



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





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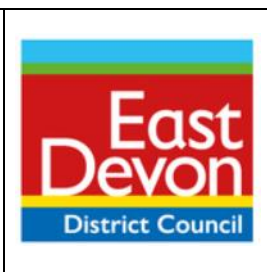







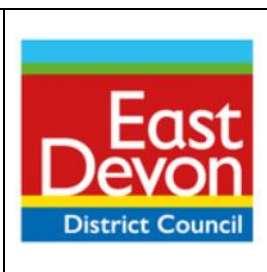
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Site Code	Musb_01a																								
Address	Land east of the A358, Musbury																								
Surface water plus climate change	<p>therefore evident that as the flooding extent increases, the average flood depth decreases. The average hazard and velocity on site during the 0.1% AEP event are shown to be a 'danger to some' (0.81) and 0.67m/s respectively across the site.</p> <p>It should be noted that an existing flow path to the south of the site is not represented in the RoFSW mapping, and therefore further investigation will be required within a site-specific FRA.</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>Musb_01a - Surface Water 3.33% AEP plus 65% Climate Change - Depth Musb_01a - Surface Water 3.33% AEP plus 65% Climate Change - Hazard Musb_01a - Surface Water 3.33% AEP plus 65% Climate Change - Velocity Musb_01a - Surface Water 1% AEP plus 65% Climate Change - Depth Musb_01a - Surface Water 1% AEP plus 65% Climate Change - Hazard Musb_01a - Surface Water 1% AEP plus 65% Climate Change - Velocity Musb_01a - Surface Water 0.1% AEP plus 65% Climate Change - Depth Musb_01a - Surface Water 0.1% AEP plus 65% Climate Change - Hazard Musb_01a - Surface Water 0.1% AEP plus 65% Climate Change - Velocity</p> <p>Management Catchment: Musb_01a 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 the best available data for the 3.3%, 1% and 0.1% AEPs.</p> <p>Data analysis:</p> <p>3.3% AEP (1 in 30 year) plus 65% climate change event:</p> <table style="width: 100%; border: none;"> <tr> <td>Proportion - 11%</td> <td>Mean Depth - 0.23m</td> </tr> <tr> <td>Max Depth - 1.13m</td> <td>Mean Velocity - 0.56m/s</td> </tr> <tr> <td>Max Velocity - 2.15m/s</td> <td>Mean Hazard - 0.83</td> </tr> <tr> <td>Max Hazard - 1.57</td> <td></td> </tr> </table> <p>1% AEP (1 in 100 year) plus 65% climate change event:</p> <table style="width: 100%; border: none;"> <tr> <td>Proportion - 19%</td> <td>Mean Depth - 0.21m</td> </tr> <tr> <td>Max Depth - 1.18m</td> <td>Mean Velocity - 0.67m/s</td> </tr> <tr> <td>Max Velocity - 3.2m/s</td> <td>Mean Hazard - 0.81</td> </tr> <tr> <td>Max Hazard - 1.73</td> <td></td> </tr> </table> <p>0.1% AEP (1 in 1000 year) plus 65% climate change event:</p> <table style="width: 100%; border: none;"> <tr> <td>Proportion - 41%</td> <td>Mean Depth - 0.23m</td> </tr> <tr> <td>Max Depth - 1.39m</td> <td>Mean Velocity - 0.84m/s</td> </tr> <tr> <td>Max Velocity - 3.78m/s</td> <td>Mean Hazard - 0.9</td> </tr> <tr> <td>Max Hazard - 2.7</td> <td></td> </tr> </table>	Proportion - 11%	Mean Depth - 0.23m	Max Depth - 1.13m	Mean Velocity - 0.56m/s	Max Velocity - 2.15m/s	Mean Hazard - 0.83	Max Hazard - 1.57		Proportion - 19%	Mean Depth - 0.21m	Max Depth - 1.18m	Mean Velocity - 0.67m/s	Max Velocity - 3.2m/s	Mean Hazard - 0.81	Max Hazard - 1.73		Proportion - 41%	Mean Depth - 0.23m	Max Depth - 1.39m	Mean Velocity - 0.84m/s	Max Velocity - 3.78m/s	Mean Hazard - 0.9	Max Hazard - 2.7	
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	East Devon District Council Level 2 Strategic Flood Risk Assessment Detailed Site Summary Tables	
Site Code	Musb_01a	
Address	Land east of the A358, Musbury	
	Flood characteristics: The site is shown to be at risk of flooding in all three scenarios with the east to west flow path flooding the north of the site during the 3.3% and 1% AEP plus climate change events. Within the 0.1% AEP plus climate change events it is evident that up to 41% of the site is flooded with flow paths across the north, centre and southwest. The average mean depth however remains no deeper than the 3.3% AEP event at 0.23m. The average velocity on site during the 0.1% AEP plus 65% climate change event is 0.84m/s, with a maximum of 3.78m/s. The average hazard rating is shown to be a 'danger to some' at 0.84.	
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	Available data and mapping: The JBA Groundwater Flood Data Map (GW5) is provided as a 5m resolution grid. Musb_01a - Groundwater Emergence Flood characteristics: Groundwater levels on site are split with the eastern half at 'Low risk', and the western half either at or very near (within 0.025m of) the ground surface 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. The risk of groundwater flooding will require further consideration in a site-specific flood risk assessment.	
Sewers	No evidence of sewer flooding has been identified at or near the development site.	
Flood history	The site is not shown to be located within the Environment Agency's Recorded Flood Outlines extent. According to DDC, property flooding occurred immediately downstream of the site in December 2023.	
Policy zones		
Critical drainage areas	The site has not been identified to be located within a critical drainage area. Mapping: Musb_01a - 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, however the northeastern corner of the site is shown to be located within a flood alert area for the River Axe.	

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	Mapping: Musb_01a - Flood Warnings and Alerts	
Access and egress	Access and egress is shown to be affected along the A358 and 'The Street' during the modelled surface water events, with moderate flood depths up to 0.38m in the 1% AEP plus climate change surface water event. Access and egress should be more carefully considered within a site-specific FRA and a Flood Response Plan may be required.	
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 alluvium superficial deposits comprising of sand, clay and silt. The soils are shown to be slightly acid loamy and clayey soils with impeded drainage. This suggests that infiltration is unlikely to be a viable means of surface water disposal.</p> <p>SuDS</p> <ul style="list-style-type: none"> • The site has not been identified to be located within a historic landfill site, a groundwater Source Protection Zone or Nitrate Vulnerable Zone. • Groundwater levels to the west of the site suggest the western side of the site are either at or very near (within 0.025m of) the ground surface, and the soils suggest infiltration is unlikely due to impeded drainage from clayey soils. 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 permeable surfaces on site using a combination of permeable surfacing and soft landscaping techniques. • If it is proposed to discharge runoff to a watercourse or sewer system, the condition and capacity of the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the asset owner. • Due to the topography, any surface water not intercepted via infiltration will drain via gravity to the southwestern boundary. It is therefore recommended that the LLFA and the EA are consulted about viable discharge locations for surface water from the site and their attenuation potential. 	
Opportunities for wider sustainability benefits and integrated flood risk management	<ul style="list-style-type: none"> • Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, water quality, amenity and biodiversity. This could provide wider sustainability benefits to the site and surrounding area. Proposals to use SuDS techniques should be discussed with relevant stakeholders (LPA, LLFA and EA) at an early stage to understand possible constraints. • The design of the surface water management proposals should take into account the impacts of future climate change over the projected lifetime of the development. 	

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	<ul style="list-style-type: none"> • Opportunities to incorporate source control techniques such as green roofs, permeable surfaces and rainwater harvesting must be considered in the design of the site. • SuDS are to be designed so that they are easy to maintain, and it should be set out who will maintain the system, how the maintenance will be funded and should be supported by an appropriately detailed maintenance and operation manual. • Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered. Consideration should be made to the existing condition of receiving waterbodies and their Water Framework Directive objectives for water quality. The use of multistage SuDS treatment will improve water quality of surface water runoff discharged from the site and reduce the impact on receiving water bodies. • 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. • SuDS should be designed in line with Devon County Councils SuDS Guidance. 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 “More Vulnerable”, this type is taken into consideration for the Exception Test.</p> <p>The site is partially located within Flood Zone 2 and 3, with a limited surface water extent in the 0.1% AEP. It is therefore suggested that development is proposed within Flood Zone 1 excluding the area located to the north within Flood Zones 2 and 3, however the Exception Test will be required for this site. It is also likely detailed flood modelling may be required during a site-specific FRA.</p> <p>It should be noted that development could potentially look to reduce the flood risk to the 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. 	



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