

Hinckley and Bosworth Borough Level 2 Strategic Flood Risk Assessment: Detailed Site Summary Tables



Site details	Site Code	Site AS589 – Land at 59 Kennel Lane, Witherley			
	Area	4.95 hectares			
	Current land use	Predominantly greenfield with some existing structures in the north west of the site			
	Proposed land use	Residential			
Sources of flood risk	Existing drainage features	An unnamed tributary of Witherley Brook runs from south to north through the centre of the site.			
	Fluvial	Proportion of site at risk			
		FZ3b	FZ3a	FZ2	FZ1
		13%	38%	53%	47%
	Flood risk to the site is associated with the tributary of the Witherley Brook flowing through the site. Flood Zone 2 covers the site to the eastern half of the watercourse and extends approximately 80m to the west of the watercourse. Flood Zone 3a also covers a significant portion of the site to the east of the watercourse with similar coverage as Flood Zone 2 to the west, severing the eastern edge of the site from the west.				
	Surface Water	Proportion of site at risk (RoFfSW)			
		30-year	100-year	1,000-year	
3%		7%	41%		
Surface water flood risk associated with a 30-year or 100-year event is mainly confined to the area surrounding the unnamed tributary flowing through the site. There are large areas of surface water ponding in the 1,000-year event to the east of the watercourse and extending approximately 90m to the west of the watercourse. The western area of the site closest to Kennel Lane is unaffected by surface water flooding. This is due to the topography of the site which is much higher in the west.					
Reservoir	The site is not shown to be at risk of reservoir flooding.				
Flood history	There are no records of historic flooding at the site from Leicestershire County Council or the Environment Agency.				
Flood risk management infrastructure	Defences	Defence Type	Standard of Protection	Condition	
		-	-	-	
	This site is not protected by any formal flood defences.				
Residual risk	Areas immediately to the north of the site (downstream) are at risk of fluvial and surface water flooding where the watercourse is potentially culverted. In an event of flooding in these locations there is potential for flood risk to be increased at this site due to back up.				
Flood warning	The site is not covered by the Environment Agency's Flood Warning Service.				

Hinckley and Bosworth Borough Level 2 Strategic Flood Risk Assessment: Detailed Site Summary Tables



Site details	Site Code	Site AS589 – Land at 59 Kennel Lane, Witherley			
	Area	4.95 hectares			
	Current land use	Predominantly greenfield with some existing structures in the north west of the site			
	Proposed land use	Residential			
Emergency planning	Access and egress	<p>Dry access and egress is available via Kennel Lane in all surface and fluvial flood events. There are very small isolated areas of surface ponding on Kennel Lane in 1,000-year surface water flooding event; however, emergency vehicles should still be able to gain access. In the event of any flooding, access to Kennel Lane should be taken from A5 to the south of the site as access routes to the north are impacted by all levels of fluvial and surface water flooding.</p> <p>The depths, velocities, hazards, durations and speeds of onset of surface water and fluvial flooding along access/ egress routes should be investigated further in a site-specific assessment, to confirm whether access for emergency vehicles could still be obtained.</p>			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		Humber	20%	30%	50%
	Implications for the site	<p>Fluvial extents from climate change increased slightly in the low topography, eastern area of the site compared to FZ3a. Larger proportions of the site to the east of the watercourse are inundated under climate change scenarios. As the site is affected by surface water flooding from the 100-year event, climate change may also increase the extent, depth and frequency of surface water flooding. The 1,000-year surface water extent can be used as an indication of surface water climate change extents. There is a large increase between the 100-year and 1,000-year surface water extents (34% of the whole site) suggesting that the site is sensitive to the impacts of climate change for surface water.</p>			

Hinckley and Bosworth Borough Level 2 Strategic Flood Risk Assessment: Detailed Site Summary Tables



Site details	Site Code	Site AS589 – Land at 59 Kennel Lane, Witherley
	Area	4.95 hectares
	Current land use	Predominantly greenfield with some existing structures in the north west of the site
	Proposed land use	Residential
Requirements for drainage control and impact mitigation	Broad scale assessment of possible SuDS	<ul style="list-style-type: none"> • Geology at the site consists of: <ul style="list-style-type: none"> ○ Bedrock – Mudstone, siltstone and sandstone ○ Superficial – Clay, silt and sand • The site is not located within a Groundwater Source Protection Zone. • Most source control techniques are likely to be suitable. Mapping suggests that permeable paving may have to use non-infiltrating systems given the possible risk from groundwater. • Infiltration may be suitable. Mapping suggests a medium risk of groundwater flooding and underlying soils may be permeable. Further site investigation should be carried out to assess potential for drainage by infiltration. If infiltration is suitable it should be avoided in areas where the depth to the water table is <1m. • Mapping suggests that the site slopes are suitable for all forms of detention. A liner maybe required due to the site potential groundwater flooding. • All filtration techniques are likely to be suitable. A liner maybe required to prevent the egress of groundwater. • All forms of conveyance are likely to be suitable. Where the slopes are >5% features should follow contours or utilise check dams to slow flows. A liner maybe required to prevent the egress of groundwater. • The site is not designated by the Environment Agency as previously being a landfill site. • should refer to latest SuDS guidance on Leicestershire County Council's website and Environmental Best Practice notes as well as the Level 1 SFRA, for information on suitable types of SuDS, the management train and opportunities and constraints
NPPF and planning implications	Exception Test requirements	<p>The Sequential Test will need to be passed before the Exception Test is applied.</p> <p>The Exception Test will need to be applied if:</p> <ul style="list-style-type: none"> • More Vulnerable and Essential Infrastructure development is located in FZ3a and for Highly Vulnerable development located in FZ2. • Highly Vulnerable infrastructure should not be permitted within FZ3a and FZ3b. • More Vulnerable and Less Vulnerable Infrastructure should not be permitted within FZ3b. • Essential Infrastructure in Flood Zone 3b will require the Exception Test. <p>Residential development is classified as 'More Vulnerable'.</p>

	<p>Requirements and guidance for site-specific Flood Risk Assessment</p>	<ul style="list-style-type: none"> • Consultation with the Local Authority, Local Lead Flood Authority and the Environment Agency should be undertaken at an early stage. • At the planning application stage, a site-specific Flood Risk Assessment will be required if any development is located within Flood Zones 2 or 3 or is greater than one hectare. A Flood Risk Assessment must consider the entire lifetime of the development and consider all sources of flooding. • The site area includes the Flood Zone 2 extents. Most development types are appropriate for this flood risk zone but must take into account the flood risk (1% to 0.1% annual exceedance probability). • The site area includes the Flood Zone 3a extents. Future development must take into account the flood risk in this area (5% to 1% annual exceedance probability). More vulnerable and critical infrastructure development is possible within Flood Zone 3a but is required to pass the Exception Test. Highly vulnerable development is not permitted within Flood Zone 3a. • The site area includes the extents of Flood Zone 3b, also known as the functional floodplain. Only essential infrastructure passing the Exception Test is permitted within Flood Zone 3b. Should there be any development within Flood Zone 3b flood storage lost by the development must be offset. • The site extents include the modelled 100-year + 50% climate change flood outline. Any development should consider the future flood risk impacts onsite and the impacts the development may have upon future flood flows. • An ordinary watercourse is within or immediately adjacent to the site area and therefore consultation with Lead Local Flood Authority should be completed. If alterations or discharges are proposed to the watercourse a land drainage consent will be required. More detailed hydraulic modelling using channel survey may be required as part of a site-specific Flood Risk Assessment, to confirm flood risk shown in the 2D generalised modelling. • Resilience measures will be required if buildings are situated in the flood risk area through the centre of the site's boundary. Raising Finished Floor Levels above the design event may remove the need for resilience measures. • Onsite attenuation schemes would need to be tested against the unnamed tributary through the centre of the site to ensure flows are not exacerbated downstream within the catchment. • The site is at high risk of surface water flooding in the 1,000-year event. This should be considered as part of a site-specific FRA or surface water drainage strategy. • New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff. • Water quality requirements for sustainable development should comply with current SuDS guidance. • Assessment for runoff should include allowance for climate change effects. • Safe access and egress will need to be demonstrated. • New development must seek opportunities to reduce overall level of flood risk at the site, for example by: <ul style="list-style-type: none"> ○ Reducing volume and rate of runoff ○ Relocating development to zones with lower flood risk ○ Creating space for flooding.
Mapping Information		
Flood Zones	The Flood Zones have been derived from 2D generalised modelling techniques.	
Climate change	The climate change allowances for the '2080s' epoch were modelled using 2D generalised modelling techniques.	
Surface Water	The Environment Agency's Risk of Flooding from Surface Water has been used to define areas at risk from surface water flooding.	

Hinckley and Bosworth Borough Level 2 Strategic Flood Risk Assessment: Detailed Site Summary Tables



Site details	Site Code	Site AS589 – Land at 59 Kennel Lane, Witherley
	Area	4.95 hectares
	Current land use	Predominantly greenfield with some existing structures in the north west of the site
	Proposed land use	Residential
Fluvial depth, velocity and hazard mapping		Depth, velocity and hazard mapping for the 1 in 100-year event (Flood Zone 3a) have been taken from 2D generalised modelling techniques.
Surface water depth, velocity and hazard mapping		The surface water depth, velocity and hazard mapping for the 1 in 100-year event (considered to be medium risk) is taken Environment Agency's Risk of Flooding from Surface Water.