	Strategic Flood Risk Assessment **Detailed Site Summary Tables** **B&Q and Halfords**	

Site details	
Site Code	**SH/015/21**
Address	B&Q and Halfords
Area	1.3ha
Current land use	Brownfield – Commercial
Proposed land use	Residential
Flood Risk Vulnerability	More Vulnerable
Sources of flood risk	
Location of the site within the administrative area	The site is located to the east of Shoreham-by-Sea, directly south of the railway line, in the south-east of the Adur District boundary. The site consists of commercial land-use and parking, with a small storage yard/depot to the east of the site, accessed via Brighton Road to the south.
Topography	The Environment Agency's 1m resolution 2022 Composite LiDAR shows that the topography of the site is relatively flat, declining slightly from the east and the west towards the centre and the south with an approximate 1% gradient across the site. The localised peak is approximately 6mAOD in the north-west of the site, declining to 4mAOD in the south. *B&Q and Halfords – Topography*
Existing drainage features	The River Adur is situated approximately 90m south of the site, flowing in an easterly direction. Existing drainage features will already be present at the site.
Flood Map for Planning (Rivers and Sea)	**Available data and mapping:** Environment Agency Flood Map for Planning for Rivers and Sea. *B&Q and Halfords - FMfP* **Data analysis:** Details of the sites location within each Flood Zone are provided within the SFRA Site Screening Appendix. **Flood characteristics:** The entire site is located within Flood Zone 1 of the Flood Map for Planning for sea. • Flood Zone 1 represents areas which have less than a 1 in 1000 (0.1%) chance of river or tidal flooding in a given year. Surface Water flooding should be considered. It is understood that additional Surface Water datasets will be published in 2025.
Tidal	**Available data and mapping:** 2025 Arun-Adur modelling – defended scenario. **Mapping:** *Depth*

	B&Q and Halfords – Tidal – Present Day – 3.3% *B&Q and Halfords – Tidal – Present Day – 0.5%* *B&Q and Halfords – Tidal – Present Day – 0.1%* *Hazard* *B&Q and Halfords – Tidal – Present Day – 3.3%* *B&Q and Halfords – Tidal – Present Day – 0.5%* *B&Q and Halfords – Tidal – Present Day – 0.1%* *Velocity* *B&Q and Halfords – Tidal – Present Day – 3.3%* *B&Q and Halfords – Tidal – Present Day – 0.5%* *B&Q and Halfords – Tidal – Present Day – 0.1%* **Data analysis:** Details of the site's location within the 2025 Arun-Adur modelling are provided within the Level 2 SFRA Site Screening Appendix. **0.1% AEP (1 in 1000 year) event:** Proportion – 1% Max Depth – 0.23m Mean Depth – 0.1m Max Velocity – 0.12m/s Mean Velocity – 0.03m/s Max Hazard – 0.61 Mean Hazard – 0.55 **Flood characteristics:** The site has been identified to be at risk of tidal flooding during the 0.1% AEP event, with a small area of flooding encroaching on the southern site boundary. This indicates that the defended risk is greater than the undefended risk, this is likely to be due to differing approaches used in the modelling with the undefended using still water levels and the defended model including overtopping.
Tidal with Climate Change	**Available data and mapping:** Arun-Adur modelling – defended. The Environment Agency guidance recommends that the Higher Central (55%) and Upper End (107%) allowance is considered. **Mapping:** *Depth – 70th percentile (higher central)* *B&Q and Halfords – Tidal – Future – 3.3%* *B&Q and Halfords – Tidal – Future – 0.5%* *Hazard - 70th percentile (higher central)* *B&Q and Halfords – Tidal – Future – 3.3%* *B&Q and Halfords – Tidal – Future – 0.5%* *Velocity -70th percentile (higher central)* *B&Q and Halfords – Tidal – Future – 3.3%* *B&Q and Halfords – Tidal – Future – 0.5%* *Depth – 95th percentile (upper end)* *B&Q and Halfords – Tidal – Future – 3.3%* *B&Q and Halfords – Tidal – Future – 0.5%* *Hazard - 95th percentile (upper end)* *B&Q and Halfords – Tidal – Future – 3.3%* *B&Q and Halfords – Tidal – Future – 0.5%* *Velocity -95th percentile (upper end)* *B&Q and Halfords – Tidal – Future – 3.3%* *B&Q and Halfords – Tidal – Future – 0.5%* **Data analysis:** Details of the site's location within the 2025 Arun-Adur modelling are provided within the Level 2 SFRA Site Screening Appendix

3.3% AEP (1 in 30 year) + Higher Central Climate Change event:

Proportion – 19%

Max Depth – 0.76m	Mean Depth – 0.23m
Max Velocity – 0.23m/s	Mean Velocity – 0.04m/s
Max Hazard – 1.42 Danger to most	Mean Hazard – 0.83 Danger to some

3.3% AEP (1 in 30 year) + Upper End Climate Change event:

Proportion – 44%

Max Depth – 1.09m	Mean Depth – 0.32m
Max Velocity – 0.46m/s	Mean Velocity – 0.06m/s
Max Hazard – 1.7 Danger to most	Mean Hazard – 0.96 Danger to some

0.5% AEP (1 in 200 year) + Higher Central Climate Change event:

Proportion – 34%

Max Depth – 0.92m	Mean Depth – 0.25m
Max Velocity – 0.3m/s	Mean Velocity – 0.05m/s
Max Hazard – 1.57 Danger to most	Mean Hazard – 0.86 Danger to some

0.5% AEP (1 in 200 year) + Upper End Climate Change event:

Proportion – 56%

Max Depth – 1.16m	Mean Depth – 0.36m
Max Velocity – 0.4m/s	Mean Velocity – 0.08m/s
Max Hazard – 1.85 Danger to most	Mean Hazard – 1.03 Danger to some

Flood characteristics:
The site flood in all climate change scenarios. During the 3.3% AEP Higher Central event, 19% of the site is shown to flood across the east and centre of the site. Maximum depths are up to 0.76m in the centre of the site with an associated hazard rating of 'Danger to most'.

The flood extent increases during the 0.5% AEP Higher Central and Upper End climate change events, however, flooding remains limited to the east and centre of the site. The maximum hazard rating is shown to be 'Danger to most'.

Surface Water

Available data and mapping: Environment Agency Risk of Surface Water flooding for the 3.3%, 1% and 0.1% AEP events. It should be noted that the data discussed below relates to the available surface water data prior to March 2025, as the newly released data does not include depth, hazard and velocity information. Details on the coverage of the two surface water flooding datasets are discussed below and are detailed within the Site Screening document undertaken as part of the Level 2 SFRA.

B&Q and Halfords – Surface Water Depth – Present Day – 3.3%
B&Q and Halfords – Surface Water Depth – Present Day – 1%
B&Q and Halfords – Surface Water Depth – Present Day – 0.1%
B&Q and Halfords – Surface Water Hazard – Present Day – 3.3%
B&Q and Halfords – Surface Water Hazard – Present Day – 1%
B&Q and Halfords – Surface Water Hazard – Present Day – 0.1%

	B&Q and Halfords – Surface Water Velocity – Present Day – 3.3% *B&Q and Halfords – Surface Water Velocity – Present Day – 1%* *B&Q and Halfords – Surface Water Velocity – Present Day – 0.1%* *B&Q and Halfords – Surface Water – Present Day – NAFRA2* **Data analysis:** **3.3% AEP (1 in 30 year) event:** Proportion – <1% Max Depth – 0.32m Mean Depth – 0.27m Max Velocity – 0.3m/s Mean Velocity – 0.1m/s Max Hazard – 1.16 Danger to some Mean Hazard – 1.04 Danger to some **1% AEP (1 in 100 year) event:** Proportion – 1% Max Depth – 0.38m Mean Depth – 0.27m Max Velocity – 0.48m/s Mean Velocity – 0.16m/s Max Hazard – 1.19 Danger to some Mean Hazard – 0.92 Danger to some **0.1% AEP (1 in 1000 year) event:** Proportion – 3% Max Depth – 0.5m Mean Depth – 0.24m Max Velocity – 0.91m/s Mean Velocity – 0.16m/s Max Hazard – 1.26 Danger to most Mean Hazard – 0.82 Danger to some **NAFRA2 - 3% AEP (1 in 30 year) event:** Proportion – 3% **NAFRA2 - 1% AEP (1 in 100 year) event:** Proportion – 4% **NAFRA2 - 0.1% AEP (1 in 1000 year) event:** Proportion – 5% **Description of surface water flow paths:** The site is shown to flood during all three events, reaching a maximum of 3% coverage during the 0.1% AEP event. Flooding encroaches on the southern boundary during all three events, with a small patch of localised flooding shown in the east of the site during the 0.1% AEP event, with a mean depth, velocity and hazard of 0.24m, 0.16m/s and 0.82 ('danger to some'). Within the NAFRA2 dataset there is a slight increase in the area of the site impacted by surface water flooding. The pattern of flooding across the site remains the same as the superseded dataset, with an addition area in the east of the site impacted.
Surface Water with Climate Change	**Available data and mapping:** Surface Water flooding for the 3.3%, 1% and 0.1% AEP events with climate change, using data available prior to March 2025. 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. The recommended uplift on peak rainfall intensity for the 3.3% AEP is 40% and for the 1% AEP is 45%.

B&Q and Halfords – Surface Water – Future – 3.3%+20CC
B&Q and Halfords – Surface Water – Future – 3.3%+40CC
B&Q and Halfords – Surface Water – Future – 1%+25CC
B&Q and Halfords – Surface Water – Future – 1%+45CC
B&Q and Halfords – Surface Water – Future – 0.1%+25CC
B&Q and Halfords – Surface Water – Future – 0.1%+45CC
Hazard
B&Q and Halfords – Surface Water – Future – 3.3%+20CC
B&Q and Halfords – Surface Water – Future – 3.3%+40CC
B&Q and Halfords – Surface Water – Future – 1%+25CC
B&Q and Halfords – Surface Water – Future – 1%+45CC
B&Q and Halfords – Surface Water – Future – 0.1%+25CC
B&Q and Halfords – Surface Water – Future – 0.1%+45CC
Velocity
B&Q and Halfords – Surface Water – Future – 3.3%+20CC
B&Q and Halfords – Surface Water – Future – 3.3%+40CC
B&Q and Halfords – Surface Water – Future – 1%+25CC
B&Q and Halfords – Surface Water – Future – 1%+45CC
B&Q and Halfords – Surface Water – Future – 0.1%+25CC
B&Q and Halfords – Surface Water – Future – 0.1%+45CC

Data analysis:

3.3% AEP (1 in 30 year) + 20% Climate Change event:

Proportion – <1%

Max Depth – 0.35m	Mean Depth – 0.28m
Max Velocity – 0.29m/s	Mean Velocity – 0.08m/s
Max Hazard – 1.18 Danger to some	Mean Hazard – 0.95 Danger to some

3.3% AEP (1 in 30 year) + 40% Climate Change event:

Proportion – <1%

Max Depth – 0.38m	Mean Depth – 0.3m
Max Velocity – 0.29m/s	Mean Velocity – 0.09m/s
Max Hazard – 1.19 Danger to some	Mean Hazard – 0.97 Danger to some

1% AEP (1 in 100 year) + 25% Climate Change event:

Proportion – 3%

Max Depth – 0.5m	Mean Depth – 0.24m
Max Velocity – 0.92m/s	Mean Velocity – 0.14m/s
Max Hazard – 1.26 Danger to most	Mean Hazard – 0.82 Danger to some

1% AEP (1 in 100 year) + 45% Climate Change event:

Proportion – 4%

Max Depth – 0.53m	Mean Depth – 0.23m
Max Velocity – 0.93m/s	Mean Velocity – 0.17m/s
Max Hazard – 1.28 Danger to most	Mean Hazard – 0.81 Danger to some

	Strategic Flood Risk Assessment **Detailed Site Summary Tables** **B&Q and Halfords**	
	0.1% AEP (1 in 1000 year) + 25% Climate Change event: Proportion – 10% Max Depth – 0.58m Mean Depth – 0.2m Max Velocity – 2.16m/s Mean Velocity – 0.43m/s Max Hazard – 1.38 Danger to most Mean Hazard – 0.76 Danger to some **0.1% AEP (1 in 1000 year) + 45% Climate Change event:** Proportion – 12% Max Depth – 0.6m Mean Depth – 0.21m Max Velocity – 2.64m/s Mean Velocity – 0.5m/s Max Hazard – 1.41 Danger to most Mean Hazard – 0.85 Danger to some **Description of surface water flow paths:** The site is shown to flood during all climate change events covering up to 12% of the site. Localised areas of flooding are shown across the south and east of the site during the 1% AEP climate change events. During the 0.1% AEP plus climate change events, a flow path is present along the western boundary of the site. The mean depth, velocity and hazard is shown to be 0.21m, 0.5m/s and 0.85 (a 'danger to some') during the 0.1% AEP plus 45% climate change event.	
Tidally influenced Surface Water Risk Zone	**Available data and mapping:** JBA's Tidally influenced Surface Water Risk Zones derived using the RoFSW data, the Present day 1% AEP extreme tidal level, LiDAR data and the Environment Agency's climate change sea level uplift allowance for South East England. *B&Q and Halfords – Tidal Drainage Risk Zones* **Flood characteristics:** The majority of the site is shown to be located within SW1 within the Surface Water Risk Zone mapping. The rest of the site is shown to be located above the future tidal level. • SW0 - Above the future tidal level. • SW1 - Not at risk of SW flooding and above the current tidal level but below the future tidal level. • SW2 - Not at risk of SW flooding but below the present-day tidal level OR at risk of SW flooding from climate change only and above the current day tidal level but below future tidal level. • SW3 - At risk of SW flooding from climate change only and below the present-day tidal level OR At risk of SW flooding without climate change and above current day tidal level but below future tidal level. • SW4 - At risk of SW flooding without climate change and below present-day tidal level.	
Groundwater	**Available data and mapping:** The JBA Groundwater Flood Data Map (GW5) is provided as a 5m resolution grid. *B&Q and Halfords – Groundwater Flood Risk*	

	Flood characteristics: During a 1% AEP groundwater flood event, groundwater levels are predominantly shown to be 'moderate risk', with the northern half of the site shown to be between 0.025m and 0.5m below the ground surface. The southern half of the site is classified as 'No Risk'.
Tidally influenced Groundwater Risk Zone	**Available data and mapping:** JBA's Tidally influenced Groundwater Risk Zones derived using the JBA Groundwater data, the British Geological Society 50k bedrock mapping, the Present day 1% AEP extreme tidal level, LiDAR data and the Environment Agency's climate change sea level uplift allowance for South East England. *B&Q and Halfords – Groundwater Risk Zones* **Flood characteristics:** The majority of the site is located within GW2 of the Groundwater Risk Zone mapping, with the land across the southern boundary of the site located within GW1. Small patches across the site are shown to be located above the future tidal level. • GW0 - Above the future tidal level. • GW1 - Groundwater level more than 0.5m below the surface and region is above the current tidal level but below the future tidal level. • GW2 - Groundwater level more than 0.5m below the surface and region is below the present-day tidal level OR groundwater level between 0.025m and 0.5m below the surface and region is above the current tidal level but below the future tidal level. • GW3 - Groundwater level between 0.025m and 0.5m below the surface and region is below the present-day tidal level OR Groundwater level within 0.025m of the surface and region is above the current tidal level but below the future tidal level. • GW4 - Groundwater level within 0.025m of the surface and region is below the present day tidal level.
Sewers	**Available data and mapping:** Drainage and Wastewater Management Plan (DWMP) Overview of the Adur and Ouse River Basin Catchment and Southern Water's Sewer Incident Report Form data (SIRF) at a five digit post code level. **Flood characteristics:** 28 reportable sewer incidents have occurred since 1990 within the five-digit postcode area of the proposed development site. Thes incidents have been attributed to hydraulic overload following rainfall.
Flood history	The site is not shown to be located within the Environment Agency's Recorded Flood Outlines extent.
Flood risk management infrastructure	
Existing Defences	The Environment Agency's AIMS dataset identifies one formal flood defence located south of the site, comprising of natural high ground.

	Strategic Flood Risk Assessment **Detailed Site Summary Tables** **B&Q and Halfords**	
Residual risk	**Available data and mapping:** The 2025 Arun-Adur breach modelling. *<u>Depth</u>* *B&Q and Halfords – Breach A–3.3%* *B&Q and Halfords – Breach A – 0.5%* *B&Q and Halfords – Breach A – 0.1%* *B&Q and Halfords – Breach B–3.3%* *B&Q and Halfords – Breach B – 0.5%* *B&Q and Halfords – Breach B – 0.1%* *B&Q and Halfords – Breach C–3.3%* *B&Q and Halfords – Breach C – 0.5%* *B&Q and Halfords – Breach C – 0.1%* *B&Q and Halfords – Breach D –3.3%* *B&Q and Halfords – Breach D – 0.5%* *B&Q and Halfords – Breach D – 0.1%* *B&Q and Halfords – Breach E–3.3%* *B&Q and Halfords – Breach E – 0.5%* *B&Q and Halfords – Breach E – 0.1%* *<u>Hazard</u>* *B&Q and Halfords – Breach A–3.3%* *B&Q and Halfords – Breach A – 0.5%* *B&Q and Halfords – Breach A – 0.1%* *B&Q and Halfords – Breach B–3.3%* *B&Q and Halfords – Breach B – 0.5%* *B&Q and Halfords – Breach B – 0.1%* *B&Q and Halfords – Breach C–3.3%* *B&Q and Halfords – Breach C – 0.5%* *B&Q and Halfords – Breach C – 0.1%* *B&Q and Halfords – Breach D –3.3%* *B&Q and Halfords – Breach D – 0.5%* *B&Q and Halfords – Breach D – 0.1%* *B&Q and Halfords – Breach E–3.3%* *B&Q and Halfords – Breach E – 0.5%* *B&Q and Halfords – Breach E – 0.1%* *<u>Velocity</u>* *B&Q and Halfords – Breach A–3.3%* *B&Q and Halfords – Breach A – 0.5%* *B&Q and Halfords – Breach A – 0.1%* *B&Q and Halfords – Breach B–3.3%* *B&Q and Halfords – Breach B – 0.5%* *B&Q and Halfords – Breach B – 0.1%* *B&Q and Halfords – Breach C–3.3%* *B&Q and Halfords – Breach C – 0.5%* *B&Q and Halfords – Breach C – 0.1%* *B&Q and Halfords – Breach D –3.3%* *B&Q and Halfords – Breach D – 0.5%* *B&Q and Halfords – Breach D – 0.1%* *B&Q and Halfords – Breach E–3.3%* *B&Q and Halfords – Breach E – 0.5%* *B&Q and Halfords – Breach E – 0.1%* **Flood characteristics:** The site is not considered to be at risk in the breach scenarios tested.	

	Strategic Flood Risk Assessment **Detailed Site Summary Tables** **B&Q and Halfords**	
Emergency planning		
Flood warning	The site is not located with a Flood Alert or Warning area. *B&Q and Halfords – Flood Warning*	
Access and egress	**Surface Water 1% AEP plus 45% climate change (upper end allowance)** Access and egress are shown to be affected during the 1% AEP plus climate change surface water modelling events. Access via Brighton Road, directly south of the site, the hazard rating is 'danger to some'. **Tidal 0.5% AEP plus 55% climate change (higher central allowance)** Access and egress across the majority of the site is unavailable during the 0.5% AEP plus climate change tidal events due to flooding across both the site and across Brighton Road, with depths exceeding 300mm, the hazard rating is 'danger to most'. As a result of the affected access and egress, and the severity of the hazard ratings throughout the design flood events, it is necessary that a Flood Response Plan is developed in line with ADEPT Guidance.	
Requirements for drainage control and impact mitigation		
Broad-scale assessment of possible SuDS	**Geology & Soils** The geology consists of White Chalk Subgroup comprised of chalk. The superficial deposits consist of sand and gravel overlay this across the entire site. The soils are shown be freely draining slightly acid loamy soils across the entire site, which suggests that infiltration is likely to be possible. The geology of the Adur District is complex; areas of chalk are often capped with small sections of clay. This can result in groundwater being trapped beneath the clay layer and surface water pooling at the surface unable to infiltrate. Groundwater may find a fissure in the clay and rise to the surface resulting in flooding that is difficult to predict in terms of location and scale. **SuDS** Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, water quality, amenity and biodiversity. Evidence should be given where multiple benefits are not provided to show that this is not possible. Preference should be given to multi-functional sustainable drainage systems, and to solutions that allow surface water to be discharged according to the hierarchy of drainage options listed in the PPG Flood Risk and Coastal Change paragraph 056. The layout and function of drainage systems needs to be considered at the start of the design process for new development, as integration with road networks and other infrastructure can maximise the availability of developable land.	

Suitability and considerations for sustainable drainage

In line with Defra's National Standards for Sustainable Drainage Systems, runoff from the development shall be discharged to the following final destinations, to the maximum extent practicable, in accordance with the below hierarchy:

- Priority 1: collected for non-potable use
- Priority 2: infiltrated to ground
- Priority 3: discharged to an above ground surface water body
- Priority 4: discharged to a surface water sewer, or another piped surface water drainage system
- Priority 5: discharged to a combined sewer

SuDS measures should follow West Sussex County Council's discharge hierarchy, and 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 based on the National Standards for SuDS.

Surface water discharge rates should not exceed pre-development discharge rates and aim to be restricted to Greenfield Qbar. If that is not possible; flow should be restricted to as close to Qbar as is achievable. A relaxation factor shall be applied to the target 50% and 1% AEP greenfield runoff rates, this relaxation factor should be no greater than five times the greenfield runoff rate. This should be done in consultation with the LLFA.

The site is at moderate risk groundwater flooding, with groundwater levels estimated to be between 0.025m and 0.5m below the ground surface. Groundwater flooding at the surface during a 1% AEP event may flow to and pool within topographic low spots. As a result, 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 winter groundwater monitoring, in line with BRE 365 or similar, to demonstrate that a sufficient unsaturated zone has been provided above the highest occurring groundwater level.

Groundwater levels are shown to be influenced by tide levels. The capacity for infiltration needs to take into account the impact of future sea levels. The influence of tide levels on groundwater levels should be investigated through groundwater monitoring.

Due to the site topography, any surface water not intercepted via infiltration will likely drain via gravity into the unnamed ordinary watercourses located centrally within the site. It is therefore recommended that the LLFA are consulted about viable discharge locations for surface water from the site and their attenuation potential.

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.
Opportunities for wider sustainability benefits and integrated flood risk management	• Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, water quality, amenity and biodiversity. This could also 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. • 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. • SuDS should be designed with a holistic approach, combining ecology, landscape and drainage requirements specific to the site, and incorporating Biodiversity Net Gain requirements. • 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 the National Standards for Sustainable Drainage Systems.
NPPF and planning implications	
Exception Test requirements **(Local Authority considerations)**	The Local Authority will need to confirm that the sequential test has been carried out in line with national guidelines. The sequential test is required due to the groundwater risk at the site. Once the sequential test has been passed, a sequential approach to development should still be undertaken. The NPPF classifies the usage as "More Vulnerable"; given the site is located within Flood Zone 1, provided development is proposed outside of the areas of risk, the exception test is not required for this site. However, within the FRA evidence that development at this site does not increase flood risk elsewhere and that the development is safe throughout its lifetime will be required.

Requirements and guidance for site-specific Flood Risk Assessment **(Developer considerations)**	**Flood Risk Assessment:** The Level 1 SFRA has more guidance on this section and any relevant policies and information applicable to development within Adur District. • All sources of flooding should be included as part of the site specific FRA. • The most recent risk of Flooding from Surface Water dataset should be used. • Consultation with Adur and Worthing Councils, West Sussex County Council, and where relevant the Environment Agency and Southern Water should be undertaken at an early stage. • Development within 16m of a tidal main river, a tidal river flood defence or culvert or a sea defence is likely to require a flood risk activities permit: https://www.gov.uk/guidance/flood-risk-activities-environmental-permits. If development is within 20m of a main river, flood defence or flow control structure the developer will need to check with the Environment Agency if a separate permit or consent is needed. • Development plans should consider the Level 1 and 2 SFRA for Adur, as well as the Local Flood Risk Management Strategies to identify cumulative flood risk issues. The Cumulative Impact Assessment (CIA) completed as part of the Level 1 SFRA, highlights that the East Adur catchment, is at a high risk of cumulative impacts. The risk of cumulative impacts of this development and others in the local area on flood risk should be considered within the site-specific flood risk assessment. It should also promote an integrated approach to water management. • The site is included within the Shoreham Harbour Joint Area Action Plan. Policies outlined within this strategy document should be followed and relevant stakeholders consulted. • Applicants are expected to provide fully detailed plans of the site's existing surface water drainage arrangements, including impermeable areas, gullies, outfalls, pipes & diameters, manholes, etc., to prove the extent of the existing positively drained areas and their associated points of discharge. **Guidance for site design and making development safe:** • 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 (temporary/seasonal surface water flow paths). • Development design should prioritise avoiding development within surface water flow paths, including off-site flow paths. Any loss in surface water flood storage will require on-site level for level

compensatory storage, so that any displaced volumes of water do not increase surface water flood risk within the site or elsewhere

- A drainage strategy should be prepared to understand infiltration capacity at the site given the underlying chalk geology and risk of groundwater emergence.
- Groundwater mapping indicates a high risk of groundwater flooding at the site. Following groundwater monitoring, development should be directed away from areas of high groundwater risk.
- Arrangements for safe access and egress are unlikely to be possible due to the severity of flooding and will need to be considered further within a site-specific FRA for the tidal and surface water events with an appropriate allowance for climate change, using the depth, velocity, and hazard outputs. This will need to accompany a Flood Response Plan for the site and its users.
- The design and layout of development at the site will need to consider the impact of tidal and surface water flow paths. A sequential approach to development should be undertaken with development located in the areas of lowest risk within the site boundary. The site layout should make space for water and seek to avoid obstructing offsite flow paths and avoid off site detriment.
- As outlined in the PPG, the Finished Floor Levels of the development should be raised to a minimum of whichever is higher of 600mm above the:
    - Average ground level of the site
    - Adjacent road level to the building
    - Estimated river or sea flood level
- It is suggested that flood resilient design is adopted in the construction of development. The PPG sets out that flood resistant material that have low permeability should be used to at least 600mm above the estimated flood level; flood resilient materials to at least 600mm above the estimated flood level and raising of electrical equipment at least 600mm above the estimated flood level.

Key messages

The site is identified to be at low risk of tidal flooding. According to the 2025 Arun-Adur modelling, the site is situated 1% in Flood Zone 2. 34% of the site is shown to flood during the tidal design event (0.5% AEP plus 55% climate change allowance).

Less than 1% of the site is at risk of surface water flooding during the 3.3%AEP scenario. Land with this probability is considered high risk and development in these areas should not take place. The majority of the site is at low risk of surface water flooding. 4% of the site is shown to flood during the surface water design event (1% AEP plus 45% climate change allowance).

The key access routes to the site is via Brighton Road. During both the tidal and surface water design events, flooding is predicted along these access routes. Detailed consideration into site access and egress will be required.

Development should be able to progress if:

- A sequential approach to development is undertaken. Layout and design should aim to avoid developing in the areas of greatest flood risk.
- Mitigation measures are incorporated to reduce the risk of flooding to the development. Early consultation should be held with the Environment Agency to discuss this.
- A site-specific Flood Risk Assessment, including detailed modelling, is undertaken to assess the risk of tidal and surface water flooding in relation to the proposed development, and the access and egress arrangements.
- Consideration is given to the safe access and egress to the site during the design flood event. A Flood Response Plan should be prepared in line with ADEPT guidance.
- Infiltration rates are assessed on site as part of a drainage strategy, including consideration of the impact of tide levels on infiltration.
- Finished floor levels are raised to a minimum of whichever is higher of 600mm above the average ground level of the site, the adjacent road level to the building or the estimated river or sea flood level. The flood level is for the design event (tidal flood level plus higher central climate change allowance, surface water flood level plus upper end)

Sources of information
National Planning Policy Framework (NPPF) https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf Planning Practice Guidance (PPG), Flood Risk and Coastal Change https://www.gov.uk/guidance/flood-risk-and-coastal-change Flood Map for Planning (NaFRA2 2025) https://www.data.gov.uk/dataset/104434b0-5263-4c90-9b1e-e43b1d57c750/flood-map-for-planning-flood-zones1 Long Term Flood Risk Where do you want to check? - Check your long term flood risk - GOV.UK Shoreham Harbour Joint Area Action Plan https://www.adur-worthing.gov.uk/media/Media,156282,smxx.pdf British Geological Survey (BGS) Geology Viewer https://geologyviewer.bgs.ac.uk/ Southern Water's Drainage and Wastewater Management Plan https://www.southernwater.co.uk/about-us/our-plans/drainage-and-wastewater-management-plans/ National standards for sustainable drainage systems (SuDS) https://www.gov.uk/government/publications/national-standards-for-sustainable-drainage-systems/national-standards-for-sustainable-drainage-systems-suds Flood Warning sign up https://www.gov.uk/sign-up-for-flood-warnings