


<b>Bassetlaw Level 2 Strategic Flood Risk Assessment Detailed Site Summary Tables</b>	
<b>Site details</b>	
<b>Site Code</b>	<b>HS12</b>
<b>Address</b>	Victoria Road Garage, Victoria Road, Retford, DN22 7DQ. Grid Reference: SK 70209 80365
<b>Area</b>	0.11ha
<b>Current land use</b>	Car Dealership
<b>Proposed land use</b>	Residential
<b>Sources of flood risk</b>	
<b>Location of the site within the catchment</b>	The site is within the River Idle catchment. The River Idle is an Environment Agency designated main river and flows in a northerly direction to the east of Retford towards its confluence with the River Trent.
<b>Existing drainage features</b>	The site is located 200m west of the River Idle. The River Idle flows from south to north through Retford. The Carr Dyke is a tributary of the River Idle and is located 105m east of the site. The watercourse flows north towards its confluence with the River Idle, 400m north from the site. The Chesterfield Canal is located 390m south of the site.
<b>Fluvial</b>	<p><b>The proportion of site at risk:</b>  <b>FZ3b</b> – 0%  <b>FZ3a</b> – 0%  <b>FZ2</b> – 0%  <b>FZ1</b> – 100%</p> <p><i>The % Flood Zones quoted show the % of the site at flood risk from that particular Flood Zone/event, including the percentage of the site at flood risk at a higher risk zone, e.g. FZ2 includes the FZ3 %. FZ1 is the remaining area outside FZ2 (FZ2 + FZ1 = 100%).</i></p> <p><b>Available data:</b>  The assessment of flood risk is based on detailed 1D-2D Flood Modeller Tuflow modelling of the River Idle. Modelling was completed by the Environment Agency in 2020. Climate change uplifts were provided by the Environment Agency in line with latest guidance these are based on UKCP18 projections.</p> <p><b>Flood characteristics:</b>  The site is not at risk of fluvial flooding from the River Idle.</p>
<b>Coastal and Tidal</b>	The site is not at risk of coastal or tidal flooding.
<b>Surface Water</b>	<p><b>Proportion of site at risk (RoFfSW):</b>  <b>3.3% AEP</b> – 0%  Max depth 0m  Max velocity 0m/s  <b>1% AEP</b> – 0%  Max depth 0m  Max velocity 0m/s  <b>0.1% AEP</b> – 0%  Max depth 0m  Max velocity 0m/s</p>

	<p><i>The % SW extents quoted show the % 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 extent includes the 3.3 % AEP extent)</i></p> <p><b>Description of surface water flow paths:</b></p> <p>The site is not predicted to flood during the 3.3% AEP, 1% AEP or 0.1% AEP surface water flood events.</p>
<b>Reservoir</b>	The site is not shown to be at risk of reservoir flooding from the available online maps.
<b>Canals</b>	Based on the site topography, it is believed that the site would be unlikely to flood if a breach in the Chesterfield canal occurred. It is recommended that overtopping and breach modelling is carried out to confirm the residual risk and confirm there would be no access issues to the site.
<b>Groundwater</b>	<p>The Environment Agency's Areas Susceptible to Groundwater Flooding dataset, provided as 1km grid squares, shows an area's susceptibility to groundwater flood emergence. The following comments can be made about groundwater flood risk:</p> <ul style="list-style-type: none"> <li>The entire site has a &gt;75% susceptibility to groundwater flood emergence from superficial deposits.</li> </ul> <p>This assessment does not negate the requirement that an appropriate groundwater regime assessment should be carried out at the site-specific FRA stage.</p>
<b>Sewers</b>	The Level 1 SFRA indicates that 36 incidences of sewer flooding have occurred in the DN22 7 postcode area.
<b>Flood history</b>	The Environment Agency's historic flooding map does not hold a record of flooding at the site. NCC holds 18 records of flooding within 100m of the site. The source of flooding is unknown.
<b>Flood risk management infrastructure</b>	
<b>Defences</b>	This site is not protected by any formal flood defences.
<b>Residual risk</b>	There is no residual risk to the site from flood risk management structures.
<b>Emergency planning</b>	
<b>Flood warning</b>	The site is not located in an Environment Agency flood warning or flood alert area.
<b>Access and egress</b>	<p>Access to the site is currently available from Victoria Road.</p> <p>In terms of fluvial and surface water flood risk, the site is not at risk of flooding from fluvial or surface water sources; therefore, access and egress will not be affected.</p> <p>It should be confirmed through modelling that a breach or overtopping of the Chesterfield Canal would not result in access and egress issues for the site.</p>
<b>Climate change</b>	
<b>Implications for the site</b>	The site is not at risk of flooding from the climate change extents of the River Idle.
<b>Requirements for drainage control and impact mitigation</b>	
<b>Broad-scale assessment of possible SuDS</b>	<p><b>Geology &amp; Soils</b></p> <ul style="list-style-type: none"> <li>Geology at the site consists of: <ul style="list-style-type: none"> <li>Bedrock- Chester Formation- Sandstone, Pebbly (Gravelly).</li> <li>Superficial- River terrace deposits, 1- Sand and Gravel.</li> </ul> </li> <li>Soils at the site consist of: <ul style="list-style-type: none"> <li>Naturally wet, very acid sandy and loamy soils.</li> </ul> </li> </ul> <p><b>SuDS</b></p> <ul style="list-style-type: none"> <li>The site is considered to be highly susceptible to groundwater flooding. Groundwater flooding could occur at the surface, which may flow to and pool within topographic low spots during very wet winters. Detention and attenuation features should be designed to prevent groundwater ingress from impacting hydraulic capacity and structural integrity. Additional site investigation</li> </ul>

	<p>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 is not appropriate at this site.</p> <ul style="list-style-type: none"> <li>• BGS data indicates that the underlying geology is sandstone which is likely to be free draining. This should be confirmed through infiltration testing, with the use of infiltration maximised as much as possible in accordance with the SuDS hierarchy.</li> <li>• The entire site is mainly located within Groundwater Source Protection Zone 1 (SPZ), and infiltration techniques may not be appropriate for anything other than clean roof drainage. If infiltration is proposed for anything other than clean roof drainage, a hydrogeological risk assessment should be undertaken to ensure that the system does not pose an unacceptable risk to the supply source. Proposed SuDS should be discussed with relevant stakeholders (LPA, LLFA and EA) at an early stage to understand possible opportunities and constraints.</li> <li>• The site is not located within a historic landfill site.</li> <li>• 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.</li> <li>• If it is proposed to discharge runoff to a watercourse or sewer system, the condition and capacity of the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the asset owner.</li> </ul>
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<p><b>Opportunities for wider sustainability benefits and integrated flood risk management</b></p>	<ul style="list-style-type: none"> <li>• Given the small size of the site there is likely to be limited space for green infrastructure.</li> <li>• Implementation of SuDS at the site could provide opportunities to deliver multiple benefits, including volume control, water quality, amenity and biodiversity. This could provide more comprehensive sustainability benefits to the site and surrounding area. Proposals to use SuDS techniques should be discussed with relevant stakeholders (LPA, LLFA and EA) at an early stage to understand possible constraints.</li> <li>• It is recommended that hard paving areas be designed to ensure that flood water can be stored during a flood event alongside green features such as rain gardens and tree pits.</li> <li>• Development at this site should not increase flood risk either on or off-site. The design of the surface water management proposals should consider the impacts of future climate change over the projected lifetime of the development.</li> </ul>
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## NPPF and planning implications

<p><b>Exception Test requirements</b></p>	<p>The Local Authority will need to confirm that the sequential test has been carried out. As the site is entirely within Flood Zone 1, the Exception Test need not be applied.</p>
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<p><b>Requirements and guidance for site-specific Flood Risk Assessment</b></p>	<p><b>Flood Risk Assessment:</b></p> <ul style="list-style-type: none"> <li>• As the site is not located in a Flood Zone, no site-specific Flood Risk Assessment is required at application stage. However, owing to the known surface water flooding issues in the area it is recommended that a precautionary approach is taken and a site specific flood risk assessment undertaken.</li> <li>• All flooding sources should be considered part of a site-specific flood risk assessment.</li> <li>• The site-specific FRA should be carried out according to the National Planning Policy Framework; Flood Risk and Coastal Change Planning Practice Guidance, Bassetlaw Council's Local Plan policies, and the Nottinghamshire County Council Lead Local Flood Authority's Statutory Consultee for Planning Guidance Document.</li> </ul> <p><b>Guidance for site design and making development safe:</b></p> <ul style="list-style-type: none"> <li>• Surface water flow routes should be quantified as part of a site-specific FRA, including a drainage strategy, to ensure that runoff from the development is not increased by development across any surface water flow routes. A drainage strategy should help inform site layout and design to ensure no increase in runoff beyond current rates.</li> <li>• An integrated flood risk management and sustainable drainage scheme for the site is advised. A detailed surface water flooding model using the existing drainage system, topographical and asset survey must be constructed at the FRA stage. This will further determine the risk from surface water flooding and ensure that overland flows do not overwhelm future sustainable drainage features.</li> <li>• Brownfield sites should discharge surface water at the original pre-development (greenfield) runoff rate. If this is not possible, a significant reduction in the current discharge rate should be achieved and agreed upon with the relevant drainage body (LLFA).</li> </ul>
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- Developers should refer to Nottinghamshire County Council's 'Nottinghamshire County Council's Guidance Note on the Validation Requirements for Planning Applications and the Level 1 SFRA for information on SuDS for guidance on the information required by the LLFA from applicants to enable it to respond to planning applications.

## Key messages

The development is likely to be able to proceed if:

- Development is located outside of areas at risk of flooding.
- Space for surface water to be stored on the site is provided, and rainwater harvesting should be considered.
- Brownfield sites should discharge surface water at the original pre-development (greenfield) runoff rate. If this is not possible, a significant reduction in the current discharge rate should be achieved and agreed with the relevant drainage body (LLFA, IDB or Severn Trent).

## Mapping Information

The key datasets used to make planning recommendations regarding this site were the Environment Agency's Flood Map for Planning, flood modelling of the River Idle and the Risk of Flooding from Surface Water map. More details regarding data used for this assessment can be found below.

<b>Flood Zones</b>	The extent of flooding from the River Idle is based on detailed 1D-2D Flood Modeller Tuflow modelling. Modelling was completed by the Environment Agency in 2020.
<b>Climate change</b>	Climate change uplifts were provided by the Environment Agency in line with latest guidance- these are based on UKCP18 projections.
<b>Fluvial depth, velocity and hazard mapping</b>	Flood depths, velocity and hazards were not available for the River Idle.
<b>Surface Water</b>	The Risk of Flooding from Surface Water map has been used to define areas at risk from surface water flooding.
<b>Surface water depth, velocity and hazard mapping</b>	The surface water depth and hazard mapping for the 1 in 0.1% AEP event is taken from the Environment Agency's Risk of Flooding from Surface Water mapping.