed point of surface water discharge should be clearly identified.

Arrangements for safe access and escape will need to be provided for the 1% AEP surface event 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 escape 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 site is shown to be at significant surface water flood risk in the 1% AEP plus climate change and 0.1% AEP events encompassing most of the site. The site is not shown to be at flood risk from any other sources.

The Exception Test is not required for this site because the entire site is not shown to be at fluvial risk within the EA's FMfP. A site-specific FRA will be required because the proposed development site is subject to surface water flooding both now and in the future.

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

- Surface water flow routes should be maintained and accommodated within the site layout.
- A carefully considered and integrated flood resilient and sustainable drainage design should be put forward, including a site-specific Surface Water Drainage Strategy, and SuDS maintenance and management plan and supported by detailed modelling.
- Safe access and escape routes should be demonstrated in the 1% AEP plus climate change surface water event. This initial assessment has shown that access and escape may be impeded during the 1% AEP plus climate change surface water event from the B5493 but may be possible via Church Lane. This will require further assessment within a site-specific FRA.
- Severn Trent Water should be consulted at an early stage on drainage proposals for the site to identify any potential constraints or existing sewer flooding issues that may not have been identified through this high level assessment.

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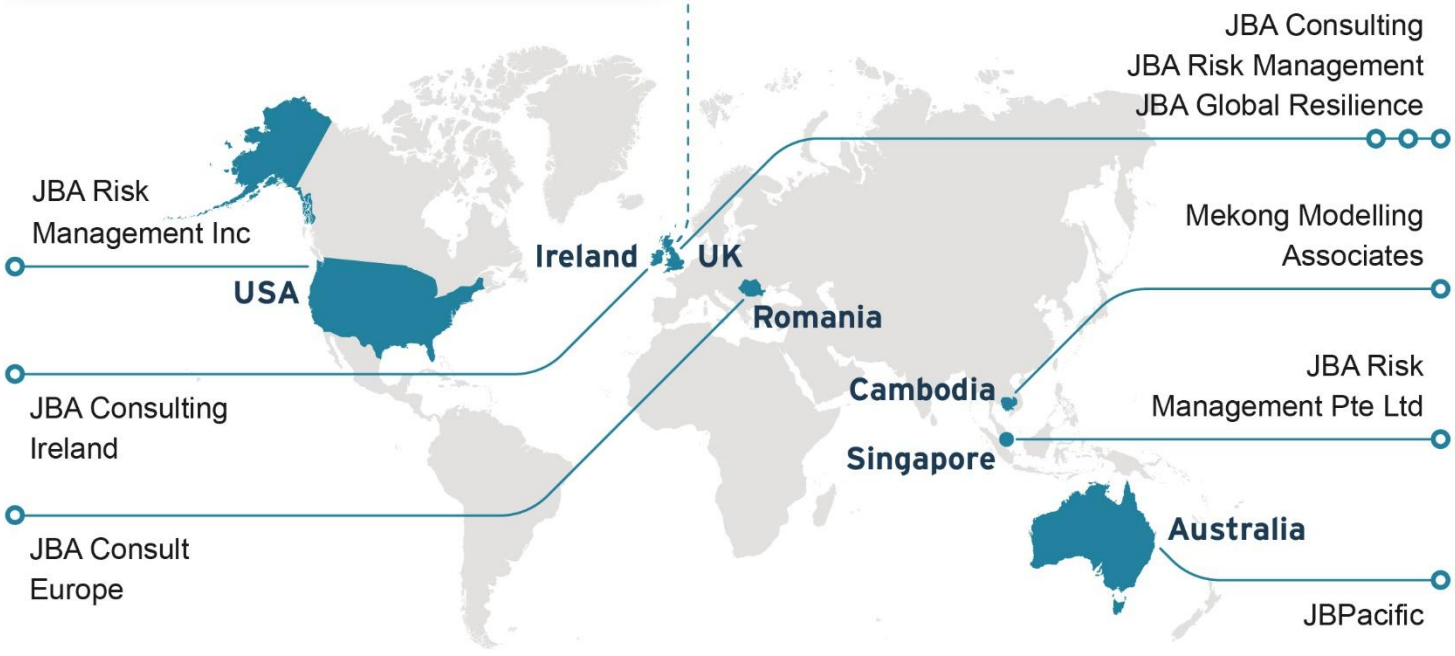

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Level 2 Strategic Flood Risk Assessment

Site 18/019

Prepared for:

Tamworth Borough Council

Contents

1 Background 4
1.1 Site details 4
1.2 Topography 4
1.3 Geology and soils 5

2 Sources of flood risk 6
2.1 Location of site within the catchment 6
2.2 Existing drainage features 6
2.3 Fluvial 6
2.4 Surface water 6
2.5 Reservoir 7
2.6 Groundwater 7
2.7 Sewers 8
2.8 Flood history 8

3 Climate change 9
3.1 Fluvial 9
3.2 Surface water 9

4 Flood risk management infrastructure 11
4.1 Defences 11
4.2 Residual risk 11

5 Emergency planning 12
5.1 Flood warnings and alerts 12
5.2 Access and Escape 12
5.3 Dry islands 12

6 Requirements for drainage control and impact mitigation 13
6.1 Broadscale assessment of possible SuDS 13
6.2 Opportunities for wider sustainability benefits and integrated flood risk management 14

7 NPPF and planning implications 15
7.1 Exception Test requirements 15

7.2 Requirements and guidance for site-specific Flood Risk Assessment 15
7.3 Guidance for site design and making development safe 15

8 Conclusions 17

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for 18/019. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Tamworth Borough Level 1 SFRA (June 2025). The reader should also familiarise themselves with the Tamworth Borough Level 2 SFRA Main Report, where there is further explanation of the terminology used in this report.

1.1 Site details

- Location: Northern Part of Beauchamp Employment Area
- Site area: 1.09ha
- Existing site use: Brownfield
- Proposed site use: Unconfirmed (likely to be promoted for residential use)

1.2 Topography

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR (updated in 2025).

The topography at the site is highest in the northwest of the site, with a maximum elevation of approximately 76.3mAOD. The elevation gradually slopes down in elevation towards the southeast corner of the site, with a minimum elevation of approximately 75.0mAOD.

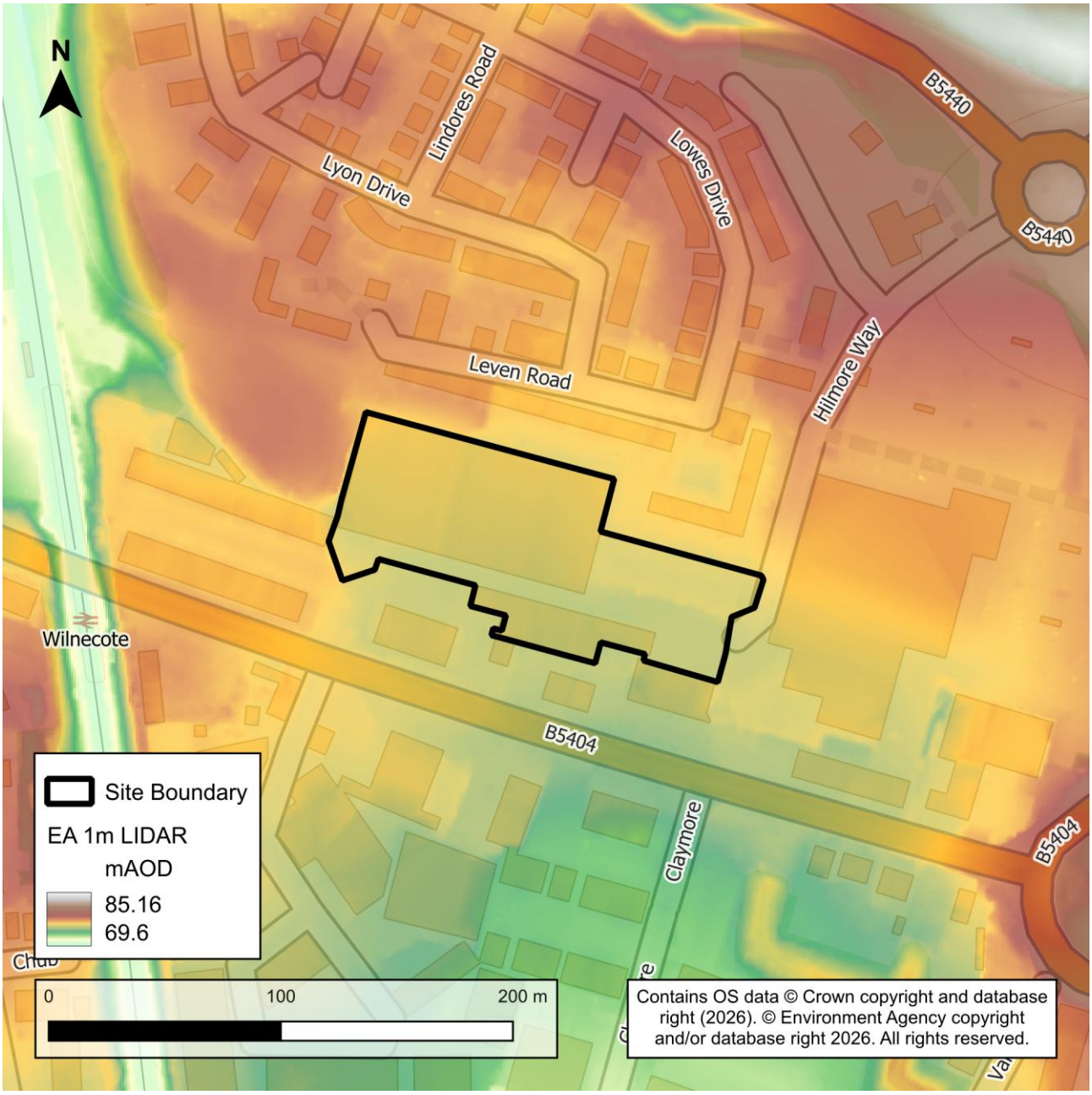

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Pennine Middle Coal Measures Formation comprised of mudstone, siltstone and sandstone.
- There are no superficial deposits present at the site.

Soils at the site consist of slowly permeable seasonally wet acid loamy and clayey soils.

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located in the downstream end of the Tame from River Blythe to River Anker Water Body catchment, which lies in the Tame Lower Rivers and Lakes Operational Catchment. The site is located in the centre of the North area of the catchment. The catchment area upstream of the site is approximately 0.67km2. The downstream end of the catchment is mostly urban, encompassing several settlements to the south and southeast of Tamworth, such as Belgrave, Wilencote and Fazeley. The upstream end of the catchment is predominantly comprised of rural areas on the banks of the River Tame, which is located approximately 880m west of the site.

2.2 Existing drainage features

Online mapping shows no existing drainage features present within or surrounding the site, however, based on its brownfield land use there is likely to be existing drainage infrastructure present within 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 lies fully within Flood Zone 1 and is not shown to be at fluvial flood risk based on the EA FMfP.

2.4 Surface water

2.4.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk. Velocity and hazard data is not currently available within this dataset, therefore the Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment to inform the velocity and hazard of surface water risk.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.4.2 Description of risk to the site

During the 3.3% AEP event, there is an instance of surface water ponding present between the existing buildings just above the southern site boundary. Flood depths do not exceed 0.15m and velocities do not exceed 0.25m/s. Hazard is classified as 'Very Low Hazard'.

During the 1% AEP flood event, the area at risk to the south of the site increases to reach the southern site boundary. Flood depths do not exceed 0.6m and velocities do not exceed 0.5m/s. Hazard is classified at 'Very Low Hazard' for most of the site, with a small area classified as 'Danger for Some' across this extent.

During the 0.1% AEP flood event, the surface water extent increases, covering the majority of the site. Flood depths during this event are predominantly between 0.30m and 0.60m and the velocity is 1.0m/s and 2m/s. There is a small instance along the west site boundary where surface water flooding with a maximum depth of between 0.6m and 0.9m begins to encroach into the site. Hazard is classified as 'Danger For Some' for most of the site, with a small area classified as 'Danger for Most' across this extent.

Table 2-1: Present day surface water flood risk based on the EA's FMfP Surface Water Spatial Planning dataset (extent, depth) and RoFSW dataset (velocity, hazard).

Assessment category	High risk (3.3% AEP)	Medium risk (1% AEP)	Low risk (0.1% AEP)
Percentage of site at risk* (%)	5	27	85
Maximum depth (m)	0.15 - 0.30	0.30 - 0.60	0.60 - 0.90
Maximum velocity (m/s)	0.25 - 0.50	0.50 - 1.00	1.00 - 2.00
Maximum hazard classification	Very Low Hazard	Danger for Some	Danger 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).*

2.5 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 site to be at negligible risk of groundwater emergence based on the nature of the underlying local geological deposits.

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 Severn Trent Drainage and Wastewater Management Plan (DWMP23) shows the site is located within the Tamworth Water Treatment Works catchment. A high-level risk based screening did not identify internal or external sewer flooding as a key catchment risk or vulnerability.

Severn Trent Water provided their Hydraulic Sewer Flooding Risk Register for the borough which includes a list of properties which have reported at least one incidence of external or internal sewer flooding between June 1997 and August 2024. Based on the data provided there have been no properties that have reported flooding within the site boundary, or in areas immediately surrounding the site. However, further incidents of sewer flooding may have occurred which have not been recorded. Therefore, the risk of sewer flooding should be assessed further at the site-specific Flood Risk Assessment stage.

2.8 Flood history

The EA's Historic Flood Mapping and Recorded Flood outlines datasets do not have records of any flooding on or surrounding the site.

Historic incident data provided by Staffordshire County Council show no records of historic flooding on or surrounding 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 4.6 of the Tamworth Level 2 SFRA Main 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 escape must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

As the risk of fluvial flooding at the site has been assessed by the New National Modelling, the Rivers and Sea fluvial climate change extents have been used to assess the risk with climate change. These use the Central allowance for the 2080s epoch and are available for the 3.3% AEP (Flood Zone 3b), 1% AEP (Flood Zone 3a) and 0.1% AEP (Flood Zone 2) events.

3.1.2 Description of risk to the site

The site is not shown to be at fluvial flood risk based on the available climate change data.

3.2 Surface water

3.2.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk with climate change. Climate change outputs are available for the 3.3%, 1%, and 0.1% AEP events with the Upper End climate change allowance for the 2070s epoch. There is currently no available velocity or hazard information to use within this assessment.

3.2.2 Description of risk to the site

Between the 3.3% AEP present day and climate change events, the risk in the centre of the site increases, encroaching down to the southern site boundary. Maximum depths remain between 0.15m and 0.30m.

During the 1% AEP surface water flood event, the surface water is predominantly present in the south of the site, covering around 27% of the site. However, during the 1% AEP plus climate change surface water event, the extent increases significantly to the north of the site, covering 81% of the site. Maximum depth during the 1% AEP event is between 0.30m and 0.60m, located to the centre of the surface water extent. During the 1% AEP plus

climate change surface water event, maximum depth stays between 0.30m and 0.60m, but the extent of this depth increases to cover a larger portion of the centre of the site.

Between the 0.1% AEP present day and climate change events, the extent increases slightly from 85% to 89%. The flow path in the northeast of the site increases in extent, reaching the eastern site boundary. During the 0.1% AEP plus climate change surface water event, the extent of surface water flooding with maximum depths between 0.3m and 0.6m increases significantly, particularly in the southwest of the site.

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

Assessment category	1% AEP	1% AEP + Upper End CC
Percentage of site at risk (%)	27	81
Maximum depth (m)	0.30 - 0.60	0.30 - 0.60

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 within an EA Flood Warning or Flood Alert Area.

5.2 Access and Escape

Safe access and escape will need to be demonstrated in the 1% AEP plus climate change surface water event. 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

Existing access to the site is from the entry point at the southwestern corner of the site from the B5404, and along the eastern site boundary from Hillmore Way, approaching from the north.

5.2.2 Fluvial

Access and escape are likely to remain viable in the 1% AEP plus climate change fluvial event as there is no fluvial risk surrounding the site.

5.2.3 Surface water

To the east of the site along the B5404, there are a few instances of surface water ponding with maximum depths of between 0.15m and 0.30m if approaching from Claymore. Another instance of surface water ponding is present on the B5404 approximately 150m east of the site at the roundabout, showing maximum depths of between 0.30m and 0.60m, meaning vehicular access may be impeded if approaching from the east. However, access and escape from west along the B5404 is not shown to be impacted.

The surface water risk area in the site extends onto the access road Hillmore Way at the eastern site boundary, but maximum depths do not exceed 0.3m, meaning vehicular access is still viable.

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

Surface water at the site should be discharged in accordance with the drainage hierarchy as set out in the National standards for SuDS (gov.uk). SuDS that provide opportunities to deliver multiple benefits including volume control, water quality, amenity, and biodiversity should be prioritised. SuDS proposals should be discussed with relevant stakeholders (Local Planning Authority (LPA), Lead Local Flood Authority (LLFA), and the EA) at an early stage to understand possible constraints. Where the national standards allow for local policy interpretation or discretion, applicants should refer to the Staffordshire County Council Flood Risk Management Team guidance and policies (staffordshire.gov.uk).

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 following factors should be considered when assessing whether infiltration is suitable at 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.
- BGS data indicates that the underlying geology is comprised of mudstone, siltstone and sandstone 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.
- The site is not located within a historic landfill site.

If it is proposed to discharge runoff to a sewer system, the condition and capacity or the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the asset owner.

6.2 Opportunities for wider sustainability benefits and integrated flood risk management

The following are opportunities for wider sustainability benefits and integrated flood risk management at the site:

- Surface water discharge rates should not exceed pre-development discharge rates for the site and should be designed to be as close to greenfield runoff rates as reasonably practical in consultation 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.
- Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered.

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 Exception Test is not required for this site because the site is not shown to be at fluvial 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:

- Greater than one hectare
- At risk of 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 Tamworth Borough 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

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 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. In particular Staffordshire County Council as LLFA will require the drainage strategy to address:

- The drainage hierarchy and preference for infiltration where feasible.
- Use of source control measures at the earliest opportunity.
- Rainwater harvesting and reuse measures where practicable.
- Management of the first 5mm of rainfall (everyday rainfall).
- Above-ground, multifunctional SuDS that deliver water quality, biodiversity and amenity benefits.
- Reduction of runoff volumes and peak discharge rates.

A CCTV survey and targeted site investigations should be undertaken to determine the location and condition of existing drainage infrastructure. Confirmation of available downstream capacity and any necessary landowner or undertaker permissions should be secured. The proposed surface water discharge point should be identified and justified.

Finished Floor Levels should be raised above the expected height of flooding in line with the EA's guidance and any raising of ground levels should ensure that flood risk is not increased elsewhere.

Arrangements for safe access and escape will need to be provided for the 1% AEP surface event 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 escape 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 site is shown to be at surface water flood risk in the 3.3%, 1%, and 0.1% AEP events. Surface water flooding is shown to increase significantly in all climate change surface water flood events.

The Exception Test is not required for this site because the entire site is not shown to be at fluvial risk within the EA's FMfP.

A site-specific FRA will be required because the proposed development site is subject to surface water flooding.

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

- A carefully considered and integrated flood resilient and sustainable drainage design should be put forward, including a site-specific Surface Water Drainage Strategy, and SuDS maintenance and management plan and supported by detailed modelling.
- Flood mitigation measures should be implemented then tested to check that they will not displace water elsewhere (for example, if land is raised to permit development in one area, compensatory flood storage will be required in another).
- Existing surface water flow routes should be maintained and appropriately integrated within the development layout.
- Safe access and escape routes should be demonstrated in the 1% AEP plus climate change surface water event.
- Severn Trent Water should be consulted at an early stage on drainage proposals for the site to identify any potential constraints or existing sewer flooding issues that may not have been identified through this high level assessment.

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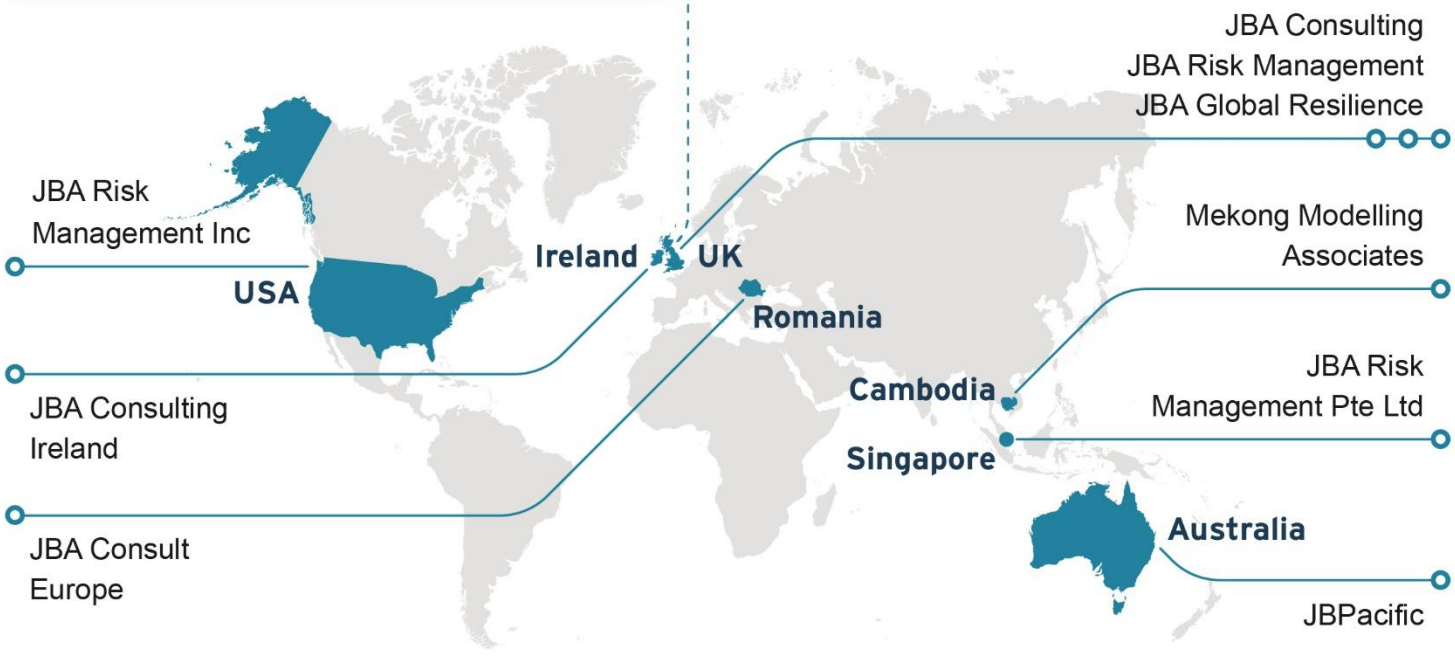

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Level 2 Strategic Flood Risk Assessment

Site 18/028

Prepared for:

Tamworth Borough Council

Contents

1 Background 4
1.1 Site details 4
1.2 Topography 4
1.3 Geology and soils 5

2 Sources of flood risk 6
2.1 Location of site within the catchment 6
2.2 Existing drainage features 6
2.3 Fluvial 6
2.4 Surface water 8
2.5 Reservoir 9
2.6 Groundwater 9
2.7 Sewers 9
2.8 Flood history 10

3 Climate change 11
3.1 Fluvial 11
3.2 Surface water 11

4 Flood risk management infrastructure 13
4.1 Defences 13
4.2 Residual risk 13

5 Emergency planning 14
5.1 Flood warnings and alerts 14
5.2 Access and Escape 14
5.3 Dry islands 14

6 Requirements for drainage control and impact mitigation 15
6.1 Broadscale assessment of possible SuDS 15
6.2 Opportunities for wider sustainability benefits and integrated flood risk management 16

7 NPPF and planning implications 17
7.1 Exception Test requirements 17

7.2 Requirements and guidance for site-specific Flood Risk Assessment 17
7.3 Guidance for site design and making development safe 17

8 Conclusions 19

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for 18/028. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Tamworth Borough Level 1 SFRA (June 2025). The reader should also familiarise themselves with the Tamworth Borough Level 2 SFRA Main Report, where there is further explanation of the terminology used in this report.

1.1 Site details

- Location: Treetops Garage Dosthill
- Site area: 0.39ha
- Existing site use: Brownfield, occupied by a car garage
- Proposed site use: Unconfirmed (but likely to be promoted to residential)

1.2 Topography

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR (updated in 2025).

The site is mostly flat, with a maximum elevation of 64.9mAOD at the southwest of the site, and a minimum elevation of 64.0mAOD at the centre of the northern site boundary. This area of lower elevation slopes away from the northern site boundary to an area of slightly lower elevation to the north of approximately 63.7mAOD.

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Pennine Lower Coal Measures Formation comprised of mudstone, siltstone, and sandstone.
- Superficial - Predominantly alluvium comprised of clay, silt, sand and gravel covering the north and east of the site. There are no superficial deposits along the southwestern site boundary.

Soils at the site consist of slowly permeable seasonally wet acid loamy and clayey soils.

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located in the downstream end of the River Tame from River Blythe to River Anker Water Body Catchment, which lies in the Tame Lower Rivers and Lakes operational catchment. The upper reaches of the catchment are predominantly rural, comprised of open green spaces on the banks of the River Tame. The downstream end of the catchment is predominantly urban, with settlements such as Belgrave, Wilnecote, Fazeley and Dotshill.

The River Tame is located approximately 600m west of the site and is joined by the River Anker approximately 3km north of the site.

2.2 Existing drainage features

There are no confirmed existing drainage features present within the site however there is likely to be existing infrastructure present due to the site comprising brownfield land.

Based on online mapping and asset data provided by Staffordshire County Council there is an unnamed culverted watercourse which flows in a westerly direction through the settlement of Dosthill. This watercourse becomes an open channel approximately 95m to the north of the site. The watercourse discharges into the River Tame approximately 630m northeast of the site. The path of the culvert is unconfirmed and may flow within the site.

The River Tame flows in a northerly direction approximately 600m west of the site.

2.3 Fluvial

2.3.1 Available data

The EA's Flood Map for Planning (FMfP) and the EA's detailed hydraulic model for the River Tame have been used in this assessment. Flood Zone 3b has been represented using the Rivers and Sea 3.3% AEP defended extent, as defined within the Tamworth Level 1 SFRA Main Report.

Available depth, velocity, and hazard information has been used to inform the risk from the River Tame for the 1% AEP undefended event (Flood Zone 3a) and the defended 1% and 0.1% AEP events. No depth velocity, or hazard data is currently available for the 3.3% AEP defended or 0.1% AEP undefended events (which have been inform by the EA national mapping), therefore, updates to the River Tame modelling to provide depth, velocity, and hazard data for these events may be required as part of a site-specific Flood Risk Assessment.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.3.2 EA Flood Zones

The northeast side of the site is at significant fluvial risk. The southwest of the site is not shown to be at fluvial risk.

Flood Zone 3b is not present on the site. Flood Zone 3a covers 48% of the site, across the northeastern side and centre of the site. Flood Zone 2 extents further south into the site, covering an additional 12% of the site.

It should be noted that the FMfP extents in this area are from broadscale mapping and are not reflective of the underlying topography, shown in the EA LiDAR data. There is a culverted watercourse upstream of the site which becomes an open watercourse downstream of the site. The exact path of this watercourse is unknown and could potentially result in some overland flows which may impact the site. However, the key fluvial risk at this site is be associated with water backing up along the path of the downstream ordinary watercourse from the River Tame. The River Tame model extents, which the EA intend to include within the FMfP in future, are believed to provide a better representation of the fluvial risk at this site. These are discussed in Sections 2.3.3 and 2.3.4.

Table 2-1: Present day fluvial flood risk based on the EA FMfP *

Flood Zone 3b (%)	Flood Zone 3a (%)	Flood Zone 2 (%)	Flood Zone 1 (%)
0	48	58	42

**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 3a and Flood Zone 3b percentage. Flood Zone 1 + Flood Zone 2 = 100%.*

2.3.3 Modelled risk - River Tame (undefended)

During the 1% AEP undefended model extent from the River Tame the site is not shown to be at fluvial flood risk. The flood extent from the River Tame remains approximately 100m northwest of the site.

2.3.4 Modelled risk - River Tame (defended)

The 1% AEP defended model extent from the River Tame remains approximately 100m northwest of the site but the flood extent in this area is shown to increase slightly compared with the 1% AEP undefended model extent and depths are also shown to increase.

The 0.1% AEP defended extent shows the same percentage area of the site to be at risk as the EA FMfP Flood Zone 2, however, the area of risk differs. Flood Zone 2 affects the northeastern part of the site only, whilst the 0.1% AEP defended extent covers the entire northern part of the site, including the area in the west not shown to be within Flood Zone 2.

During the 0.1% AEP defended River Tame event, flood extents enter the site from the north and west, encroaching into the centre of the site. Maximum depths are between 0.30m and 0.60m at the centre of the northern site boundary, reducing to depths of less than 0.15m across the centre of the site. Maximum velocities during this event are between

1.0m/s and 2.0m/s along the northern site boundary, with velocities decreasing to less than 0.25m/s across the centre and east of the site. Maximum hazard is classified as 'Danger For Most' during this event, however, risk across most of the site is classified as 'Very Low Hazard'.

Table 2-2: Present day fluvial flood risk based on the River Tame model defended outputs.

Assessment category	0.1% AEP
Percentage of site at risk (%)	60
Maximum depth (m)	0.30 - 0.60
Maximum velocity (m/s)	1.0 - 2.0
Maximum hazard classification	Danger for Most

2.4 Surface water

2.4.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk. Velocity and hazard data is not currently available within this dataset, therefore the Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment to inform the velocity and hazard of surface water risk.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.4.2 Description of risk to the site

During the 3.3% AEP surface water event, there are instances of surface water ponding in the southeastern corner of the site and in the west of the site. Maximum depth, velocity, and hazard shown in Table 2-3 are found in the southeast of the site. Outside the northern site boundary, an instance of surface water ponding emerges but only reaches the northern site boundary.

Similarly, during the 1% AEP surface water event, instances of surface water ponding are primarily in the same locations as during the 3.3% AEP surface water event but increase in extent. A new instance of surface water ponding is apparent just outside the middle of the southern site boundary and reaches the southern site boundary but does not encroach further into the site. Maximum depths, velocity, and hazard during this event are found in the southeast of the site.

During the 0.1% AEP surface water event, extents increase significantly at the site, covering the eastern half of the site. Additionally, a new surface water flow path emerges along the southern site boundary. Maximum depths during this event are in the southeast of the site and at the northern site boundary between 0.30m and 0.60m. Depths across the centre of the site are mostly between 0.15m and 0.30m. Maximum velocity during this event

is between 1.0m/s and 2.0m/s in the northeastern corner of the site. Maximum hazard classification during this event is 'Danger for Most' in the east and north of the site although large areas of the site have a hazard of 'Very Low Hazard' or 'Danger for Some'.

Table 2-3: Present day surface water flood risk based on the EA's FMfP Surface Water Spatial Planning dataset (extent, depth) and RoFSW dataset (velocity, hazard).

Assessment category	High risk (3.3% AEP)	Medium risk (1% AEP)	Low risk (0.1% AEP)
Percentage of site at risk* (%)	15	23	64
Maximum depth (m)	0.15 - 0.30	0.30 - 0.60	0.30 - 0.60
Maximum velocity (m/s)	0.25 - 0.50	0.25 - 0.50	1.00 - 2.00
Maximum hazard classification	Very Low Hazard	Danger for Some	Danger 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).*

2.5 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 site is deemed to be at negligible risk of groundwater emergence due to the nature of the underlying geological deposits.

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 Severn Trent Drainage and Wastewater Management Plan (DWMP23) shows the site is located within the Tamworth Water Treatment Works catchment. A high-level risk based screening did not identify internal or external sewer flooding as a key catchment risk or vulnerability.

Severn Trent Water provided their Hydraulic Sewer Flooding Risk Register for the borough which includes a list of properties which have reported at least one incidence of external or internal sewer flooding between June 1997 and August 2024. Based on the data provided there have been no properties that have reported flooding within the site boundary, or in areas immediately surrounding the site. However, further incidents of sewer flooding may

have occurred which have not been recorded. Therefore, the risk of sewer flooding should be assessed further at the site-specific Flood Risk Assessment stage.

2.8 Flood history

The EA's Historic Flood Mapping and Recorded Flood outlines datasets do not have records of any flooding on or surrounding the site.

Historic incident data provided by Staffordshire County Council show no records of historic flooding on or surrounding 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 4.6 of the Tamworth Level 2 SFRA Main 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 escape must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

Fluvial climate change extents have been taken from the EA's detailed River Tame hydraulic model. The defended extents for the 1% AEP plus 22% and 30% climate change have been used which represent the Central and Higher Central allowances for the 2080s epoch. These have been compared with the 1% AEP defended present day extent to assess the implications of climate change.

3.1.2 Description of risk to the site

The site is not shown to be at risk of fluvial flooding during the 1% AEP climate change events, with the extent remaining approximately 90m northeast of the site.

3.2 Surface water

3.2.1 Available data

The EA’s Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk with climate change. Climate change outputs are available for the 3.3%, 1%, and 0.1% AEP events with the Upper End climate change allowance for the 2070s epoch. There is currently no available velocity or hazard information to use within this assessment.

3.2.2 Description of risk to the site

Between the 3.3% AEP present day and climate change events the extents of the areas of surface water ponding increase slightly in the southeastern corner and the west of the site. A new instance of surface water ponding also appears in the middle of the southern site boundary. Maximum surface water depths increase to between 0.30m and 0.60m in the southeastern corner.

Between the 1% AEP present day and climate change events the extents increase with a new flow path emerging bisecting through the centre of the site to the northern site

boundary. Maximum surface water depths remain at between 0.3m and 0.6m during this event, increasing in extent to encompass most of the southeast of the site, and with new instances emerging at the northern site boundary.

Between the 0.1% AEP present day and climate change events the risk increases significantly encompassing most of the site, with only an area near the northern site boundary, and an area at the southern site boundary which remain free of surface water flooding. Maximum depths during this event increase from between 0.30m and 0.60m to between 0.60m and 0.90m in the southeast of the site, with larger areas also shown to have depths between 0.30m and 0.60m.

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

Assessment category	1% AEP	1% AEP + Upper End CC
Percentage of site at risk (%)	23	43
Maximum depth (m)	0.30 - 0.60	0.30 - 0.60

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 potentially a residual risk to the site from the culverted watercourse surcharging resulting in overland flows which could impact the site. Further investigation is required to determine the location of the culvert and whether this is within the site boundary.

5 Emergency planning

5.1 Flood warnings and alerts

The northeast half of the site is located in the Middle Tame (033WAF304) EA Flood Alert Area. The site is not located in an EA Flood Warning Area.

5.2 Access and Escape

Safe access and escape 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

There are two existing access points to the site from the A51 which runs along the east site boundary.

5.2.2 Fluvial

The EA FMfP Flood Zones 2 and 3 show both access points from the A51 are within the fluvial flood extents. However, in the 1% AEP plus climate change extents from the River Tame hydraulic model, the site and access points are not shown to be at fluvial risk.

5.2.3 Surface water

During the 1% AEP plus climate change surface water flood event, the A51 is completely inundated with surface water along the eastern site boundary from a major flow path which flows from the east of the site, through the site and towards the lower topography to the northwest. Surface water depths are mainly between 0.15m and 0.30m along the A51, however there are areas of depths between 0.30m and 0.60m, so access and escape may be impeded. Further assessment will be required within a site-specific FRA, including assessment of velocity and hazard.

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

Surface water at the site should be discharged in accordance with the drainage hierarchy as set out in the National standards for SuDS (gov.uk). SuDS that provide opportunities to deliver multiple benefits including volume control, water quality, amenity, and biodiversity should be prioritised. SuDS proposals should be discussed with relevant stakeholders (Local Planning Authority (LPA), Lead Local Flood Authority (LLFA), and the EA) at an early stage to understand possible constraints. Where the national standards allow for local policy interpretation or discretion, applicants should refer to the Staffordshire County Council Flood Risk Management Team guidance and policies (staffordshire.gov.uk).

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 following factors should be considered when assessing whether infiltration is suitable at 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.
- BGS data indicates that the underlying geology is comprised of mudstone, siltstone and sandstone 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 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.

If it is proposed to discharge runoff to a sewer system, the condition and capacity or the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the asset owner.

Where possible, proposed attenuation features such as basins, ponds and tanks should be located outside of Flood Zone 2 to avoid the potential risks to the hydraulic capacity or structural integrity of these features

6.2 Opportunities for wider sustainability benefits and integrated flood risk management

The following are opportunities for wider sustainability benefits and integrated flood risk management at the site:

- Surface water discharge rates should not exceed pre-development discharge rates for the site and should be designed to be as close to greenfield runoff rates as reasonably practical in consultation 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.
- 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 Tame 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. The River Tame is considered to be of poor ecological status.

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 site is currently shown to be within the EA FMfP Flood Zone 3a and would therefore require the Exception Test. However, the River Tame modelling shows the site is not at fluvial risk during the 1% AEP event which is considered to provide a better prediction of the fluvial risk to this site and is due to be included within future updates of the FMfP. The fluvial risk will need to be considered further within a detailed site-specific FRA, but it is likely that the Exception Test will not be required for this 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:

- in Flood Zones 2 and 3
- 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 Tamworth Borough 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

A sequential approach to the site layout should be adopted with the most vulnerable parts of the development steered away from the areas of fluvial risk in the north of the site.

Finished Floor Levels should be raised above the expected height of flooding in line with the EA's guidance and any raising of ground levels should ensure that flood risk is not increased elsewhere.

Updates to the River Tame detailed hydraulic model are likely to be required at FRA stage to accurately represent the risk from this watercourse and test mitigation measures. The modelling will be required to show that any land raising at the sites does not increase flood risk elsewhere.

Further investigation is required to determine if a culverted watercourse is present within the site. If a watercourse is located within the site boundary, no built development should be permitted within 8m of the watercourse. CCTV survey may be required to assess the condition of the culvert.

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 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. In particular Staffordshire County Council as LLFA will require the drainage strategy to address:

- The drainage hierarchy and preference for infiltration where feasible.
- Use of source control measures at the earliest opportunity.
- Rainwater harvesting and reuse measures where practicable.
- Management of the first 5mm of rainfall (everyday rainfall).
- Above-ground, multifunctional SuDS that deliver water quality, biodiversity and amenity benefits.
- Reduction of runoff volumes and peak discharge rates.

Arrangements for safe access and escape have not currently been demonstrated for the surface water climate change event and will therefore need to be considered further within a site-specific FRA, using depth, velocity, and hazard outputs. Provisions for safe access and escape 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 north and the east of the site are at fluvial risk from the River Tame which is located approximately 600m from the western site boundary. Flood Zone 2 impacts the site but there is no evidence of historic fluvial flooding to the site. The FMfP indicates significant fluvial flood risk across the northeastern part of the site, with Flood Zones 2 and 3a extending into the site, although these extents are considered to overestimate the fluvial risk due to the broadscale nature of the mapping. Comparatively, the River Tame modelling indicates a lower level of fluvial risk than shown by the FMfP, with no flooding predicted during the 1% AEP River Tame events and flooding only affecting the northern part of the site during the defended 0.1% AEP event.

The site has significant surface water flood risk in all modelled AEP surface water events.

Access and escape from the A51 is likely to remain possible during fluvial flood events; however, this has not yet been demonstrated during the 1% AEP plus climate change surface water flood event. Further assessment will therefore be required as part of a site-specific FRA, including consideration of surface water velocity and hazard.

Further assessment of the fluvial risk will need to be undertaken to confirm the requirements for the Exception Test, which should be applied if 'More Vulnerable' development is proposed within Flood Zone 3a.

A site-specific FRA will be required.

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

- A site-specific FRA should be undertaken, which assess all sources of flood risk.
- A sequential approach to development layout should be taken, steering more vulnerable aspects of the development away from the area of highest risk in the north and east of the site.
- Habitable areas of residential ('More Vulnerable') development must be set above the design flood level (1% AEP plus a suitable climate change allowance).
- Safe access and escape routes should be demonstrated in the 1% AEP plus climate change surface water event.
- A carefully considered and integrated flood resilient and sustainable drainage design should be put forward, including a site-specific Surface Water Drainage Strategy, and SuDS maintenance and management plan and supported by detailed modelling.
- Flood mitigation measures should be implemented then tested to check that they will not displace water elsewhere (for example, if land is raised to permit development in one area, compensatory flood storage will be required in another).
- Severn Trent Water should be consulted at an early stage on drainage proposals for the site to identify any potential constraints or existing sewer flooding issues that may not have been identified through this high level assessment.

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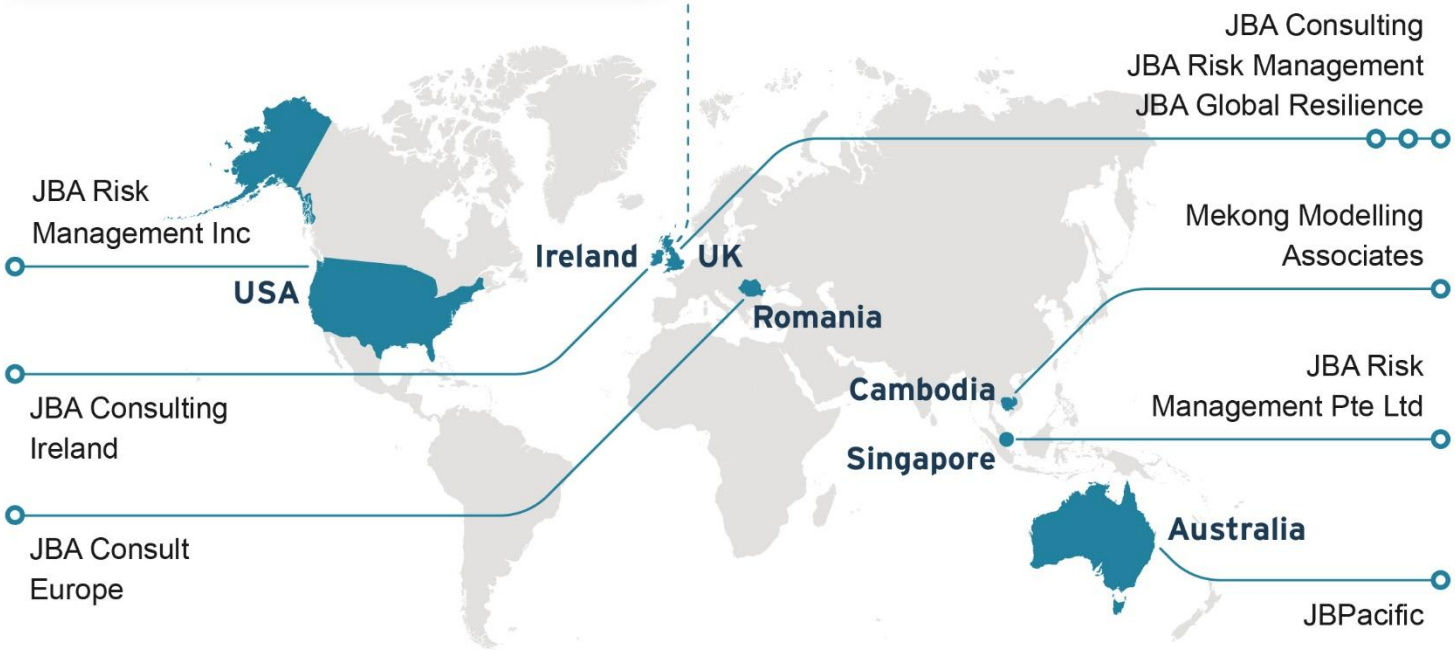

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Level 2 Strategic Flood Risk Assessment

Site 18/029

Prepared for:
Tamworth Borough Council

Contents

1 Background 4
1.1 Site details 4
1.2 Topography 4
1.3 Geology and soils 5

2 Sources of flood risk 6
2.1 Location of site within the catchment 6
2.2 Existing drainage features 6
2.3 Fluvial 6
2.4 Surface water 6
2.5 Reservoir 7
2.6 Groundwater 8
2.7 Sewers 8
2.8 Flood history 8

3 Climate change 9
3.1 Fluvial 9
3.2 Surface water 9

4 Flood risk management infrastructure 11
4.1 Defences 11
4.2 Residual risk 11

5 Emergency planning 12
5.1 Flood warnings and alerts 12
5.2 Access and Escape 12
5.3 Dry islands 12

6 Requirements for drainage control and impact mitigation 13
6.1 Broadscale assessment of possible SuDS 13
6.2 Opportunities for wider sustainability benefits and integrated flood risk management 13

7 NPPF and planning implications 15
7.1 Exception Test requirements 15

7.2 Requirements and guidance for site-specific Flood Risk Assessment 15
7.3 Guidance for site design and making development safe 15

8 Conclusions 17

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Site 18/029. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Tamworth Borough Level 1 SFRA (June 2025). The reader should also familiarise themselves with the Tamworth Borough Level 2 SFRA Main Report, where there is further explanation of the terminology used in this report.

1.1 Site details

- Location: Winecote Railway Sidings
- Site area: 0.81ha
- 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 land slopes downhill from maximum elevations of 74.8mAOD in the south of the site to minimum elevations of 65.8mAOD in the northwest corner of the site.

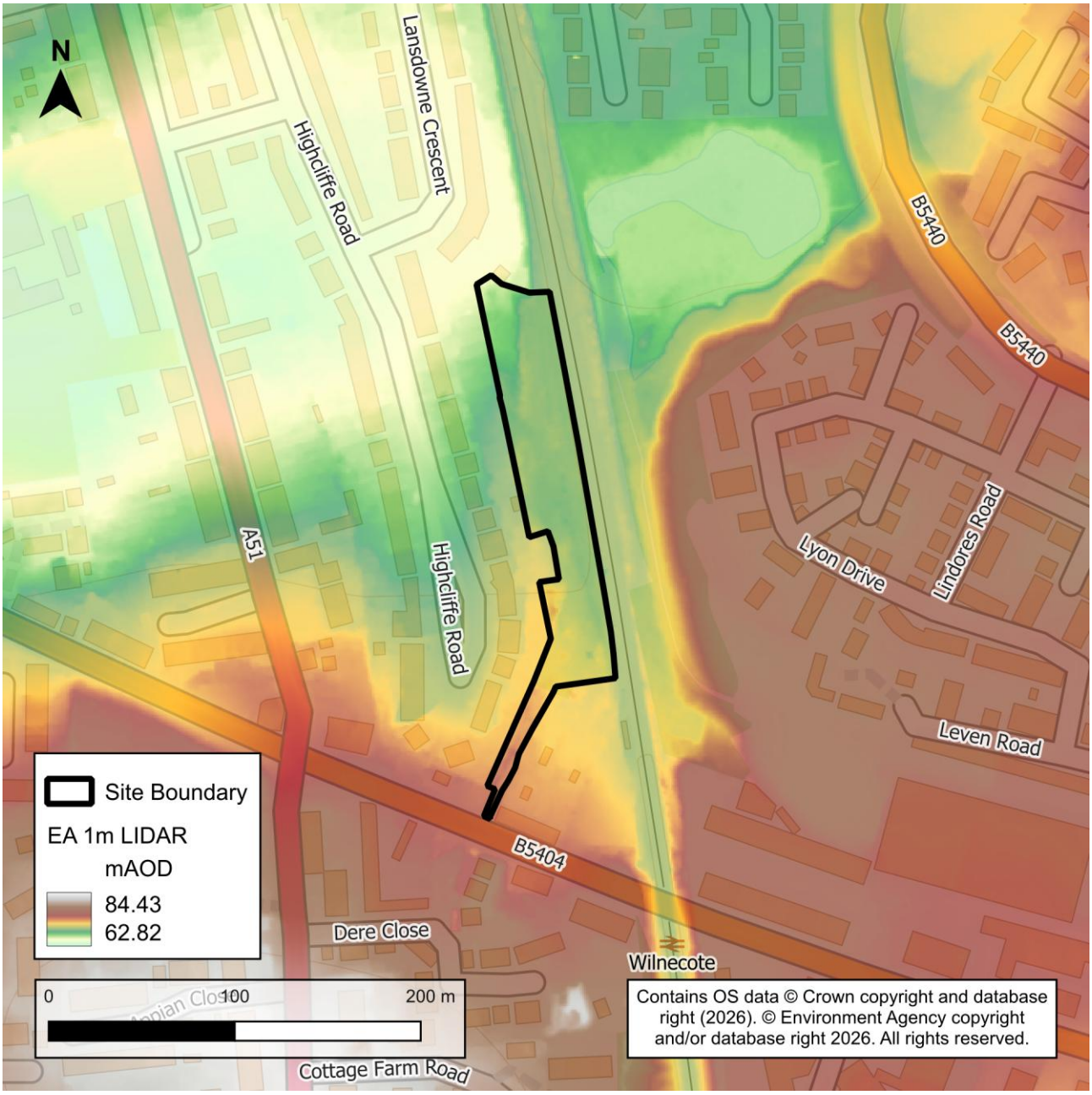

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Pennine Middle Coal Measures Formation comprised of mudstone.
- Superficial - There are no superficial deposits present at the site.

Soils at the site consist of loamy soils with naturally high groundwater in the west of the site and slowly permeable, seasonally wet, acid, loamy and clayey soils in the east of the site.

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located in the downstream end of the Tame from River Blythe to River Anker Water Body Catchment, which lies in the Tame Lower Rivers and Lakes operational catchment. The catchment area upstream of the site is approximately 62km^2.

The downstream end of the catchment is predominantly urban and encompasses several settlements to the south and southeast of Tamworth, such as Belgrave, Wilencote and Fazeley.

The upstream end of the catchment is mostly comprised of rural areas on the banks of the River Tame, which is located approximately 700m west of the site.

2.2 Existing drainage features

There are no existing drainage features present within 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 entirely located within Flood Zone 1 and is therefore not shown to be at risk of fluvial flooding from the EA FMfP.

2.4 Surface water

2.4.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk. Velocity and hazard data is not currently available within this dataset, therefore the Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment to inform the velocity and hazard of surface water risk.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.4.2 Description of risk to the site

During the 3.3% AEP event, two areas of surface water ponding emerge within the centre of the site which show maximum depths between 0.30m and 0.60m. Maximum velocities do not reach 0.25m/s and the maximum hazard classification is 'Danger for Some'.

During the 1% AEP event, these areas of ponding merge to form a larger area of ponding which encroaches approximately 90m towards the northern site boundary. The centre of this ponding shows predicted flood depths between 0.30m and 0.60m which cover a larger area then in the 3.3% AEP event. A further surface water flow path develops along the railway embankment which borders the east of the site. The extent of this flow path intersects the southeast corner of the site and maximum flood depths are between 0.15 and 0.30m within the site. Maximum velocity increases to between 0.25m/s and 0.50m/s at the eastern site boundary. Maximum hazard is classified as 'Danger for Most' in the centre of the site.

During the 0.1% AEP event, the surface water flow path present along the railway embankment increases in extent to intersect the entire eastern site boundary and merges with the area of risk within the site to form a single flow path. These additional areas of risk show maximum flood depths of between 0.15m and 0.30m. Maximum flood depths increase to between 0.60m and 0.90m in the centre of the site. Maximum velocity increases to between 0.5m/s and 1.0m/s in the north of the site. The maximum hazard classification remains as 'Danger for Most'.

Table 2-1: Present day surface water flood risk based on the EA's FMfP Surface Water Spatial Planning dataset (extent, depth) and RoFSW dataset (velocity, hazard).

Assessment category	High risk (3.3% AEP)	Medium risk (1% AEP)	Low risk (0.1% AEP)
Percentage of site at risk* (%)	9	16	32
Maximum depth (m)	0.30 - 0.60	0.30 - 0.60	0.60 - 0.90
Maximum velocity (m/s)	<0.25	0.25 - 0.50	0.50 - 1.00
Maximum hazard classification	Danger for Some	Danger for Most	Danger 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).*

2.5 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 site to be at negligible risk of groundwater emergence based on the nature of the underlying local geological deposits.

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 Severn Trent Drainage and Wastewater Management Plan (DWMP23) shows the site is located within the Tamworth Water Treatment Works catchment. A high-level risk based screening did not identify internal or external sewer flooding as a key catchment risk or vulnerability.

Using data from the Severn Trent Water Sewer flooding database there have been no incidents of sewer flooding reported within the site boundary, or in areas immediately surrounding the site. However, further incidents of sewer flooding may have occurred which have not been recorded. Therefore, the risk of sewer flooding should be assessed further at the site-specific Flood Risk Assessment stage.

2.8 Flood history

The EA's Historic Flood Mapping and Recorded Flood outlines datasets do not have records of any flooding on or surrounding the site.

Historic incident data provided by Staffordshire County Council show no records of historic flooding on or surrounding 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 4.6 of the Walsall Level 2 SFRA Main 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 escape must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

As the risk of fluvial flooding at the site has been assessed by the New National Modelling, the Rivers and Sea fluvial climate change extents have been used to assess the risk with climate change. These use the Central allowance for the 2080s epoch and are available for the 3.3% AEP (Flood Zone 3b), 1% AEP (Flood Zone 3a) and 0.1% AEP (Flood Zone 2) events.

3.1.2 Description of risk to the site

The site is not shown to be at fluvial risk in the climate change scenarios

3.2 Surface water

3.2.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk with climate change. Climate change outputs are available for the 3.3%, 1%, and 0.1% AEP events with the Upper End climate change allowance for the 2070s epoch. There is currently no available velocity or hazard information to use within this assessment.

3.2.2 Description of risk to the site

Between the 3.3% AEP present day and climate change events, the flood exent increases to form a larger area of surface water ponding in the centre of the site. These additional areas of ponding in the centre of the site show flood depths of between 0.15m and 0.30m and new areas of risk which develop along the eastern site boundary show similar depths.

Between the 1% AEP present day and climate change events an additional 16% of the site is shown to be at risk of surface water flooding. Flood depths in the centre of the site increase to between 0.60m and 0.90m. New areas of risk which develop along the eastern site boundary show flood depths of between 0.15m and 0.30m.

Between the 0.1% AEP present day and climate change events, there is a slight increase in flood extent. Increased ponding in the centre of the site shows depths between 0.60m and 0.90m.

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

Assessment category	1% AEP	1% AEP + Upper End CC
Percentage of site at risk (%)	16	32
Maximum depth (m)	0.30 - 0.60	0.60 - 0.90

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 within an EA Flood Warning or Flood Alert Area.

5.2 Access and Escape

Safe access and escape 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

The site can currently be accessed from the south of the site via Watling Street (B5404). This is likely to be the only feasible access and escape route at the site due to the residential properties bordering the site to the west and the railway line bordering the site to the east.

5.2.2 Fluvial

Access and escape are likely to remain viable in the 1% plus climate change fluvial flood event.

5.2.3 Surface water

The 1% AEP plus climate change surface water flood event shows small areas of ponding along Watling Street but flood depths remain below 0.30m and are not likely to impede access and escape.

5.3 Dry islands

During the 0.1% AEP present day and climate change surface water flood events, there are several small dry islands that form within the site.

6 Requirements for drainage control and impact mitigation

6.1 Broadscale assessment of possible SuDS

Surface water at the site should be discharged in accordance with the drainage hierarchy as set out in the National standards for SuDS (gov.uk). SuDS that provide opportunities to deliver multiple benefits including volume control, water quality, amenity, and biodiversity should be prioritised. SuDS proposals should be discussed with relevant stakeholders (Local Planning Authority (LPA), Lead Local Flood Authority (LLFA), and the EA) at an early stage to understand possible constraints. Where the national standards allow for local policy interpretation or discretion, applicants should refer to the Staffordshire County Council Flood Risk Management Team guidance and policies (staffordshire.gov.uk).

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 following factors should be considered when assessing whether infiltration is suitable at 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.
- BGS data indicates that the underlying geology is 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.

If it is proposed to discharge runoff to a watercourse or sewer system, the condition and capacity or the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the asset owner.

6.2 Opportunities for wider sustainability benefits and integrated flood risk management

The following are opportunities for wider sustainability benefits and integrated flood risk management at the site:

- 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.

- Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered.

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 not shown to be at fluvial 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:

- 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 Walsall 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

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 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. Detailed surface water modelling is likely to be required, including assessment of depth, velocity, and hazard both in the present day and with latest climate change allowances. In particular Staffordshire County Council as LLFA will require the drainage strategy to address:

- The drainage hierarchy and preference for infiltration where feasible.
- Use of source control measures at the earliest opportunity.
- Rainwater harvesting and reuse measures where practicable.
- Management of the first 5mm of rainfall (everyday rainfall).
- Above-ground, multifunctional SuDS that deliver water quality, biodiversity and amenity benefits.

- Reduction of runoff volumes and peak discharge rates.

Arrangements for safe access and escape will need to be provided for the 1% AEP surface event 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 escape 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 site is shown to be at surface water flood risk, particularly in the east of the site during the 3.3%, 1%, and 0.1% AEP events. The Exception Test is not required given the site is located wholly with Flood Zone 1.

A site-specific FRA will be required because the proposed development is subject to surface water flooding, however, the site-specific FRA should consider all sources of flooding.

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

- Safe access and escape routes should be demonstrated in the 1% AEP plus climate change surface water event.
- A carefully considered and integrated flood resilient and sustainable drainage design should be put forward, including a site-specific Surface Water Drainage Strategy, and SuDS maintenance and management plan and supported by detailed modelling.
- Severn Trent Water should be consulted at an early stage on drainage proposals for the site to identify any potential constraints or existing sewer flooding issues that may not have been identified through this high level assessment.

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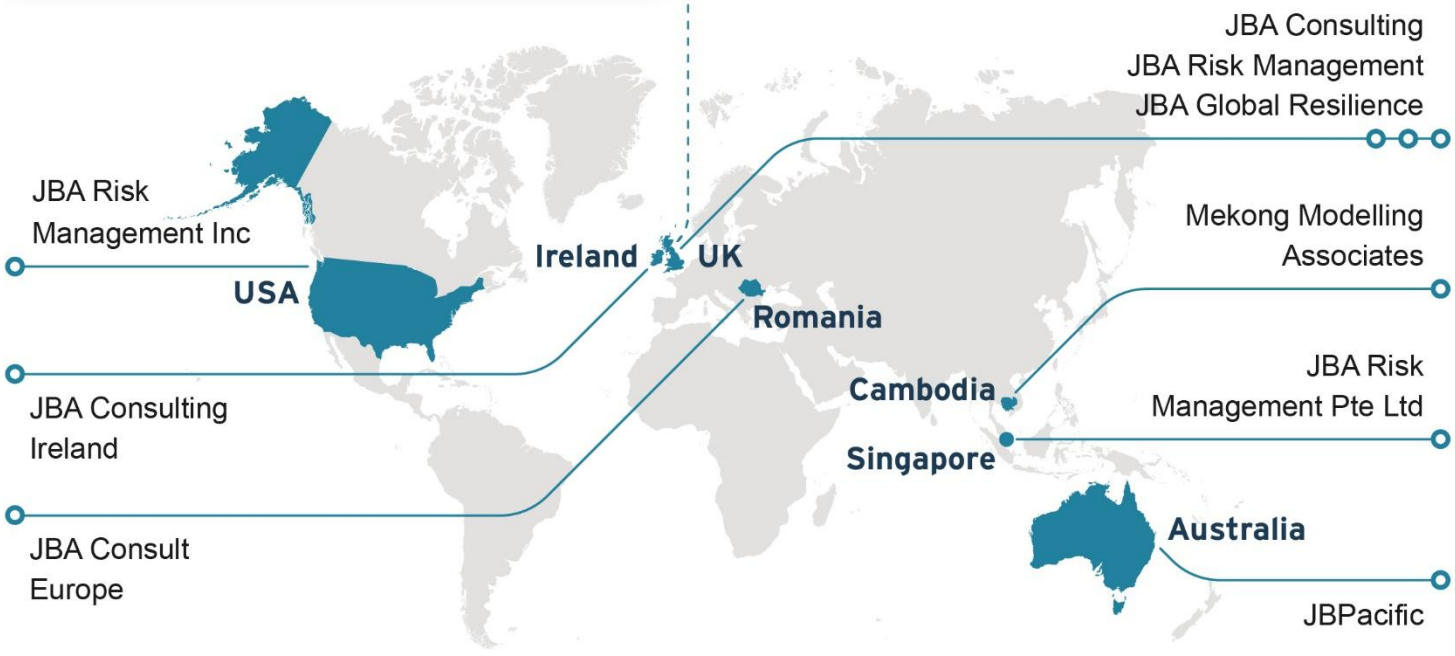

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Level 2 Strategic Flood Risk Assessment

Site 20/089

Prepared for:

Tamworth Borough Council

Contents

1 Background 4
1.1 Site details 4
1.2 Topography 4
1.3 Geology and soils 5

2 Sources of flood risk 6
2.1 Location of site within the catchment 6
2.2 Existing drainage features 6
2.3 Fluvial 6
2.4 Surface water 8
2.5 Reservoir 9
2.6 Canals 9
2.7 Groundwater 10
2.8 Sewers 10
2.9 Flood history 10

3 Climate change 11
3.1 Fluvial 11
3.2 Surface water 12

4 Flood risk management infrastructure 13
4.1 Defences 13
4.2 Residual risk 13

5 Emergency planning 14
5.1 Flood warnings and alerts 14
5.2 Access and Escape 14
5.3 Dry islands 14

6 Requirements for drainage control and impact mitigation 15
6.1 Broadscale assessment of possible SuDS 15
6.2 Opportunities for wider sustainability benefits and integrated flood risk management 16

7 NPPF and planning implications 17

7.1 Exception Test requirements 17
7.2 Requirements and guidance for site-specific Flood Risk Assessment 17
7.3 Guidance for site design and making development safe 17

8 Conclusions 19

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Site 20/089. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Tamworth Borough Level 1 SFRA (June 2025). The reader should also familiarise themselves with the Tamworth Borough Level 2 SFRA Main Report, where there is further explanation of the terminology used in this report.

1.1 Site details

- Location: Land off Peelers Way, Kettlebrook
- Site area: 3.16ha
- Existing site use: Greenfield
- Proposed site use: Employment or retail

1.2 Topography

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR (updated in 2025). Most of the site is located on a topographic high point which is approximately 7m higher than the surrounding land to the east, south and west. The northern site boundary borders the A5 which lies approximately 3m higher than the site. Within the western edge of the site there is a steep drop in elevation to the River Tame which flows along the west boundary. There is also a steep drop in elevation along the east boundary towards an unnamed ordinary watercourse. The maximum elevation near the centre of the site is 64.4mAOD while the minimum elevation along the western boundary is 57.39mAOD.

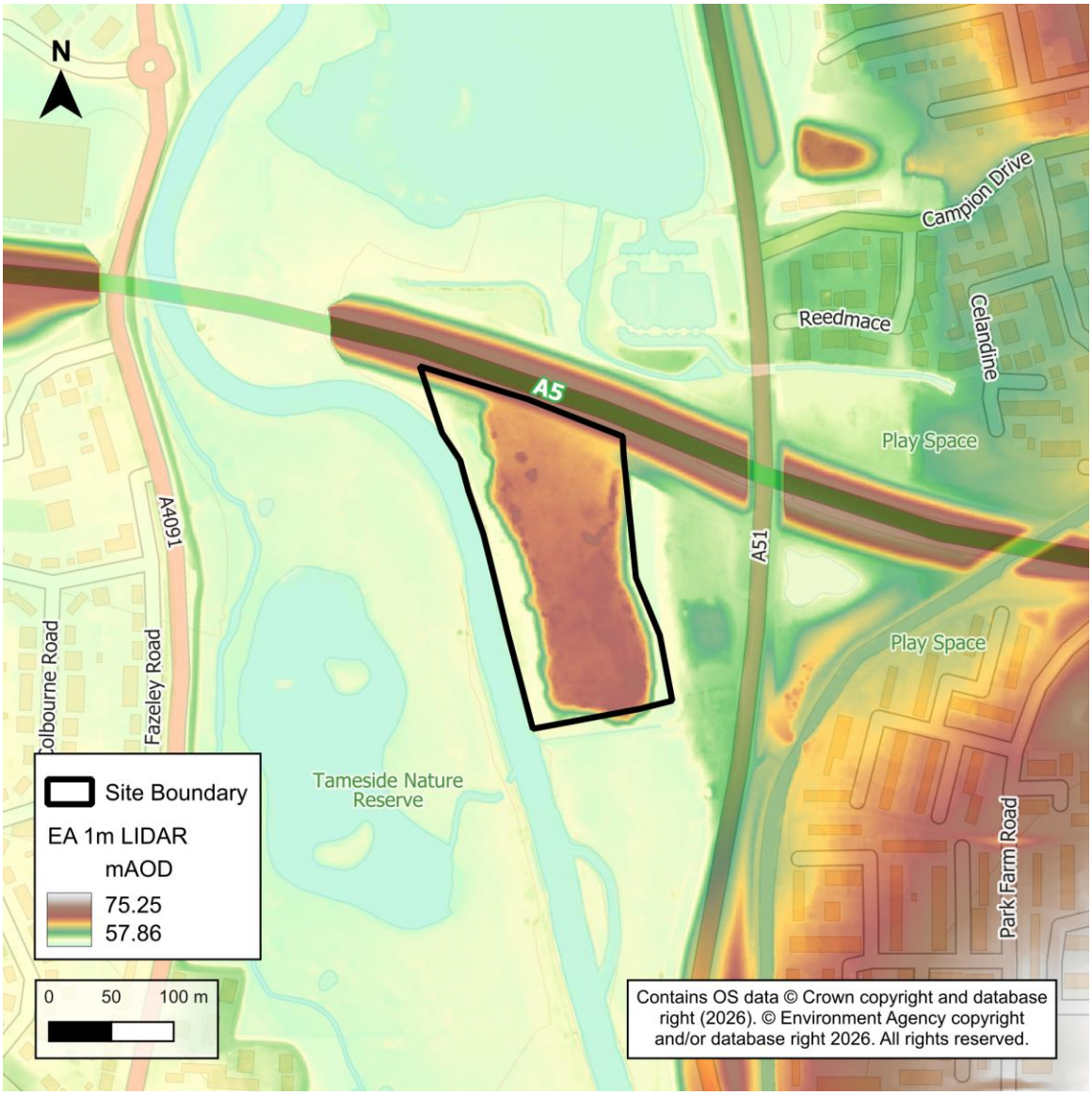

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Gunthorpe Member comprised of mudstone across most of the site. Helsby Sandstone Formation comprised of sandstone is located along the east boundary and in the southeast corner.
- Superficial - Alluvium comprised of clay, silt, sand and gravel.

Soils at the site consist of loamy and clayey floodplain soils with naturally high groundwater.

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located within the downstream reaches of the Tame from River Blythe to River Anker Water Body catchment. The catchment upstream of the site is rural at its upstream end but then becomes predominantly urbanised incorporating the south side of Tamworth. The River Tame flows in a northerly direction adjacent to the western site boundary.

2.2 Existing drainage features

The River Tame flows northwards along the west boundary of the site. There is an unnamed ordinary watercourse which flows southwards along the eastern boundary of the site, then flows westwards outside the southern site boundary, into the River Tame.

2.3 Fluvial

2.3.1 Available data

The EA's Flood Map for Planning (FMfP) and the EA's detailed hydraulic model for the River Tame have been used in this assessment. Flood Zone 3b has been represented using the Rivers and Sea 3.3% AEP defended extent, as defined within the Tamworth Level 1 SFRA Main Report.

Available depth, velocity, and hazard information has been used to inform the risk from the River Tame for the 1% AEP undefended event (Flood Zone 3a) and the defended 1% and 0.1% AEP events. No depth velocity, or hazard data is currently available for the 3.3% AEP defended or 0.1% AEP undefended events (which have been inform by the EA national mapping), therefore, updates to the River Tame modelling to provide depth, velocity, and hazard data for these events may be required as part of a site-specific Flood Risk Assessment.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.3.2 EA Flood Zones

The site is shown to be at significant risk of fluvial flooding from the River Tame. The percentage of risk at the site in each Flood Zone is shown in Table 2-1.

Flood Zone 3b covers the western and eastern boundaries of the site. Flood Zone 3a covers the southern half of the site and part of the northwest area. Flood Zone 2 extends to cover almost the entire site, with the exception of a narrow area along the northern boundary.

It should be noted that Flood Zone 3b extends beyond Flood Zone 3a at the site boundaries, which is likely to be due to discrepancies in model methodologies between the EA Flood Zones and the Rivers and Sea 3.3% AEP defended modelling.

The EA Flood Zones for this site are based on broadscale modelling and are not shown to be reflective of the elevations on the site based on the EA LiDAR, which shows the central areas of the site are raised significantly higher than the surrounding land. The fluvial risk is believed to be better represented by the River Tame hydraulic modelling, described in Sections 2.3.3 and 2.3.4, which the EA intend to include within the FMfP in future.

Table 2-1: Present day fluvial flood risk based on the EA FMfP *

Flood Zone 3b (%)	Flood Zone 3a (%)	Flood Zone 2 (%)	Flood Zone 1 (%)
9	50	92	8

**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 3a and Flood Zone 3b percentage. Flood Zone 1 + Flood Zone 2 = 100%.*

2.3.3 Modelled risk - River Tame (undefended)

The 1% AEP undefended model extent from the River Tame has been used to assess depth, velocity, and hazard across the site within this event. This shows a smaller extent affecting the site than the EA FMfP Flood Zone 3a (as described in Section 2.3.2).

The 1% AEP undefended model extent surrounds the west, south and east of the site, encroaching slightly onto the site from the east and south, and encroaching more significantly from the west. Significant depths are predicted within the site including a maximum of 3.4m in the west, up to 2m along the eastern boundary and up to 1.2m along the southern boundary. Maximum velocities mainly remain below 0.25m/s, however along the western boundary this increases to a maximum of 1.14m/s. The maximum hazard of 'Danger for All' is also shown along the western boundary, as well as in the southeast corner.

Table 2-2: Present day fluvial flood risk based on the EA's River Tame hydraulic model.

Assessment category	1% AEP
Percentage of site at risk* (%)	20
Maximum depth (m)	3.40
Maximum velocity (m/s)	1.14
Maximum hazard classification	Danger for All (6.64)

2.3.4 Modelled risk - River Tame (defended)

The 1% AEP defended model extent shows a similar extent to the undefended 1% AEP event, with small increases in extent, depth, velocity and hazard.

The 0.1% AEP defended model extent shows a similar extent, only encroaching marginally further into the site along the boundaries, however there are further increases in depth, velocity, and hazard.

Table 2-3: Present day fluvial flood risk based on the EA's River Tame hydraulic model.

Assessment category	1% AEP	0.1% AEP
Percentage of site at risk* (%)	21	23
Maximum depth (m)	3.52	4.10
Maximum velocity (m/s)	1.14	1.56
Maximum hazard classification	Danger for All (6.82)	Danger for All (9.51)

2.4 Surface water

2.4.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk. Velocity and hazard data is not currently available within this dataset, therefore the Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment to inform the velocity and hazard of surface water risk.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.4.2 Description of risk to the site

Most of the site is not predicted to be at risk of surface water flooding. There are isolated areas of surface water flood risk, and a significant flow path is predicted along the eastern boundary which follows the path of the ordinary watercourse and encroaches slightly onto the east of the site.

During the 3.3% AEP event, there is a small area of ponding in the southeast corner of the site and along the east boundary to depths up to 0.30m. These areas of ponding increase slightly in extent during the 1% AEP event but depths remain similar. During the 1% AEP event, an additional area of risk is predicted in the northwest corner of the site with depths up to 0.90m and hazard classified as 'Danger for Most'.

The existing areas of flood risk increase further in extent and depth in the 0.1% AEP event. The depth in the northwest corner increases to between 0.90m and 1.20m but the hazard remains at 'Danger for Most'. The flow path along the eastern boundary also shows the hazard to be classified as 'Danger for Most'. An additional area of flood risk develops in the south of the site to depths up to 0.30m with hazard classified as 'Danger for Some'.

Table 2-4: Present day surface water flood risk based on the EA's FMfP Surface Water Spatial Planning dataset (extent, depth) and RoFSW dataset (velocity, hazard).

Assessment category	High risk (3.3% AEP)	Medium risk (1% AEP)	Low risk (0.1% AEP)
Percentage of site at risk* (%)	<1	1	3

Assessment category	High risk (3.3% AEP)	Medium risk (1% AEP)	Low risk (0.1% AEP)
Maximum depth (m)	0.15 - 0.30	0.60 - 0.90	0.90 - 1.20
Maximum velocity (m/s)	<0.25	0.25 - 0.50	0.50 - 1.00
Maximum hazard classification	Very Low Hazard	Danger for Most	Danger 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).*

2.5 Reservoir

The site is shown to be at risk of reservoir flooding during the Dry Day and Wet Day scenarios.

During the Dry Day scenario, the site is shown to be affected by flood extents from the following reservoirs, which surround the east, south and west of the site, encroaching onto the site at the east and west boundaries:

- Chasewater (Cannock Chase)
- Bartley
- Shustoke Lower
- Rotton Park.

During the Wet Day scenario, the extents shown in the Dry Day scenario increase slightly further onto the site within the east and west. In addition, the site is affected by the following reservoirs, with the flood extents covering similar areas of the site:

- Belfry
- Canwell Estate Reservoir
- Earlswood Lakes - Engine Pool
- Earlswood Laked - Windmill Pool
- Middleton Hall Lake
- Minworth Curdworth

The Wet Day event seeks to estimate the effect of a breach at the same time as a 0.1% AEP river flood is occurring and suggests that the consequences of such a breach are similar to the modelled 0.1% AEP event river flood event but probably would be associated with a much lower probability.

2.6 Canals

The Coventry Canal is situated approximately 110m to the east of the site. Information provided by the Canal and River Trust shows no recorded incidents of breach or overtopping of the canal within the vicinity of the site.

2.7 Groundwater

The JBA Groundwater Emergence Map shows most of the site is at negligible risk of groundwater emergence due to the nature of underlying local geological deposits. However, the southeast corner and eastern boundary are shown to have groundwater levels that are between 0.025 and 0.5m below the ground surface, suggesting there is a risk of groundwater flooding to surface and subsurface assets and groundwater may emerge at the surface locally.

Based on the EA surface water mapping and topography of the site, it is likely that any groundwater that emerges will flow eastwards into the ordinary watercourse which borders the eastern site boundary.

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.

2.8 Sewers

The Severn Trent Drainage and Wastewater Management Plan (DWMP23) shows the site is not located within a Severn Trent sewer wastewater treatment works therefore no further information can be ascertained at this time.

Severn Trent Water provided their Hydraulic Sewer Flooding Risk Register for the borough which includes a list of properties which have reported at least one incidence of external or internal sewer flooding between June 1997 and August 2024. Based on the data provided there have been no properties that have reported flooding within the site boundary, or in areas immediately surrounding the site. However, further incidents of sewer flooding may have occurred which have not been recorded. Therefore, the risk of sewer flooding should be assessed further at the site-specific Flood Risk Assessment stage.

2.9 Flood history

The EA's Historic Flood Mapping and Recorded Flood Outlines datasets show historic flood extents across almost the entire site, with records indicating these occurred in June 1955 and December 1992.

Historic incident data provided by Staffordshire County Council show no records of historic flooding on or surrounding 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 4.6 of the Tamworth Level 2 SFRA Main 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 escape must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

Fluvial climate change extents have been taken from the EA's detailed River Tame hydraulic model. The defended extents for the 1% AEP plus 22% and 30% climate change have been used which represent the Central and Higher Central allowances for the 2080s epoch. These have been compared with the 1% AEP defended present day extent to assess the implications of climate change.

3.1.2 Description of risk to the site

The 1% AEP plus climate change events shows a similar extent to the 1% AEP present day scenario. Depth and velocity increases in the areas of flood risk along the east boundary and near the boundary within the west of the site, resulting in larger areas of the flood extent having a hazard classification of 'Danger for All'.

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

Assessment category	1% AEP	1% AEP plus 22% CC	1% AEP plus 30% CC
Percentage of site at risk (%)	21	22	22
Maximum depth (m)	3.52	3.80	3.87
Maximum velocity (m/s)	1.14	1.31	1.41
Maximum hazard classification	Danger for All (6.82)	Danger for All (7.90)	Danger for All (8.44)

3.2 Surface water

3.2.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk with climate change. Climate change outputs are available for the 3.3%, 1%, and 0.1% AEP events with the Upper End climate change allowance for the 2070s epoch. There is currently no available velocity or hazard information to use within this assessment.

3.2.2 Description of risk to the site

As with the present day scenario, most of the site is not shown to be at risk of surface water flooding in the climate change scenarios.

During the 3.3% AEP plus climate change event, the surface water flood extent in the southeast corner of the site and along the east boundary are similar to present day, but the depths increase to between 0.30m and 0.60m. In addition, the climate change scenario shows a small area of risk in the northwest of the site, with depths up to 0.90m.

Compared to the present day 1% AEP event, the depths remain similar in the 1% AEP climate change scenario, with the greatest depths shown in the northwest corner. However, an additional area of risk is shown in the climate change scenario, in the south of the site. This ponding shows depths up to 0.30m

During the 0.1% AEP plus climate change scenario, the flood risk shown in the northwest corner of the site shows similar depths to present day, at between 0.90m and 1.20m, but the ponding in the south of the site increases in depth from between 0.15 and 0.30m in the present day event to between 0.30m and 0.60m in the climate change scenario.

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

Assessment category	1% AEP	1% AEP + Upper End CC
Percentage of site at risk (%)	1	2
Maximum depth (m)	0.60 - 0.90	0.60 - 0.90

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 is at residual risk of reservoir flooding in the event of breaches of several reservoirs, as detailed in Section 2.5.

The site is at residual risk of flooding from overtopping or breach of the Coventry canal which runs approximately 110m to the east of the site, as detailed in Section 2.6.

5 Emergency planning

5.1 Flood warnings and alerts

The site is located in the Middle Tame EA Flood Alert Area (033WAF304). The site is not located in an EA Flood Warning Area.

5.2 Access and Escape

Safe access and escape 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 roads could be routed from the A5 to the north or Peelers Lane to the east.

5.2.2 Fluvial

The areas to the east, south and west of the site are shown to be at significant flood risk in the 1% AEP plus climate change events, therefore access via Peelers Way is not currently shown to be safe. However, the A5 to the north of the site is not shown to be at fluvial risk as the road is raised higher than the surrounding land, so would provide safe access and escape to the site.

5.2.3 Surface water

There is minimal surface water risk along the A5 to the north of the site in all modelled AEP events, so safe access and escape via this route are likely to be possible.

5.3 Dry islands

The site is completely surrounded by fluvial risk in the 1% AEP, 1% AEP plus climate change, and 0.1% AEP modelled flood events, however, the A5 is raised above the predicted height of fluvial flooding and provides and access route across the north of the site.

6 Requirements for drainage control and impact mitigation

6.1 Broadscale assessment of possible SuDS

Surface water at the site should be discharged in accordance with the drainage hierarchy as set out in the National standards for SuDS (gov.uk). SuDS that provide opportunities to deliver multiple benefits including volume control, water quality, amenity, and biodiversity should be prioritised. SuDS proposals should be discussed with relevant stakeholders (Local Planning Authority (LPA), Lead Local Flood Authority (LLFA), and the EA) at an early stage to understand possible constraints. Where the national standards allow for local policy interpretation or discretion, applicants should refer to the Staffordshire County Council Flood Risk Management Team guidance and policies (staffordshire.gov.uk).

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.

The following factors should be considered when assessing whether infiltration is suitable at the site:

- For the southeast corner and eastern boundary of the site, groundwater levels are indicated to be less than 0.5m 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 in these areas of the site.
- BGS data indicates that the underlying geology is mainly 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 may be required to discharge surface water runoff subject to testing.
- 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 entire site is shown to be 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.

If it is proposed to discharge runoff to a watercourse or sewer system, the condition and capacity or the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the asset owner.

SuDS assets should, where practicable, be located outside areas of flood risk in the 1% AEP plus climate change fluvial event.to avoid the potential risks to the hydraulic capacity or structural integrity of these features. Surface water outfalls that discharge into the River Tame or unnamed ordinary watercourse may be susceptible to surcharging due to water levels in the River Tame. 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

The following are opportunities for wider sustainability benefits and integrated flood risk management at the site:

- 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.
- 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 Tame from River Blythe to River Anker waterbody 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. The Tame from River Blythe to River Anker waterbody is considered to be of poor ecological status.

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 employment development as 'Less Vulnerable'. The Exception Test is not required for 'Less Vulnerable' development, therefore it is not required for this 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:

- greater than one hectare
- in Flood Zones 3b, 3a, and 2
- at increased fluvial risk in future
- at risk of flooding from surface water, reservoirs, and groundwater

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 Tamworth Borough 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 lower topography where fluvial and surface water flood risk are shown along the east site boundary, and within the west of the site near the western boundary. A buffer of 8m should be maintained between the River Tame and the ordinary watercourse and any built development.

A detailed hydraulic model of the unnamed ordinary watercourse along the east and south boundaries of the site may be required at FRA stage to accurately represent the risk from this watercourse. Updates to the River Tame detailed hydraulic model may also be required at FRA stage, to accurately represent the risk from this watercourse for Flood Zone 3b and test 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 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. In particular Staffordshire County Council as LLFA will require the drainage strategy to address:

- The drainage hierarchy and preference for infiltration where feasible.
- Use of source control measures at the earliest opportunity.
- Rainwater harvesting and reuse measures where practicable.
- Management of the first 5mm of rainfall (everyday rainfall).
- Above-ground, multifunctional SuDS that deliver water quality, biodiversity and amenity benefits.
- Reduction of runoff volumes and peak discharge rates.

Arrangements for safe access and escape 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 escape 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.

The residual risk of reservoir flooding at the site will need to be considered further at the site-specific FRA stage. An emergency plan may be required, demonstrating that the residual risks to the site can be safely managed and that appropriate evacuation plans are in place.

The residual risk of overtopping or breach of the canal will also need to be considered further at the site-specific FRA stage. The Canal and River Trust should be consulted at an early stage.

8 Conclusions

The site is shown to be at significant risk of fluvial flooding from the River Tame in the EA's Flood Map for Planning. However, the detailed River Tame hydraulic model shows a smaller extent of the site to be affected by fluvial flood risk, with the area of raised topography in the centre of the site remaining outside the area of risk in the 1% AEP plus climate change scenario, which is believed to be more representative of the underlying site topography. Surface water flood extents are limited within the site to isolated areas of ponding, but there is a significant flow path shown along the eastern boundary, following the path of the ordinary watercourse.

The site it also at residual risk of flooding from reservoirs and the Coventry Canal. Part of the site is also at risk of groundwater emergence.

The Exception Test will not be required for this site as 'Less Vulnerable' development is proposed; however, a site-specific FRA will be required.

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

- A sequential approach to development layout should be taken, steering more vulnerable aspects of the development away from the area of highest risk at the east and west boundaries of the site.
- A site-specific FRA should be undertaken, which assesses all sources of flood risk. This may require updates to the River Tame hydraulic model and a detailed model of the ordinary watercourse flowing around the east and south boundaries of the site.
- Safe access and escape should be considered in the design fluvial and surface water events. Developers should demonstrate that safe access and escape routes can be achieved; however, any raising of access and escape routes must make sure that floodwater is not displaced elsewhere. Where safe access and escape is not possible, other means of safe refuge and evacuation must be considered. Due to the fluvial risk on and surrounding the site, a Flood Warning and Evacuation Plan will be required to be prepared which considers the likely onset and duration of flooding and demonstrates how residents can safely be evacuated and/or shelter safely in situ during the design events.
- A carefully considered and integrated flood resilient and sustainable drainage design should be put forward, including a site-specific Surface Water Drainage Strategy, and SuDS maintenance and management plan and supported by detailed modelling.
- As the entire site is shown to be 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 and there should be early engagement with relevant stakeholders (LPA, LLFA and EA) to understand possible constraints to SuDS options.

- Severn Trent Water should be consulted at an early stage on drainage proposals for the site to identify any potential constraints or existing sewer flooding issues that may not have been identified through this high level assessment.

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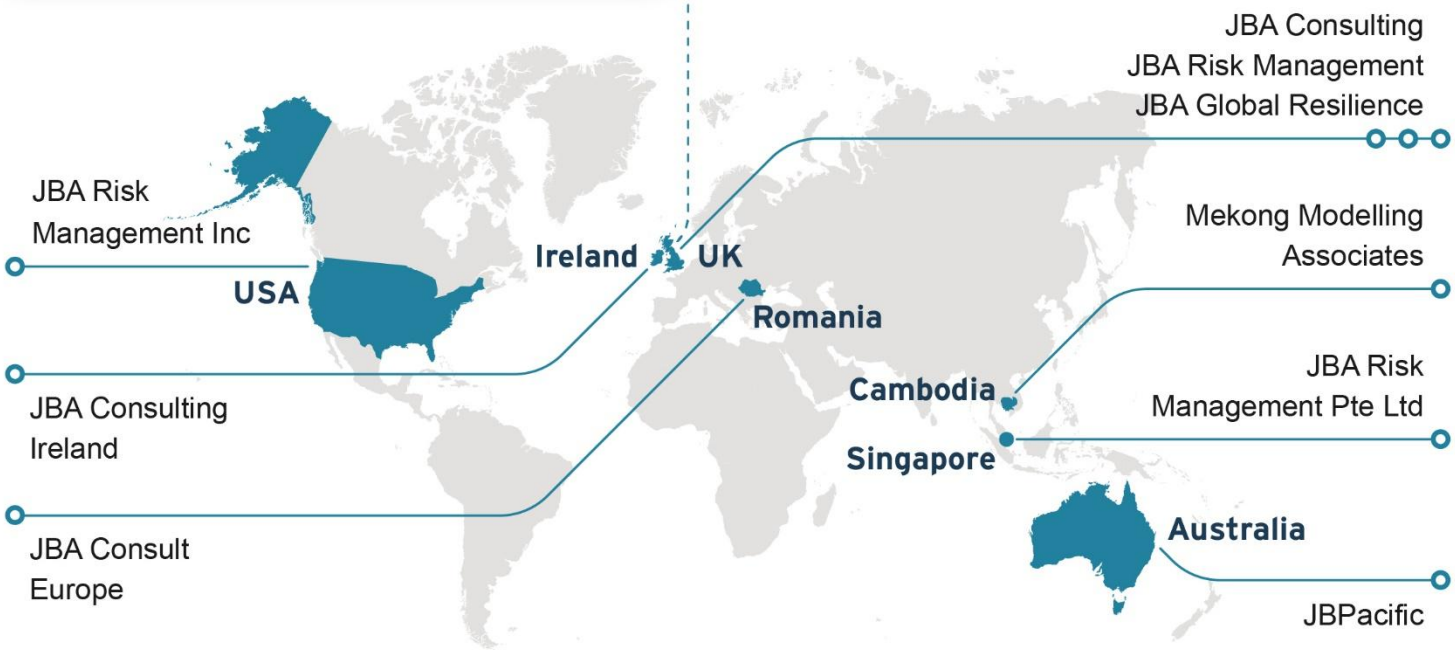

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Level 2 Strategic Flood Risk Assessment

Site 22/095

Prepared for:

Tamworth Borough Council

Contents

1 Background 4
1.1 Site details 4
1.2 Topography 4
1.3 Geology and soils 5

2 Sources of flood risk 6
2.1 Location of site within the catchment 6
2.2 Existing drainage features 6
2.3 Fluvial 6
2.4 Surface water 7
2.5 Reservoir 8
2.6 Groundwater 8
2.7 Sewers 8
2.8 Flood history 9

3 Climate change 10
3.1 Fluvial 10
3.2 Surface water 10

4 Flood risk management infrastructure 12
4.1 Defences 12
4.2 Residual risk 12

5 Emergency planning 13
5.1 Flood warnings and alerts 13
5.2 Access and Escape 13
5.3 Dry islands 13

6 Requirements for drainage control and impact mitigation 14
6.1 Broadscale assessment of possible SuDS 14
6.2 Opportunities for wider sustainability benefits and integrated flood risk management 15

7 NPPF and planning implications 16
7.1 Exception Test requirements 16

7.2 Requirements and guidance for site-specific Flood Risk Assessment 16
7.3 Guidance for site design and making development safe 16

8 Conclusions 18

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Site 22/095. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Tamworth Borough Level 1 SFRA (June 2025). The reader should also familiarise themselves with the Tamworth Borough Level 2 SFRA Main Report, where there is further explanation of the terminology used in this report.

1.1 Site details

- Location: Land North of Moor Lane, Amington, B77 3AX
- Site area: 2.51ha
- Existing site use: Predominantly greenfield with existing agricultural buildings in the northeast of the 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 (updated in 2025).

The topography at the site is greater to the east and southeast of the site, with a maximum elevation of 68.9mAOD in the southeastern corner of the site. The elevation slopes down in elevation towards the north and west of the site, with a minimum elevation of approximately 60.2mAOD by the western site boundary.

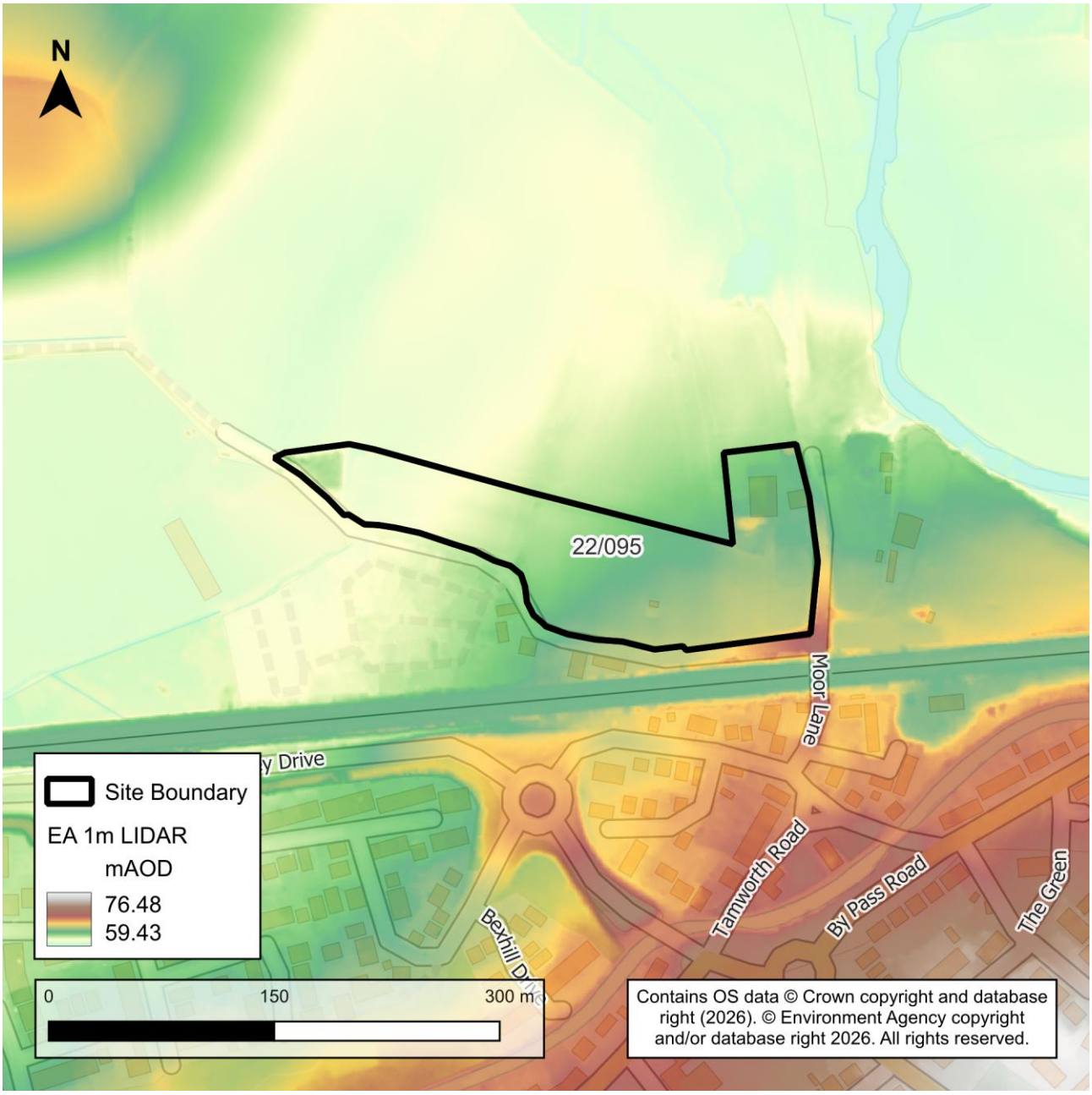

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Halesowen Formation comprised of mudstone, siltstone and sandstone covers the majority of the site. Helsby Sandstone Formation comprised of pebbly (gravelly) sandstone is present in the western corner of the site.
- Superficial - River Terrace Deposits comprised of sand and gravel in the west of the site. There are no superficial deposits present across the rest of the site.

Soils at the site consist of loamy soils with naturally high groundwater.

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located in the downstream reaches of the Anker from River Sence to River Tame Water Body catchment, which lies in the Sence Anker and Bourne Rivers and Lakes Operational Catchment. The catchment upstream of the site is approximately 94km^2. Land use across the catchment is varied with large rural areas but also several large settlements including Atherstone and Polesworth.

The River Anker flows in a northerly direction approximately 65m northeast of the site.

2.2 Existing drainage features

There are no existing drainage features present within the site.

The River Anker flows in a northerly direction approximately 65m northeast 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. Flood Zone 3b has been represented using the Rivers and Sea 3.3% AEP defended extent, as defined within the Tamworth Level 1 SFRA Main Report.

No depth velocity, or hazard data is currently available within the EA national mapping, therefore, detailed modelling to determine depth, velocity, and hazard data for these events may be required as part of a site-specific Flood Risk Assessment.

2.3.2 Description of risk to the site

Within the site, the fluvial risk is concentrated to the west, constrained to the area of lower elevation.

Flood Zone 3b is not present on the site.

Flood Zone 3a covers the western corner of the site, extending approximately 120m into the site. Flood Zone 2 extends approximately 40m further towards the centre of the site.

Table 2-1: Present day fluvial flood risk based on the EA FMfP*

Flood Zone 3b (%)	Flood Zone 3a (%)	Flood Zone 2 (%)	Flood Zone 1 (%)
0	18	24	76

**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 3a and Flood Zone 3b percentage. Flood Zone 1 + Flood Zone 2 = 100%.*

2.4 Surface water

2.4.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk. Velocity and hazard data is not currently available within this dataset, therefore the Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment to inform the velocity and hazard of surface water risk.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.4.2 Description of risk to the site

Most of the site is not shown to be at risk of surface water flooding. Surface water flood risk on the site is primarily concentrated in the west of the site, with a small, isolated area of surface water ponding during the 0.1% AEP surface water event in the centre of the site.

During the 3.3% AEP surface water event, instances of surface water ponding are present in the west of the site, in the areas of lowest elevation. Maximum depth, velocity, and hazard are shown in Table 2-2.

Similarly, during the 1% AEP surface water event, the same areas of surface water ponding as the 3.3% AEP surface water event are present, with their extents growing marginally.

During the 0.1% AEP surface water event, the surface water ponding present in the 1% AEP surface water event grows in extent, and new instances of ponding emerge in the west and centre of the site. Maximum depths at the centre of the site are between 0.15m and 0.30m, with the velocity not exceeding 0.25m/s. The area of surface water flooding to the northeast of the site begins to encroach on the site boundary. Maximum depth, velocity, and hazard are shown in Table 2-2.

Table 2-2: Present day surface water flood risk based on the EA's FMfP Surface Water Spatial Planning dataset (extent, depth) and RoFSW dataset (velocity, hazard).

Assessment category	High risk (3.3% AEP)	Medium risk (1% AEP)	Low risk (0.1% AEP)
Percentage of site at risk* (%)	1	1	3
Maximum depth (m)	0.30 - 0.60	0.30 - 0.60	0.30 - 0.60
Maximum velocity (m/s)	0.25 - 0.50	0.25 - 0.50	0.50 - 1.00
Maximum hazard classification	Danger for Some	Danger for Most	Danger 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).*

2.5 Reservoir

The site is not shown to be at risk of reservoir flooding during the Dry Day scenario from the EA reservoir flood map.

Reservoir flood mapping shows the western edge of the site to be affected by the Wet Day flood extent from Chasewater (Cannock Chase) reservoir. The Chasewater (Cannock Chase) reservoir extent encroaches approximately 50m from the northern site boundary to the southern site boundary.

The Wet Day event seeks to estimate the effect of a breach at the same time as a 0.1% AEP river flood is occurring and suggests that the consequences of such a breach are similar to the modelled 0.1% AEP event river flood event but probably would be associated with a much lower probability.

2.6 Groundwater

The JBA Groundwater Emergence Map shows that in the west of the site groundwater levels are predicted to be within 0.025m of the ground surface in a 1% AEP groundwater flood event. This means that there is a risk of groundwater flooding to both surface and subsurface assets. Groundwater may emerge at significant rates and has the capacity to flow overland and/or pond within any topographic low spots.

Based on the EA surface water mapping and topography of the site it is likely that any emerging groundwater will pool in the west of the site in areas of lower elevation.

The east of the site is deemed as having a negligible risk from groundwater flooding due to the nature of the local geological deposits.

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 Severn Trent Drainage and Wastewater Management Plan (DWMP23) shows the site is located within the Tamworth Water Treatment Works catchment. A high-level risk based screening did not identify internal or external sewer flooding as a key catchment risk or vulnerability.

Severn Trent Water provided their Hydraulic Sewer Flooding Risk Register for the borough which includes a list of properties which have reported at least one incidence of external or internal sewer flooding between June 1997 and August 2024. Based on the data provided there have been no properties that have reported flooding within the site boundary, or in areas immediately surrounding the site. However, further incidents of sewer flooding may have occurred which have not been recorded. Therefore, the risk of sewer flooding should be assessed further at the site-specific Flood Risk Assessment stage.

2.8 Flood history

The EA's Historic Flood Mapping and Recorded Flood outlines datasets do not have records of any flooding in the site. Approximately 65m to the east of the site, there is a record of a historic fluvial flooding from the River Trent in December 1992.

Historic incident data provided by Staffordshire County Council show no records of historic flooding on or surrounding 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 4.6 of the Tamworth Level 2 SFRA Main 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 escape must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

As the risk of fluvial flooding at the site has been assessed by the New National Modelling, the Rivers and Sea fluvial climate change extents have been used to assess the risk with climate change. These use the Central allowance for the 2080s epoch and are available for the 3.3% AEP (Flood Zone 3b), 1% AEP (Flood Zone 3a) and 0.1% AEP (Flood Zone 2) events. However, the 1% AEP and 0.1% AEP extents are not shown to align with the risk at the site shown within the EA FMfP Flood Zones. Therefore, in the absence of available data the 0.1% AEP has been used as a proxy for the 1% AEP climate change event. No data is available to assess the 0.1% AEP climate change event.

3.1.2 Description of risk to the site

The western side of the site is shown to be susceptible to climate change, whilst the rest of the site is not shown to be at fluvial risk.

Present day Flood Zone 3b is not present on the site, however, the 3.3% AEP climate change event shows an area of risk in the west of the site, covering 8% of the site.

The Flood Zone 2 extent remains within the west of the site but extends approximately 40m further into the site than Flood Zone 3a.

3.2 Surface water

3.2.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk with climate change. Climate change outputs are available for the 3.3%, 1%, and 0.1% AEP events with the Upper End climate change allowance for the 2070s epoch. There is currently no available velocity or hazard information to use within this assessment.

3.2.2 Description of risk to the site

Most of the site is not shown to be susceptible to increased surface water risk with climate change. The 0.1% AEP climate change event is only shown to cover 5% of the site.

The flood extent during the 3.3% AEP climate change event increases slightly from the 3.3% AEP present day event in the same areas of surface water ponding in the west of the site. Maximum depths remain between 0.30m and 0.60m.

Between the 1% AEP present day and climate change events, new areas of surface water ponding emerge. A new instance of surface water ponding emerges in the west of the site, and another towards the centre of the site in an area of lower elevation. Maximum depths remain the same, however, the extent of surface water with a depth of 0.15m to 0.30m increases.

During the 0.1% AEP climate change event, areas of surface water ponding present in the 0.1% AEP present day event increase in size in the west and centre of the site. A new area of surface water ponding also emerges at the eastern site boundary in an area of lower elevation. Maximum depths of surface water remain the same.

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

Assessment category	1% AEP	1% AEP + Upper End CC
Percentage of site at risk (%)	1	2
Maximum depth (m)	0.30 - 0.60	0.30 - 0.60

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 west of the site is located in the River Anker at Amington, Tamworth EA Flood Warning Area (033FWF3ANKR008) and the River Anker and River Sence Flood Alert Area (033WAF307).

5.2 Access and Escape

Safe access and escape 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

The site can be accessed from Moor Lane which runs along the eastern and southern site boundaries.

5.2.2 Fluvial

Access and escape is likely to remain viable in the 1% AEP plus climate change fluvial event as Moor Lane stays predominantly clear of flood risk in both Flood Zones 2 and 3a.

5.2.3 Surface water

During the 1% AEP plus climate change surface water flood event, Moor Lane is not shown to be impacted by surface water flood risk. An instance of surface water ponding is present on Tamworth Road, partially covering the junction onto Moor Lane of with a maximum depth of 0.30m and 0.60m, however, the maximum depth of the extent that encroaches the junction remains below 0.30m, meaning access and escape is likely to still be viable.

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

Surface water at the site should be discharged in accordance with the drainage hierarchy as set out in the National standards for SuDS (gov.uk). SuDS that provide opportunities to deliver multiple benefits including volume control, water quality, amenity, and biodiversity should be prioritised. SuDS proposals should be discussed with relevant stakeholders (Local Planning Authority (LPA), Lead Local Flood Authority (LLFA), and the EA) at an early stage to understand possible constraints. Where the national standards allow for local policy interpretation or discretion, applicants should refer to the Staffordshire County Council Flood Risk Management Team guidance and policies (staffordshire.gov.uk).

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.

The following factors should be considered when assessing whether infiltration is suitable at the site:

- Groundwater levels are indicated to be at or very near (within 0.025m) ground level within the west of the site 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 in these areas of the site.
- BGS data indicates that the underlying geology is varied with mudstone, siltstone and sandstone 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. If it is proposed to discharge runoff to a watercourse or sewer system, the condition and capacity or the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the asset owner.
- 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 Zone 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 River Anker may be susceptible to surcharging due to water levels in the River Anker. 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

The following are opportunities for wider sustainability benefits and integrated flood risk management at the site:

- 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.
- 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 River Anker 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. The River Anker is considered to be of poor ecological status.

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 will be required for this site if 'More Vulnerable' development is proposed within Flood Zone 3a.

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:

- Greater than one hectare
- In Flood Zones 2 or 3
- At risk of flooding from surface water and reservoirs
- At high risk of groundwater emergence

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 Tamworth Borough 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

A sequential approach to the site layout should be adopted with the most vulnerable parts of the development steered away from the areas of highest risk in the western section of the site which is at risk of fluvial and surface water flooding.

A detailed hydraulic model of the River Anker may be required at FRA stage to accurately represent the risk from this watercourse.

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 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. In particular Staffordshire County Council as LLFA will require the drainage strategy to address:

- The drainage hierarchy and preference for infiltration where feasible.
- Use of source control measures at the earliest opportunity.
- Rainwater harvesting and reuse measures where practicable.
- Management of the first 5mm of rainfall (everyday rainfall).
- Above-ground, multifunctional SuDS that deliver water quality, biodiversity and amenity benefits.
- Reduction of runoff volumes and peak discharge rates.

Arrangements for safe access and escape 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 escape 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.

The residual risk of reservoir flooding at the site will need to be considered further at the site-specific FRA stage. An emergency plan may be required, demonstrating that the residual risks to the site can be safely managed and that appropriate evacuation plans are in place.

8 Conclusions

The west of the site is at fluvial risk from the River Anker. Flood Zones 3a, and 2 impact the site but there are no records of historic fluvial flooding to the site. Surface water risk on the site is limited to ponding in the west and a small instance of ponding to the centre in the 0.1% AEP surface water event. Additionally, the west of the site is at residual risk of reservoir flooding and high risk of groundwater emergence.

Access and escape from Moor Lane is likely to be possible in both fluvial and surface water events from the south, however, further assessment of surface water velocity and hazard is likely to be required as part of a site-specific FRA as this data is currently not available within the EA's FMfP Surface Water Spatial Planning dataset.

The Exception Test may be required for this site if 'More Vulnerable' development is proposed within Flood Zone 3a.

A site-specific FRA will be required for this site.

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

- A site-specific FRA should be undertaken, which assesses all sources of flood risk. This may require hydraulic modelling of the River Anker and detailed surface water modelling.
- A sequential should be taken to the site layout steering more vulnerable aspects of the development away from the area of highest risk in the west of the site.
- A carefully considered and integrated flood resilient and sustainable drainage design should be put forward, including a site-specific Surface Water Drainage Strategy, and SuDS maintenance and management plan and supported by detailed modelling. Infiltration testing should be undertaken to confirm the groundwater levels and appropriateness of SuDS, to inform a sustainable drainage strategy in line with the SuDS hierarchy.
- Flood mitigation measures should be implemented then tested to check that they will not displace water elsewhere (for example, if land is raised to permit development in one area, compensatory flood storage will be required in another).
- Severn Trent Water should be consulted at an early stage on drainage proposals for the site to identify any potential constraints or existing sewer flooding issues that may not have been identified through this high level assessment.

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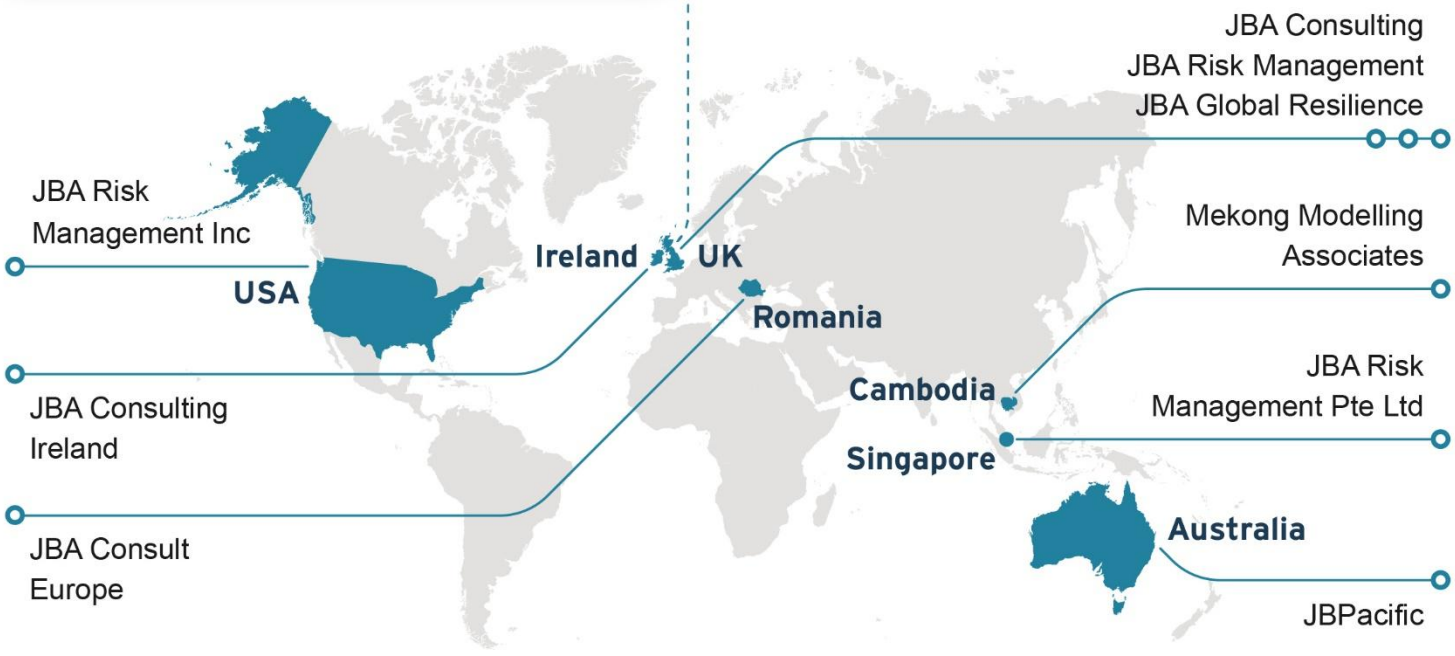

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Level 2 Strategic Flood Risk Assessment

Site 22/096

Prepared for:

Tamworth Borough Council

Contents

1 Background 4
1.1 Site details 4
1.2 Topography 4
1.3 Geology and soils 5

2 Sources of flood risk 6
2.1 Location of site within the catchment 6
2.2 Existing drainage features 6
2.3 Fluvial 6
2.4 Surface water 8
2.5 Reservoir 9
2.6 Groundwater 10
2.7 Sewers 10
2.8 Flood history 10

3 Climate change 11
3.1 Fluvial 11
3.2 Surface water 12

4 Flood risk management infrastructure 13
4.1 Defences 13
4.2 Residual risk 13

5 Emergency planning 14
5.1 Flood warnings and alerts 14
5.2 Access and Escape 14
5.3 Dry islands 14

6 Requirements for drainage control and impact mitigation 15
6.1 Broadscale assessment of possible SuDS 15
6.2 Opportunities for wider sustainability benefits and integrated flood risk management 16

7 NPPF and planning implications 17
7.1 Exception Test requirements 17

7.2 Requirements and guidance for site-specific Flood Risk Assessment 17
7.3 Guidance for site design and making development safe 17

8 Conclusions 19

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Site 22/096. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Tamworth Borough Level 1 SFRA (June 2025). The reader should also familiarise themselves with the Tamworth Borough Level 2 SFRA Main Report, where there is further explanation of the terminology used in this report.

1.1 Site details

- Location: Land off Coton Lane
- Site area: 4.19ha
- 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 (updated in 2025). The site lies on low-lying land as part of the floodplain of the River Tame and is bounded by higher ground to the east, south, and west.

The site slopes gently downhill from a maximum elevation in the west of 58.9mAOD, to a minimum elevation in the east of 55.9mAOD. Minimum elevations are shown along the channel of an unnamed watercourse which flows through the east of the site from the southern to the northern boundary, and along a footpath within the site which runs parallel to the eastern boundary.

The site contains a raised embankment which starts within the southern site boundary running southwest, continues northwards parallel to the western site boundary, and then passes through the north-western extension of the site before exiting the site boundary. Additionally, there is a small area of higher ground in the southeast corner of the site associated with a bridge over the railway line, which shows a maximum elevation within the site of 65.6mAOD.

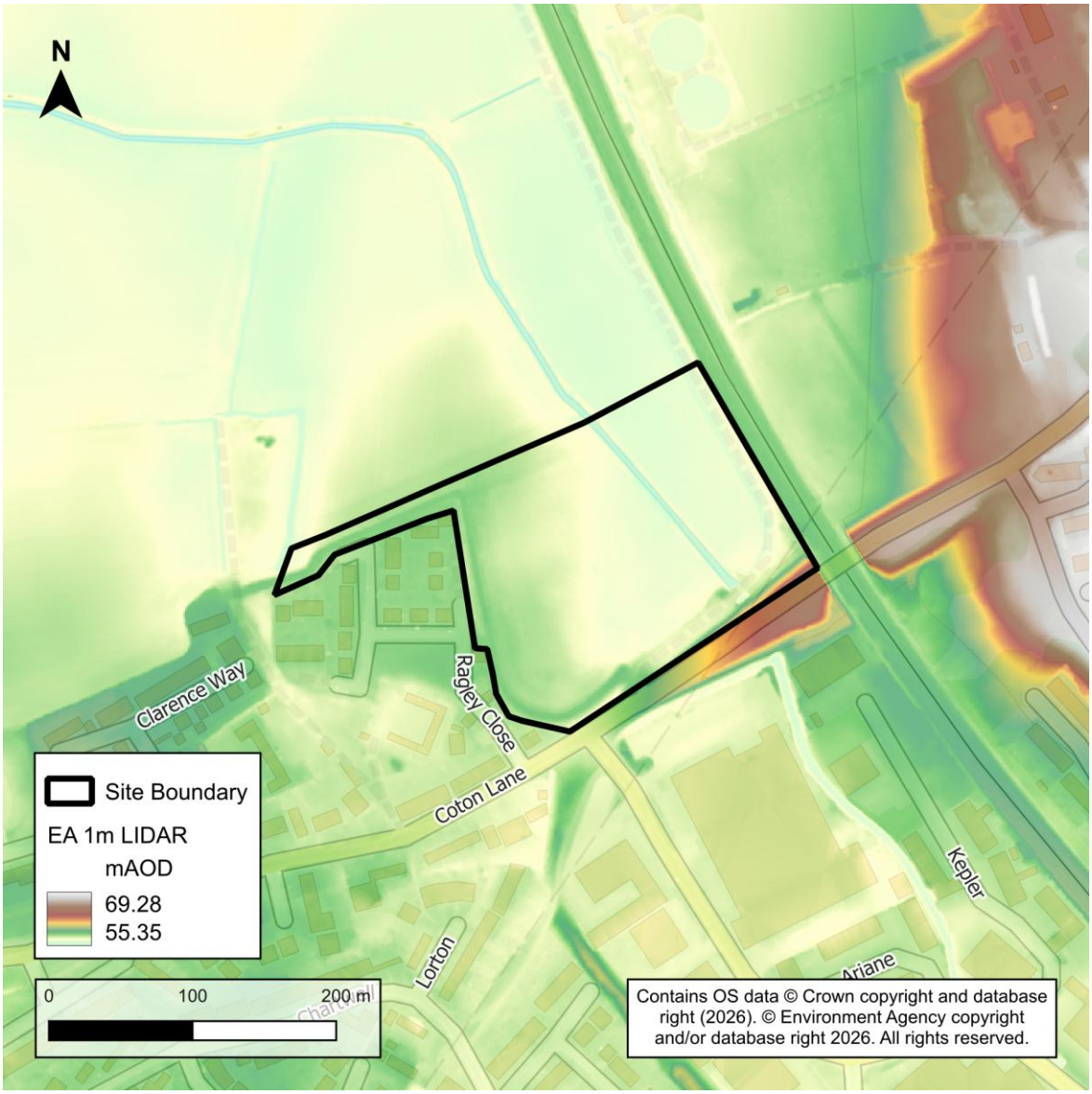

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Gunthorpe Member, comprised of mudstone.
- Superficial - River terrace deposits, comprised of sand and gravel.

Soils at the site consist of loamy soils with naturally high groundwater.

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located in the upper reaches of the Tame from River Anker to River Trent Water Body catchment. The River Tame flows through the west of Tamworth where it is joined by the River Anker. The River Tame continues flowing northwards approximately 700m west of the site, then flows through Comberford and Elford before joining the River Trent at Alrewas. The catchment is characterised by a mix of urban and rural land uses, with the urban areas concentrated around Tamworth.

2.2 Existing drainage features

There is an unnamed ordinary watercourse flowing through the east of the site, entering the southern boundary under Coton Lane, flowing northwest across the site, and exiting the northern boundary. The watercourse continues northwards until its confluence with the River Tame, approximately 1.2km downstream of the site.

2.3 Fluvial

2.3.1 Available data

The EA's Flood Map for Planning (FMfP) and the EA's detailed hydraulic model for the River Tame have been used in this assessment. Flood Zone 3b has been represented using the Rivers and Sea 3.3% AEP defended extent, as defined within the Tamworth Level 1 SFRA Main Report.

Available depth, velocity, and hazard information has been used to inform the risk from the River Tame for the 1% AEP undefended event (Flood Zone 3a) and the defended 1% and 0.1% AEP events. No data is currently available for the 3.3% AEP defended or 0.1% AEP undefended events, therefore, updates to the River Tame modelling may be required as part of a site-specific Flood Risk Assessment.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.3.2 EA Flood Zones

There is significant fluvial flood risk shown across the site. Table 2-1 shows the percentage of the site shown to be at risk of fluvial flooding.

Flood Zone 3b covers most of the eastern half of the site and the western site boundary. The FMfP Flood Zone 3a covers the rest of the eastern half, as well as extending across much of the western area. The FMfP Flood Zone 2 increases further in extent, encompassing almost the entire site.

Table 2-1: Present day fluvial flood risk based on the EA FMfP *

Flood Zone 3b (%)	Flood Zone 3a (%)	Flood Zone 2 (%)	Flood Zone 1 (%)
26	85	97	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 3a and Flood Zone 3b percentage. Flood Zone 1 + Flood Zone 2 = 100%.*

2.3.3 Modelled risk - River Tame (undefended)

The 1% AEP undefended model extent for the River Tame shows a greater extent than the EA FMfP Flood Zone 3a extent.

The maximum depth and hazard are found in the east of the site, within and adjacent to the unnamed watercourse, while the maximum velocity is shown in the southwest corner of the site. These are shown in Table 2-2.

Depths are mainly between 1.2m and 2.0m in the east of the site, progressively decreasing towards the west. For a small area in the north-western extension of the site, depths do not exceed 0.15m. Velocities across the site are mostly shown to remain below 0.25m/s, with the exception of along the unnamed watercourse and in the southwest corner. The hazard classification across the site is mainly 'Danger for Most', however this increases to 'Danger for All' in an area stretching from the centre of the site up to the northeast corner.

Table 2-2: Present day fluvial flood risk based on the River Tame model undefended outputs.

Assessment category	1% AEP
Percentage of site at risk (%)	96
Maximum depth (m)	2.13
Maximum velocity (m/s)	1.04
Maximum hazard classification	Danger for All (2.30)

2.3.4 Modelled risk - River Tame (defended)

Fluvial risk to this site is shown to decrease slightly when the defences along the River Tame are included within the modelling.

While the flood extent of the 1% AEP defended scenario remains similar to the 1% AEP undefended scenario, depths generally decrease, especially in the west of the site. The hazard across much of the site is 'Danger for Most' similar to the undefended scenario, however the area covered by the highest classification, 'Danger for All', reduces considerably with only minor areas shown within the path of the unnamed watercourse. Velocities are shown to remain below 0.25m/s across most of the site, however they increase for the defended scenario within the western boundary of the site and in the north-western extension to between 0.5m/s and 1.0m/s, with small areas reaching between 1.0m/s and 2.0m/s.

The 0.1% AEP defended extent covers almost the entire site. Maximum depths are greater than 2.0m across most of the eastern half of the site, while depths of between 1.0m and 2.0m cover a large area of the site too. The lowest depths in the west of the site are shown to be up to 0.3m. Velocities are mainly between 0.25m/s and 0.5m/s, with the southwest corner increasing to 0.5m/s to 1.0m/s. A velocity of between 1.0m/s and 2.0m/s is reached for an extended area within the site, parallel to the western boundary and through the north-western extension, with small areas of this increasing to more than 2.0m/s. The maximum hazard of 'Danger for All' is shown across the majority of the site, with the rest of the site mainly classified as 'Danger for Most'.

Table 2-3: Present day fluvial flood risk based on the River Tame model defended outputs.

Assessment category	1% AEP	0.1% AEP
Percentage of site at risk* (%)	96	97
Maximum depth (m)	2.01	2.61
Maximum velocity (m/s)	1.43	2.45
Maximum hazard classification	Danger for All (2.29)	Danger for All (3.97)

2.4 Surface water

2.4.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk. Velocity and hazard data is not currently available within this dataset, therefore the Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment to inform the velocity and hazard of surface water risk.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.4.2 Description of risk to the site

Surface water flood risk is dispersed across the site as small, isolated areas of ponding. There are minor flow paths present along the footpath within the eastern boundary and within the western boundary of the site, but most of the site is not shown to be at surface water risk in any of the modelled AEP events.

During the 3.3% AEP event, there are two small areas of ponding with a hazard classification of 'Very Low Hazard'. The maximum depth shown in Table 2-3 is reached near the centre of the site, while the depth of ponding at the footpath in the east of the site is less than 0.15m.

During the 1% AEP event, the existing areas of ponding increase and an additional area develops along the western site boundary. The maximum depth in all areas of ponding remains between 0.15m and 0.30m and the hazard classification remains at 'Very Low Hazard'.

These areas of ponding increase further during the 0.1% AEP event and several additional areas of ponding emerge. Depths of between 0.30m and 0.60m are reached along the south and west boundaries, with a hazard classification of 'Danger for Some'. Velocities are mainly below 0.25m/s but exceed 0.5m/s near the eastern footpath and the western boundary of the north-western extension. Maximum depths up to 0.90m are reached for a very small area at this western boundary, where the hazard classification increases to 'Danger for Most'.

Table 2-4: Present day surface water flood risk based on the EA's FMfP Surface Water Planning dataset (extent, depth) and RoFSW dataset (velocity, hazard).

Assessment category	High risk (3.3% AEP)	Medium risk (1% AEP)	Low risk (0.1% AEP)
Percentage of site at risk* (%)	1	1	6
Maximum depth (m)	0.15 - 0.30	0.15 - 0.30	0.60 - 0.90
Maximum velocity (m/s)	<0.25	<0.25	0.5 - 1.0
Maximum hazard classification	Very Low Hazard	Very Low Hazard	Danger 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).*

2.5 Reservoir

The site is not shown to be at risk of reservoir flooding during the Dry Day scenario from the EA reservoir flood maps. However, almost the entire site is affected by Wet Day flood extents from the following reservoirs:

- Belfry
- Chasewater (Cannock Chase)
- Middleton Hall Lake
- Shustoke Lower.

In addition, the eastern part of the site and the western boundary is affected by Wet Day flood extents from the following reservoirs:

- Rotton Park
- Earlswood Lakes - Engine Pool
- Earlswood Lakes - Windmill Pool
- Bartley
- Minworth Curdworth

The Wet Day event seeks to estimate the effect of a breach at the same time as a 0.1% AEP river flood is occurring and suggests that the consequences of such a breach are

similar to the modelled 0.1% AEP event river flood event but probably would be associated with a much lower probability.

2.6 Groundwater

The JBA Groundwater Emergence Map shows groundwater levels are predicted to lie at or very near (within 0.025m of) the ground surface in a 1% AEP groundwater flood event. This indicates there is a risk of groundwater flooding to both surface and subsurface assets and groundwater may emerge at significant rates. Based on the topography of the site, it is likely that any groundwater that emerges at the surface will flow towards the east of the site into the unnamed ordinary watercourse which flows through 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 Severn Trent Drainage and Wastewater Management Plan (DWMP23) shows the site is not located within a Severn Trent sewer wastewater treatment works catchment, therefore no further information can be ascertained at this time.

Severn Trent Water provided their Hydraulic Sewer Flooding Risk Register for the borough which includes a list of properties which have reported at least one incidence of external or internal sewer flooding between June 1997 and August 2024. Based on the data provided, there has been one incident of sewer flooding reported within the site boundary in February 2021. Therefore, the risk of sewer flooding should be assessed further at the site-specific Flood Risk Assessment stage.

2.8 Flood history

The EA's Historic Flood Mapping and Recorded Flood outlines datasets do not have records of any flooding on or surrounding the site.

Historic incident data provided by Staffordshire County Council show no records of historic flooding on or surrounding 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 4.6 of the Tamworth Level 2 SFRA Main 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 escape must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

Fluvial climate change extents have been taken from the EA's detailed River Tame hydraulic model. The defended extents for the 1% AEP plus 22% and 30% climate change have been used which represent the Central and Higher Central allowances for the 2080s epoch. These have been compared with the 1% AEP defended present day extent to assess the implications of climate change.

3.1.2 Description of risk to the site

Similar to the 1% AEP present day scenario, almost the entire site is affected in the 1% AEP plus climate change scenarios, with a marginal increase in flood extent. Flood depths generally increase across the site in the climate change scenarios, with depths exceeding 2.0m across a much larger area in the east of the site compared to in the present day scenario.

While in the 1% AEP scenario the velocities across the site mainly remain below 0.25m/s, in the climate change scenarios, velocities up to 0.5m/s affect a large area of the site, especially in the west. The maximum hazard classification of 'Danger for All' only affects a small area along the unnamed watercourse within the site in the present day scenario, however in the climate change scenarios, this area increases significantly to cover most of the eastern area of the site, also extending towards the southwest corner.

Table 3-1: Comparison of fluvial flood risk to the site between the 1% AEP and 1% AEP plus 22% climate change extents.

Assessment category	1% AEP	1% AEP plus 22% CC	1% AEP plus 30% CC
Percentage of site at risk (%)	96	97	97
Maximum depth (m)	2.01	2.41	2.44
Maximum velocity	1.43	2.06	2.16

Assessment category	1% AEP	1% AEP plus 22% CC	1% AEP plus 30% CC
(m/s)			
Maximum hazard classification	Danger for All (2.29)	Danger for All (3.26)	Danger for All (3.56)

3.2 Surface water

3.2.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk with climate change. Climate change outputs are available for the 3.3%, 1%, and 0.1% AEP events with the Upper End climate change allowance for the 2070s epoch. There is currently no available velocity or hazard information to use within this assessment.

3.2.2 Description of risk to the site

As with the present day scenario, most of the site is not shown to be at surface water risk in the climate change scenario, with surface water flood risk dispersed across the site as isolated areas of ponding and minor flow paths.

Compared to the 3.3% AEP, the 3.3% AEP plus Upper End climate change scenario shows the depth of the existing areas of ponding increases to between 0.60m and 0.90m. There is also an additional area of ponding to these depths in the west of the site.

Compared to the 1% AEP present day scenario, the 1% AEP plus Upper End climate change scenario shows an increase in extent to existing areas of ponding, especially within the western boundary and along the footpath in the east. Depths are similar in the climate change scenario compared to present day, except for in the flow path within the western boundary where the maximum increases to between 0.30m and 0.60m. Additionally, at the western boundary of the north-western extension to the site, the maximum depth increases further, to between 0.60m and 0.90m.

The areas of ponding shown in the 0.1% AEP event increase in extent during the 0.1% AEP climate change scenario, but depths remain similar.

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

Assessment category	1% AEP	1% AEP + Upper End CC
Percentage of site at risk (%)	1	3
Maximum depth (m)	0.15 - 0.30	0.60 - 0.90

4 Flood risk management infrastructure

4.1 Defences

The site is not located in an area shown to benefit from defences.

The EA AIMS dataset also shows there are flood defences along the River Tame upstream of the site. Part of these defences include an embankment within the site which starts within the southern site boundary running southwest, continues northwards parallel to the western site boundary, and then passes through the north-western extension of the site before exiting the site boundary. The defences were designed to protect the residential area upstream of the site up to the 1% AEP event when built, however, the EA's River Tame hydraulic modelling shows the defences do not overtop within the 5% AEP event but do overtop within the 2% AEP event. While the fluvial risk to this site is shown to decrease slightly when the defences along the River Tame are included within the modelling, this is likely a result of them overtopping. Any improvements made to the defences could therefore cause the fluvial flood risk to this site to increase.

The EA have a project within the Flood and Coast Risk Management programme to improve the flood defences along the River Tame. There are currently no further details or timescales for this work, although the EA reported some early development work has been undertaken.

4.2 Residual risk

The site is at residual risk of reservoir flooding in the event of breaches of several reservoirs, as detailed in Section 2.5.

5 Emergency planning

5.1 Flood warnings and alerts

The site is located in the Lower Tame and Middle Tame EA Flood Alert Areas (033WAF306 and 033WAF304). A marginal area of the southwest corner is within the River Tame at Lichfield Road Tamworth Flood Warning Area (033FWF3TAME021).

5.2 Access and Escape

Safe access and escape 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 to the site may be provided from Coton Lane which runs along the southern boundary, or Ragley Close which borders the western boundary and part of the north-western extension of the site.

5.2.2 Fluvial

Access and escape via Ragley Close and Coton Lane are likely to be severely impeded by fluvial flooding. Flood Zones 2 and 3 from the EA's FMfP covers the northwest of the site and much of Ragley Close. Flood depths along Ragley Close for the 1% AEP plus climate change events in the River Tame hydraulic model, show a maximum of up to 1.2m with a hazard classification of 'Danger for All'.

Flood Zones 2 and 3 also cover Coton Lane to the southwest of the site. Maximum depths on Coton Lane in the climate change scenarios reach up to 2.0m, with maximum velocities up to 2.0m/s and a maximum hazard rating of 'Danger for All'. Safe access and escape may be possible on Coton Lane in an easterly direction, as the bridge over the railway track increases the elevation of the road above the area of flood risk.

5.2.3 Surface water

During the 1% AEP plus Upper End climate change scenario, Ragley Close itself is not affected by surface water flood extents, however the entrance to Ragley Close from Coton Lane is predicted to flood to maximum depths up to 0.6m. This would impede safe access and escape via this route. Coton Lane to the south of the site is largely unaffected by flood risk in the 1% AEP climate change scenario, with just some minor areas of ponding with depths which remain below 0.3m, which is unlikely to impede vehicular access and escape.

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

Surface water at the site should be discharged in accordance with the drainage hierarchy as set out in the National standards for SuDS (gov.uk). SuDS that provide opportunities to deliver multiple benefits including volume control, water quality, amenity, and biodiversity should be prioritised. SuDS proposals should be discussed with relevant stakeholders (Local Planning Authority (LPA), Lead Local Flood Authority (LLFA), and the EA) at an early stage to understand possible constraints. Where the national standards allow for local policy interpretation or discretion, applicants should refer to the Staffordshire County Council Flood Risk Management Team guidance and policies (staffordshire.gov.uk).

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.

The following factors should be considered when assessing whether infiltration is suitable at 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 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.

If it is proposed to discharge runoff to a watercourse or sewer system, the condition and capacity or the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the asset owner.

The unnamed ordinary watercourse flowing through the east of the site should be integrated into the site drainage strategy as blue-green infrastructure and public open space.

SuDS assets should, where practicable, be located outside areas of flood risk in the 1% AEP plus climate change fluvial event. As the entire site is shown to be at fluvial risk within this event, this presents a significant constraint to the placement and design of sustainable drainage options at this site. The LLFA should be consulted at an early stage to discuss appropriate drainage options, and the acceptability of SuDS features for the site.

6.2 Opportunities for wider sustainability benefits and integrated flood risk management

The following are opportunities for wider sustainability benefits and integrated flood risk management at the site:

- 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.
- Consideration should be made to the existing condition of the 'Tame from River Anker to River Trent' waterbody 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. The 'Tame from River Anker to River Trent' waterbody is considered to be of 'poor' ecological status.

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 required as the majority of the site is located in Flood Zone 3a. 'More Vulnerable' development will not be permitted within Flood Zone 3b which covers most of the east of 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 in Flood Zones 2, 3a and 3b
- is at risk of surface water flooding, reservoir flooding, sewer flooding and groundwater emergence
- is shown to be at increased risk of fluvial flooding in the future

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 Tamworth Borough 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

A buffer of at least 8m should be maintained between the watercourse within the site and any built development.

Due to the significant fluvial flood risk to the site, it will not be possible to steer development outside of areas of flood risk. Significant mitigation measures will be required to make development at the site safe.

Updates to the River Tame detailed hydraulic model are likely to be required at FRA stage, including to accurately represent the risk from this watercourse for Flood Zone 3b and test mitigation measures. The modelling will be required to show that any land raising at the sites does not increase flood risk elsewhere.

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 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. The significant fluvial risk at the site may affect the viability of sustainable drainage options, along with the predicted high groundwater levels and low permeability geology. The LLFA should therefore be consulted at an early stage to discuss a suitable approach to surface water management and drainage design. In particular Staffordshire County Council as LLFA will require the drainage strategy to address:

- The drainage hierarchy and preference for infiltration where feasible.
- Use of source control measures at the earliest opportunity.
- Rainwater harvesting and reuse measures where practicable.
- Management of the first 5mm of rainfall (everyday rainfall).
- Above-ground, multifunctional SuDS that deliver water quality, biodiversity and amenity benefits.
- Reduction of runoff volumes and peak discharge rates.

Arrangements for safe access and escape 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 escape 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.

The residual risk of reservoir flooding at the site will need to be considered further at the site-specific FRA stage. An emergency plan may be required, demonstrating that the residual risks to the site can be safely managed and that appropriate evacuation plans are in place.

8 Conclusions

The site is at significant risk of fluvial flooding, with almost the entire site covered by Flood Zones 2 and 3. Detailed hydraulic modelling of the River Tame indicates that climate change is expected to increase flood depths, velocities and hazards across the site. Therefore, substantial flood risk constraints and mitigation requirements will need to be addressed through site layout, drainage design and flood-resilient master planning. Additionally, the site is at risk of surface water flooding, reservoir flooding, sewer flooding and groundwater emergence.

The Exception Test will be required as most of the site is located within Flood Zone 3a. 'More Vulnerable' development is not permitted in Flood Zone 3b.

A site-specific FRA will also be required.

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

- A site-specific FRA should be undertaken, which assesses all sources of flood risk. This may require updates to the River Tame hydraulic model and detailed surface water modelling.
- Built development should be avoided within Flood Zone 3b, which should be retained for flood-compatible uses, green infrastructure and biodiversity enhancement.
- Flood mitigation measures should be implemented then tested to check that they will not displace water elsewhere (for example, if land is raised to permit development on one area, compensatory flood storage will be required in another).
- Habitable areas of residential ('More Vulnerable') development must be set above the design flood level (1% AEP plus a suitable climate change allowance).
- The unnamed ordinary watercourse in the east of the site should be incorporated within a multifunctional blue-green corridor, providing flood risk, amenity and biodiversity benefits.
- Safe access and escape should be considered in the design fluvial and surface water events. Developers should demonstrate that safe access and escape routes can be achieved; however, any raising of access and escape routes must make sure that floodwater is not displaced elsewhere. Where safe access and escape is not possible, other means of safe refuge and evacuation must be considered. Due to the fluvial risk surrounding the site, a Flood Warning and Evacuation Plan will be required to be prepared which considers the likely onset and duration of flooding and demonstrates how residents can safely be evacuated and/or shelter safely in situ during the design events.
- A carefully considered and integrated flood resilient and sustainable drainage design should be put forward, including a site-specific Surface Water Drainage Strategy, and SuDS maintenance and management plan and supported by detailed modelling. Infiltration testing should be undertaken to confirm the

groundwater levels and appropriateness of SuDS, to inform a sustainable drainage strategy in line with the SuDS hierarchy. The fluvial risk at the site may present a significant constraint to the implementation of SuDS at the site and will require early consultation with the LLFA to identify viable options.

- Severn Trent Water should be consulted at an early stage on drainage proposals for the site to identify any potential constraints or existing sewer flooding issues that may not have been identified through this high level assessment.

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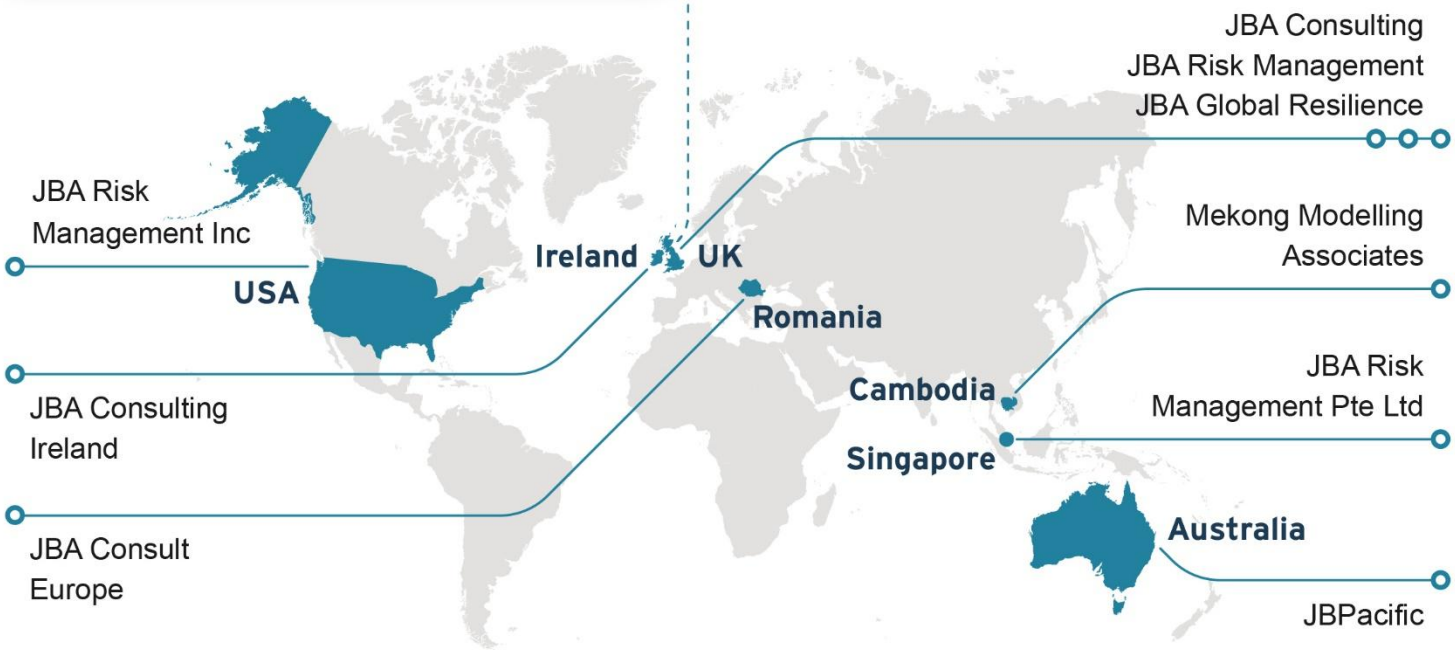

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Level 2 Strategic Flood Risk Assessment

Sites 23/575, 18/023, and 18/009

Prepared for:
Tamworth Borough Council

Contents

1 Background 4
1.1 Site details 4
1.2 Topography 4
1.3 Geology and soils 5

2 Sources of flood risk 6
2.1 Location of site within the catchment 6
2.2 Existing drainage features 6
2.3 Fluvial 6
2.4 Surface water 9
2.5 Reservoir 10
2.6 Groundwater 10
2.7 Sewers 11
2.8 Flood history 11

3 Climate change 12
3.1 Fluvial 12
3.2 Surface water 13

4 Flood risk management infrastructure 15
4.1 Defences 15
4.2 Residual risk 15

5 Emergency planning 16
5.1 Flood warnings and alerts 16
5.2 Access and Escape 16
5.3 Dry islands 17

6 Requirements for drainage control and impact mitigation 18
6.1 Broadscale assessment of possible SuDS 18
6.2 Opportunities for wider sustainability benefits and integrated flood risk management 19

7 NPPF and planning implications 20
7.1 Exception Test requirements 20

7.2 Requirements and guidance for site-specific Flood Risk Assessment 20
7.3 Guidance for site design and making development safe 20

8 Conclusions 22

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Sites 23/575, 18/023, and 18/009. The site assessment covers all three sites due to their proximity. It is expected that for whichever sites which progress to development, an integrated strategy is considered across the adjacent areas, and the sites are not considered on an individual basis.

The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Tamworth Borough Level 1 SFRA (June 2025). The reader should also familiarise themselves with the Tamworth Borough Level 2 SFRA Main Report, where there is further explanation of the terminology used in this report.

Descriptions within this assessment apply to all three sites except for when they are specified individually.

1.1 Site details

- Location: this site assessment is for three adjacent sites (23/575, 18/023, and 18/009) located adjacent to Millfield House, south of Lichfield Road (A51).
- Site area:
  - 23/575 - 0.84ha
  - 18/023 - 0.23ha
  - 18/009 - 0.42ha
- Existing site use: 23/575 is a greenfield site. 18/023 and 18/009 are both brownfield sites with existing commercial premises present.
- Proposed site use: Unconfirmed but likely to be promoted for residential use.

1.2 Topography

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR (updated in 2025).

Sites 18/009 and 18/023 are situated at a higher elevation than site 23/575. The highest elevations are found along the northern part of site 18/023, reaching 59.9mAOD. Otherwise, elevations across sites 18/009 and 18/023 remain mostly flat. The average elevations across sites 18/023 and 18/009 are 59.4mAOD and 59.2mAOD respectively.

Elevations across site 23/575 are highest along the northern site boundary reaching 59.8mAOD and then decrease steeply south into the site. Elevations across the remainder of the site remain mostly flat, with slightly lower elevations along the southernmost part of the site. The average elevation across the site is 58.7mAOD.

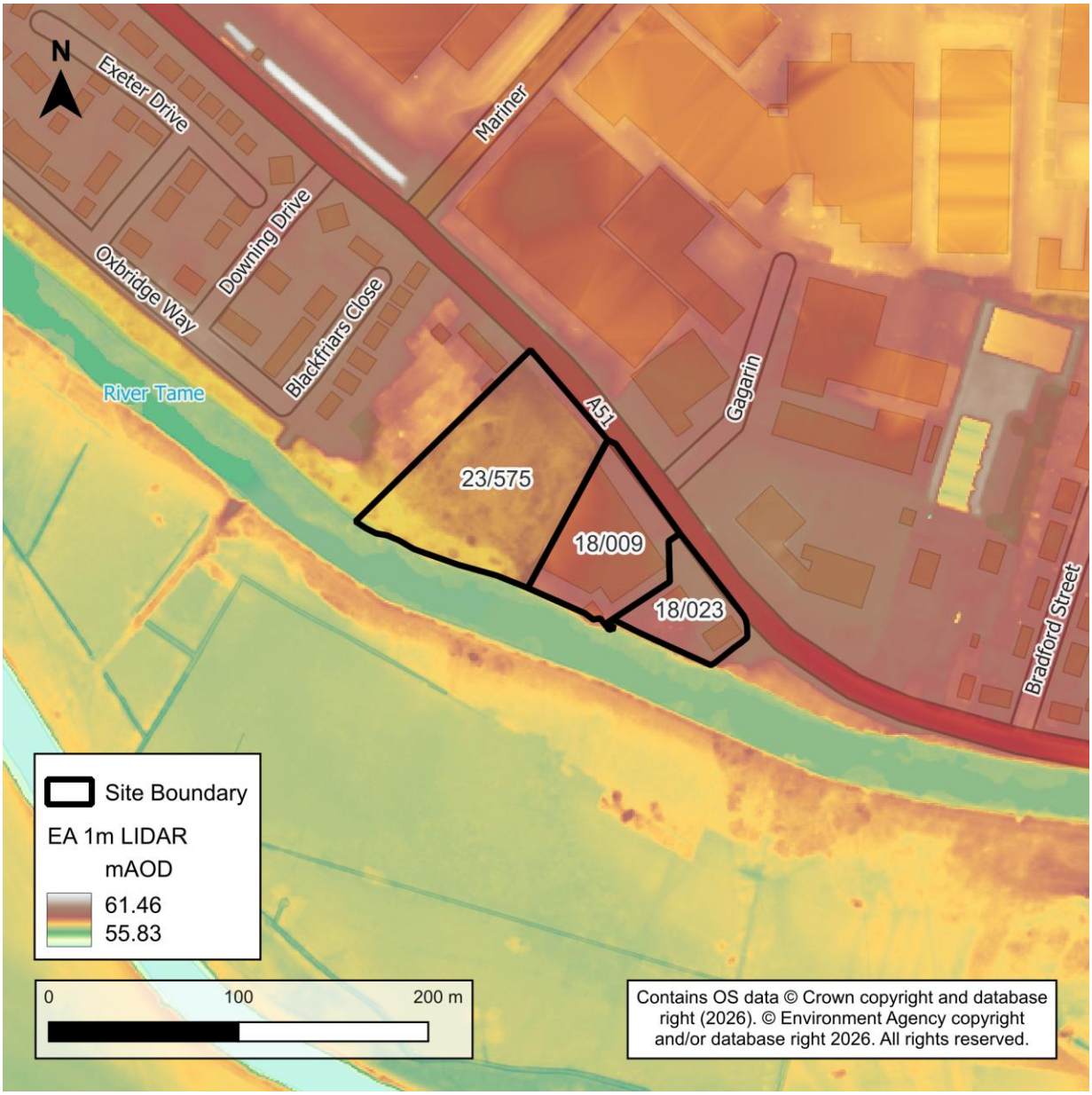

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology across the sites consists of:

- Bedrock - Gunthorpe Member comprised of mudstone.
- Superficial - River Terrace Deposits comprised of sand and gravel across most of the sites. There is a small area of alluvium deposits comprised of clay, silt, sand, and gravel in the southwest corner of site 23/575.

Soils at the sites consist of predominantly loamy and clayey floodplain soils with naturally high groundwater. Soils along the northeastern boundary of the sites consist of loamy soils with naturally high groundwater.

2 Sources of flood risk

2.1 Location of site within the catchment

The sites are located in the upstream end of the Tame from River Anker to River Trent Water Body catchment. A branch of the River Tame flows in a westerly direction adjacent to the southern site boundaries. The River Tame then continues and joins the River Trent approximately 10km north of the sites.

2.2 Existing drainage features

A branch of the River Tame flows in a westerly direction adjacent to the southern site boundaries. A second branch of the River Tame, believed to be a flood relief channel, is located approximately 250m south of the sites.

Online mapping shows no existing drainage features within the site boundaries however sites 18/023 and 18/009 are brownfield and there is likely to be existing drainage infrastructure present within the site.

2.3 Fluvial

2.3.1 Available data

The EA's Flood Map for Planning (FMfP) and the EA's detailed hydraulic model for the River Tame have been used in this assessment. Flood Zone 3b has been represented using the Rivers and Sea 3.3% AEP defended extent, as defined within the Tamworth Level 1 SFRA Main Report.

Available depth, velocity, and hazard information has been used to inform the risk from the River Tame for the 1% AEP undefended event (Flood Zone 3a) and the defended 1% and 0.1% AEP events. No depth velocity, or hazard data is currently available for the 3.3% AEP defended or 0.1% AEP undefended events (which have been inform by the EA national mapping), therefore, updates to the River Tame modelling to provide depth, velocity, and hazard data for these events may be required as part of a site-specific Flood Risk Assessment.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.3.2 EA Flood Zones

There is significant fluvial flood risk across all three sites. Table 2-1 shows the percentage of each site shown to be at risk of fluvial flooding.

Flood Zones 3b and 3a are shown to remain within the river channel adjacent to sites 18/023 and 18/009 and do not affect the sites.

Flood Zone 3b is present across site 23/575, covering the southern half of the site.

The FMfP Flood Zone 3a covers almost the entirety of site 23/575 but is shown to be a minimal area into sites 18/023 and 18/009 along the southern boundary.

FMfP Flood Zone 2 increases in extent, encompassing most of the area across all three sites.

Table 2-1: Present day fluvial flood risk based on the EA FMfP *

Site	Flood Zone 3b (%)	Flood Zone 3a (%)	Flood Zone 2 (%)	Flood Zone 1 (%)
23/575	41	90	100	0
18/023	<1	3	87	13
18/009	<1	4	97	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 3a and Flood Zone 3b percentage. Flood Zone 1 + Flood Zone 2 = 100%.*

2.3.3 Modelled risk - River Tame (undefended)

The 1% AEP undefended model extent from the River Tame shows a similar extent to the EA FMfP Flood Zone 3a (as described in Section 2.3.2) and has been used to assess depth, velocity, and hazard across the sites within this event.

The maximum depth, velocity, and hazard are found along the southern boundary of the sites adjacent to the River Tame, shown in Table 2-2.

Depths across site 23/575 exceed 0.60m in the southern end of the site, are between 0.30m and 0.60m across the southern half of the site, and are mostly between 0.15m and 0.30m across the areas of risk in the north of the site, with some areas shown where depths do not exceed 0.15m. Velocities across the site are mostly shown to remain below 0.25m/s. Hazard classification is 'Danger for Most' across the southern part of the site and then varies between 'Danger for Some' and 'Very Low Hazard' across the central and northern parts of the site.

Table 2-2: Present day fluvial flood risk based on the River Tame model undefended outputs.

Assessment category	Site 23/575 1% AEP	Site 18/023 1% AEP	Site 18/009 1% AEP
Percentage of site at risk (%)	92	7	6
Maximum depth (m)	2.26	0.68	0.98
Maximum velocity (m/s)	1.04	0.51	0.73
Maximum hazard classification	Danger for All (4.72)	Danger for Most (1.70)	Danger for All (2.20)

2.3.4 Modelled risk - River Tame (defended)

There are no formal raised flood defences immediately adjacent to the site although there are raised defences upstream and downstream of the site along the River Tame. Fluvial risk to these sites is shown to increase when the defences along the River Tame upstream of the site are included within the modelling. The defences are discussed further in Section 4.1.

The extent of risk across site 23/575 is shown to increase when comparing the 1% AEP defended with the 1% AEP undefended scenario to cover most of the site boundary, showing a similar extent to Flood Zone 2. Depths across the site are shown to increase with most of the site having depths between 0.30m and 0.60m. Velocities are shown to remain below 0.25m/s across most of the site. Hazard classification increases across the site with 'Danger for Most' covering a much larger area across the south and centre of the site.

The 0.1% AEP defended extent shows fluvial risk across the majority of site 23/575 and the boundaries of sites 18/023 and 18/009, forming a small dry island within the centre of these sites. Depths across site 23/575 are between 0.60m and 0.90m and exceed 0.90m in the southern part of the site. Velocities are between 0.25m/s and 0.50m/s in the south of the site, remaining below 0.25m/s in the north of the site. Hazard classification is 'Danger for Most' across most of the site. The area of risk surrounding 18/023 and 18/009 shows lower depths, remaining mostly below 0.60m along the site boundaries and below 0.15m where the risk extends further into the sites. Velocities are mostly below 0.25m/s and hazard classification is 'Danger for Most' along the site boundaries but 'Very Low Hazard' where the risk extends further into the sites.

Table 2-3: Present day fluvial flood risk based on the River Tame model defended outputs.

Assessment category	Site 23/575 1% AEP	Site 18/023 1% AEP	Site 18/009 1% AEP	Site 23/575 0.1% AEP	Site 18/023 0.1% AEP	Site 18/009 0.1% AEP
Percentage of site at risk (%)	96	20	16	99	66	70
Maximum depth (m)	2.47	0.83	1.14	2.87	1.24	1.55
Maximum velocity (m/s)	0.92	0.52	0.69	1.07	0.78	0.89
Maximum hazard classification	Danger for All (4.69)	Danger for Most (1.84)	Danger for All (2.35)	Danger for All (5.67)	Danger for All (2.43)	Danger for All (3.04)

2.4 Surface water

2.4.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water flood risk. Velocity and hazard data is not currently available within this dataset, therefore the Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment to inform the velocity and hazard of surface water risk.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.4.2 Description of risk to the site

Site 18/009 is not shown to be at surface water flood risk in any of the modelled AEP events.

Site 18/023 shows minimal flood risk during the 0.1% AEP event but is otherwise not shown to be at surface water risk in any of the modelled AEP events.

Site 23/575 is not shown to be at surface water risk in the 3.3% AEP event.

In the 1% AEP event, there is an area of ponding that develops in the northeast of site 23/575, and an additional area of ponding along the southern site boundary. Depths mostly remain below 0.15m across the site, with velocities less than 0.25m/s, and a hazard classification of 'Very Low Hazard'.

In the 0.1% AEP event, the ponding in the northeast of the site increases in extent and two additional areas of ponding form in the centre and west of the site. Depths remain mostly below 0.15m, with an area of depths between 0.15m and 0.30m in the area of ponding in the northeast. Velocities are mostly below 0.25m/s and hazard is classified as 'Very Low Hazard'. Maximum depths, velocities and hazard classifications for this site are shown in Table 2-4.

Table 2-4: Present day surface water flood risk based on the EA's FMfP Surface Water Spatial Planning dataset (extent, depth) and RoFSW dataset (velocity, hazard) for site 23/575.

Assessment category	High risk (3.3% AEP)	Medium risk (1% AEP)	Low risk (0.1% AEP)
Percentage of site at risk* (%)	0	3	10
Maximum depth (m)	N/A	<0.15	0.15 - 0.30
Maximum velocity (m/s)	N/A	<0.25	0.25 - 0.50
Maximum hazard classification	N/A	Very Low Hazard	Very Low Hazard

** 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

Reservoir flood mapping shows the Dry Day flood extent from the Chasewater (Cannock Chase) reservoir affects the area of lowered elevation in the south of site 23/575.

In the Wet Day flood extent the sites are at risk of flooding from several reservoirs.

- The largest flood extents are from the Chasewater (Cannock Chase) and Shustoke Lower reservoirs which cover most of the sites, with the exception of the area of highest elevation in the north of site 18/023.
- The Belfry and Middleton Hall Lake reservoirs show similar extents at the sites, encompassing most of site 23/575, the western and southern sides of site 18/009, and the southwest of site 18/023.
- Earlswood Lakes - Engine Pool, Earlswood Lakes - Windmill Pool, Minworth Curdworth, and Rotton Park reservoirs show similar extents, predominantly impacting site 23/575, covering most of the site. The risk to sites 18/023 and 18/009 from these reservoirs is confined to the southern site boundaries.
- Bartley Reservoir shows a small extent, covering the southern part of site 23/575 and also encroaching into the northeast of the site. The risk to sites 18/023 and 18/009 is confined to the southern site boundaries.

The Wet Day event seeks to estimate the effect of a breach at the same time as a 0.1% AEP river flood is occurring and suggests that the consequences of such a breach are similar to the modelled 0.1% AEP event river flood event but probably would be associated with a much lower probability.

2.6 Groundwater

The JBA Groundwater Emergence Map shows groundwater levels are predicted within 0.025m of the ground surface in a 1% AEP groundwater flood event across most of the sites. Within these areas there is a risk of groundwater flooding to both surface and subsurface assets and groundwater may emerge at significant rates.

Based on the flat topography of the sites, it is likely that any emerging groundwater will pool within low points of the sites.

There is a small area along the south of site 23/575 where the risk of groundwater emergence is deemed to be negligible due to the nature of the underlying local geological deposits.

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 Severn Trent Drainage and Wastewater Management Plan (DWMP23) shows the brownfield sites (18/023 and 18/009) are located within the Tamworth Water Treatment Works catchment. A high-level risk based screening did not identify internal or external sewer flooding as a key catchment risk or vulnerability.

Severn Trent Water provided their Hydraulic Sewer Flooding Risk Register for the borough which includes a list of properties which have reported at least one incidence of external or internal sewer flooding between June 1997 and August 2024. Based on the data provided, no properties have reported flooding within the site boundary or in areas immediately surrounding the site. However, further incidents of sewer flooding may have occurred which have not been recorded. Therefore, the risk of sewer flooding should be assessed further at the site-specific Flood Risk Assessment stage.

2.8 Flood history

The EA's Historic Flood Mapping and Recorded Flood outlines datasets show two records of flooding across the sites. In both June 1955 and December 1992, the sites are recorded to have experienced fluvial flooding as a result of overtopping of the River Trent.

Historic incident data provided by Staffordshire County Council show no records of historic flooding on or surrounding 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 4.6 of the Tamworth Level 2 SFRA Main 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 escape must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

Fluvial climate change extents have been taken from the EA's detailed River Tame hydraulic model. The defended extents for the 1% AEP plus 22% and 30% climate change have been used which represent the Central and Higher Central allowances for the 2080s epoch. These have been compared with the 1% AEP defended present day extent to assess the implications of climate change.

3.1.2 Description of risk to the site

The sites are shown to be at increased risk with climate change with increased extents across 18/023 and 18/009 and increased depth and hazard across site 23/575.

Most of site 23/575 is already shown to be at fluvial risk within the 1% AEP event. However, depths across the site are shown to increase between the present day and climate change events to depths between 0.6m and 0.9m across most of the site. Velocities remain below 0.25m/s across most of the site with increased areas between 0.25m/s and 0.50m/s in the south of the site. Hazard classification increases with 'Danger for Most' classification across most of the site.

The 1% AEP event shows risk at sites 18/023 and 18/009 to be confined to the southern and western site boundaries. In the 1% AEP climate change events, there is increased risk in the north of site 18/023 and in the southwest and northeast of site 18/009. Depths in these new areas of risk mostly remain below 0.15m, with some areas between 0.15m and 0.30m. Velocities mostly remain below 0.25m/s with a hazard classification of 'Very Low Hazard'.

Table 3-1: Summary of fluvial flood risk to the site in the 1% AEP plus climate change defended extents.

Assessment category	Site 23/575 1% AEP plus 22% CC	Site 23/575 1% AEP plus 30% CC	Site 18/009 1% AEP plus 22% CC AEP	Site 18/009 1% AEP plus 30% CC	Site 18/023 1% AEP plus 22% CC	Site 18/023 1% AEP plus 30% CC
Percentage of site at risk (%)	99	99	46	46	52	52
Maximum depth (m)	2.69	2.73	1.36	1.40	1.05	1.08
Maximum velocity (m/s)	0.98	1.00	0.74	0.78	0.79	0.79
Maximum hazard classification	Danger for All (5.14)	Danger for All (5.26)	Danger for All (2.69)	Danger for All (2.77)	Danger for All (2.13)	Danger for All (2.20)

3.2 Surface water

3.2.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk with climate change. Climate change outputs are available for the 3.3%, 1%, and 0.1% AEP events with the Upper End climate change allowance for the 2070s epoch. There is currently no available velocity or hazard information to use within this assessment.

3.2.2 Description of risk to the site

Surface water risk across the sites is shown to increase with climate change but remains confined to localised areas of ponding with most of the sites remaining at low risk of surface water flooding.

Surface water risk at site 18/009 remains minimal with climate change. The site is not shown to be at surface water risk until the 0.1% AEP climate change event where an area of ponding encroaches into the northwest corner of the site, where the depth remains below 0.15m.

Site 18/023 has a single cell of risk shown in the 1% AEP climate change event but otherwise is not shown to be at risk until the 0.1% AEP climate change event where an area of ponding develops in the south of the site. Depths in this area of ponding mostly remain below 0.15m with a small area between 0.15m and 0.30m.

Site 23/575 is shown to be at increased risk in all modelled climate change events. The site is not at risk in the present day 3.3% AEP event, but an area of ponding develops in the

northeast of the site in the 3.3% AEP climate change event. Depths mostly remain below 0.30m. Between the 1% AEP present day and climate change events, a new area of ponding develops in the west of the site, with depths mostly below 0.15m. Depths in the existing area of ponding in the northeast increase slightly with climate change, with more areas showing depths between 0.15m and 0.30m. Between the 0.1% AEP present day and climate change events, the extents of all areas of ponding increase and two new areas of ponding develop in the northeast and southwest of the site. Depths across all areas of risk still remain mostly below 0.15m but there are larger areas where depths are between 0.15m and 0.30m.

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

Assessment category	1% AEP	1% AEP + Upper End CC
Percentage of site at risk (%)	2	6
Maximum depth (m)	<0.15	0.15 - 0.30

4 Flood risk management infrastructure

4.1 Defences

The EA AIMS dataset shows there are no formal flood defences along the River Tame where it flows adjacent to the southern site boundaries. There is an embankment along the right bank of the River Tame which ends immediately upstream of the site. Detailed hydraulic modelling for the River Tame shows that fluvial flood risk at the sites is shown to increase when the presence of the flood defences is considered (Section 2.3.4). Therefore, the risk of flooding to the site should be considered in both the undefended and defended scenarios within a site-specific FRA, to ensure that flood risk to the site is not underestimated.

4.2 Residual risk

The site is at residual risk of reservoir flooding as a result of a breach of several reservoirs, as detailed in Section 2.5.

5 Emergency planning

5.1 Flood warnings and alerts

The sites are located within the River Tame at Lichfield Road Tamworth Flood Warning Area (033WAF304) and the Middle Tame Flood Alert Area (033WAF304).

5.2 Access and Escape

Safe access and escape 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

The sites can be accessed from the north via the A51.

5.2.2 Fluvial

Whilst the A51 immediately north of the site is not shown to be at fluvial risk within the EA FMfP Flood Zones or EA's detailed hydraulic modelling of the River Tame, the sites are part of a large dry island. In the 1% AEP plus 30% climate change event this dry island is approximately 0.12km^2 in area, extending from the site approximately 550m west. Access and escape from the site to the immediate vicinity is likely to be possible but access and escape to the wider surroundings and for emergency vehicles is shown to be impeded by fluvial flood risk.

In the 1% AEP plus climate change events, depths along the A51 to the east of the site are shown to exceed 0.9m with a hazard classification of 'Danger for Most' whilst depths to the west exceed 1.2m with a hazard classification of 'Danger for All'.

5.2.3 Surface water

The A51 immediately adjacent to the site is not shown to be at surface water risk. However, there is a flow path present along the A51 to the east of the site in the 1% AEP, 1% AEP plus climate change, and 0.1% AEP events. Depths are shown to be between 0.30m and 0.60m in the 1% AEP climate change event which may impede access and escape from this direction.

To the west of the site, there are areas of ponding which form along the A51 in all modelled AEP events. However, depths remain below 0.30m in the 1% AEP plus climate change event so access and escape may be possible from this direction. However, further assessment of velocity and hazard will be required as part of a site-specific FRA to confirm this.

5.3 Dry islands

The site is located on a dry island, as discussed in Section 5.2.2. This dry island is not present in the 3.3% AEP event, but is present in the 1% AEP, 1% AEP plus climate change, and 0.1% AEP events. In the 0.1% AEP fluvial event, there is also a small dry island that forms within sites 18/009 and 18/023, as discussed in Section 2.3.4.

6 Requirements for drainage control and impact mitigation

6.1 Broadscale assessment of possible SuDS

Surface water at the site should be discharged in accordance with the drainage hierarchy as set out in the National standards for SuDS (gov.uk). SuDS that provide opportunities to deliver multiple benefits including volume control, water quality, amenity, and biodiversity should be prioritised. SuDS proposals should be discussed with relevant stakeholders (Local Planning Authority (LPA), Lead Local Flood Authority (LLFA), and the EA) at an early stage to understand possible constraints. Where the national standards allow for local policy interpretation or discretion, applicants should refer to the Staffordshire County Council Flood Risk Management Team guidance and policies (staffordshire.gov.uk).

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 following factors should be considered when assessing whether infiltration is suitable at 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 mudstone and is likely to be poorly draining. Any proposed use of infiltration should be supported by infiltration testing but is likely to be limited due to the low permeability of the underlying geology and high groundwater levels predicted on the site. Off-site discharge in accordance with the SuDS hierarchy may be required to discharge surface water runoff subject to testing.
- 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.

If it is proposed to discharge runoff to the River Tame or sewer system, the condition and capacity or the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the asset owner.

SuDS assets should, where practicable, be located outside areas of flood risk in the 1% AEP plus climate change fluvial event. As most of site 23/575 is shown to be at fluvial risk

within this event, this presents a significant constraint to the placement and design of sustainable drainage options at this site. The LLFA should be consulted at an early stage to discuss appropriate drainage options, and the acceptability of SuDS features for the site.

Surface water outfalls that discharge into the River Tame may be susceptible to surcharging due to water levels in the River Tame. 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

The following are opportunities for wider sustainability benefits and integrated flood risk management at the site:

- For site 23/575 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.
- For sites 18/023 and 18/009 surface water discharge rates should not exceed pre-development discharge rates for the sites and should be designed to be as close to greenfield runoff rates as reasonably practical in consultation with the LLFA. It may be possible to reduce site runoff by maximising the permeable surfaces on the sites using a combination of permeable surfacing and soft landscaping techniques.
- 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 Tame from River Anker to River Trent Water Body 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. The Tame from River Anker to River Trent Water Body is considered to be of poor ecological status.

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 will be required for site 23/575 as most of the site is located within Flood Zone 3a. 'More Vulnerable' development is not permitted in Flood Zone 3b, which covers a considerable proportion of site 23/575.

The Exception Test will only be required for sites 18/023 and 18/009 if 'More Vulnerable' development is proposed within the extent of Flood Zone 3a along the southern extent.

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 sites are:

- In Flood Zones 2, 3a, and 3b
- At increased risk of fluvial flooding in future
- At risk of flooding from surface water, reservoirs, and groundwater

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 Tamworth Borough 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

A buffer of at least 8m should be maintained between the River Tame and any built development.

A sequential approach to the site layout should be adopted with the most vulnerable parts of the development steered away from the areas of highest risk in the southern part of site 23/575 which is located within Flood Zone 3b. If the sites are considered for development together, the most vulnerable parts of the development could be steered away from site 23/575 altogether, with this site used to provide public open space and flood mitigation measures, such as formalised flood storage.

Updates to the River Tame detailed hydraulic model will be required at FRA stage, including to accurately represent the risk from this watercourse for Flood Zone 3b and test

mitigation measures. The modelling will be required to show that any land raising at the sites does not increase flood risk elsewhere.

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 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. The significant fluvial risk at these sites may affect the viability of sustainable drainage options, along with the predicted high groundwater levels and low permeability geology. The LLFA should therefore be consulted at an early stage to discuss a suitable approach to surface water management and drainage design. In particular Staffordshire County Council as LLFA will require the drainage strategy to address:

- The drainage hierarchy and preference for infiltration where feasible.
- Use of source control measures at the earliest opportunity.
- Rainwater harvesting and reuse measures where practicable.
- Management of the first 5mm of rainfall (everyday rainfall).
- Above-ground, multifunctional SuDS that deliver water quality, biodiversity and amenity benefits.
- Reduction of runoff volumes and peak discharge rates.

Arrangements for safe access and escape have not currently been demonstrated for the fluvial climate change event and will therefore need to be considered further within a site-specific FRA, using depth, velocity, and hazard outputs. Provisions for safe access and escape 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.

The residual risk of reservoir flooding at the site will need to be considered further at the site-specific FRA stage. An emergency plan may be required, demonstrating that the residual risks to the site can be safely managed and that appropriate evacuation plans are in place.

8 Conclusions

This assessment has provided a summary of the risk of flooding to sites 23/575, 18/023, and 18/009.

Site 23/575 is at significant fluvial risk both now and in the future. Flood Zone 3b is present across the southern half of the site. Sites 18/023 and 18/009 are mostly at fluvial risk within the Flood Zone 2 extent. Detailed hydraulic modelling for the River Tame has shown that representation of upstream defences along the River Tames is shown to increase the fluvial risk to the site. All three sites are within a larger dry island which is present within Flood Zones 3a and 2, which will impede access and escape from the sites to the wider surroundings and impact access for emergency services to the sites during a flood event.

In addition, the sites are at risk of flooding from surface water (mostly site 23/575), residual risk from several reservoirs, and at high risk of groundwater emergence.

The Exception Test will be required for site 23/575 due to the extent of site located within Flood Zone 3a. 'More Vulnerable' development is not permitted in Flood Zone 3b, which covers a considerable proportion of site 23/575. The Exception Test will only be required for sites 18/023 and 18/009 if 'More Vulnerable' development is proposed within the extent of Flood Zone 3a along the southern extent.

All three sites will require a site-specific FRA.

The following points should be considered in development of these sites:

- A site-specific FRA should be undertaken, which assesses all sources of flood risk. This may require updates to the River Tame hydraulic model and detailed surface water modelling.
- A sequential approach should be taken to the site layout with the most vulnerable aspects of the development steered away from the areas of highest risk in the south of site 23/575.
- Site 23/575 is at significant risk of fluvial flooding and appears to provide an informal area of flood storage. Consideration should be given to the use of this site as public open space and for flood risk mitigation, such as formalised flood storage. If any built development is proposed for this site, it is likely to require significant land raising and compensatory storage to ensure flood risk is not increased elsewhere.
- Safe access and escape should be considered in the design fluvial and surface water events. Developers should demonstrate that safe access and escape routes can be achieved; however, any raising of access and escape routes must make sure that floodwater is not displaced elsewhere. Where safe access and escape is not possible, other means of safe refuge and evacuation must be considered. Due to the fluvial risk surrounding the site, a Flood Warning and Evacuation Plan will be required to be prepared which considers the likely onset

and duration of flooding and demonstrates how residents can safely be evacuated and/or shelter safely in situ during the design events.

- Habitable areas of residential ('More Vulnerable') development must be set above the design flood level (1% AEP plus a suitable climate change allowance).
- A carefully considered and integrated flood resilient and sustainable drainage design should be put forward, including a site-specific Surface Water Drainage Strategy, and SuDS maintenance and management plan and supported by detailed modelling. Infiltration testing should be undertaken to confirm the groundwater levels and appropriateness of SuDS, to inform a sustainable drainage strategy in line with the SuDS hierarchy. The fluvial risk at these sites may present a significant constraint to the implementation of SuDS at the site and will require early consultation with the LLFA to identify viable options.
- Severn Trent Water should be consulted at an early stage on drainage proposals for the site to identify any potential constraints or existing sewer flooding issues that may not have been identified through this high level assessment.

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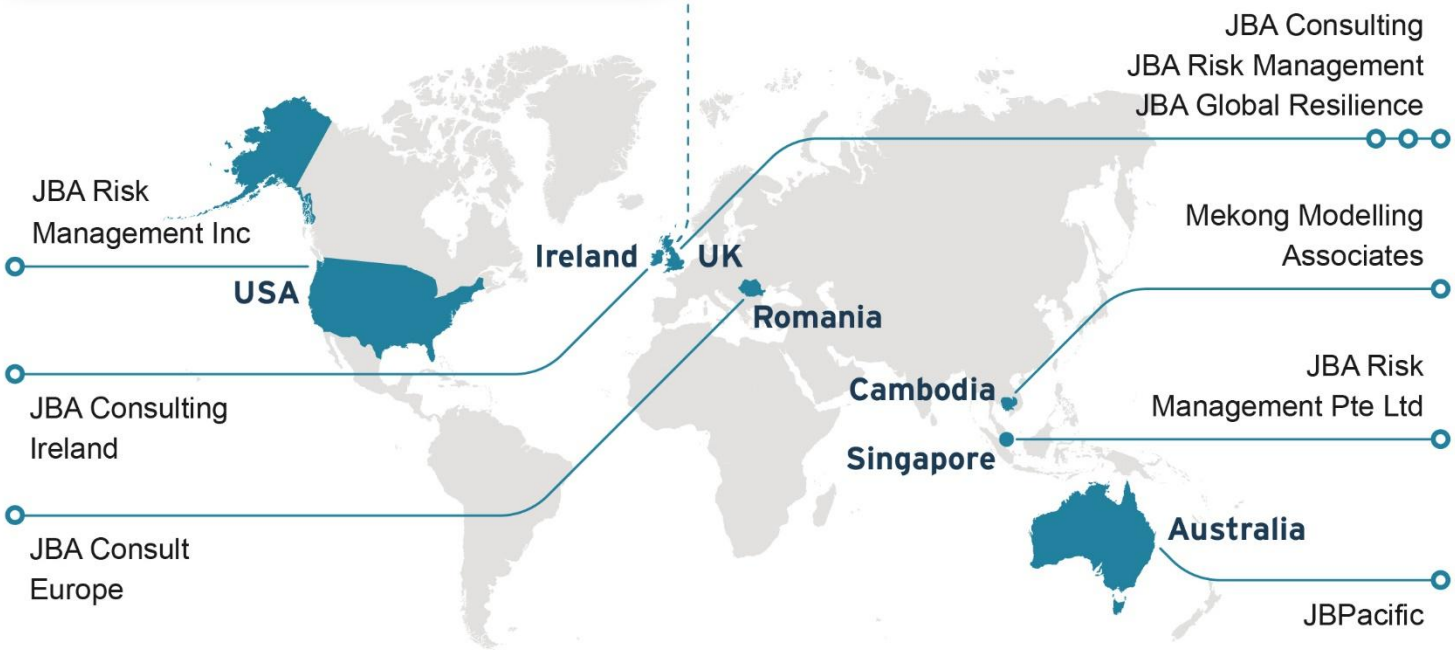

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Level 2 Strategic Flood Risk Assessment

Site 23/585

Prepared for:

Tamworth Borough Council

Contents

1 Background 4
1.1 Site details 4
1.2 Topography 4
1.3 Geology and soils 5

2 Sources of flood risk 6
2.1 Location of site within the catchment 6
2.2 Existing drainage features 6
2.3 Fluvial 6
2.4 Surface water 8
2.5 Reservoir 9
2.6 Canals 9
2.7 Groundwater 9
2.8 Sewers 10
2.9 Flood history 10

3 Climate change 11
3.1 Fluvial 11
3.2 Surface water 12

4 Flood risk management infrastructure 13
4.1 Defences 13
4.2 Residual risk 13

5 Emergency planning 14
5.1 Flood warnings and alerts 14
5.2 Access and Escape 14
5.3 Dry islands 14

6 Requirements for drainage control and impact mitigation 15
6.1 Broadscale assessment of possible SuDS 15
6.2 Opportunities for wider sustainability benefits and integrated flood risk management 16

7 NPPF and planning implications 17

7.1 Exception Test requirements 17
7.2 Requirements and guidance for site-specific Flood Risk Assessment 17
7.3 Guidance for site design and making development safe 17

8 Conclusions 19

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for 23/585. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Tamworth Borough Level 1 SFRA (June 2025). The reader should also familiarise themselves with the Tamworth Borough Level 2 SFRA Main Report, where there is further explanation of the terminology used in this report.

1.1 Site details

- Location: Land west of Dunstall Lane
- Site area: 11.14ha
- Existing site use: Greenfield
- Proposed site use: Unconfirmed (likely to be promoted for residential use)

1.2 Topography

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR (updated in 2025). The Coventry Canal runs along the western and southern site boundaries and is raised above the elevations on the site. Elevations across the site slope gradually downhill from the southwest boundary towards the northeast, with steeper gradients down to the north and east corners where there are ordinary watercourses. The maximum elevation along the southwestern boundary of the site is 64.4mAOD and the minimum elevation in the eastern corner of the site is 57.4mAOD.

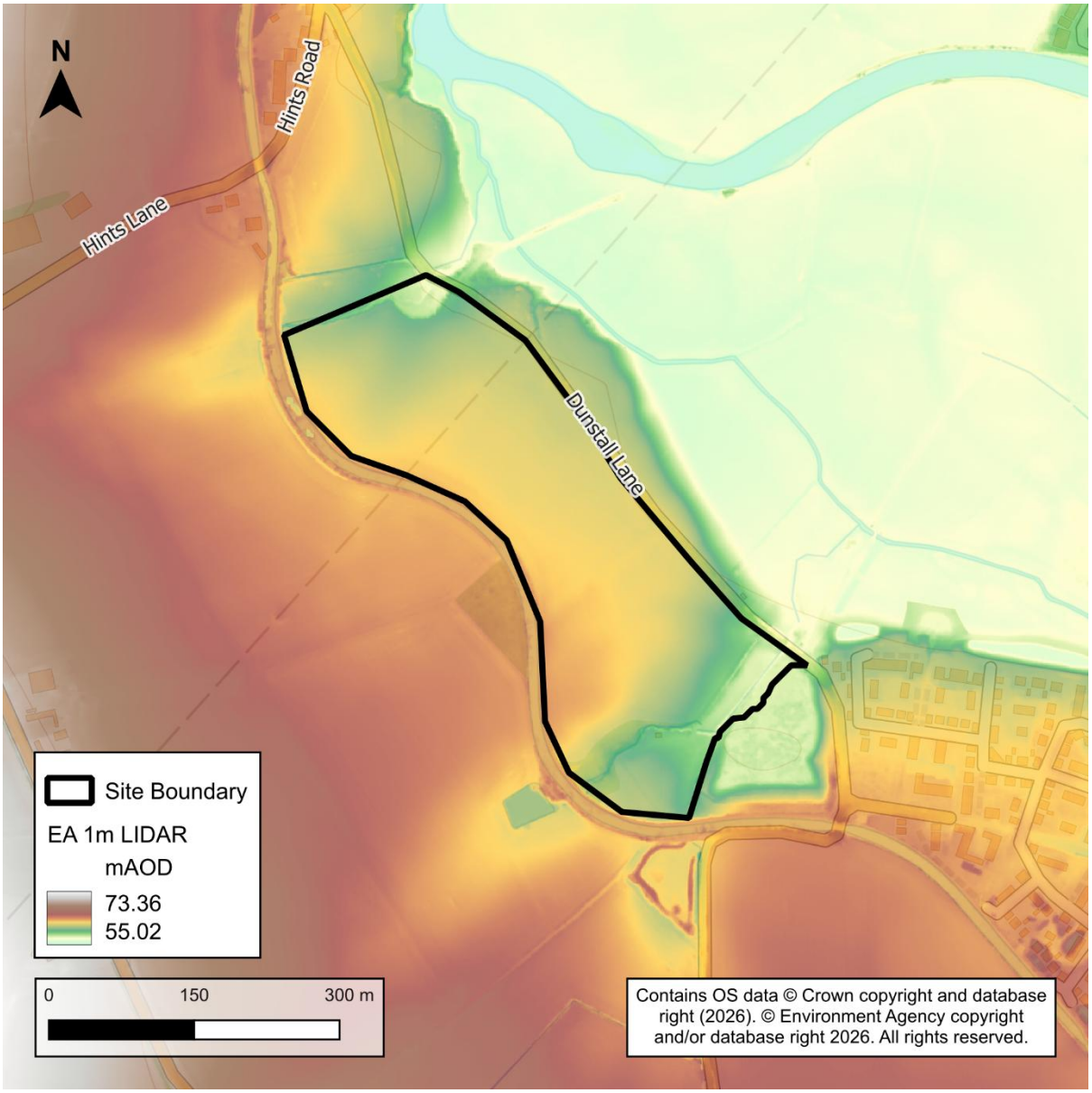

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Gunthorpe Member comprised of mudstone
- Superficial - River terrace deposits comprised of sand and gravel across most of the site, with Head comprised of clay, sand and gravel along the northwest and southeast boundaries.

Soils at the site consist of slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils across the majority of the site, with a small area in the east corner comprised of loamy and clayey floodplain soils with naturally high groundwater.

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located in the upstream reaches of the Tame from River Anker to River Trent Water Body catchment. The River Tame flows through the west of Tamworth where it is joined by the River Anker. The River Tame continues flowing northwards approximately 200m northeast of the site, then flows through Comberford and Elford before joining the River Trent at Alrewas. The catchment upstream of the site is characterised by a mix of urban and rural land uses, with the urban areas concentrated around Tamworth.

2.2 Existing drainage features

The River Tame flows northwards approximately 200m to the northeast of the site. There is also a minor tributary of the River Tame flowing less than 100m northeast of the site, which is fed by two small ordinary watercourses within the site, one flowing in a north-easterly direction within the south of the site and the other flowing in an easterly direction along the northwest boundary.

The Coventry Canal runs along the southwest boundary at the highest point of the site.

2.3 Fluvial

2.3.1 Available data

The EA's Flood Map for Planning (FMfP) and the EA's detailed hydraulic model for the River Tame was used in this assessment. Flood Zone 3b has been represented using the Rivers and Sea 3.3% AEP defended extent, as defined within the Tamworth Level 1 SFRA Main Report.

Available depth, velocity, and hazard information has been used to inform the risk from the River Tame for the 1% AEP undefended event (Flood Zone 3a) and the defended 1% and 0.1% AEP events. No data is currently available for the 3.3% AEP defended or 0.1% AEP undefended events, therefore, updates to the River Tame modelling may be required as part of a site-specific Flood Risk Assessment.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.3.2 EA Flood Zones

Most of the site is not shown to be at fluvial risk. Whilst Flood Zone 3b is shown to be present on the western site boundary, this extent appears to be associated with the canal, which does not present a fluvial risk to the site. Flood Zone 3b from the River Tame does not extend onto the site.

Flood Zones 2 and 3a cover the eastern and northern corners of the site.

Table 2-1: Present day fluvial flood risk based on the EA FMfP *

Flood Zone 3b (%)	Flood Zone 3a (%)	Flood Zone 2 (%)	Flood Zone 1 (%)
<1	4	6	94

**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 3a and Flood Zone 3b percentage. Flood Zone 1 + Flood Zone 2 = 100%.*

2.3.3 Modelled risk - River Tame (undefended)

The 1% AEP undefended model extent for the River Tame shows a slightly greater extent than the EA FMfP Flood Zone 3a. Maximum flood depths in the north corner of the site do not exceed 0.3m, while in the east corner they are up to 0.9m with a small area reaching 1.0m. The maximum velocity and hazard classification (shown in Table 2-1) are also reached in the east corner. The maximum hazard classification in the north corner is 'Very Low Hazard' whereas in the east corner a large part of the flood extent reaches 'Danger for Most'.

Table 2-2: Present day fluvial flood risk based on the EA's River Tame hydraulic model*

Assessment category	1% AEP
Percentage of site at risk* (%)	5
Maximum depth (m)	1.01
Maximum velocity (m/s)	0.51
Maximum hazard classification	Danger for Most (1.51)

**The percentage AEP events quoted show the percentage of the site at flood risk from that particular event, including the percentage of the site at flood risk at a higher risk event, e.g. 0.1% AEP includes the 1% AEP percentage.*

2.3.4 Modelled risk - River Tame (defended)

Fluvial risk to this site is shown to increase slightly when the defences along the River Tame are included within the modelling.

There is a small increase in extent during the defended 1% AEP event compared to the undefended 1% AEP event. Maximum flood depths in the north corner are up to 0.9m while in the east corner they exceed 1.0m. The maximum hazard classification in the north corner increases from 'Very Low Hazard' in the undefended event to 'Danger for Most' in the defended event. In the east corner, a greater area of the extent is shown to be 'Danger for Most' compared to in the undefended event.

The defended 0.1% AEP event shows an increase from the defended 1% AEP event in extent, depth, velocity and hazard. The most significant increases are in the east corner of the site, resulting in a maximum hazard classification here of 'Danger for All'.

Table 2-3: Present day fluvial flood risk based on the EA's River Tame hydraulic model*

Assessment category	1% AEP	0.1% AEP
Percentage of site at risk* (%)	6	7
Maximum depth (m)	1.41	1.79
Maximum velocity (m/s)	0.57	0.59
Maximum hazard classification	Danger for Most (1.74)	Danger for All (2.06)

**The percentage AEP events quoted show the percentage of the site at flood risk from that particular event, including the percentage of the site at flood risk at a higher risk event, e.g. 0.1% AEP includes the 1% AEP percentage.*

2.4 Surface water

2.4.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water flood risk. Velocity and hazard data is not currently available within this dataset, therefore the Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment to inform the velocity and hazard of surface water risk.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.4.2 Description of risk to the site

Surface water flood risk on the site is concentrated along the areas of lower topography following the ordinary watercourses within the northwest and southeast boundaries. These unnamed watercourses are not represented within the EA's FMfP, therefore the risk from these watercourses has been assessed using the EA's Risk of Flooding from Surface Water Map.

During the 3.3% AEP event, depths along the watercourses reach between 0.6m and 0.9m, with velocities exceeding 1.0m/s and hazard classified as 'Danger for Most'. During the 1% AEP, depths increase to between 0.9m and 1.2m but the velocities are similar and the hazard remains at 'Danger for Most' The 0.1% AEP event shows similar depths, but greater velocities mean the hazard increases to 'Danger for All'.

Away from the watercourse corridors, most of the site is not shown to be at surface water risk in any of the modelled AEP events. During the 3.3% AEP event, there is no risk shown outside the areas of the watercourse corridors. During the 1% AEP event, there is minor ponding in the centre of the southwest boundary, but maximum depths within the site do not exceed 0.3m and the maximum hazard is classed as 'Very Low Hazard'. During the 0.1% AEP event, an additional area of ponding develops along the northeast boundary which minorly encroaches on the site, reaching maximum depths within the site between 0.3m and 0.6m and a maximum hazard classification of 'Very Low Hazard'.

Table 2-4: Present day surface water flood risk based on the EA's FMfP Surface Water Spatial Planning dataset (extent, depth) and RoFSW dataset (velocity, hazard).

Assessment category	High risk (3.3% AEP)	Medium risk (1% AEP)	Low risk (0.1% AEP)
Percentage of site at risk* (%)	4	6	9
Maximum depth (m)	0.9 - 1.2	0.9 - 1.2	0.9 - 1.2
Maximum velocity (m/s)	1.0 - 2.0	1.0 - 2.0	>2.0
Maximum hazard classification	Danger for Most	Danger for Most	Danger for All

** 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 scenario from the EA reservoir flood maps.

During the Wet Day scenario, reservoir flood extents from Belfry, Chasewater (Cannock Chase), Middleton Hall Lake and Shustoke Lower reservoirs cover the north and east corners of the site.

The Wet Day event seeks to estimate the effect of a breach at the same time as a 0.1% AEP river flood is occurring and suggests that the consequences of such a breach are similar to the modelled 0.1% AEP event river flood event but probably would be associated with a much lower probability.

2.6 Canals

The Coventry Canal is located adjacent to the southwest boundary of the site. Data provided by the Canal and Rivers Trust suggests there have been no records of breaching or overtopping near the site or within the wider study area. However, historic incident data provided by Staffordshire County Council shows one record of flooding outside the eastern boundary of the site due to overtopping of the canal in 1900.

2.7 Groundwater

The JBA Groundwater Emergence Map shows the entire site is at negligible risk of groundwater emergence due to the nature of underlying local geological deposits.

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.

2.8 Sewers

The Severn Trent Drainage and Wastewater Management Plan (DWMP23) shows the site is not located within a Severn Trent sewer wastewater treatment works catchment (as such no further information can be ascertained at this time).

Severn Trent Water provided their Hydraulic Sewer Flooding Risk Register for the borough which includes a list of properties which have reported at least one incidence of external or internal sewer flooding between June 1997 and August 2024. Based on the data provided there have been no properties that have reported flooding within the site boundary, or in areas immediately surrounding the site. However, further incidents of sewer flooding may have occurred which have not been recorded. Therefore, the risk of sewer flooding should be assessed further at the site-specific Flood Risk Assessment stage.

2.9 Flood history

The EA's Historic Flood Mapping and Recorded Flood outlines datasets do not have records of any flooding within the site; however both datasets show extents covering a large area approximately 20m to the east.

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 Tamworth Level 2 SFRA Main 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 escape must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

Fluvial climate change extents have been taken from the EA's detailed River Tame hydraulic model. The defended extents for the 1% AEP plus 22% and 30% climate change have been used which represent the Central and Higher Central allowances for the 2080s epoch. These have been compared with the 1% AEP defended present day extent to assess the implications of climate change.

3.1.2 Description of risk to the site

The 1% AEP climate change scenarios show a minor increase in the extent which covers the north and east corners of the site compared to the present day 1% AEP event. Maximum velocity and hazard also increase slightly, but the hazard classification remains in the 'Danger for Most' category.

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

Assessment category	1% AEP	1% AEP plus 22% CC	1% AEP plus 30% CC
Percentage of site at risk (%)	6	7	7
Maximum depth (m)	1.41	1.62	1.66
Maximum velocity (m/s)	0.57	0.59	0.59
Maximum hazard classification	Danger for Most (1.74)	Danger for Most (1.89)	Danger for Most (1.92)

3.2 Surface water

3.2.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk with climate change. Climate change outputs are available for the 3.3%, 1%, and 0.1% AEP events with the Upper End climate change allowance for the 2070s epoch. There is currently no available velocity or hazard information to use within this assessment.

3.2.2 Description of risk to the site

In the 1% AEP plus climate change scenario, the majority of the site is not shown to be at risk of surface water flooding. As with the 1% AEP, flood risk is concentrated along the northwest and southeast boundaries where the unnamed watercourses flow. Compared to the 1% AEP, the climate change scenario shows an increase in extent of the flow paths, however the greatest depths remain between 0.9m and 1.2m.

Away from the watercourse corridors, maximum depths of the minor ponding in the centre of the southwest boundary during the 1% climate change event remain similar to the present-day scenario, not exceeding 0.3m. However, ponding also occurs along the northeast boundary in the 1% AEP climate change event with a maximum depth shown of between 0.3m and 0.6m.

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

Assessment category	1% AEP	1% AEP + Upper End CC
Percentage of site at risk (%)	6	8
Maximum depth (m)	0.9 - 1.2	0.9 - 1.2

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 is at residual risk of reservoir flooding as a result of a breach of several reservoirs, as detailed in Section 2.5, and canal flooding as a result of breach or overtopping, as detailed in Section 2.6.

There are two culverts under Dunstall Lane at the northern and eastern corners of the site. There is also a culvert within the southeast of the site. Surface water mapping shows water backing up in the site upstream of these culverts. There is a residual blockage risk of blockage of these culverts increasing the risk on site, although this risk is likely to remain within the northern and southern ends of the site where the site elevations are lower.

5 Emergency planning

5.1 Flood warnings and alerts

The site is located in the Middle Tame EA Flood Alert Area (033WAF304). The site is not located in an EA Flood Warning Area.

5.2 Access and Escape

Safe access and escape 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 to the site may be provided via Dunstall Lane which runs adjacent to the northeast boundary of the site. Due to the canal running along the entire length of the southwest boundary, there are limited alternate access and escape routes.

5.2.2 Fluvial

Access and escape via Dunstall Lane is likely to be impeded by fluvial flooding. Flood Zones 2 and 3 from the EA's FMfP cover Dunstall Lane next to the north and east corners of the site. Flood depths here for the 1% AEP plus 22% climate change event in the River Tame hydraulic model, show a maximum of up to 2.0m in the defended scenario with a maximum hazard classification of 'Danger for Most'.

5.2.3 Surface water

Surface water flood risk is shown across Dunstall Lane at the north and east corners of the site where the culverts overtop onto the road. In the 1% AEP plus climate change events, depths reach between 0.3m and 0.6m to the east of the site which could impede access and escape in this direction. To the north of the site, depths on Dunstall Lane are between 0.15m and 0.3m indicating access and escape in this direction are likely to remain safe.

Away from the corridors of the Ordinary Watercourses, surface water flood mapping identifies a small area of ponding on Dunstall Lane in the 1% AEP plus climate change events that marginally encroaches into the northeastern part of the site. The maximum modelled flood depth within this area is between 0.3m and 0.6m. Whilst this may present a localised constraint to access and escape, the limited extent of flooding suggests that safe access and escape routes are likely to be achievable through appropriate site layout and route planning.

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

Surface water at the site should be discharged in accordance with the drainage hierarchy as set out in the National standards for SuDS (gov.uk). SuDS that provide opportunities to deliver multiple benefits including volume control, water quality, amenity, and biodiversity should be prioritised. SuDS proposals should be discussed with relevant stakeholders (Local Planning Authority (LPA), Lead Local Flood Authority (LLFA), and the EA) at an early stage to understand possible constraints. Where the national standards allow for local policy interpretation or discretion, applicants should refer to the Staffordshire County Council Flood Risk Management Team guidance and policies (staffordshire.gov.uk).

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.

The following factors should be considered when assessing whether infiltration is suitable at 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.
- BGS data indicates that the underlying geology is 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.

If it is proposed to discharge runoff to a watercourse or sewer system, the condition and capacity or the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the asset owner.

The two ordinary watercourses within the northwest and southeast boundaries of the site should be integrated into the site drainage strategy as blue-green infrastructure and public open space.

Where possible, proposed attenuation features such as basins, ponds and tanks should be located outside of Flood Zone 2 and Flood Zone 3 to avoid the potential risks to the hydraulic capacity or structural integrity of these features.

6.2 Opportunities for wider sustainability benefits and integrated flood risk management

The following are opportunities for wider sustainability benefits and integrated flood risk management at the site:

- 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.
- 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 Tame from River Anker to River Trent waterbody 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. The Tame from River Anker to River Trent waterbody is considered to be of poor ecological status.

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 proposed development use is currently unconfirmed, although residential development is anticipated. Should a different use be proposed, the requirement for the Exception Test may differ and would need to be reviewed accordingly.

The NPPF classifies residential development as 'More Vulnerable'.

If the site use is confirmed to be residential, the Exception Test will be required for this site if 'More Vulnerable' development is proposed within the north and east corners which are located in Flood Zone 3a.

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 in Flood Zones 2 and 3a
- Is at risk of flooding from reservoirs
- Is at risk of flooding from ordinary watercourses, as represented in surface water mapping
- Is shown to be at increased risk of flooding from rivers or sea in future

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 Tamworth Borough 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

A buffer of at least 8m should be maintained between the watercourses within the site and any built development.

A sequential approach should be taken to the site layout with more vulnerable aspects of the development steered outside of the areas of fluvial flood risk within the northwest and southeast boundaries. Developers should consider utilising these areas as green corridors or as locations for SuDS.

Updates to the River Tame detailed hydraulic model are likely to be required at FRA stage, including to accurately represent the risk from this watercourse for Flood Zone 3b and test mitigation measures. The modelling will be required to show that any land raising at the sites does not increase flood risk elsewhere.

A detailed hydraulic model of the ordinary watercourses within the site may be required at FRA stage to accurately represent the risk from this watercourse and set the height of any mitigation measures. Blockage modelling should be conducted to assess the residual risk associated with potential blockage of the culvert structures under Dunstall Lane and within the southeast of the site.

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 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. In particular Staffordshire County Council as LLFA will require the drainage strategy to address:

- The drainage hierarchy and preference for infiltration where feasible.
- Use of source control measures at the earliest opportunity.
- Rainwater harvesting and reuse measures where practicable.
- Management of the first 5mm of rainfall (everyday rainfall).
- Above-ground, multifunctional SuDS that deliver water quality, biodiversity and amenity benefits.
- Reduction of runoff volumes and peak discharge rates.

Arrangements for safe access and escape 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. Flood extents from the River Tame and associated ordinary watercourse are shown to pose a significant constraint on access and escape routes. Design and access arrangements will need to incorporate measures, so development and occupants are safe.

Provisions for safe access and escape 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.

The residual risk of reservoir flooding at the site will need to be considered further at the site-specific FRA stage. An emergency plan may be required, demonstrating that the residual risks to the site can be safely managed and that appropriate evacuation plans are in place.

8 Conclusions

This site is at risk of fluvial flooding within the northwest and southeast boundaries, where extents from the River Tame extend onto the site and two ordinary watercourses flow through the site. Detailed hydraulic modelling of the River Tame indicates that climate change is expected to slightly increase flood depths, velocities and hazards in these areas. Away from the watercourse corridors, surface water flood risk is generally limited and does not represent a constraint to development.

The site is at residual risk of reservoir flooding from several reservoirs and the canal. The site is also at residual risk of blockage from three culverts.

If the proposed use for the site is confirmed to be residential, the Exception Test will be required if 'More Vulnerable' development is proposed within the north and east corners which are located in Flood Zone 3a.

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

- A site-specific FRA should be undertaken, which assesses all sources of flood risk. This may require updates to the River Tame hydraulic model, detailed modelling of the two ordinary watercourses, and detailed surface water modelling.
- The ordinary watercourses in the northwest and southeast of the site should be incorporated within multifunctional blue-green corridors, providing flood risk, amenity and biodiversity benefits.
- Surface water flow routes should be retained and accommodated within the site layout to ensure flood risk is not increased elsewhere
- Safe access and escape should be considered in the design fluvial and surface water events. Developers should demonstrate that safe access and escape routes can be achieved; however, any raising of access and escape routes must make sure that floodwater is not displaced elsewhere. Where safe access and escape is not possible, other means of safe refuge and evacuation must be considered. Due to the fluvial risk surrounding the site, a Flood Warning and Evacuation Plan will be required to be prepared which considers the likely onset and duration of flooding and demonstrates how residents can safely be evacuated and/or shelter safely in situ during the design events.
- A carefully considered and integrated flood resilient and sustainable drainage design should be put forward, including a site-specific Surface Water Drainage Strategy, and SuDS maintenance and management plan and supported by detailed modelling. Infiltration testing should be undertaken to confirm the groundwater levels and appropriateness of SuDS, to inform a sustainable drainage strategy in line with the SuDS hierarchy.
- Severn Trent Water should be consulted at an early stage on drainage proposals for the site to identify any potential constraints or existing sewer flooding issues that may not have been identified through this high level assessment.

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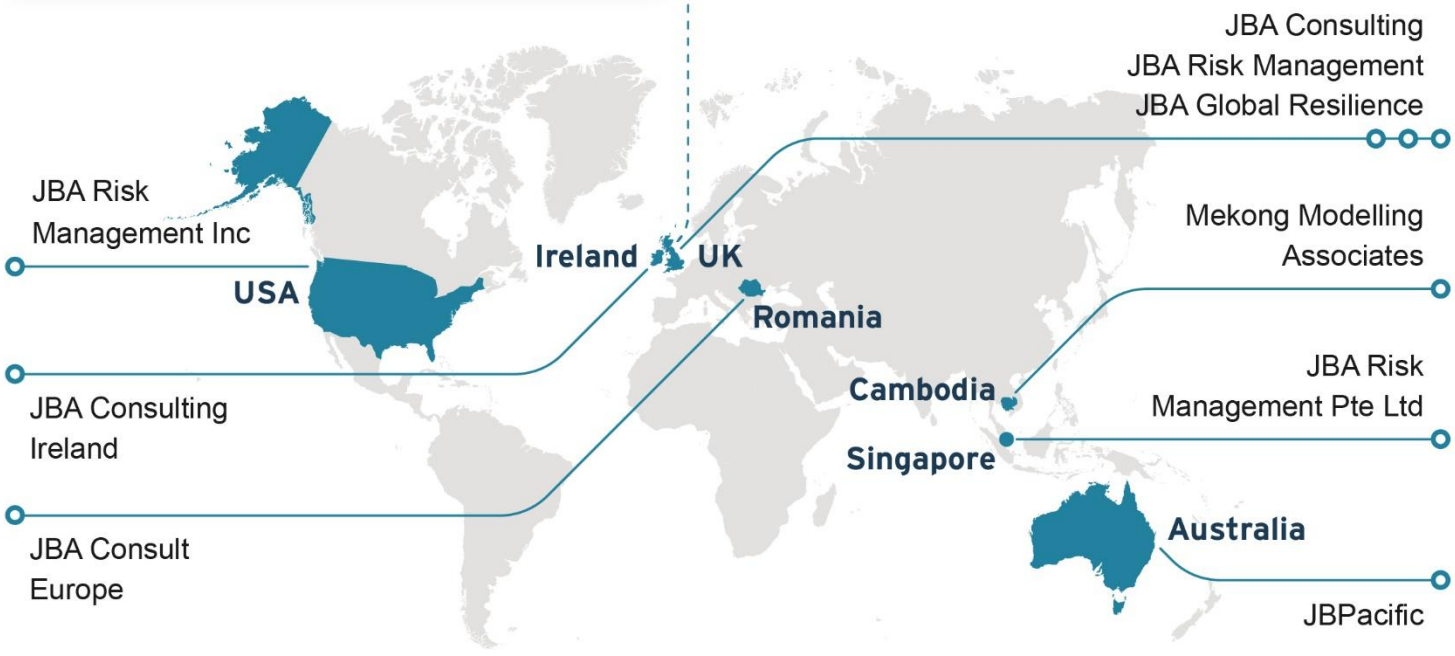

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Level 2 Strategic Flood Risk Assessment

Site 24/591

Prepared for:
Tamworth Borough Council

Contents

1 Background 4
1.1 Site details 4
1.2 Topography 4
1.3 Geology and soils 5

2 Sources of flood risk 6
2.1 Location of site within the catchment 6
2.2 Existing drainage features 6
2.3 Fluvial 6
2.4 Surface water 8
2.5 Reservoir 9
2.6 Canals 9
2.7 Groundwater 10
2.8 Sewers 10
2.9 Flood history 10

3 Climate change 11
3.1 Fluvial 11
3.2 Surface water 12

4 Flood risk management infrastructure 13
4.1 Defences 13
4.2 Residual risk 13

5 Emergency planning 14
5.1 Flood warnings and alerts 14
5.2 Access and Escape 14
5.3 Dry islands 14

6 Requirements for drainage control and impact mitigation 15
6.1 Broadscale assessment of possible SuDS 15
6.2 Opportunities for wider sustainability benefits and integrated flood risk management 16

7 NPPF and planning implications 17

7.1 Exception Test requirements 17
7.2 Requirements and guidance for site-specific Flood Risk Assessment 17
7.3 Guidance for site design and making development safe 17

8 Conclusions 19

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Site 24/591. The content of this Level 2 SFRA site screening report assumes the reader has already consulted the Tamworth Borough Level 1 SFRA (June 2025). The reader should also familiarise themselves with the Tamworth Borough Level 2 SFRA Main Report, where there is further explanation of the terminology used in this report.

1.1 Site details

- Location: Land south of the A5
- Site area: 9.66ha
- Existing site use: Greenfield
- Proposed site use: Employment

1.2 Topography

Figure 1-1 shows the topography of the site represented by the Environment Agency (EA) 1m resolution LiDAR (updated in 2025).

The site is bounded by higher elevations to the north, where the A5 runs along the site boundary approximately 7m higher than elevations on the site, and to the west, where the Birmingham and Fazeley Canal runs along the site boundary approximately 2m higher than elevations on the site.

Elevations within the site slope gently downhill away from the western boundary and are then relatively flat across the site, with a couple of topographic high points in the east of the site. The lowest elevations are found along a small depression in the centre of the site, which aligns with an existing area of trees within the site boundary.

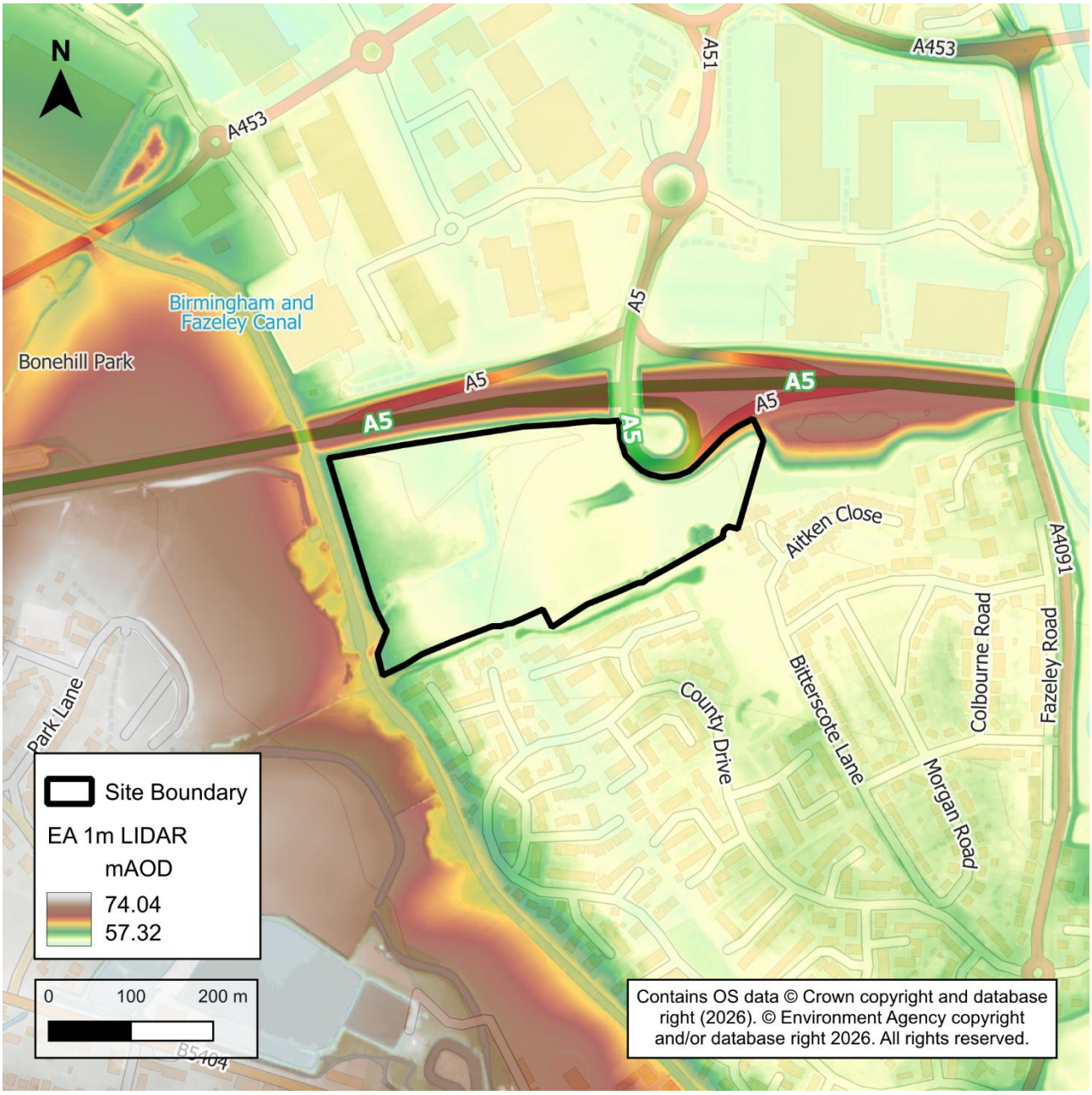

Figure 1-1: Topography of the site.

1.3 Geology and soils

Geology at the site consists of:

- Bedrock - Gunthorpe Member comprised of mudstone.
- Superficial - River Terrace Deposits comprised of sand and gravel.

Soils at the site consist of loamy soils with naturally high groundwater.

2 Sources of flood risk

2.1 Location of site within the catchment

The site is located within the downstream reaches of the Tame from River Blythe to River Anker Water Body catchment. The catchment upstream of the site drains an area of approximately 61.7km^2 and is rural at its upstream end but then becomes predominantly urbanised incorporating the south side of Tamworth. The River Tame flows in a northerly direction approximately 300m east of the site.

2.2 Existing drainage features

Available mapping and online imagery show no drainage features within the site boundary. The Birmingham and Fazeley Canal runs along the western site boundary. The River Tame flows in a northerly direction approximately 300m east of the site.

2.3 Fluvial

2.3.1 Available data

The EA's Flood Map for Planning (FMfP) and the EA's detailed hydraulic model for the River Tame have been used in this assessment. Flood Zone 3b has been represented using the Rivers and Sea 3.3% AEP defended extent, as defined within the Tamworth Level 1 SFRA Main Report.

Available depth, velocity, and hazard information has been used to inform the risk from the River Tame for the 1% AEP undefended event (Flood Zone 3a) and the defended 1% and 0.1% AEP events. No depth velocity, or hazard data is currently available for the 3.3% AEP defended or 0.1% AEP undefended events (which have been inform by the EA national mapping), therefore, updates to the River Tame modelling to provide depth, velocity, and hazard data for these events may be required as part of a site-specific Flood Risk Assessment.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.3.2 EA Flood Zones

The site is shown to be at significant risk of fluvial flooding from the River Tame. The percentage of risk at the site in each Flood Zone is shown in Table 2-1.

The site is not shown to be at fluvial flood risk in Flood Zone 3b which remains within the channel of the River Tame.

Flood Zone 3a shows most of the site to be at fluvial flood risk, with the exception of the western boundary which is at a slightly higher elevation, and the two topographic high spots in the east of the site.

Flood Zone 2 extends further towards the western site boundary and also encompasses the two topographic high spots in the east of the site.

Table 2-1: Present day fluvial flood risk based on the EA FMfP *

Flood Zone 3b (%)	Flood Zone 3a (%)	Flood Zone 2 (%)	Flood Zone 1 (%)
0	91	96	4

**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 3a and Flood Zone 3b percentage. Flood Zone 1 + Flood Zone 2 = 100%.*

2.3.3 Modelled risk - River Tame (undefended)

The 1% AEP undefended model extent from the River Tame shows a similar extent to the EA FMfP Flood Zone 3a (as described in Section 2.3.2) and has been used to assess depth, velocity, and hazard across the sites within this event.

Depths across the site are predicted to be significant with depths exceeding 1.5m across most of the site, with a maximum depth of approximately 3.6m. Depths are lower towards the western site boundary where the ground elevations slope uphill. Most of the site has a hazard classification of 'Danger for Most' or 'Danger for All'.

Table 2-2: Present day fluvial flood risk based on the River Tame model undefended outputs.

Assessment category	1% AEP
Percentage of site at risk (%)	94
Maximum depth (m)	3.57
Maximum velocity (m/s)	1.90
Maximum hazard classification	Danger for All (2.86)

2.3.4 Modelled risk - River Tame (defended)

The site is located within an area which benefits from defences, which is discussed further in Section 4.1.

The defended model outputs from the EA's River Tame model show that the defences protect the site in the 5% AEP event and are first overtopped in the 2% AEP event.

The fluvial risk at the site in the 1% AEP defended event is similar to the risk in the 1% AEP undefended event (as described in Section 2.3.3). Depth, velocity, and hazard are shown to increase slightly at the site, as set out in Table 2-3.

In the 0.1% AEP defended event, depths are shown to exceed 2m across most of the site. Velocities are highest in the centre of the site where they are between 0.5m/s and 1.0m/s, between 0.25m/s and 0.5m/s in the east of the site, and lowest in the west of the site where they generally remain below 0.25m/s. Hazard classification is 'Danger for All' across most of the site.

Table 2-3: Present day fluvial flood risk based on the River Tame model defended outputs.

Assessment category	1% AEP	0.1% AEP
Percentage of site at risk (%)	95	98
Maximum depth (m)	3.65	4.29
Maximum velocity (m/s)	1.39	2.07
Maximum hazard classification	Danger for All (2.90)	Danger for All (3.40)

2.4 Surface water

2.4.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk. Velocity and hazard data is not currently available within this dataset, therefore the Risk of Flooding from Surface Water (RoFSW) map has been used within this assessment to inform the velocity and hazard of surface water risk.

Descriptions refer to the maximum depth, velocity, and hazard values experienced in each area of the site within a given event.

2.4.2 Description of risk to the site

The main area of surface water risk in the 3.3% AEP event is along the lowered topography in the centre of the site, where the greatest depths, velocities, and hazard are predicted, as shown in Table 2-4. There is also an area of ponding to the northwest of this area, and several small areas of ponding along the northeast boundary. Depths in the areas of ponding largely remain below 0.30m, with velocities below 0.25m/s, and a hazard classification of 'Very Low Hazard'.

In the 1% AEP event the flood risk in the centre of the site combines with the ponding to the northwest to form one area of risk which bisects the site. Large parts of this risk area show depths which exceed 0.30m and have a hazard classification of 'Danger for Some'. The areas of ponding in the northeast also increase in extent with several small new areas of risk forming. Depths in these areas mainly remain below 0.15m, with velocities below 0.25m/s, and a hazard classification of 'Very Low Hazard'.

The existing areas of risk increase in extent in the 0.1% AEP event and a new flow path forms which flows from the northeast of the site along the northern boundary to join the central area of risk. Depths in the central area of the site largely exceed 0.30m, with large parts which exceed 0.60m, and hazard classification of 'Danger for Most'. Depths in the northeast of the site are mostly between 0.15m and 0.30m and largely remain classified as 'Very Low Hazard' with some areas of 'Danger for Some'. The newly formed flow path mostly has depths which remain below 0.15m, velocities below 0.25m/s, and a hazard classification of 'Very Low Hazard'.

Table 2-4: Present day surface water flood risk based on the EA's FMfP Surface Water Spatial Planning dataset (extent, depth) and RoFSW dataset (velocity, hazard).

Assessment category	High risk 3.3% AEP)	Medium risk (1% AEP)	Low risk (0.1% AEP)
Percentage of site at risk* (%)	7	12	26
Maximum depth (m)	1.20 - 2.30	1.20 - 2.30	1.20 - 2.30
Maximum velocity (m/s)	1.00 - 2.00	1.00 - 2.00	1.00 - 2.00
Maximum hazard classification	Danger for Most	Danger for Most	Danger 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).*

2.5 Reservoir

The site is not shown to be at risk of reservoir flooding during the Dry Day scenario.

During the Wet Day scenario, the site is shown to be affected by flood extents from eight reservoirs:

- Belfry, Chasewater (Cannock Chase), Middleton Hall Lake, and Shustoke Lower reservoirs are shown to impact most of the site, with the exception of the western boundary.
- Earlswood Lakes - Engine Pool impacts most of the site, excluding the western side.
- Minworth Cudworth and Rotton Park reservoirs impact areas of the central, northern and eastern parts of the site.
- Canwell Estate Reservoir only impacts a small area in the south of the site.

The Wet Day event seeks to estimate the effect of a breach at the same time as a 0.1% AEP river flood is occurring and suggests that the consequences of such a breach are similar to the modelled 0.1% AEP event river flood event but probably would be associated with a much lower probability.

2.6 Canals

The Birmingham and Fazeley Canal runs along the western site boundary and is situated approximately 2m higher than the elevations in the west of the site. Information provided by the Canal and River Trust shows no recorded incidents of breach or overtopping of the canal within the vicinity of the site.

2.7 Groundwater

The JBA Groundwater Emergence Map shows groundwater levels across most of the site are at or very near (within 0.025m) of the ground surface. This means that there is a risk of groundwater flooding to both surface and subsurface assets. Groundwater may emerge at significant rates and has the capacity to flow overland and/or pond within any topographic low spots. Based on the EA surface water mapping and topography of the site it is likely that any emerging groundwater will pool within the site.

The western boundary of the site is deemed to be at negligible risk of groundwater emergence due to the nature of the underlying geological deposits.

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.

2.8 Sewers

The Severn Trent Drainage and Wastewater Management Plan (DWMP23) shows the site is not located within a Severn Trent sewer wastewater treatment works catchment and as such no further information can be ascertained at this time.

Severn Trent Water provided their Hydraulic Sewer Flooding Risk Register for the borough which includes a list of properties which have reported at least one incidence of external or internal sewer flooding between June 1997 and August 2024. Based on the data provided no properties have reported flooding within the site boundary, or in areas immediately surrounding the site. However, further incidents of sewer flooding may have occurred which have not been recorded. Therefore, the risk of sewer flooding should be assessed further at the site-specific Flood Risk Assessment stage.

2.9 Flood history

The EA's Historic Flood Mapping and Recorded Flood outlines datasets show one recorded flooding incident at the site. The centre of the site is recorded to have experienced fluvial flooding in June 1955 as a result of the River Tame overtopping. At the time there are no raised defences recorded to have been present along the watercourse.

Historic incident data provided by Staffordshire County Council show no records of historic flooding on or surrounding 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 4.6 of the Tamworth Level 2 SFRA Main 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 escape must also address the potential increase in severity and frequency of flooding.

3.1 Fluvial

3.1.1 Available data

Fluvial climate change extents have been taken from the EA's detailed River Tame hydraulic model. The defended extents for the 1% AEP plus 22% and 30% climate change have been used which represent the Central and Higher Central allowances for the 2080s epoch. These have been compared with the 1% AEP defended present day extent to assess the implications of climate change.

3.1.2 Description of risk to the site

Most of the site is already shown to be at fluvial risk within the present day 1% AEP event. However, in the 1% AEP climate change events the extent increases to cover most of the western end of the site and the two topographic high points in the east of the site. Depth, velocity, and hazard are also shown to increase across the site, with larger areas of the site classified as 'Danger for All'. A comparison of the maximum depth, velocity, and hazard at the site is shown in Table 3-1.

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

Assessment category	1% AEP	1% AEP plus 22% CC	1% AEP plus 30% CC
Percentage of site at risk (%)	95	97	97
Maximum depth (m)	3.65	3.98	4.05
Maximum velocity (m/s)	1.39	1.84	1.91
Maximum hazard classification	Danger for All (2.90)	Danger for All (3.10)	Danger for All (3.14)

3.2 Surface water

3.2.1 Available data

The EA's Surface Water Spatial Planning Dataset, released in May 2026, has been used within this assessment to inform the extent and depth of surface water risk with climate change. Climate change outputs are available for the 3.3%, 1%, and 0.1% AEP events with the Upper End climate change allowance for the 2070s epoch. There is currently no available velocity or hazard information to use within this assessment.

3.2.2 Description of risk to the site

The risk along the central flow path and in the east of the site is shown to increase with climate change, however, the western and eastern central areas are shown to remain free from risk in future.

Between the 3.3% AEP present day and climate change events, the existing areas of ponding in the northeast increase in extent and the risk in the centre of the site extends to bisect the site. Depths in this central area of risk increase with larger areas exceeding 0.3m.

Between the 1% AEP present day and climate change events, the flow path increases in extent, and larger areas show depths exceeding 0.3m. The risk in the northeast of the site also increases in extent with larger areas of depths between 0.15m and 0.3m.

The 0.1% AEP climate change event shows new areas of risk in the centre of the site with a significant increase in the flow path extent. Depths exceed 0.6m in large parts of this area of risk. The entirety of the eastern end of the site is shown to be at risk with depths exceeding 0.3m in places. The flow path which forms in the north of the site in the 0.1% AEP present day event increases in extent and depth in the climate change event.

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

Assessment category	1% AEP	1% AEP + Upper End CC
Percentage of site at risk (%)	12	22
Maximum depth (m)	1.20 - 2.30	1.20 - 2.30

4 Flood risk management infrastructure

4.1 Defences

The EA AIMS dataset shows a series of defences along the left bank of the River Tame, extending from the B5404 in the south up to the Jolly Sailor Car Park in the north and then west to Tame Drive (A51). The defences comprise sections of embankment, wall, and engineered high ground. The defences were last inspected in May 2026 and found to be in good and fair condition.

The defences were designed to protect up to the 1% AEP event when built, however as detailed in Section 2.3.4, the EA's River Tame hydraulic modelling shows the defences do not overtop within the 5% AEP event but overtop within the 2% AEP event resulting in fluvial risk at the site.

The EA have a project within the Flood and Coast Risk Management programme to improve the flood defences along the River Tame. There are currently no further details or timescales for this work, although the EA reported some early development work has been undertaken.

4.2 Residual risk

As detailed in Section 2.3.4, the defences providing protection to the site are shown to overtop from the 2% AEP event, resulting in fluvial risk at the site. There is a residual risk of a breach of the defences increasing the risk to the site.

The site is at residual risk of reservoir flooding in the event of breaches of several reservoirs, as detailed in Section 2.5.

The site is at residual risk of flooding from overtopping or breach of the Birmingham and Fazeley canal which runs along the western site boundary, situated approximately 2m above the site, as detailed in Section 2.6.

5 Emergency planning

5.1 Flood warnings and alerts

The site is located in the River Tame at County Drive and Bitterscote EA Flood Warning Area (033FWF3TAME019) and the Middle Tame Flood Alert Area (033WAF304).

5.2 Access and Escape

Safe access and escape 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

There is no existing vehicular access to the site. Potential access roads could be routed from the A5 to the north or Bitterscote Lane to the southeast.

5.2.2 Fluvial

The entire site and Bitterscote Lane are at fluvial risk within the 1% AEP plus climate change events including the residential areas to the south.

However, the A5 to the north is not shown to be at fluvial risk as the road is raised higher than the surrounding land so would provide safe access and escape to the site.

5.2.3 Surface water

There is minimal surface water risk along the A5 in all modelled AEP events so access and escape via this route is likely to be maintained. There are areas of ponding along the residential streets that lead to Bitterscote Lane within the 1% AEP climate change event, however depths are shown to remain below 0.3m so access and escape to the east of the site via this route is likely to be maintained. However, access and escape will need to be considered separately to the west of the site due to the significant surface water flow path which bisects the site in the 1% AEP climate change event, with depths exceeding 0.3m.

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

Surface water at the site should be discharged in accordance with the drainage hierarchy as set out in the National standards for SuDS (gov.uk). SuDS that provide opportunities to deliver multiple benefits including volume control, water quality, amenity, and biodiversity should be prioritised. SuDS proposals should be discussed with relevant stakeholders (Local Planning Authority (LPA), Lead Local Flood Authority (LLFA), and the EA) at an early stage to understand possible constraints. Where the national standards allow for local policy interpretation or discretion, applicants should refer to the Staffordshire County Council Flood Risk Management Team guidance and policies (staffordshire.gov.uk).

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.

The following factors should be considered when assessing whether infiltration is suitable at 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 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.

If it is proposed to discharge runoff to a sewer system, the condition and capacity or the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the asset owner.

SuDS assets should, where practicable, be located outside areas of flood risk in the 1% AEP plus climate change fluvial event. As the entire site is shown to be at fluvial risk within this event, this presents a significant constraint to the placement and design of sustainable drainage options at this site. The LLFA should be consulted at an early stage to discuss appropriate drainage options, and the acceptability of SuDS features for the site.

6.2 Opportunities for wider sustainability benefits and integrated flood risk management

The following are opportunities for wider sustainability benefits and integrated flood risk management at the site:

- 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.
- Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered.

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 employment development as 'Less Vulnerable'. The Exception Test is not required for 'Less Vulnerable' development and therefore is not required for this 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:

- Greater than one hectare
- In Flood Zones 3a, and 2
- At increased fluvial risk in future
- At risk of flooding from surface water, reservoirs, and groundwater

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, the EA, and the Canal and River Trust 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 Tamworth Borough 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

The entire site is at significant fluvial flood risk and land raising and mitigation measures will be required to accommodate built development at the site. Updates to the River Tame detailed hydraulic model are likely to be required at FRA stage, including to accurately represent the risk from this watercourse for Flood Zone 3b and test mitigation measures. The site is bounded by raised land to the north and west and adjacent to residential areas. The modelling will be required to show that any land raising at the site does not increase flood risk elsewhere.

Developers should consult the EA at an early stage to discuss proposals for the site, and options for improvements to the River Tame defences to increase the protection afforded to the site. Overtopping and breach of any defences will also need to be considered.

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 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. The significant fluvial risk at the site may affect the viability of sustainable drainage options, along with the predicted high groundwater levels and low permeability geology. The LLFA should therefore be consulted at an early stage to discuss a suitable approach to surface water management and drainage design. In particular Staffordshire County Council as LLFA will require the drainage strategy to address:

- The drainage hierarchy and preference for infiltration where feasible.
- Use of source control measures at the earliest opportunity.
- Rainwater harvesting and reuse measures where practicable.
- Management of the first 5mm of rainfall (everyday rainfall).
- Above-ground, multifunctional SuDS that deliver water quality, biodiversity and amenity benefits.
- Reduction of runoff volumes and peak discharge rates.

Arrangements for safe access and escape 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 escape 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.

The residual risk of reservoir flooding at the site will need to be considered further at the site-specific FRA stage. An emergency plan may be required, demonstrating that the residual risks to the site can be safely managed and that appropriate evacuation plans are in place.

The residual risk of overtopping or breach of the canal will need to be considered further at the site-specific FRA stage. The Canal and River Trust should be consulted at an early stage.

8 Conclusions

The site is at significant fluvial risk both now and in the future. Considerable mitigation, likely to include land raising, will be required, without increasing flood risk elsewhere, if built development is to be accommodated at the site Although the site is afforded protection by fluvial flood defences along the River Tame, the EA's River Tame hydraulic modelling shows these defences are predicted to overtop in the 2% AEP event. There is also a significant surface water flow path which bisects the centre of the site in the 1% AEP, 0.1% AEP, and climate change events. The site it also at residual risk of flooding from reservoirs, the Birmingham and Fazeley Canal, and breach of the fluvial flood defences. Most of the site is also at high risk of groundwater emergence.

The Exception Test will not be required for this site as 'Less Vulnerable' development is proposed; however, a site-specific FRA will be required.

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

- A site-specific FRA should be undertaken, which assesses all sources of flood risk. This will require updates to the River Tame hydraulic model and detailed surface water modelling. Significant surface water flood risk has also been identified and should be assessed through detailed site-specific flood risk analysis.
- Significant land raising is likely to be required to accommodate built development at this site with compensatory storage to ensure flood risk is not increased elsewhere.
- Early consultation should be undertaken with the EA to understand proposed works to improve the fluvial flood defences on the River Tame and potential to reduce the fluvial risk to the site. Assessment of the residual risk to the site, including from breach or overtopping of any proposed flood defences would also need to be considered.
- Safe access and escape should be considered in the design fluvial and surface water events. Developers should demonstrate that safe access and escape routes can be achieved; however, any raising of access and escape routes must make sure that floodwater is not displaced elsewhere. Where safe access and escape is not possible, other means of safe refuge and evacuation must be considered. Due to the fluvial risk on and surrounding the site, a Flood Warning and Evacuation Plan will be required to be prepared which considers the likely onset and duration of flooding and demonstrates how residents can safely be evacuated and/or shelter safely in situ during the design events.
- A carefully considered and integrated flood resilient and sustainable drainage design should be put forward, including a site-specific Surface Water Drainage Strategy, and SuDS maintenance and management plan and supported by detailed modelling. The fluvial risk at the site may present a significant constraint

to the implementation of SuDS at the site and will require early consultation with the LLFA to identify viable options.

- Severn Trent Water should be consulted at an early stage on drainage proposals for the site to identify any potential constraints or existing sewer flooding issues that may not have been identified through this high level assessment.

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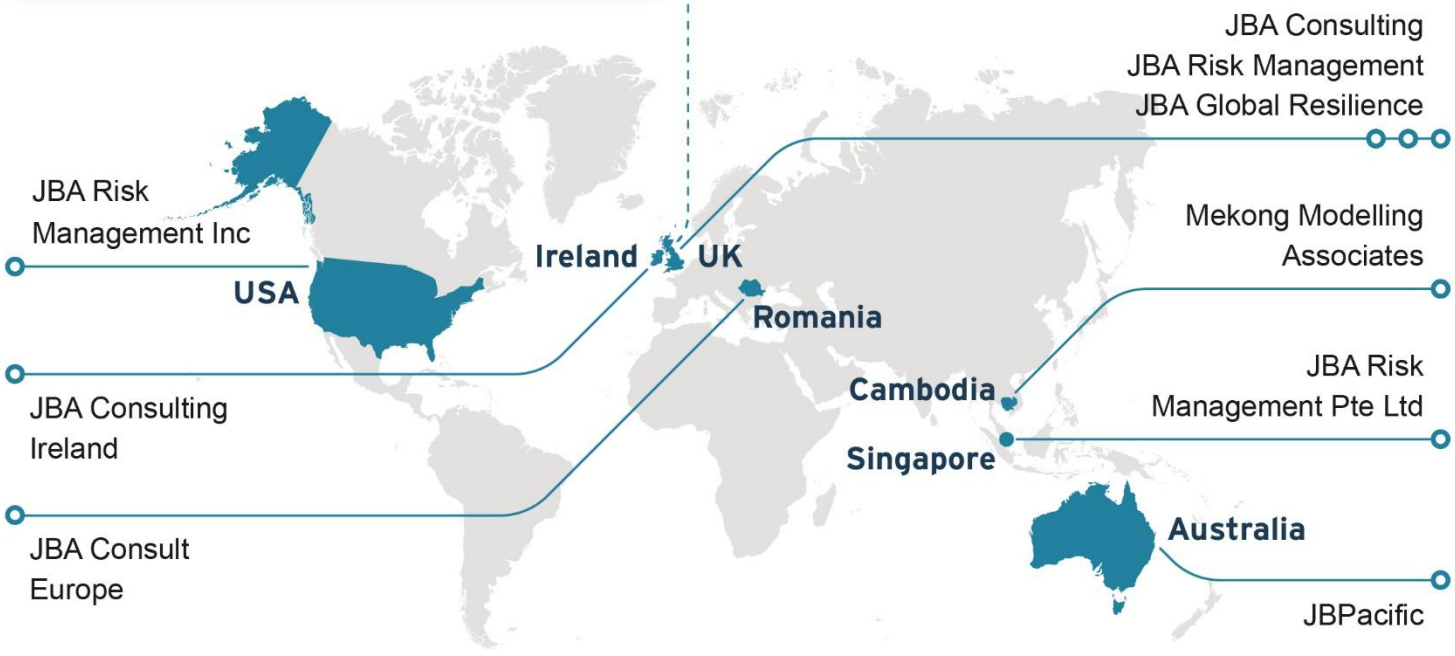

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