



East Devon District Council Level 2 Strategic Flood Risk Assessment Detailed Site Summary Tables


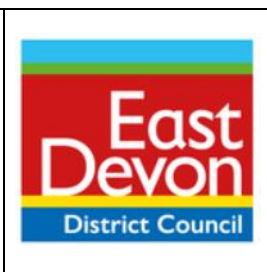






East Devon District Council Level 2 Strategic Flood Risk Assessment Detailed Site Summary Tables



Site Code	GH_ED_43																								
Address	Land far east of Exeter Airport																								
Surface water plus climate change	<p>Data analysis:</p> <p>3.3% AEP (1 in 30 year) event:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Proportion - 3%</td> <td style="width: 50%;"></td> </tr> <tr> <td>Max Depth - 0.88m</td> <td>Mean Depth - 0.31m</td> </tr> <tr> <td>Max Velocity - 1.49m/s</td> <td>Mean Velocity - 0.24m/s</td> </tr> <tr> <td>Max Hazard - 1.57</td> <td>Mean Hazard - 0.97</td> </tr> </table> <p>1% AEP (1 in 100 year) event:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Proportion - 8%</td> <td style="width: 50%;"></td> </tr> <tr> <td>Max Depth - 1.18m</td> <td>Mean Depth - 0.36m</td> </tr> <tr> <td>Max Velocity - 1.52m/s</td> <td>Mean Velocity - 0.34m/s</td> </tr> <tr> <td>Max Hazard - 1.79</td> <td>Mean Hazard - 1.01</td> </tr> </table> <p>0.1% AEP (1 in 1000 year) event:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Proportion - 17%</td> <td style="width: 50%;"></td> </tr> <tr> <td>Max Depth - 1.41m</td> <td>Mean Depth - 0.37m</td> </tr> <tr> <td>Max Velocity - 2.15m/s</td> <td>Mean Velocity - 0.6m/s</td> </tr> <tr> <td>Max Hazard - 2.42</td> <td>Mean Hazard - 1.05</td> </tr> </table> <p>Flood characteristics: The site is shown to be at risk of flooding in the 1% and 0.1% AEP events with a flow path from north to southwest along the western and northern boundaries with predominantly shallow depths (averaging 0.37m). During the 3.33% AEP events localised areas to the northwest and west are shown to be at risk, with a maximum depth of 0.88m. The average hazard and velocity on site during the 0.1% AEP event are shown to be 1.05 'danger to some' and 0.6m/s.</p> <p>Available data and mapping: Environment Agency's Risk of Flooding from Surface Water dataset for the 3.33%, 1% and 0.1% AEP events with 65% Climate Change scenarios.</p> <p>GH_ED_43 - Surface Water 3.33% AEP plus 65% Climate Change - Depth GH_ED_43 - Surface Water 3.33% AEP plus 65% Climate Change - Hazard GH_ED_43 - Surface Water 3.33% AEP plus 65% Climate Change - Velocity GH_ED_43 - Surface Water 1% AEP plus 65% Climate Change - Depth GH_ED_43 - Surface Water 1% AEP plus 65% Climate Change - Hazard GH_ED_43 - Surface Water 1% AEP plus 65% Climate Change - Velocity GH_ED_43 - Surface Water 0.1% AEP plus 65% Climate Change - Depth GH_ED_43 - Surface Water 0.1% AEP plus 65% Climate Change - Hazard GH_ED_43 - Surface Water 0.1% AEP plus 65% Climate Change - Velocity</p> <p>Management Catchment: GH_ED_43 is located within the East Devon Management Catchment. The Environment Agency guidance recommends that the Upper End allowance is considered for both the 3.3% and 1% AEPs for the 2070's epoch, unless the allowance for the 2050's epoch is higher, in which case this should be used. This is appropriate for development with a lifetime beyond 2100. The recommended uplift on peak rainfall intensity for the 3.3% AEP is 40% and for the 1% AEP is 45%. As Risk of Flooding from Surface Water data with a 65% uplift was already available this has been used as best available data for the 3.3%, 1% and 0.1% AEPs.</p>	Proportion - 3%		Max Depth - 0.88m	Mean Depth - 0.31m	Max Velocity - 1.49m/s	Mean Velocity - 0.24m/s	Max Hazard - 1.57	Mean Hazard - 0.97	Proportion - 8%		Max Depth - 1.18m	Mean Depth - 0.36m	Max Velocity - 1.52m/s	Mean Velocity - 0.34m/s	Max Hazard - 1.79	Mean Hazard - 1.01	Proportion - 17%		Max Depth - 1.41m	Mean Depth - 0.37m	Max Velocity - 2.15m/s	Mean Velocity - 0.6m/s	Max Hazard - 2.42	Mean Hazard - 1.05
Proportion - 3%																									
Max Depth - 0.88m	Mean Depth - 0.31m																								
Max Velocity - 1.49m/s	Mean Velocity - 0.24m/s																								
Max Hazard - 1.57	Mean Hazard - 0.97																								
Proportion - 8%																									
Max Depth - 1.18m	Mean Depth - 0.36m																								
Max Velocity - 1.52m/s	Mean Velocity - 0.34m/s																								
Max Hazard - 1.79	Mean Hazard - 1.01																								
Proportion - 17%																									
Max Depth - 1.41m	Mean Depth - 0.37m																								
Max Velocity - 2.15m/s	Mean Velocity - 0.6m/s																								
Max Hazard - 2.42	Mean Hazard - 1.05																								


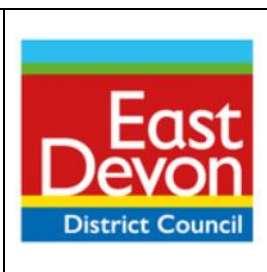
	East Devon District Council Level 2 Strategic Flood Risk Assessment Detailed Site Summary Tables																									
Site Code	GH_ED_43																									
Address	Land far east of Exeter Airport																									
	<p>Data analysis:</p> <p>3.3% AEP (1 in 30 year) plus 65% climate change event:</p> <table border="0" style="width: 100%;"> <tr> <td>Proportion - 11%</td> <td></td> </tr> <tr> <td>Max Depth - 1.33m</td> <td>Mean Depth - 0.4m</td> </tr> <tr> <td>Max Velocity - 1.69m/s</td> <td>Mean Velocity - 0.37m/s</td> </tr> <tr> <td>Max Hazard - 2.07</td> <td>Mean Hazard - 1.07</td> </tr> </table> <p>1% AEP (1 in 100 year) plus 65% climate change event:</p> <table border="0" style="width: 100%;"> <tr> <td>Proportion - 15%</td> <td></td> </tr> <tr> <td>Max Depth - 1.41m</td> <td>Mean Depth - 0.38m</td> </tr> <tr> <td>Max Velocity - 2.11m/s</td> <td>Mean Velocity - 0.49m/s</td> </tr> <tr> <td>Max Hazard - 2.3</td> <td>Mean Hazard - 1.06</td> </tr> </table> <p>0.1% AEP (1 in 1000 year) plus 65% climate change event:</p> <table border="0" style="width: 100%;"> <tr> <td>Proportion - 26%</td> <td></td> </tr> <tr> <td>Max Depth - 1.6m</td> <td>Mean Depth - 0.41m</td> </tr> <tr> <td>Max Velocity - 2.85m/s</td> <td>Mean Velocity - 0.83m/s</td> </tr> <tr> <td>Max Hazard - 3.01</td> <td>Mean Hazard - 1.22</td> </tr> </table> <p>Flood characteristics: The site is shown to be at risk of flooding in all three scenarios with a flow path from north to southwest, along the western and northern boundaries with moderate depths (averaging 0.41m in the 0.1% AEP event). It is evident that as the flooding extent increases between the 3.33% AEP and 1% AEP events, the average flood depth decreases. The maximum flood depth in the 0.1% AEP plus 65% climate change event is shown to be 1.6m along the western boundary of the site. The average velocity is shown to be no more than 0.83m/s, with a maximum velocity of 2.85m/s during the 0.1% AEP event with 65% climate change. The average hazard rating is 1.22 and is therefore stated to be a 'danger to some'.</p>		Proportion - 11%		Max Depth - 1.33m	Mean Depth - 0.4m	Max Velocity - 1.69m/s	Mean Velocity - 0.37m/s	Max Hazard - 2.07	Mean Hazard - 1.07	Proportion - 15%		Max Depth - 1.41m	Mean Depth - 0.38m	Max Velocity - 2.11m/s	Mean Velocity - 0.49m/s	Max Hazard - 2.3	Mean Hazard - 1.06	Proportion - 26%		Max Depth - 1.6m	Mean Depth - 0.41m	Max Velocity - 2.85m/s	Mean Velocity - 0.83m/s	Max Hazard - 3.01	Mean Hazard - 1.22
Proportion - 11%																										
Max Depth - 1.33m	Mean Depth - 0.4m																									
Max Velocity - 1.69m/s	Mean Velocity - 0.37m/s																									
Max Hazard - 2.07	Mean Hazard - 1.07																									
Proportion - 15%																										
Max Depth - 1.41m	Mean Depth - 0.38m																									
Max Velocity - 2.11m/s	Mean Velocity - 0.49m/s																									
Max Hazard - 2.3	Mean Hazard - 1.06																									
Proportion - 26%																										
Max Depth - 1.6m	Mean Depth - 0.41m																									
Max Velocity - 2.85m/s	Mean Velocity - 0.83m/s																									
Max Hazard - 3.01	Mean Hazard - 1.22																									
Reservoir	The site is not located near to a Wet or Dry day reservoir flooding extent, according to the Environment Agency's reservoir flood mapping.																									
Groundwater	<p>Available data and mapping: The JBA Groundwater Flood Data Map (GW5) is provided as a 5m resolution grid.</p> <p>GH_ED_43 - Groundwater Emergence</p> <p>Flood characteristics: Groundwater levels on site are predominately shown to be at 'low risk'. There is a small area in the northwestern corner where groundwater levels are modelled to be either at or very near (within 0.025m of) the ground surface or between 0.025m and 0.5m during a 1% AEP groundwater flood event. Flow paths would be expected to follow the topography of the site and be similar to surface water flow paths.</p>																									
Sewers	No evidence of sewer flooding has been identified at or near the development site.																									
Flood history	<p>The site is not shown to be located within the Environment Agency's Recorded Flood Outlines extent.</p> <p>There are no flooding incidents within Devon County Council's dataset recorded within 100m of the site.</p>																									

	East Devon District Council Level 2 Strategic Flood Risk Assessment Detailed Site Summary Tables	
Site Code	GH_ED_43	
Address	Land far east of Exeter Airport	
Policy zones		
Critical drainage areas	The site has not been identified to be located within a critical drainage area. Mapping: GH_ED_43 - Critical Drainage Area	
Coastal change management areas	The site has not been identified to be located within a coastal change management area.	
Flood risk management infrastructure		
Existing defences	The Environment Agency's AIMS dataset shows there are no formal flood defences within the vicinity of the site.	
Emergency planning		
Flood warning	The site has not been identified to be located within an area of flood warning or alerts. Mapping: GH_ED_43 - Flood Warnings and Alerts	
Access and egress	Access and egress are available along Long Lane to the south of the site through shallow flood depths up to 0.22m in the 1% AEP plus climate change surface water modelling.	
Requirements for drainage control and impact mitigation		
Broad-scale assessment of possible SuDS	<p>Geology and Soils</p> <p>The geology consists of mudstone, siltstone and sandstone, with clay, silt and sand superficial deposits. The soils are shown to be slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils. This suggests that infiltration is likely to be a viable option.</p> <p>SuDS</p> <ul style="list-style-type: none"> • The site is located within a Nitrate Vulnerable Zone. Therefore, early engagement with the LLFA and the EA is recommended to determine requirements for the site to manage the impact to surrounding watercourses. Consideration of water quality is likely to be of high importance and demonstrated through the use of the Simple Index Approach. • The site has not been identified to be located within a historic landfill site or a groundwater Source Protection Zone. • Groundwater levels on site suggest a small area in the north/northwestern corner where groundwater levels are either at or very near (within 0.025m of) the ground surface during a 1% AEP flood event. The infiltration potential of the site should be confirmed through infiltration testing, in line with BRE 365. Offsite discharge may therefore be required to discharge surface water runoff. • 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 	



East Devon District Council Level 2 Strategic Flood Risk Assessment Detailed Site Summary Tables



	East Devon District Council Level 2 Strategic Flood Risk Assessment Detailed Site Summary Tables	
Site Code	GH_ED_43	
Address	Land far east of Exeter Airport	
	https://www.devon.gov.uk/floodriskmanagement/document/sustainable-drainage-system-guidance-for-devon-2023/#dcc-documents-cpt-contents	
NPPF and planning implications		
Exception Test requirements (Local Authority considerations)	<p>The Local 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.</p> <p>The NPPF classifies the usage as “Less Vulnerable”.</p> <p>East Devon District Council require that developments in areas at risk of surface water, groundwater or reservoir flooding will be expected to follow the same requirements as those laid out in Parts (a) and (b) of the NPPF’s Exception Test. However, providing development is proposed outside of the areas at risk, the Exception Test is not required for this site.</p> <p>Given the site is in Flood Zone 1, and the limited surface water extent in the 0.1% AEP event, provided development is proposed outside of the areas at risk, the Exception Test is not required for this site.</p>	
Requirements and guidance for site-specific Flood Risk Assessment (Developer considerations)	<p>Flood Risk Assessment:</p> <p>The Level 1 SFRA has more guidance on this section and any relevant policies and information applicable to development within East Devon District Council.</p> <ul style="list-style-type: none"> • Consultation with the East Devon District Council, and where relevant South West Water, Devon County Council, and the Environment Agency should be undertaken at an early stage. • Developers should consult with South West Water to ensure that the development aims to help achieve the targets of the Drainage and Wastewater Management Plan. • Development plans should use the Level 1 SFRA for East Devon District Council, as well as the Local Flood Risk Management Strategies to identify cumulative flood risk issues. It should also promote an integrated approach to water management. • The site is located within a medium risk Cumulative Impact Assessment (CIA) catchment and therefore specific CIA policy documents are applicable to this site. <p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none"> • The developer will need to show, through an FRA, that future users of the development will not be placed in danger from flood hazards throughout its lifetime. It is for the applicant to show that the development meets the objectives of the NPPF’s policy on flood risk. For example, how the operation of any mitigation measures can be safeguarded and maintained effectively through the lifetime of the development. (Para 048 Flood Risk and Coastal Change PPG). • The risk from surface water flow routes should be quantified as part of a site-specific FRA, including a drainage strategy, so runoff magnitudes from the development are not increased by development across any ephemeral surface water flow routes. A drainage strategy 	



East Devon District Council Level 2 Strategic Flood Risk Assessment Detailed Site Summary Tables



Site Code	GH_ED_43
Address	Land far east of Exeter Airport
	<p>should help inform site layout and design to ensure runoff rates do not exceed greenfield rates.</p> <ul style="list-style-type: none">• Arrangements for safe access and egress are likely to be possible, however these will need to be considered further within a site-specific FRA for the surface water events with an appropriate allowance for climate change, using the depth, velocity, and hazard outputs.

Key messages

The site is generally identified to be at low risk, and development is likely to progress if:

- A site-specific FRA is undertaken to assess the risk of surface water and groundwater flooding in relation to the proposed development, and the access and egress arrangements.
- Development is placed outside of the areas at risk from surface water flooding.
- Infiltration rates are assessed on site as part of a drainage strategy.
- There is early engagement with the LLFA and the EA on the proposed SuDS measures and infiltration rate to discuss requirements on the site meeting relevant conditions due to the sites location within a Nitrate Vulnerable Zone.
- Cumulative Impact Assessment policy documents must be understood, and the cumulative impact of development should be considered.