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Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site Category	Strategic Employment Sites
Site code	HOR9
Site name	Horley Business Park

Site details	OS Grid reference	528949, 141956			
	Area	30.9Ha			
	Current land use	Greenfield			
	Proposed site use	Employment			
	NPPF Flood risk vulnerability	Less Vulnerable			
Sources of flood risk	Existing watercourses	No watercourses exist within the site boundary. A main river watercourse and several ordinary watercourses are present to the west of the sites.			
	Flood history	The EA Historic Flood Map identifies that the north and east of the site have had two recorded fluvial flood incidents in 1960 and 1968. The B2036 to the east has recorded incidents of internal property damage from surface water flooding.			
	Fluvial	Proportion of site at risk in Flood Zones			
		FZ3b	FZ3a	FZ2	FZ1
		0%	0%	24%	76%
	Available modelled data: Burstow Stream Model (Environment Agency, 2011) covers the west of the site, and the Upper Mole Model (Environment Agency 2006) covers the west of the site.				
	Flood characteristics: The site lies beyond the 1 in 100-year (1% AEP) flood extent of Tilgate Brook and Burstow Stream, but a large area of the northern and eastern area of the site lies in Flood Zone 2.				
	Surface Water	Proportion of site at risk (RoFSW)			
		30-year		100-year	
		2%		3%	
Description of surface water flow paths: The site shows potential for significant ponding at the north west of the site during 1 in 30-year (3.3% AEP) rainfall event and greater return periods. This extends in a band to the centre of the site. The tracks running across the site currently provide linear surface water flow paths during the 1 in 1,000-year (0.1%) event, however this is likely to change with the proposed development.					
Groundwater	Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)				
	The east of the site, approximately half the area, is considered to have groundwater levels at or very near the surface with the remaining area to the west having a negligible risk of groundwater flooding.				
Reservoir	The south east of the site falls within the maximum extent of flooding from reservoir failure.				
Canal	The site is not located within 100m of a canal.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site Category	Strategic Employment Sites
Site code	HOR9
Site name	Horley Business Park

	Defences	Defence Type	Standard of Protection	Condition	
		The site does not receive protection from flood defences.			
Flood risk management infrastructure	Residual risk	Culvert / structure blockage?	There are no structures on the site (identified at this stage) with the potential to block.		
		Impounded water body failure?	The site is within the extent of flooding from reservoir failure.		
		Defence breach / overtopping?	<p style="text-align: center;">Breach Zone</p> The site is not at risk from breach of defences.		
Emergency planning	Flood warning	The site lies within the "Burstow Stream at East and North Horley" flood warning area and Ilfield Brook, Upper River Mole, Gatwick Stream, Burstow Stream and Salfords Stream flood alert area. Environment Agency flood warnings are now issued to individuals via the Flood Information Service.			
	Access and egress	Access and egress to this site may be achieved via the B2036 to the east which has a small risk of flooding from surface water and a recorded incident of property flooding from surface water. A connection from the A23 roundabout to the south could be considered.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		Thames	25%	35%	70%
	Implications for the site	Climate change is unlikely to significantly change the Flood Zone classification of this site.			

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site Category	Strategic Employment Sites
Site code	HOR9
Site name	Horley Business Park

Requirement for drainage control and impact mitigation	Bedrock Geology	Wealdon Group, mudstone, siltstone and sandstone.
	Superficial Geology	Sand and gravel river terrace deposits cover the whole of the site.
	Soils	The south west of the site has slowly permeable loamy and clayey soils with impeded drainage, the north east of the site has naturally wet loamy soil with high groundwater.
	SuDS	<p>SuDS should be designed around existing surface water flow paths and areas of ponding. Due to the existing flood risk to properties surrounding the site, surface water discharge should be restricted to greenfield runoff rates as a minimum.</p> <p>The slowly permeable soils present on the site and the high groundwater table may limit the opportunities for infiltration SuDS, however this large undeveloped site should be able to implement other SuDS features and designs.</p> <p>Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.</p> <p>Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.</p>
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.
	Historic Landfill Site	No part of the site is designated by the Environment Agency as historic landfill site.
	Opportunities for flood risk betterment	Opportunity to implement exemplar SuDS design following CIRIA and SCC guidance on runoff rates and volumes, contributing to the reduction of flood peaks downstream.
Recommendations for Local Plan policy	Sequential Test and Exception Test requirements	
	<p>24% of the site is within Flood Zone 2 and also at risk of surface water flooding.</p> <p>The sequential test must be passed and it is expected that all built development will be located sequentially within Flood Zone 1. The Exception Test will be required:</p> <ul style="list-style-type: none"> • If More Vulnerable and Essential Infrastructure is located in FZ3a • If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate change • If Essential Infrastructure is located in Flood Zone 3b <p>Development will not be permitted in the following scenarios:</p> <ul style="list-style-type: none"> • Highly Vulnerable development within FZ3a or FZ3a plus climate change and FZ3b. • More Vulnerable and Less Vulnerable development within FZ3b. 	

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site Category	Strategic Employment Sites
Site code	HOR9
Site name	Horley Business Park

	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers
	<p>Flood risk assessment:</p> <ul style="list-style-type: none"> • At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. • Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage • Groundwater flood risk in the north of the site should be investigated. • Detailed modelling will be required to confirm Flood Zone and climate change extents. The Environment Agency and LLFA should be consulted to obtain the latest hydraulic modelling information for the site at the time of the flood risk assessment. They will advise as to whether existing detailed models need to be updated. • Climate change modelling should be undertaken using the relevant allowances (February 2016) for the type of development and level of risk. <p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none"> • Development must seek opportunities to reduce overall level of flood risk at the site. • The development should be designed using a sequential approach. Flood Zones 2 and 3, and 3a + upper end climate change (subject to a detailed flood risk assessment) should be preserved as public green space, with built development restricted to Flood Zone 1. • Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. • Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change flood extent • Onsite attenuation options would need to be tested to ensure that altering the timing of peak flows leaving the site does not exacerbate flooding downstream. • All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site Category	Urban Extensions
Site code	SSW2
Site name	Land at Sandcross Lane, South Park, Reigate

Site details	OS Grid reference	524954 148433				
	Area	16.58Ha				
	Current land use	Greenfield				
	Proposed site use	Urban Extension site				
	Flood risk vulnerability	More vulnerable				
Sources of flood risk	Existing watercourses	An ordinary watercourse (drainage ditch) flows from the northern end of the site and exits through a culvert under Slipshatch Road.				
	Flood history	External property flooding has been reported along Whitehall lane (the western boundary of the site), and the north-eastern tip of the site is close to a road noted on the Surrey Wetspots database.				
	Fluvial	Proportion of site at risk in Flood Zones				
		FZ3b	FZ3a	FZ2	FZ1	
		0%	0%	0%	100%	
		Available modelled data: There is no fluvial modelled data available for the ordinary watercourse on the site, and the Risk of Flooding from Surface Water mapping has been used as a proxy. Flood characteristics: Risk of flooding from Surface Water mapping suggests that localised flooding may occur from the unnamed ordinary watercourse that flows across the site.				
	Surface Water	Proportion of site at risk (RoFSW)				
		30-year		100-year		1,000-year
		3%		7%		20.3%
		Description of surface water flow paths: A significant surface water flow path follows the ordinary watercourse across the site from north west to south. Significant ponding is likely towards the southern end of the site in a 1 in 30-year event, and more extensive flows and ponding from a 1 in 100-year or 1 in 1000-year event.				
Groundwater	Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)					
	Negligible risk of groundwater flooding.					
Reservoir	The site does not at risk from reservoir flooding.					
Canal	The site is not located within 100m of a canal.					

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site Category	Urban Extensions
Site code	SSW2
Site name	Land at Sandcross Lane, South Park, Reigate

	Defences	Defence Type	Standard of Protection	Condition		
		The site does not receive protection from flood defences.				
Flood risk management infrastructure	Residual risk	Culvert / structure blockage?	There are no structures on the site (identified at this stage) with the potential to block. However the Ordinary Watercourse that crosses the site does exit the site via a culvert under Slipshatch Road, so a blockage risk may be present at this location.			
		Impounded water body failure?	The site is not at risk of inundation in the event of reservoir failure.			
		Defence breach / overtopping?	Breach Zone			
			The site is not at risk from breach of defences.			
Emergency planning	Flood warning	The site lies outside the Flood Alert Area for the River Mole and its tributaries.				
	Access and egress	Access to the site is possible from three sides. However significant risk of surface water flooding exists on Slipshatch Road on the southern side, Whitehall Lane to the west and the northern part of Sandcross Lane to the east.				
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End	
		Thames	25%	35%	70%	
	Implications for the site	Climate change is unlikely to change the Flood Zone classification of this site.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site Category	Urban Extensions
Site code	SSW2
Site name	Land at Sandcross Lane, South Park, Reigate

Requirement for drainage control and impact mitigation	Bedrock Geology	Wealdon Group, Mudstone, Siltstone and Sandstone
	Superficial Geology	No superficial deposits are known to exist on the site.
	Soils	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils with impeded drainage.
	SuDS	<p>The low permeability of this site suggests that infiltration systems may not be appropriate. However, sloping nature of the site (west to east) allows opportunities for SuDS which drain by gravity, and there is potential to utilise the existing watercourse.</p> <p>Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.</p> <p>Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.</p>
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.
	Opportunities for flood risk betterment	<p>Opportunities for using source control SuDS to manage runoff rates and volumes, contributing to the reduction of flood peaks downstream and existing surface water flow paths leaving the site.</p> <p>Opportunity to investigate the condition and capacity of the culvert at the southern edge of the site, and determine whether it can accept flows from the developed site. Culvert enlargement may be required if the asset is undersized.</p>
Recommendations for Local Plan policy	Sequential Test and Exception Test requirements	
	The site is within Flood Zone 1 but does contain an Ordinary Watercourse and is at risk from surface water flooding, which should be taken into account when carrying out the Sequential Test and Exception test if required.	
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers	
<p>Flood risk assessment:</p> <ul style="list-style-type: none"> At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage Impacts of the development on flood risk to the wider catchment should be assessed. <p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none"> Development must seek opportunities to reduce overall level of flood risk at the site. The surface water drainage strategy should ensure that the development does not increase 		

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Level 2 SFRA Detailed Site Summary Tables



Site Category	Urban Extensions
Site code	SSW2
Site name	Land at Sandcross Lane, South Park, Reigate

	<p>flood risk elsewhere.</p> <ul style="list-style-type: none"> • Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. • All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc. • Drainage designs should 'design for exceedance' and accommodate existing surface water flow routes, with development located outside of existing flood risk areas.
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Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	SSW7
Site name	Hartwood Nursery and land west Castle Drive, Reigate

Site details	OS Grid reference	525543 147882			
	Area	1.59Ha			
	Current land use	Greenfield, with farm building			
	Proposed site use	Urban Extension site			
	Flood risk vulnerability	More vulnerable			
Sources of flood risk	Existing watercourses	A sluice, identified as a main river on the detailed river network map starts in the north-west corner of the site.			
	Flood history	No recorded incidents of fluvial flooding have been identified. Internal property flooding from surface water has been recorded on Dovers Green Road (A217) to the south of the site.			
	Fluvial	Proportion of site at risk in Flood Zones			
		FZ3b	FZ3a	FZ2	FZ1
		0.3%	0.3%	0.3%	99.7%
		Available modelled data: The area of the site is covered by the Middle Mole Model currently being updated. Flood characteristics: Whilst the site predominantly outside FZ2 and FZ3, a small area at the north-western corner of the site overlaps with FZ3. The impact of climate change of this should be considered.			
	Surface Water	Proportion of site at risk (RoFSW)			
		30-year	100-year	1,000-year	
		2%	3%	8%	
		Description of surface water flow paths: Significant ponding may be present at the northern end of the site associated with the Sluice in a 1 in 30-year event. A smaller flow path may cross the northern half of the site in a 1 in 1000-year event.			
Groundwater	Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)				
	Negligible risk of groundwater flooding.				
Reservoir	The site does not at risk from reservoir flooding.				
Canal	The site is not located within 100m of a canal.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	SSW7
Site name	Hartwood Nursery and land west Castle Drive, Reigate

	Defences	Defence Type	Standard of Protection	Condition	
		The site does not receive protection from flood defences.			
Flood risk management infrastructure	Residual risk	Culvert / structure blockage?	There are no structures on the site (identified at this stage) with the potential to block.		
		Impounded water body failure?	The site is not at risk of inundation in the event of reservoir failure.		
		Defence breach / overtopping?	Breach Zone		
			The site is not at risk from breach of defences.		
Emergency planning	Flood warning	The north-west tip of the site lies within the "River Mole and its tributaries from Kinnersley Manor to South Hersham" Flood Alert Area. Environment Agency flood warnings are now issued to individuals via the Flood Information Service.			
	Access and egress	The site can be accessed from the A217 to the east, Castle Drive to the North and an un-named road to the south. Castle Drive has a significant risk from surface water flooding.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		Thames	25%	35%	70%
	Implications for the site	Climate change is unlikely to change the Flood Zone classification of this site.			

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	SSW7
Site name	Hartwood Nursery and land west Castle Drive, Reigate

Requirement for drainage control and impact mitigation	Bedrock Geology	Wealdon Group, Mudstone, Siltstone and Sandstone
	Superficial Geology	No superficial deposits are known to exist on the site.
	Soils	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils with impeded drainage.
	SuDS	<p>The low permeability of this site suggests that infiltration systems may not be appropriate. However, sloping nature of the site (south to north) allows opportunities for SuDS which drain by gravity, and there is potential to utilise the existing drainage ditch to the north west.</p> <p>Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.</p> <p>Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.</p>
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.
	Opportunities for flood risk betterment	<p>Opportunities for using source control SuDS to manage runoff rates and volumes, contributing to the reduction of flood peaks downstream and existing surface water flow paths leaving the site.</p> <p>Opportunity to investigate the condition and capacity of the drainage ditch at the north-western edge of the site, and determine whether it can accept flows from the developed site.</p>
Recommendations for Local Plan policy	Sequential Test and Exception Test requirements	
	<p>99% of site is within Flood Zone 1 but at risk from surface water flooding, which should be taken into account when carrying out the Sequential Test and Exception test if required. The sequential test should be applied within the site.</p> <p>Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required:</p> <ul style="list-style-type: none"> • If More Vulnerable and Essential Infrastructure is located in FZ3a. • If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate change. • If Essential Infrastructure is located in Flood Zone 3b <p>Development will not be permitted in the following scenarios:</p> <ul style="list-style-type: none"> • Highly Vulnerable development within FZ3a or Flood Zone 3a plus climate change and FZ3b. • More Vulnerable and Less Vulnerable development within FZ3b. 	

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	SSW7
Site name	Hartwood Nursery and land west Castle Drive, Reigate

	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers
	<p>Flood risk assessment:</p> <ul style="list-style-type: none"> • At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. • Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage • Impacts of the development on flood risk to the wider catchment should be assessed. <p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none"> • Development must seek opportunities to reduce overall level of flood risk at the site. • The surface water drainage strategy should ensure that the development does not increase flood risk elsewhere. • Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. • All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc. • Drainage designs should 'design for exceedance' and accommodate existing surface water flow routes, with development located outside of existing flood risk areas.

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	SSW9
Site name	Land at Dovers Farm, Woodhatch, Reigate

Site details	OS Grid reference	525946 147946			
	Area	6.10Ha			
	Current land use	Greenfield			
	Proposed site use	Urban Extension site			
	Flood risk vulnerability	More vulnerable			
Sources of flood risk	Existing watercourses	Earlswood Brook, classified as a main river, is present at the south-eastern tip of the site. A drainage ditch is present on the southern side of the site which is likely to be flow into a culvert as it leaves the site.			
	Flood history	No fluvial flood events are recorded for the site. Earlswood Brook was recorded as flooding in 1968 approximately 200 m south of the site.			
	Fluvial	Proportion of site at risk in Flood Zones			
		FZ3b	FZ3a	FZ2	FZ1
		0.3%	0.3%	0.5%	99.5%
		Available modelled data: The area of the site is covered by the Middle Mole Model currently being updated. Flood characteristics: The south-east corner of the site lies within FZ2 and FZ3 of Earlswood Brook.			
	Surface Water	Proportion of site at risk (RoFSW)			
		30-year	100-year	1,000-year	
		1%	4%	14%	
			Description of surface water flow paths: A surface water flow path is present from the north-west corner of the site, joining up with the course of the drainage ditch, then flowing along the southern boundary of the site. In the case of this southern section, ponding may occur during a 1 in 30-year event.		
Groundwater	Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)				
	Negligible risk of groundwater flooding.				
Reservoir	The south-east corner of the site falls within the maximum extent of flooding from reservoir failure.				
Canal	The site is not located within 100m of a canal.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	SSW9
Site name	Land at Dovers Farm, Woodhatch, Reigate

	Defences	Defence Type	Standard of Protection	Condition	
		The site does not receive protection from flood defences.			
Flood risk management infrastructure	Residual risk	Culvert / structure blockage?	The drainage ditch at the southern end of the site is likely to enter a culvert as it passes under the road.		
		Impounded water body failure?	The south-east corner of the site falls within the maximum extent of flooding from reservoir failure.		
		Defence breach / overtopping?	Breach Zone		
	The site is not at risk from breach of defences.				
Emergency planning	Flood warning	The south-east corner of the site lies within the "River Mole and its tributaries from Kinnersley Manor to South Hersham" Flood Alert Area. Environment Agency flood warnings are now issued to individuals via the Flood Information Service.			
	Access and egress	The site can be accessed from Ashdown Road to the north, Lonesome Lane to the east, and an un-named minor road at the south west. Of these Ashdown Road is likely to experience surface water flooding in a 1 in 1000-year event, and Lonesome lane in a 1 in 30-year event.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		Thames	25%	35%	70%
	Implications for the site	The Flood Zones in this location are presently derived from broadscale modelling, however it is understood that the watercourse has been included in update to the Middle Mole model and it is understood that there will be very limited impacts to the site as a result of climate change.			

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	SSW9
Site name	Land at Dovers Farm, Woodhatch, Reigate

Requirement for drainage control and impact mitigation	Bedrock Geology	Wealdon Group Mudstone, Siltstone and Sandstone.
	Superficial Geology	No superficial deposits are known to exist on the site.
	Soils	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils with impeded drainage.
	SuDS	<p>The low permeability of this site suggests that infiltration systems may not be appropriate. However, sloping nature of the site east to west) allows opportunities for SuDS which drain by gravity, and there is potential to utilise both the existing drainage ditch to the north west and to discharge to the Earlswood Brook.</p> <p>Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.</p> <p>Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.</p>
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.
	Opportunities for flood risk betterment	<p>Opportunities for using source control SuDS to manage runoff rates and volumes, contributing to the reduction of flood peaks downstream and existing surface water flow paths leaving the site.</p> <p>Opportunity to investigate the condition and capacity of the drainage ditch at the southern end of the site and its associated culverts, and determine whether it can accept flows from the developed site.</p>
Recommendations for Local Plan policy	Sequential Test and Exception Test requirements	
	<p>99% of site is within Flood Zone 1 but it is shown to be at risk from surface water flooding and from the ordinary watercourse on site, which should be taken into account when carrying out the Sequential Test and Exception test if required.</p> <p>The sequential test should be applied within the site.</p> <p>Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required:</p> <ul style="list-style-type: none"> • If More Vulnerable and Essential Infrastructure is located in FZ3a. • If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate change. • If Essential Infrastructure is located in Flood Zone 3b <p>Development will not be permitted in the following scenarios:</p> <ul style="list-style-type: none"> • Highly Vulnerable development within FZ3a or Flood Zone 3a plus climate change and FZ3b. • More Vulnerable and Less Vulnerable development within FZ3b. 	

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	SSW9
Site name	Land at Dovers Farm, Woodhatch, Reigate

	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers
	<p>Flood risk assessment:</p> <ul style="list-style-type: none"> • At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. • Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage • Impacts of the development on flood risk to the wider catchment should be assessed. <p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none"> • Development must seek opportunities to reduce overall level of flood risk at the site. • The surface water drainage strategy should ensure that the development does not increase flood risk elsewhere. • Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. • All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc. • Drainage designs should 'design for exceedance' and accommodate existing surface water flow routes, with development located outside of existing flood risk areas.

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	NWH1
Site name	Land at Meath Green Lane, Horley

Site details	OS Grid reference	527439 144957			
	Area	9.27Ha			
	Current land use	Greenfield.			
	Proposed site use	Urban Extension site			
	Flood risk vulnerability	More vulnerable			
Sources of flood risk	Existing watercourses	Burstow Stream forms the northern boundary of the site and is classified as a main river.			
	Flood history	45% of the proposed site is in an area with recorded flood outline. Fluvial flooding is known to have occurred in 1968, 1990 and 2000.			
	Fluvial	Proportion of site at risk in Flood Zones			
		FZ3b	FZ3a	FZ2	FZ1
		39%	46%	55%	45%
		Available modelled data: The site lies within the area covered by the Burstow Stream Modelling study (Environment Agency 2011) Flood characteristics: A significant part of the site lies within Flood Zones 2 and 3 associated with Burstow Stream.			
	Surface Water	Proportion of site at risk (RoFSW)			
		30-year	100-year	1,000-year	
		11%	23%	30%	
	Groundwater	Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)			
The northern 2/3rds of the site is at negligible risk of groundwater flooding, however the southern 1/3rd may experience groundwater levels at or very near the surface and is considered at risk of groundwater flooding.					
Reservoir	The site is not at risk from reservoir flooding.				
Canal	The site is not located within 100m of a canal.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	NWH1
Site name	Land at Meath Green Lane, Horley

	Defences	Defence Type	Standard of Protection	Condition	
		The site benefits from protection from the Upper Mole Flood Alleviation Scheme.			
Flood risk management infrastructure	Residual risk	Culvert / structure blockage?	Burstow Stream flows under Meath Green Lane providing an opportunity for blockage.		
		Impounded water body failure?	The site is not at risk of inundation in the event of reservoir failure.		
		Defence breach / overtopping?	<p style="text-align: center;">Breach Zone</p> The site is not at risk from breach of defences.		
Emergency planning	Flood warning	The site lies within the "Burstow Stream at East and North Horley" flood warning area and "Ilfield Brook, Upper River Mole, Gatwick Stream, Burstow Stream and Salfords Stream" flood alert area. Environment Agency flood warnings are now issued to individuals via the Flood Information Service.			
	Access and egress	The site can be accessed from Meath Green Lane which runs across the site. This road lies within FZ3 where it crosses Burstow Stream, and is also at risk of flooding from surface water in this area in a 1 in 30-year event. Access will also be available from the North West Sector once this has been completed			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		Thames	25%	35%	70%
	Implications for the site	The floodplain in this location is well constrained by the local topography and therefore the Flood Zone 3a + 70% extent is only predicted to be marginally larger than the current Flood Zone 3a.			

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	NWH1
Site name	Land at Meath Green Lane, Horley

Requirement for drainage control and impact mitigation	Bedrock Geology	Wealdon Group Mudstone, Siltstone and Sandstone.
	Superficial Geology	No superficial deposits are known to exist on the site.
	Soils	The majority of the site is covered by loamy soils with naturally high groundwater that are naturally wet. The northern part of the site has slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils, with impeded drainage.
	SuDS	<p>The low permeability of this site, naturally wet soils and high groundwater table suggest that infiltration systems may not be appropriate. SuDS should be designed to accommodate existing areas of fluvial and surface water flood risk. Drainage features at the south and southeast of the site should be designed to be resilient to fluvial flooding.</p> <p>Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.</p> <p>Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.</p>
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.
	Opportunities for flood risk betterment	Opportunities for using source control SuDS to manage runoff rates and volumes, contributing to the reduction of flood peaks downstream.
Recommendations for Local Plan policy	Sequential Test and Exception Test requirements	
	<p>The Sequential Test must be passed. Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required:</p> <ul style="list-style-type: none"> • If More Vulnerable and Essential Infrastructure is located in FZ3a. • If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate change. • If Essential Infrastructure is located in Flood Zone 3b <p>Development will not be permitted in the following scenarios:</p> <ul style="list-style-type: none"> • Highly Vulnerable development within FZ3a or Flood Zone 3a plus climate change and FZ3b. • More Vulnerable and Less Vulnerable development within FZ3b. 	
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers	
	<p>Flood risk assessment:</p> <ul style="list-style-type: none"> • At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. • Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage. • Detailed modelling will be required to confirm Flood Zone and climate change extents. The Environment Agency and LLFA should be consulted to obtain the latest hydraulic modelling information for the site at the time of the flood risk assessment. They will advise as to 	

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	NWH1
Site name	Land at Meath Green Lane, Horley

	<p>whether existing detailed models need to be updated.</p> <ul style="list-style-type: none"> Climate change modelling should be undertaken using the relevant allowances (February 2016) for the type of development and level of risk. <p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none"> Development must seek opportunities to reduce overall level of flood risk at the site. The development should be designed using a sequential approach. Flood Zones 2 and 3, and 3a + upper end climate change (subject to a detailed flood risk assessment) should be preserved as public green space, with built development restricted to Flood Zone 1. Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change flood extent Existing surface water flow paths should be retained and incorporated within the site design. Onsite attenuation options would need to be tested to ensure that altering the timing of peak flows leaving the site does not exacerbate flooding downstream. All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.
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Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	NWH2
Site name	Land at Bonehurst Road, Horley

Site details	OS Grid reference	528298 144516			
	Area	5.09Ha			
	Current land use	Greenfield			
	Proposed site use	Urban Extension site			
	Flood risk vulnerability	More vulnerable			
Sources of flood risk	Existing watercourses	Burstow Stream forms the north-eastern boundary of the site.			
	Flood history	70% of the site flooding in 1968, and Bonehurst road flooded up to the site boundary in December 2013.			
	Fluvial	Proportion of site at risk in Flood Zones			
		FZ3b	FZ3a	FZ2	FZ1
		6%	7%	70%	30%
		Available modelled data: The site lies within the area covered by the Burstow Stream Modelling study (Environment Agency 2011) Flood characteristics: A significant part of the site lies within Flood Zones 2 and 3 associated with Burstow Stream.			
	Surface Water	Proportion of site at risk (RoFSW)			
		30-year	100-year	1,000-year	
		1%	3%	15%	
	Description of surface water flow paths: Significant ponding may occur in the north-east corner of the site in a 1 in 30-year event, and along the course of Burstow stream.				
Groundwater	Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)				
	Negligible risk of groundwater flooding.				
Reservoir	The site is not at risk of reservoir flooding.				
Canal	The site is not located within 100m of a canal.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	NWH2
Site name	Land at Bonehurst Road, Horley

	Defences	Defence Type	Standard of Protection	Condition	
		The site benefits from protection from the Upper Mole Flood Alleviation Scheme.			
Flood risk management infrastructure	Residual risk	Culvert / structure blockage?	Upstream of the site Burstow Stream passes under the A23 with a potential to cause flooding to the east – which may overtop the road and flood the northern part of the site as indicated in the climate change and RoFSW maps		
		Impounded water body failure?	The site is not at risk of inundation in the event of reservoir failure.		
		Defence breach / overtopping?	Breach Zone		
			The site is not at risk from breach of defences.		
Emergency planning	Flood warning	The site lies within the “Burstow Stream at East and North Horley” flood warning area and “Ilfield Brook, Upper River Mole, Gatwick Stream, Burstow Stream and Salfords Stream” flood alert area. Environment Agency flood warnings are now issued to individuals via the Flood Information Service.			
	Access and egress	Access to the site could be from the A23 to the east (Bonehurst Road) and to the west from Avondale Close. Both of these roads are likely to suffer from ponding during a 1 in 100-year event. The A23 next to the site recorded on the Surrey Wetspots database, and has recorded incidents of property flooding from surface water.			
Climate Change	Climate change allowances for ‘2080s’	River Basin District	Central	Higher Central	Upper End
		Thames	25%	35%	70%
	Implications for the site	Climate change under a +70% scenario is likely to increase the extent of the 1 in 100 year event over the northern part of the site, with extensive flooding across the A23.			

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	NWH2
Site name	Land at Bonehurst Road, Horley

Requirement for drainage control and impact mitigation	Bedrock Geology	Wealdon Group Mudstone, Siltstone and Sandstone.
	Superficial Geology	No superficial deposits are known to exist on the site.
	Soils	The site is covered by loamy soils with naturally high groundwater that are naturally wet.
	SuDS	<p>The naturally wet soils and high groundwater table suggest that infiltration systems may not be appropriate. SuDS should be designed to accommodate existing areas of fluvial and surface water flood risk. Drainage features at the south and southeast of the site should be designed to be resilient to fluvial flooding.</p> <p>Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.</p> <p>Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.</p>
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.
	Opportunities for flood risk betterment	Opportunities for using source control SuDS to manage runoff rates and volumes, contributing to the reduction of flood peaks downstream.
Recommendations for Local Plan policy	Sequential Test and Exception Test requirements	
	<p>The Sequential Test must be passed. Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required:</p> <ul style="list-style-type: none"> • If More Vulnerable and Essential Infrastructure is located in FZ3a. • If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate change. • If Essential Infrastructure is located in Flood Zone 3b <p>Development will not be permitted in the following scenarios:</p> <ul style="list-style-type: none"> • Highly Vulnerable development within FZ3a or Flood Zone 3a plus climate change and FZ3b. • More Vulnerable and Less Vulnerable development within FZ3b. 	
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers	
	<p>Flood risk assessment:</p> <ul style="list-style-type: none"> • At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. • Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage. • Detailed modelling will be required to confirm Flood Zone and climate change extents. The Environment Agency and LLFA should be consulted to obtain the latest hydraulic modelling 	

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	NWH2
Site name	Land at Bonehurst Road, Horley

	<p>information for the site at the time of the flood risk assessment. They will advise as to whether existing detailed models need to be updated.</p> <ul style="list-style-type: none"> • Climate change modelling should be undertaken using the relevant allowances (February 2016) for the type of development and level of risk. • The Environment Agency would expect to see no encroachment for development within flood zone 3 inclusive of climate change to ensure an adequate buffer is maintained. Any development proposed here should look to incorporate additional enhancement along the river corridor that can potentially increase both flood risk management and environmental benefits. <p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none"> • Development must seek opportunities to reduce overall level of flood risk at the site. • The development should be designed using a sequential approach. Flood Zones 2 and 3, and 3a + upper end climate change (subject to a detailed flood risk assessment) should be preserved as public green space, with built development restricted to Flood Zone 1. • Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. • Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change flood extent • Existing surface water flow paths should be retained and incorporated within the site design. • Onsite attenuation options would need to be tested to ensure that altering the timing of peak flows leaving the site does not exacerbate flooding downstream. • All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.
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Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site Category	Town Centre Development sites
Site code	REI1
Site name	Library & Pool House, Bancroft Road, Reigate

Site details	OS Grid reference	525520 150144			
	Area	0.22Ha			
	Current land use	Brownfield			
	Proposed site use	Town Centre Development Site			
	Flood risk vulnerability	More vulnerable			
Sources of flood risk	Existing watercourses	An ordinary watercourse flows under the site in a culvert from the north, and two other water courses join this on the southern edge of the site from the east and south. These then exit from the south-west corner of the site through a culvert.			
	Flood history	Flooding was recorded 100 m to the west of the site in 1947 and 1968. Internal property flooding from surface water was recorded in Roebuck Close to the East.			
	Fluvial	Proportion of site at risk in Flood Zones			
		FZ3b	FZ3a	FZ2	FZ1
		14%	14%	35%	65%
		Available modelled data: The site is not covered by any detailed modelled flood extents. Flood characteristics: Flood Zone 3 extends over the southern boundary of the site at the confluence of the ordinary watercourses. Flood Zone 2 is also present at the north part of the site.			
	Surface Water	Proportion of site at risk (RoFSW)			
		30-year		100-year	
		3%		7%	
		26%			
Description of surface water flow paths: Surface water flow paths are present along the roads around the site in a 1 in 100-year event. Some ponding may occur at the southern edge of the site in a 1 in 30-year event.					
Groundwater	Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)				
	The site is at risk of groundwater flooding with water levels at or very near the surface.				
Reservoir	The site is not at risk of reservoir flooding.				
Canal	The site is not located within 100m of a canal.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site Category	Town Centre Development sites
Site code	REI1
Site name	Library & Pool House, Bancroft Road, Reigate

Flood risk management infrastructure	Defences	Defence Type	Standard of Protection	Condition	
	Residual risk	The site does not receive protection from flood defences.			
Culvert / structure blockage?		The culvert to the west of the site presents a risk from blockage.			
Impounded water body failure?		The site is not at risk of inundation in the event of reservoir failure.			
Defence breach / overtopping?		Breach Zone The site is not at risk from breach of defences.			
Emergency planning	Flood warning	The site lies within the "River Mole and its tributaries from Kinnersley Manor to South Hersham" Flood Alert area. Environment Agency flood warnings are now issued to individuals via the Flood Information Service.			
	Access and egress	Access to the site is from Bancroft Road to the north. This road is likely to see surface water ponding during a 1 in 100-year event.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		Thames	25%	35%	70%
	Implications for the site	Climate change is unlikely to significantly change the Flood Zone classification, with flows in the vicinity of the site limited by the culverted watercourses around the site. Flood risk is likely to most significantly be affected by potential blockage of the culverts.			

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site Category	Town Centre Development sites
Site code	REI1
Site name	Library & Pool House, Bancroft Road, Reigate

Requirement for drainage control and impact mitigation	Bedrock Geology	Lower Greensand Group – Sandstone and Mudstone
	Superficial Geology	No superficial deposits are known to exist at this site.
	Soils	Freely draining slightly acid loamy soils.
	SuDS	<p>The freely draining soils and local geology make infiltration SuDS a possibility, however the source protection zone needs to be considered in any scheme. Opportunities to deculvert the watercourse and incorporate into a SuDS scheme should be investigated.</p> <p>Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.</p> <p>Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.</p>
	Groundwater Source Protection Zone	The site lies within SPZ3 (Total Catchment)
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.
	Opportunities for flood risk betterment	The culvert exiting the site should be investigated as well as opportunities for using source control SuDS to manage runoff rates and volumes.

Recommendations for Local Plan policy	Sequential Test and Exception Test requirements
	<p>The Sequential Test must be passed (see Section 4 of main report). Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required:</p> <ul style="list-style-type: none"> • If More Vulnerable and Essential Infrastructure is located in FZ3a. • If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate change. • If Essential Infrastructure is located in Flood Zone 3b <p>Development will not be permitted in the following scenarios:</p> <ul style="list-style-type: none"> • Highly Vulnerable development within FZ3a or Flood Zone 3a plus climate change and FZ3b. • More Vulnerable and Less Vulnerable development within FZ3b.
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers

Flood risk assessment:
<ul style="list-style-type: none"> • At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. • Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage • Groundwater flood risk in the northeast of the site should be investigated.

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site Category	Town Centre Development sites
Site code	REI1
Site name	Library & Pool House, Bancroft Road, Reigate

	<ul style="list-style-type: none"> Detailed modelling will be required to confirm Flood Zone and climate change extents. The Environment Agency and LLFA should be consulted to obtain the latest hydraulic modelling information for the site at the time of the flood risk assessment. They will advise as to whether existing detailed models need to be updated. Climate change modelling should be undertaken using the relevant allowances (February 2016) for the type of development and level of risk. The EA have advised that any development proposed here should look to incorporate additional enhancement along the river corridor that can potentially increase both flood risk management and environmental benefits. <p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none"> Development must seek opportunities to reduce overall level of flood risk at the site. The development should be designed using a sequential approach. Flood Zones 2 and 3, and 3a + upper end climate change (subject to a detailed flood risk assessment) should be preserved as public green space, with built development restricted to Flood Zone 1. Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change flood extent Onsite attenuation options would need to be tested to ensure that altering the timing of peak flows leaving the site does not exacerbate flooding downstream. All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.
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Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RTC6
Site name	Gloucester Road Car Park, Redhill

Site details	OS Grid reference	527888 150962			
	Area	0.76Ha			
	Current land use	Brownfield			
	Proposed site use	Town Centre Development Site			
	Flood risk vulnerability	More vulnerable			
Sources of flood risk	Existing watercourses	No water courses present or within 500m			
	Flood history	No recorded flood events on the site. London Road to the east has recorded incidents of flooding from surface water and is on the Surrey Wetspots database.			
	Fluvial	Proportion of site at risk in Flood Zones			
		FZ3b	FZ3a	FZ2	FZ1
		0%	0%	0%	100%
		Available modelled data: Not covered by any modelled extent. Flood characteristics: Site is completely within Flood Zone 1.			
	Surface Water	Proportion of site at risk (RoFSW)			
		30-year		100-year	
		9%		16%	
			1,000-year		
		79%			
		Description of surface water flow paths: Significant ponding may be present on the east side of the site in the 1 in 30-year event. More widespread surface water may be present in a 1 in 1000-year event covering the majority of the site. Surface water flooding is shown to impact all the major access routes to and from the site.			
Groundwater	Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)				
	High risk of groundwater flooding – groundwater levels at or near the surface. This may exacerbate the impact of surface water flooding at this location due to limited infiltration capacity.				
Reservoir	The site is within the maximum extent of reservoir flooding.				
Canal	The site is not located within 100m of a canal.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RTC6
Site name	Gloucester Road Car Park, Redhill

	Defences	Defence Type	Standard of Protection	Condition	
		The site does not receive protection from flood defences.			
Flood risk management infrastructure	Residual risk	Culvert / structure blockage?	There are no structures on the site (identified at this stage) with the potential to block.		
		Impounded water body failure?	The site is within the maximum extent of reservoir flooding.		
		Defence breach / overtopping?	Breach Zone		
			The site is not at risk from breach of defences.		
Emergency planning	Flood warning	The site is not covered by a Flood Alert or Warning area.			
	Access and egress	Access to the site is from a minor road off Gloucester Road to the south of the site. Both this and Gloucester Road has significant surface water ponding in a 1 in 30-year event.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		Thames	25%	35%	70%
	Implications for the site	Climate change is unlikely to significantly change the Flood Zone classification.			

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RTC6
Site name	Gloucester Road Car Park, Redhill

Requirement for drainage control and impact mitigation	Bedrock Geology	Lower Greensand Group – Sandstone and Mudstone
	Superficial Geology	No superficial deposits are known to exist on the site.
	Soils	Freely draining slightly acid loamy soils
	SuDS	<p>The freely draining nature of the site provides opportunities for infiltration SuDS schemes. However consideration should be paid to the potential risk of high groundwater levels when designing the drainage systems.</p> <p>Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.</p> <p>Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.</p>
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.
	Opportunities for flood risk betterment	The widespread nature of modelled surface water on the site in combination with the freely draining nature of the site suggest there is a significant opportunity for management of surface water to reduce surface water flow paths leaving the site.
Recommendations for Local Plan policy	Sequential Test and Exception Test requirements	
	The site is within Flood Zone 1 but at risk from surface water flooding, which should be taken into account when carrying out the Sequential Test and Exception test if required.	
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers	
	<p>Flood risk assessment:</p> <ul style="list-style-type: none"> At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage Impacts of the development on flood risk to the wider catchment should be assessed. <p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none"> Development must seek opportunities to reduce overall level of flood risk at the site. The surface water drainage strategy should ensure that the development does not increase flood risk elsewhere. Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc. Drainage designs should 'design for exceedance' and accommodate existing surface water flow routes, with development located outside of existing flood risk areas. 	

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RTC5
Site name	Former Longmead Centre

Site details	OS Grid reference	527718 150488			
	Area	0.2Ha			
	Current land use	Brownfield			
	Proposed site use	Town Centre Development Site			
	Flood risk vulnerability	More vulnerable			
Sources of flood risk	Existing watercourses	Redhill Brook lies 200m to the east of the site running north to south.			
	Flood history	No fluvial flooding is recorded on the site. Some surface water flooding with causing internal property damage has been recorded in Baxter Avenue within 50m of the south west edge of the site.			
	Fluvial	Proportion of site at risk in Flood Zones			
		FZ3b	FZ3a	FZ2	FZ1
		0%	0%	0%	100%
	Available modelled data: Not covered by any modelled extent.				
	Flood characteristics: Site is completely within Flood Zone 1.				
	Surface Water	Proportion of site at risk (RoFSW)			
		30-year		100-year	
		30%		55%	
Description of surface water flow paths: The site lies on a significant flow path from west to east in the northern half of the site, adjacent to the existing building on the site. Significant ponding may be present on the east side of the site in the 1 in 30-year event. More widespread surface water may be present in a 1 in 1000-year event covering the majority of the site. Surface water flooding is shown to impact all the major access routes to and from the site					
Groundwater	Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)				
	The site is in an area at risk of groundwater flooding where groundwater levels are at or close to the surface.				
Reservoir	The site is outside the maximum extent of flooding from reservoirs.				
Canal	The site is not located within 100m of a canal.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RTC5
Site name	Former Longmead Centre

	Defences	Defence Type	Standard of Protection	Condition	
		Flood risk management infrastructure	Residual risk	The site does not receive protection from flood defences.	
Culvert / structure blockage?	There are no structures identified at this stage with the potential to block.				
Impounded water body failure?	The site is outside the maximum extent of flooding from reservoirs.				
Defence breach / overtopping?	<p style="text-align: center;">Breach Zone</p> The site is not at risk from breach of defences.				
Emergency planning	Flood warning	The site lies within the "Redhill" Brook Flood Alert area and the "Redhill Brook at Redhill" Flood Warning area. Environment Agency flood warnings are now issued to individuals via the Flood Information Service.			
	Access and egress	Access is from Holland Close to the south via Fairfax or Baxter Avenue. Both of these roads are likely to experience surface water flooding in a 1 in 30-year event and therefore would restrict access to the site.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		Thames	25%	35%	70%
	Implications for the site	Climate change is unlikely to significantly change the Flood Zone classification.			

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RTC5
Site name	Former Longmead Centre

Requirement for drainage control and impact mitigation	Bedrock Geology	Lower Greensand Group – Sandstone and mudstone
	Superficial Geology	No superficial deposits are known to exist on the site.
	Soils	Freely draining slightly acid loamy soils cover the site.
	SuDS	<p>The freely draining nature of the soils, and local geology may allow the impementation of an infiltration SuDS scheme. However the groundwater levels may restrict this.</p> <p>Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.</p> <p>Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.</p>
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.
	Opportunities for flood risk betterment	Opportunities for using source control SuDS to manage runoff rates and volumes, contributing to the reduction of flood peaks downstream.
Recommendations for Local Plan policy	Sequential Test and Exception Test requirements	
	<p>The Sequential Test must be passed (see Section 4 of main report). Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required:</p> <ul style="list-style-type: none"> • If More Vulnerable and Essential Infrastructure is located in FZ3a. • If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate change. • If Essential Infrastructure is located in Flood Zone 3b <p>Development will not be permitted in the following scenarios:</p> <ul style="list-style-type: none"> • Highly Vulnerable development within FZ3a or Flood Zone 3a plus climate change and FZ3b. • More Vulnerable and Less Vulnerable development within FZ3b. 	
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers	
<p>Flood risk assessment:</p> <ul style="list-style-type: none"> • At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding, particularly surface water risk) and surface water drainage strategy will be required. • Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage • Groundwater flood risk in the northeast of the site should be investigated. • Detailed modelling will be required to confirm Flood Zone and climate change extents. The 		

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RTC5
Site name	Former Longmead Centre

	<p>Environment Agency and LLFA should be consulted to obtain the latest hydraulic modelling information for the site at the time of the flood risk assessment. They will advise as to whether existing detailed models need to be updated.</p> <ul style="list-style-type: none"> • Climate change modelling should be undertaken using the relevant allowances (February 2016) for the type of development and level of risk. • The EA have advised that they would expect to see no encroachment for development within flood zone 3 inclusive of climate change to ensure an adequate buffer is maintained. <p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none"> • Development must seek opportunities to reduce overall level of flood risk at the site. • Safe access and egress should be demonstrated in the 1 in 100 plus climate change event and considering surface water risk. • Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change flood extent • Onsite attenuation options would need to be tested to ensure that altering the timing of peak flows leaving the site does not exacerbate flooding downstream. • All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.
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Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RTC4
Site name	Colebrook, Noke Drive, Redhill

Site details	OS Grid reference	528314 150664			
	Area	1.40Ha			
	Current land use	Brownfield			
	Proposed site use	Town Centre Development Site			
	Flood risk vulnerability	More vulnerable			
Sources of flood risk	Existing watercourses	Redhill Brook enters a culvert immediately south of the site and is joined by two culverted ordinary watercourses. One of these passes under the site (north to south).			
	Flood history	No fluvial flooding is recorded on the site. Some surface water flooding has been recorded in Noke Drive on the southern edge of the site.			
	Fluvial	Proportion of site at risk in Flood Zones			
		FZ3b	FZ3a	FZ2	FZ1
		0%	34%	62%	38%
		Available modelled data: The site is covered by the Redhill Brook and Salfords Stream model (Environment Agency 2014). Flood characteristics: The south-eastern half of the site lies within Flood Zones 2 and 3 associated with Redhill Brook.			
	Surface Water	Proportion of site at risk (RoFSW)			
		30-year		100-year	
		1%		2%	
			1,000-year		
		31%			
		Description of surface water flow paths: Some surface water ponding may occur in the centre of the site during a 1 in 30-year event, and more widely in a 1 in 1000-year event. This is likely to be closely linked to flooding from the watercourse in this location.			
Groundwater	Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)				
	Most of the site is in an area of negligible risk from groundwater, however the northern part of the site has an area where groundwater levels are at or close to the surface.				
Reservoir	The site is within the maximum extent of flooding from reservoirs.				
Canal	The site is not located within 100m of a canal.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RTC4
Site name	Colebrook, Noke Drive, Redhill

	Defences	Defence Type	Standard of Protection	Condition	
		The site does not receive protection from flood defences.			
Flood risk management infrastructure	Residual risk	Culvert / structure blockage?	Redhill Brook enters a culvert 130 m to the east. This presents a risk from blocking.		
		Impounded water body failure?	The site is within the maximum extent of flooding from reservoirs.		
		Defence breach / overtopping?	Breach Zone		
			The site is not at risk from breach of defences.		
Emergency planning	Flood warning	The site lies within the "Redhill" Brook Flood Alert area and the "Redhill Brook at Redhill" Flood Warning area. Environment Agency flood warnings are now issued to individuals via the Flood Information Service.			
	Access and egress	Access is from Noke Drive to the south and St Anne's Drive to the north. St Anne's Drive has some minor surface water flooding in a 1 in 1000-year event, but would provide a suitable access and egress route. Noke Drive, which is a deadend to the east, may experience more widespread flooding in a 1 in 100-year fluvial event and therefore would provide restricted access to the site.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		Thames	25%	35%	70%
	Implications for the site	The changes to flows within the Redhill Brook adjacent to the site as a result of climate change are predicted to lead to an increase the extent of the 1 in 100 year event in the south of the site of 10 to 25%.			

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RTC4
Site name	Colebrook, Noke Drive, Redhill

Requirement for drainage control and impact mitigation	Bedrock Geology	Lower Greensand Group – Sandstone and mudstone
	Superficial Geology	No superficial deposits are known to exist on the site.
	Soils	Freely draining slightly acid loamy soils cover the site.
	SuDS	<p>The freely draining nature of the soils, and local geology may allow the implementation of an infiltration SuDS scheme. However the groundwater levels in the northern part of the site may restrict this.</p> <p>Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.</p> <p>Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.</p>
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.
	Opportunities for flood risk betterment	Opportunities for using source control SuDS to manage runoff rates and volumes, contributing to the reduction of flood peaks downstream.
Recommendations for Local Plan policy	Sequential Test and Exception Test requirements	
	<p>The Sequential Test must be passed (see Section 4 of main report). Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required:</p> <ul style="list-style-type: none"> • If More Vulnerable and Essential Infrastructure is located in FZ3a. • If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate change. • If Essential Infrastructure is located in Flood Zone 3b <p>Development will not be permitted in the following scenarios:</p> <ul style="list-style-type: none"> • Highly Vulnerable development within FZ3a or Flood Zone 3a plus climate change and FZ3b. • More Vulnerable and Less Vulnerable development within FZ3b. 	
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers	
<p>Flood risk assessment:</p> <ul style="list-style-type: none"> • At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. • Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage • Groundwater flood risk in the northeast of the site should be investigated. • Detailed modelling will be required to confirm Flood Zone and climate change extents. The Environment Agency and LLFA should be consulted to obtain the latest hydraulic modelling 		

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RTC4
Site name	Colebrook, Noke Drive, Redhill

	<p>information for the site at the time of the flood risk assessment. They will advise as to whether existing detailed models need to be updated.</p> <ul style="list-style-type: none"> • Climate change modelling should be undertaken using the relevant allowances (February 2016) for the type of development and level of risk. • The EA have advised that they would expect to see no encroachment for development within flood zone 3 inclusive of climate change to ensure an adequate buffer is maintained. <p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none"> • Development must seek opportunities to reduce overall level of flood risk at the site. • The development should be designed using a sequential approach. Flood Zones 2 and 3, and 3a + upper end climate change (subject to a detailed flood risk assessment) should be preserved as public green space, with built development restricted to Flood Zone 1. • Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. • Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change flood extent • Onsite attenuation options would need to be tested to ensure that altering the timing of peak flows leaving the site does not exacerbate flooding downstream. • All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.
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Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site Category	Urban Development sites
Site code	RED4
Site name	Church of the Epiphany, Mansfield Drive, Merstham

Site details	OS Grid reference	529775 153082			
	Area	0.33Ha			
	Current land use	Brownfield			
	Proposed site use	Urban Development Site			
	Flood risk vulnerability	More vulnerable			
Sources of flood risk	Existing watercourses	None present on the site. A culverted drain classified as an ordinary watercourse is present 200 north east of the site.			
	Flood history	No recorded flood history.			
	Fluvial	Proportion of site at risk in Flood Zones			
		FZ3b	FZ3a	FZ2	FZ1
		0%	0%	0%	100%
	Available modelled data: Not covered by any modelled extents.				
	Flood characteristics: Not covered by any Flood Zones.				
	Surface Water	Proportion of site at risk (RoFSW)			
		30-year		100-year	
		4%		25%	
4%		55%			
Description of surface water flow paths: A surface water flow path exists across the site from north east to south west. This is likely to be present in a 1 in 30-year event, with ponding occurring on the Huddleston Crescent and Mansfield Drive each side of the site, and around the existing building (although this is likely to change post development).					
Groundwater	Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)				
	Negligible risk from groundwater flooding.				
Reservoir	Site is not at risk from reservoir flooding.				
Canal	The site is not located within 100m of a canal.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site Category	Urban Development sites
Site code	RED4
Site name	Church of the Epiphany, Mansfield Drive, Merstham

	Defences	Defence Type	Standard of Protection	Condition	
		The site does not receive protection from flood defences.			
Flood risk management infrastructure	Residual risk	Culvert / structure blockage?	There are no structures on the site (identified at this stage) with the potential to block.		
		Impounded water body failure?	The site is not at risk of inundation in the event of reservoir failure.		
		Defence breach / overtopping?	Breach Zone		The site is not at risk from breach of defences.
Emergency planning	Flood warning	The site is not covered by any flood warning or alert areas.			
	Access and egress	Access to the site is from Mansfield Road to the south. Surface water flooding is likely to occur on this road in a 1 in 30-year event immediately adjacent to the site.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		Thames	25%	35%	70%
	Implications for the site	Climate change is unlikely to significantly change the Flood Zone classification.			

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site Category	Urban Development sites
Site code	RED4
Site name	Church of the Epiphany, Mansfield Drive, Merstham

Requirement for drainage control and impact mitigation	Bedrock Geology	Gault Formations and Upper Greensand Formation (Undifferentiated) – Mudstone, sandstone and limestone.
	Superficial Geology	No superficial deposits are known to exist on the site.
	Soils	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils with impeded drainage.
	SuDS	<p>The low permeability of this site suggests that infiltration systems may not be appropriate. The slope of the site may allow opportunities for SuDS which drain by gravity.</p> <p>Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.</p> <p>Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.</p>
	Groundwater Source Protection Zone	No source protection zones exist close to the site.
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.
	Opportunities for flood risk betterment	Opportunities for using source control SuDS to manage runoff rates and volumes, contributing to the reduction in surface water flooding south of the site.
Recommendations for Local Plan policy	Sequential Test and Exception Test requirements	
	The site is within Flood Zone 1 but at risk from surface water flooding, which should be taken into account when carrying out the Sequential Test and Exception test if required.	
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers	
<p>Flood risk assessment:</p> <ul style="list-style-type: none"> At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage Impacts of the development on flood risk to the wider catchment should be assessed. <p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none"> Development must seek opportunities to reduce overall level of flood risk at the site. The surface water drainage strategy should ensure that the development does not increase flood risk elsewhere. Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice 		

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site Category	Urban Development sites
Site code	RED4
Site name	Church of the Epiphany, Mansfield Drive, Merstham

	<p>(CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.</p> <ul style="list-style-type: none">• Drainage designs should 'design for exceedance' and accommodate existing surface water flow routes, with development located outside of existing flood risk areas.
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Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RED5
Site name	Merstham Library, Weldon Way, Merstham

Site details	OS Grid reference	529463 152752			
	Area	0.26Ha			
	Current land use	Brownfield			
	Proposed site use	Urban Development Site			
	Flood risk vulnerability	More vulnerable			
Sources of flood risk	Existing watercourses	No watercourses exist on the site. A tributary of the Redhill Brook is located along the western side of the Merstham Recreation Ground approximately 150 m south of the site.			
	Flood history	Flooding from Redhill Brook occurred 30-40m to the east of the site in 1947 and 1968.			
	Fluvial	Proportion of site at risk in Flood Zones			
		FZ3b	FZ3a	FZ2	FZ1
		0%	24%	36%	64%
		Available modelled data: Covered by the Redhill Brook and Salfords Stream model (Environment Agency, 2014). Flood characteristics: The south west side of the site lies within Flood Zone 3.			
	Surface Water	Proportion of site at risk (RoFSW)			
		30-year	100-year	1,000-year	
		0%	0%	0%	
		Description of surface water flow paths: No modelled surface water flood risk exists on the site. However, significant surface water flooding may occur along Weldon Way, which provides access to the site from the east in a 1 in 100-year event. A Surface Water flow path is also present to the west of the site, which is associated with the Fluvial Flood Zones in this area.			
Groundwater	Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)				
	Negligible risk of groundwater flooding.				
Reservoir	Site is not at risk of reservoir flooding.				
Canal	The site is not located within 100m of a canal.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RED5
Site name	Merstham Library, Weldon Way, Merstham

	Defences	Defence Type	Standard of Protection	Condition		
		The site does not receive protection from flood defences.				
Flood risk management infrastructure	Residual risk	Culvert / structure blockage?	There are no structures on the site (identified at this stage) with the potential to block.			
		Impounded water body failure?	The site is not at risk of inundation in the event of reservoir failure.			
		Defence breach / overtopping?	Breach Zone			
			The site is not at risk from breach of defences.			
Emergency planning	Flood warning	Site is covered by the Redhill Brook Flood Alert area.				
	Access and egress	<p>Access to the site is from Weldon Way to the west. This may experience limited surface water flooding in a 1 in 100-year event, but no flood incidents have been reported.</p> <p>Further from the site surface water flow paths from the north and north east may impede access to the site along Bletchingley Road, which is main route in and out of the area.</p>				
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End	
		Thames	25%	35%	70%	
	Implications for the site	Climate change is unlikely to significantly change the Flood Zone classification at the site due to the confined nature of the Flood Zone at this location.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RED5
Site name	Merstham Library, Weldon Way, Merstham

Requirement for drainage control and impact mitigation	Bedrock Geology	Gault Formation and Upper Greensand Formation (Undifferentiated) – Mudstone, Sandstone and Limestone
	Superficial Geology	No superficial deposits are known to exist on the site.
	Soils	Freely draining slightly acid loamy soils that are freely draining.
	SuDS	<p>The freely draining soils and underlying geology provide the option of an infiltration SuDS scheme.</p> <p>Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.</p> <p>Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.</p>
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.
	Opportunities for flood risk betterment	Opportunities for using source control SuDS to manage runoff rates and volumes, contributing to the reduction of surface water flow paths leaving the site.
Recommendations for Local Plan policy	Sequential Test and Exception Test requirements	
	<p>The Sequential Test must be passed (see Section 4 of main report). Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required:</p> <ul style="list-style-type: none"> • If More Vulnerable and Essential Infrastructure is located in FZ3a. • If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate change. • If Essential Infrastructure is located in Flood Zone 3b <p>Development will not be permitted in the following scenarios:</p> <ul style="list-style-type: none"> • Highly Vulnerable development within FZ3a or Flood Zone 3a plus climate change and FZ3b. • More Vulnerable and Less Vulnerable development within FZ3b. 	
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers	
	<p>Flood risk assessment:</p> <ul style="list-style-type: none"> • At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. • Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage • Groundwater flood risk in the north of the site should be investigated. • Detailed modelling will be required to confirm Flood Zone and climate change extents. The Environment Agency and LLFA should be consulted to obtain the latest hydraulic modelling information for the site at the time of the flood risk assessment. They will advise as to whether existing detailed models need to be updated. 	

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RED5
Site name	Merstham Library, Weldon Way, Merstham

	<ul style="list-style-type: none">• Climate change modelling should be undertaken using the relevant allowances (February 2016) for the type of development and level of risk. <p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none">• Development must seek opportunities to reduce overall level of flood risk at the site.• The development should be designed using a sequential approach. Flood Zones 2 and 3, and 3a + upper end climate change (subject to a detailed flood risk assessment) should be preserved as public green space, with built development restricted to Flood Zone 1.• Safe access and egress should be demonstrated in the 1 in 100 plus climate change event.• Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change flood extent• Onsite attenuation options would need to be tested to ensure that altering the timing of peak flows leaving the site does not exacerbate flooding downstream.• All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.
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Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RED8
Site name	Land at Reading Arch Road/Brighton Road, Redhill

Site details	OS Grid reference	527965 150240			
	Area	1.94Ha			
	Current land use	Brownfield			
	Proposed site use	Urban Development Site			
	Flood risk vulnerability	More vulnerable			
Sources of flood risk	Existing watercourses	Redhill Brook flows north to south across the site within a culvert.			
	Flood history	No recorded flooding from fluvial sources are recorded on the site, however recorded extents are present north and south of the site (1947 and 1968).			
	Fluvial	Proportion of site at risk in Flood Zones			
		FZ3b	FZ3a	FZ2	FZ1
		21%	53%	69%	31%
		Available modelled data: Covered by the Redhill and Salford Stream model (Environment Agency, 2014). Flood characteristics: More than 50% of the site lies within Flood Zone 3 from Redhill Brook.			
	Surface Water	Proportion of site at risk (RoFSW)			
		30-year		100-year	
		11%		19%	
			Description of surface water flow paths: A surface water flow path may be present in the northern half of the site following the existing road / carpark. This may change post development, but there is potential for significant flows / ponding in a 1 in 30-year event.		
Groundwater	Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)				
	The site is in an area of significant risk of groundwater flooding (groundwater at or just below the surface).				
Reservoir	The site is within the maximum extent of flooding from reservoir failure.				
Canal	The site is not located within 100m of a canal.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RED8
Site name	Land at Reading Arch Road/Brighton Road, Redhill

	Defences	Defence Type	Standard of Protection	Condition	
		The site does not receive protection from flood defences.			
Flood risk management infrastructure	Residual risk	Culvert / structure blockage?	There are no structures on the site (identified at this stage) with the potential to block.		
		Impounded water body failure?	The site is within the maximum extent of flooding from reservoir failure.		
		Defence breach / overtopping?	<p style="text-align: center;">Breach Zone</p> The site is not at risk from breach of defences.		
Emergency planning	Flood warning	The site is covered by the Redhill Brook Flood Alert area and the "Redhill Brook at Redhill" Flood Warning area. Environment Agency flood warnings are now issued to individuals via the Flood Information Service.			
	Access and egress	Access to the site is from Brighton Road (A25). This is likely to experience surface water flooding in a 1 in 1000-year event at the site entrance and a 1 in 30-year event south of the site.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		Thames	25%	35%	70%
	Implications for the site	Climate change under a +70% scenario is likely to increase the extent of the 1 in 100 year event to greater than the current Flood Zone 2 extent.			

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RED8
Site name	Land at Reading Arch Road/Brighton Road, Redhill

Requirement for drainage control and impact mitigation	Bedrock Geology	Lower Greensand Group – Sandstone and Mudstone.
	Superficial Geology	No superficial deposits are known to exist on the site.
	Soils	Freely draining slightly acid loamy soils.
	SuDS	<p>The freely draining nature of the site suggests that an infiltration SuDS scheme could be appropriate. However consideration should be paid to the potential risk of high groundwater levels when designing the drainage systems</p> <p>Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.</p> <p>Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.</p>
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.
	Opportunities for flood risk betterment	<p>The condition and capacity of the culvert crossing the site should be investigated to determine if culvert enlargement is required or whether an opportunity exists for daylighting.</p> <p>Opportunity to implement an exemplar SuDS design following CIRIA and SCC guidance on runoff rates and volumes, contributing to the reduction of flood peaks downstream.</p>
Recommendations for Local Plan policy	Sequential Test and Exception Test requirements	
	<p>The Sequential Test must be passed (see Section 4 of main report). Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required:</p> <ul style="list-style-type: none"> • If More Vulnerable and Essential Infrastructure is located in FZ3a. • If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate change. • If Essential Infrastructure is located in Flood Zone 3b <p>Development will not be permitted in the following scenarios:</p> <ul style="list-style-type: none"> • Highly Vulnerable development within FZ3a or Flood Zone 3a plus climate change and FZ3b. <p>More Vulnerable and Less Vulnerable development within FZ3b.</p>	
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers	
	<p>Flood risk assessment:</p> <ul style="list-style-type: none"> • At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. • Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage. 	

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RED8
Site name	Land at Reading Arch Road/Brighton Road, Redhill

	<ul style="list-style-type: none"> Detailed modelling will be required to confirm Flood Zone and climate change extents. The Environment Agency and LLFA should be consulted to obtain the latest hydraulic modelling information for the site at the time of the flood risk assessment. They will advise as to whether existing detailed models need to be updated. Climate change modelling should be undertaken using the relevant allowances (February 2016) for the type of development and level of risk. <p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none"> Development must seek opportunities to reduce overall level of flood risk at the site. The development should be designed using a sequential approach. Flood Zones 2 and 3, and 3a + upper end climate change (subject to a detailed flood risk assessment) should be preserved as public green space, with built development restricted to Flood Zone 1. Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change flood extent Onsite attenuation options would need to be tested to ensure that altering the timing of peak flows leaving the site does not exacerbate flooding downstream. All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.
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Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RED2
Site name	Bellway House, Station Road, Merstham

Site details	OS Grid reference	529107 153453			
	Area	0.2Ha			
	Current land use	Brownfield			
	Proposed site use	Urban Development Site			
	Flood risk vulnerability	More vulnerable			
Sources of flood risk	Existing watercourses	No watercourses exist on the site. A culverted ordinary watercourse is present 200m south east of the site.			
	Flood history	There are no recorded flood events on the site. Flooding occurred in 1968 150m from the site (the other side of the railway line).			
	Fluvial	Proportion of site at risk in Flood Zones			
		FZ3b	FZ3a	FZ2	FZ1
		0%	0%	0%	100%
		Available modelled data: Flood characteristics: The site is completely within Flood Zone 1.			
	Surface Water	Proportion of site at risk (RoFSW)			
		30-year		100-year	
		0%		0%	
		0%		0.6%	
Description of surface water flow paths: The north-eastern part of the site has a very small area at risk of ponding in a 1 in 1000-year event resulting from flows off the M25, which is located to the north of the site					
Groundwater	Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)				
	Negligible risk of groundwater flooding.				
Reservoir	The site is not at risk from reservoir flooding.				
Canal	The site is not located within 100m of a canal.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RED2
Site name	Bellway House, Station Road, Merstham

	Defences	Defence Type	Standard of Protection	Condition		
		The site does not receive protection from flood defences.				
Flood risk management infrastructure	Residual risk	Culvert / structure blockage?	There are no structures on the site (identified at this stage) with the potential to block.			
		Impounded water body failure?	The site is not at risk of inundation in the event of reservoir failure.			
		Defence breach / overtopping?	Breach Zone			
			The site is not at risk from breach of defences.			
Emergency planning	Flood warning	The site is within the Redhill Brook Flood Alert area. Environment Agency flood warnings are now issued to individuals via the Flood Information Service.				
	Access and egress	Access to the site is from Station Road North to the south. There is minimal risk of surface water flooding on this road and it lies outside of the area at risk of fluvial flooding.				
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End	
		Thames	25%	35%	70%	
	Implications for the site	Climate change is unlikely to significantly change the Flood Zone classification of this site.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RED2
Site name	Bellway House, Station Road, Merstham

Requirement for drainage control and impact mitigation	Bedrock Geology	Gault Formation and Upper Greensand Formation (undifferentiated) – Mudstone, Sandstone and Limestone
	Superficial Geology	No superficial deposits are known to exist on the site.
	Soils	Slightly acid loamy and clayey soils with impeded drainage
	SuDS	The nature of the soils on this site may limit the use of Infiltration SuDS.
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.
	Opportunities for flood risk betterment	No significant opportunities for flood risk betterment are present at this site.
Recommendations for Local Plan policy	Sequential Test and Exception Test requirements	
	The site is within Flood Zone 1 but at some risk from surface water flooding, which should be taken into account when carrying out the Sequential Test and Exception test if required.	
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers	
	<p>Flood risk assessment:</p> <ul style="list-style-type: none"> At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage Impacts of the development on flood risk to the wider catchment should be assessed. <p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none"> Development must seek opportunities to reduce overall level of flood risk at the site. The surface water drainage strategy should ensure that the development does not increase flood risk elsewhere. Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc. Drainage designs should 'design for exceedance' and accommodate existing surface water flow routes, with development located outside of existing flood risk areas. 	

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RED1
Site name	Quarryside Business Park, Thornton Side, Redhill

Site details	OS Grid reference	528959 152056			
	Area	1.2Ha			
	Current land use	Brownfield			
	Proposed site use	Urban Development Site			
	Flood risk vulnerability	More vulnerable			
Sources of flood risk	Existing watercourses	A culverted main river flows along the western site boundary. This splits in the south-west corner of the site into an ordinary watercourse that flows towards the south east. The main river continues south where it eventually joins Redhill Brook.			
	Flood history	No recorded flood history.			
	Fluvial	Proportion of site at risk in Flood Zones			
		FZ3b	FZ3a	FZ2	FZ1
		0%	0%	0%	100%
		Available modelled data: No modelled extents cover this site.			
	Flood characteristics: Site is completely within Flood Zone 1, however, significant ponding is modelled immediately to the west of the site on the opposite side of the railway that forms the western boundary of the site				
	Surface Water	Proportion of site at risk (RoFSW)			
		30-year		100-year	1,000-year
		8%		14%	20%
Description of surface water flow paths: A significant surface water flow path associated with flows under the railway and from the north runs across the northern part of the site during a 1 in 30-year event. Some ponding may occur along the western side and the south west corner during a 1 in 100-year event.					
Groundwater	Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)				
	The site lies within an area at risk of groundwater flooding with water at or just below the surface.				
Reservoir	The site is within the maximum extent of reservoir flooding.				
Canal	The site is not located within 100m of a canal.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RED1
Site name	Quarryside Business Park, Thornton Side, Redhill

	Defences	Defence Type	Standard of Protection	Condition	
		The site does not receive protection from flood defences.			
Flood risk management infrastructure	Residual risk	Culvert / structure blockage?	It is understood that a culverted watercourse runs along the western boundary of the site adjacent to the railway line. The culvert begins to the west of the railway and flooding as a result of a blockage of the culvert is not expected to directly impact the site		
		Impounded water body failure?	The site is within the maximum extent of reservoir flooding.		
		Defence breach / overtopping?	Breach Zone		The site is not at risk from breach of defences.
Emergency planning	Flood warning	The site is not covered by a Flood alert or Flood Warning area.			
	Access and egress	Access is via a Thorntonside which may experience some minor ponding from surface water near the site entrance in a 1 in 100-year event. Access is possible to the east but this road experiences significant ponding in a 1 in 30-year event.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		Thames	25%	35%	70%
	Implications for the site	Climate change is unlikely to significantly change the Flood Zone classification of this site.			

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RED1
Site name	Quarryside Business Park, Thornton Side, Redhill

Requirement for drainage control and impact mitigation	Bedrock Geology	Lower Greensand Group – Sandstone and Mudstone
	Superficial Geology	No superficial deposits are known to exist on the site.
	Soils	Freely draining slightly acid loamy soils.
	SuDS	<p>The freely draining soils and sandstone geology provide opportunities for an infiltration SuDS scheme. However the existing historic landfill site may limit this.</p> <p>Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.</p> <p>Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.</p>
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.
	Historic Landfill Site	The eastern part of the site lies within a site designated by the EA as a historic landfill site. (Holmethorpe Trading Estate – Last input 1989).
	Opportunities for flood risk betterment	Opportunities to de-culvert the watercourse on the west of the site with possibilities to incorporate into a SuDS scheme.
Recommendations for Local Plan policy	Sequential Test and Exception Test requirements	
	The site is within Flood Zone 1 but at risk from surface water flooding, which should be taken into account when carrying out the Sequential Test and Exception test if required.	
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers	
	<p>Flood risk assessment:</p> <ul style="list-style-type: none"> At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage Impacts of the development on flood risk to the wider catchment should be assessed. <p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none"> Development must seek opportunities to reduce overall level of flood risk at the site. The surface water drainage strategy should ensure that the development does not increase flood risk elsewhere. Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice 	

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RED1
Site name	Quarryside Business Park, Thornton Side, Redhill

	<p>(CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.</p> <ul style="list-style-type: none">• Drainage designs should 'design for exceedance' and accommodate existing surface water flow routes, with development located outside of existing flood risk areas.
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Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RED9
Site name	East Surrey Hospital

Site details	OS Grid reference	528405 148250			
	Area	15.5Ha			
	Current land use	Brownfield			
	Proposed site use	Hospital			
	Flood risk vulnerability	More vulnerable			
Sources of flood risk	Existing watercourses	An un-named ordinary watercourses flow along the northern west facing edge of the site and is culverted in places, and Earlswood Brook flows along the south-eastern boundary and enters a culvert to the south west.			
	Flood history	No recorded flood history.			
	Fluvial	Proportion of site at risk in Flood Zones			
		FZ3b	FZ3a	FZ2	FZ1
		0.1%	0.1%	0.1%	99.9%
		Available modelled data: The site is located close to the source of the Earlswood Brook, which is currently not modelled in detail. Flood characteristics: Flood Zone 3 of Earlswood Brook is located at the southerly tip of the site. However this is not expected to impact the potential development of the site.			
	Surface Water	Proportion of site at risk (RoFSW)			
		30-year		100-year	
		9%		15%	
		1,000-year		1,000-year	
36%		36%			
Description of surface water flow paths: Significant flow paths and ponding are present along the northern and western boundaries of the site in the 1 in 30-year event, with more extensive ponding in a 1 in 1000-year event. A second surface water flow path is present along the southern edge of the site and significant ponding is predicted to occur adjacent to the railway line to the west of the site, which may impact access to the site. The surface water flow paths follow the ordinary watercourse that form the upper reaches of the Earlswood Brook and originate to the east of the site.					
Groundwater	Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)				
	Negligible risk of groundwater flooding.				
Reservoir	The site does not lie within an area at risk of reservoir flooding.				
Canal	The site is not located within 100m of a canal.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RED9
Site name	East Surrey Hospital

	Defences	Defence Type	Standard of Protection	Condition	
		The site does not receive protection from flood defences.			
Flood risk management infrastructure	Residual risk	Culvert / structure blockage?	The culvert along the northern edge and to the south west present a risk of blockage. Blockage of culverts under the railway line to the west of the site may result in significant ponding around the site, which may impact access.		
		Impounded water body failure?	The site does not lie within an area at risk of reservoir flooding.		
		Defence breach / overtopping?	Breach Zone		
			The site is not at risk from breach of defences.		
Emergency planning	Flood warning	The lies within the "River Mole and its tributaries from Kinnersley Manor to South Hersham" Flood Warning Area.			
	Access and egress	Safe access is possible from Canada Avenue (West of Site). Access may be limited from Three Arch Road to the South and Royal Earlswood Road to the north due to surface water flooding in a 1 in 30-year event. Three Arch Road is also within within Flood Zone 3b at the southern side of the site.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		Thames	25%	35%	70%
	Implications for the site	Climate change may increase the extent of Flood Zones into the southern part of the site.			

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RED9
Site name	East Surrey Hospital

Requirement for drainage control and impact mitigation	Bedrock Geology	Wealden Group – Mudstone, Siltstone and Sandstone.
	Superficial Geology	No superficial deposits are known to exist on the site.
	Soils	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils with impeded drainage.
	SuDS	The impeded drainage may restrict the implementation of an infiltration SuDS scheme. Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace. Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.
	Groundwater Source Protection Zone	The site is not located within a Groundwater Source Protection Zone.
	Historic Landfill Site	No part of the site is designated by the Environment Agency as an historic landfill site.
	Opportunities for flood risk betterment	Opportunities to de-culvert the watercourse to the south west to reduce risk of blockage. De-culverting the watercourse to the north could provide an opportunity to incorporate into a SuDS scheme.
Recommendations for Local Plan policy	Sequential Test and Exception Test requirements	
	<p>The Sequential Test must be passed (see Section 4 of main report). Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required:</p> <ul style="list-style-type: none"> • If More Vulnerable and Essential Infrastructure is located in FZ3a. • If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate change. • If Essential Infrastructure is located in Flood Zone 3b <p>Development will not be permitted in the following scenarios:</p> <ul style="list-style-type: none"> • Highly Vulnerable development within FZ3a or Flood Zone 3a plus climate change and FZ3b. • More Vulnerable and Less Vulnerable development within FZ3b. 	
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers	
	<p>Flood risk assessment:</p> <ul style="list-style-type: none"> • At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. • Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage • Groundwater flood risk in the northeast of the site should be investigated. • Detailed modelling will be required to confirm Flood Zone and climate change extents. The Environment Agency and LLFA should be consulted to obtain the latest hydraulic modelling 	

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	RED9
Site name	East Surrey Hospital

	<p>information for the site at the time of the flood risk assessment. They will advise as to whether existing detailed models need to be updated.</p> <ul style="list-style-type: none"> Climate change modelling should be undertaken using the relevant allowances (February 2016) for the type of development and level of risk. <p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none"> Development must seek opportunities to reduce overall level of flood risk at the site. The development should be designed using a sequential approach. Flood Zones 2 and 3, and 3a + upper end climate change (subject to a detailed flood risk assessment) should be preserved as public green space, with built development restricted to Flood Zone 1. Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change flood extent Onsite attenuation options would need to be tested to ensure that altering the timing of peak flows leaving the site does not exacerbate flooding downstream. All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.
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Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site Category	Traveller Sites
Site code	Old Rectory 1
Site name	The Old Rectory

Site details	OS Grid reference	527926, 159550			
	Area	0.24 Ha			
	Current land use	Brownfield			
	Proposed site use	Traveller site			
	NPPF Flood risk vulnerability	Highly Vulnerable			
Sources of flood risk	Existing watercourses	No watercourses exist within or close to the site boundary.			
	Flood history	The EA Historic Flood Map does not show any recorded incidents of flooding on the site.			
	Fluvial	Proportion of site at risk in Flood Zones			
		FZ3b	FZ3a	FZ2	FZ1
		0%	0%	0%	100%
		Available modelled data: The site is not covered by any modelled extents.			
	Flood characteristics: The site is contained completely within Flood zone 1.				
	Surface Water	Proportion of site at risk (RoFSW)			
		30-year		100-year	
		0%		0%	
0%		23%			
Description of surface water flow paths:					
Linear surface water flow paths run north to south across the site during the 1 in 1,000-year (0.1%) event, however this may alter with the proposed development.					
Groundwater	Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)				
	Groundwater levels across most of the site are typically greater than 5m below the surface. On the south-east corner of the site, groundwater levels may be between 0.5m and 5m below the surface.				
Reservoir	The site is not at risk of flooding from reservoir failure.				
Canal	The site is not located within 100m of a canal.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site Category	Traveller Sites
Site code	Old Rectory 1
Site name	The Old Rectory

Flood risk management infrastructure	Defences	Defence Type	Standard of Protection	Condition	
	Residual risk	The site does not receive protection from flood defences.			
Culvert / structure blockage?		There are no structures on the site (identified at this stage) with the potential to block.			
Impounded water body failure?		The site is not at risk of flooding from reservoir failure.			
Defence breach / overtopping?		<p style="text-align: center;">Breach Zone</p> The site is not at risk from breach of defences.			
Emergency planning	Flood warning	The site lies outside of any Flood Warning or Flood Alert areas. Environment Agency flood warnings are now issued to individuals via the Flood Information Service.			
	Access and egress	Access and egress to this site may be achieved via the B278 which runs past the site to the east. Some surface water flooding may be present on the B278 north and south of the site, although the immediate vicinity of the site entrance it unlikely to experience flooding.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		Thames	25%	35%	70%
	Implications for the site	Climate change is unlikely to significantly change the Flood Zone classification of this site.			

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site Category	Traveller Sites
Site code	Old Rectory 1
Site name	The Old Rectory

Requirement for drainage control and impact mitigation	Bedrock Geology	White chalk subgroup.
	Superficial Geology	Deposits of clay with flints cover the whole of the site.
	Soils	The site has shallow lime-rich soils over chalk or limestone that are freely draining.
	SuDS	<p>SuDS should be designed around existing surface water flow paths and areas of ponding.</p> <p>The freely draining nature of the soils present on the site offer opportunities for infiltration SuDS, however the site's location within a groundwater source protection zone needs to be considered during the design process.</p> <p>Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.</p> <p>Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.</p>
	Groundwater Source Protection Zone	The site lies within Zone 1 (Inner Zone).
	Historic Landfill Site	No part of the site is designated by the Environment Agency as historic landfill site.
	Opportunities for flood risk betterment	Opportunity to implement exemplar SuDS design following CIRIA and SCC guidance on runoff rates and volumes, contributing to the reduction of flood peaks downstream.
Recommendations for Local Plan policy	Sequential Test and Exception Test requirements	
	The site is within Flood Zone 1 but at risk from surface water flooding, which should be taken into account when carrying out the Sequential Test and Exception test if required	
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers	
	<p>Flood risk assessment:</p> <ul style="list-style-type: none"> At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage Detailed modelling is not expected to be required as the site is a significant distance from Flood Zone 2 and climate change is unlikely to increase the risk to the site. The Environment Agency and LLFA should be consulted to confirm any requirements for the site at the time of the flood risk assessment. They will advise as to whether existing detailed models need to be updated. 	

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site Category	Traveller Sites
Site code	Old Rectory 1
Site name	The Old Rectory

	<p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none">• Development must seek opportunities to reduce overall level of flood risk at the site.• Safe access and egress should be demonstrated in the 1 in 100 plus climate change event.• All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.
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Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	Trentham
Site name	Trentham and Treetops

Site details	OS Grid reference	530813 142501			
	Area	0.36 Ha			
	Current land use	Brownfield			
	Proposed site use	Traveller site			
	NPPF Flood risk vulnerability	Highly Vulnerable			
Sources of flood risk	Existing watercourses	No watercourses exist within the site boundary. An ordinary water course (drain) lies 200m to the south of the site.			
	Flood history	The EA Historic Flood Map shows that flooding has occurred across the site in 1968 and 1974. Internal property flooding has also been recorded along Peeks Brook Lane.			
	Fluvial	Proportion of site at risk in Flood Zones			
		FZ3b	FZ3a	FZ2	FZ1
		0%	0%	89.6%	10.4%
	Available modelled data: The site lies within the area covered by the Burstow Stream Modelling study (Environment Agency 2011).				
	Flood characteristics: The site lies largely within Flood Zone 2.				
	Surface Water	Proportion of site at risk (RoFSW)			
		30-year		100-year	
		1.6%		2.7%	
1,000-year		6.3%			
Description of surface water flow paths:					
A small percentage of the site may experience flooding from surface water in a 1 in 30-year event, however significant ponding of surface water is modelled along Peeks Brook Lane close to the likely entrance to the site. This may impact access and egress from the site.					
Groundwater	Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)				
	Negligible risk of flooding from groundwater.				
Reservoir	The site is not at risk of flooding from reservoir failure.				
Canal	The site is not located within 100m of a canal.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	Trentham
Site name	Trentham and Treetops

	Defences	Defence Type	Standard of Protection	Condition	
		The site does not receive protection from flood defences.			
Flood risk management infrastructure	Residual risk	Culvert / structure blockage?	There are no structures on the site (identified at this stage) with the potential to block.		
		Impounded water body failure?	The site is not at risk of flooding from reservoir failure.		
		Defence breach / overtopping?	Breach Zone		
		The site is not at risk from breach of defences.			
Emergency planning	Flood warning	The site lies in the Burstow Stream at east and North Horley Flood Warning Area and the Ilfield Brook, Upper River Mole, Gatwick Stream, Burstow Stream and Salfords Stream Flood Alert Area. Environment Agency flood warnings are now issued to individuals via the Flood Information Service.			
	Access and egress	Access and egress to this site may be achieved via Peeks Brook Lane to the west of the site. This minor road has recorded incidents of property flooding along it and may experience significant ponding of surface water close to the site.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		Thames	25%	35%	70%
	Implications for the site	Climate change modelling indicates an increase in the flood extent from the Burstow Stream to the north and south of the site, however, it is unlikely to significantly change the Flood Zone classification of this site.			

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	Trentham
Site name	Trentham and Treetops

Requirement for drainage control and impact mitigation	Bedrock Geology	Mudstone, Siltstone and Sandstone.
	Superficial Geology	River terrace deposits (undifferentiated) exist across the site.
	Soils	The site has slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils.
	SuDS	<p>SuDS should be designed around existing surface water flow paths and areas of ponding. Due to the existing flood risk to properties surrounding the site, surface water discharge should be restricted to greenfield runoff rates as a minimum.</p> <p>The poor draining nature of the soils present on the site offer limited opportunities for infiltration SuDS.</p> <p>Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.</p> <p>Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.</p>
	Groundwater Source Protection Zone	The site does not lie within a source protection zone.
	Historic Landfill Site	No part of the site is designated by the Environment Agency as historic landfill site; however a historic land fill site is present 200m north of the site.
	Opportunities for flood risk betterment	Opportunity to implement exemplar SuDS design following CIRIA and SCC guidance on runoff rates and volumes, contributing to the reduction of flood peaks downstream.
Recommendations for Local Plan policy	Sequential Test and Exception Test requirements	
	<p>The Sequential Test must be passed (see Section 4 of main report). Only once the Sequential Test is passed should the Exception Test be applied. It is recommended that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required:</p> <ul style="list-style-type: none"> • If More Vulnerable and Essential Infrastructure is located in FZ3a. • If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate change. • If Essential Infrastructure is located in Flood Zone 3b <p>Development will not be permitted in the following scenarios:</p> <ul style="list-style-type: none"> • Highly Vulnerable development within FZ3a or Flood Zone 3a plus climate change and FZ3b. • More Vulnerable and Less Vulnerable development within FZ3b. 	
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers	
	Flood risk assessment:	<ul style="list-style-type: none"> • At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. • Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	Trentham
Site name	Trentham and Treetops

	<ul style="list-style-type: none"> Detailed modelling may be required to confirm Flood Zone and climate change extents. The Environment Agency and LLFA should be consulted to obtain the latest hydraulic modelling information for the site at the time of the flood risk assessment. They will advise as to whether existing detailed models need to be updated. Climate change modelling should be undertaken using the relevant allowances (February 2016) for the type of development and level of risk. <p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none"> Development must seek opportunities to reduce overall level of flood risk at the site. The development should be designed using a sequential approach. Flood Zones 2 and 3, and 3a + upper end climate change (subject to a detailed flood risk assessment) should be preserved as public green space, with built development restricted to Flood Zone 1 where possible. Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change flood extent Onsite attenuation options would need to be tested to ensure that altering the timing of peak flows leaving the site does not exacerbate flooding downstream. All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.
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Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



Site code	Woodlea Stables
Site name	Woodlea Stables Peek Brook Lane

Site details	OS Grid reference	530691 142469			
	Area	0.31 Ha			
	Current land use	Brownfield			
	Proposed site use	Traveller site			
	NPPF Flood risk vulnerability	Highly Vulnerable			
Sources of flood risk	Existing watercourses	No watercourses exist within the site boundary. An ordinary water course (drain) lies 150m to the south of the site.			
	Flood history	The EA Historic Flood Map shows that flooding has occurred on the eastern section of the site in 1968 and 1974. Internal property flooding has also been recorded along Peeks Brook Lane.			
	Fluvial	Proportion of site at risk in Flood Zones			
		FZ3b	FZ3a	FZ2	FZ1
		0%	0%	25.3	74.7%
	Available modelled data: The site lies within the area covered by the Burstow Stream Modelling study (Environment Agency 2011).				
	Flood characteristics: The site lies partially within Flood Zone 2.				
	Surface Water	Proportion of site at risk (RoFSW)			
		30-year		100-year	
		0%		0%	
0%		0.1%			
Description of surface water flow paths:					
Although a negligible percentage of the site is predicted to experience flooding from surface water in a 1 in 1000-year event, significant ponding of surface water may occur along Peeks Brook Lane close to the likely entrance to the site in a 1 in 30-year event. There is also ponding present immediately north of the site in a 1 in 100-year event,					
Groundwater	Areas Susceptible to Groundwater Flooding Map class (risk of groundwater emergence)				
	Negligible risk of flooding from groundwater.				
Reservoir	The site is not at risk of flooding from reservoir failure.				
Canal	The site is not located within 100m of a canal.				

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



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Site name	Woodlea Stables Peek Brook Lane

	Defences	Defence Type	Standard of Protection	Condition	
		The site does not receive protection from flood defences.			
Flood risk management infrastructure	Residual risk	Culvert / structure blockage?	There are no structures on the site (identified at this stage) with the potential to block.		
		Impounded water body failure?	The site is not at risk of flooding from reservoir failure.		
		Defence breach / overtopping?	Breach Zone		
		The site is not at risk from breach of defences.			
Emergency planning	Flood warning	The site lies in the Burstow Stream at east and North Horley Flood Warning Area and the Ilfield Brook, Upper River Mole, Gatwick Stream, Burstow Stream and Salfords Stream Flood Alert Area. Environment Agency flood warnings are now issued to individuals via the Flood Information Service.			
	Access and egress	Access and egress to this site may be achieved via Peeks Brook Lane to the east of the site. This minor road has recorded incidents of property flooding along it and may experience significant ponding of surface water close to the site.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		Thames	25%	35%	70%
	Implications for the site	Climate change modelling indicates an increase in the flood extent from the Burstow Stream to the north and south of the site, however, it is unlikely to significantly change the Flood Zone classification of this site.			

Reigate and Banstead Borough Council

Level 2 SFRA Detailed Site Summary Tables



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Site name	Woodlea Stables Peek Brook Lane

Requirement for drainage control and impact mitigation	Bedrock Geology	Mudstone, Siltstone and Sandstone.
	Superficial Geology	River terrace deposits (undifferentiated) exist across the site.
	Soils	The site has slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils.
	SuDS	<p>SuDS should be designed around existing surface water flow paths and areas of ponding. Due to the existing flood risk to properties surrounding the site, surface water discharge should be restricted to greenfield runoff rates as a minimum.</p> <p>The poor draining nature of the soils present on the site offer limited opportunities for infiltration SuDS.</p> <p>Opportunities should be taken to deliver SuDS with multiple benefits, such as biodiversity, recreation and water resource education, through integration with areas of greenspace.</p> <p>Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Surrey County Council website.</p>
	Groundwater Source Protection Zone	The site does not lie within a source protection zone.
	Historic Landfill Site	No part of the site is designated by the Environment Agency as historic landfill site, however a historic land fill site is present 200m north of the site.
	Opportunities for flood risk betterment	Opportunity to implement exemplar SuDS design following CIRIA and SCC guidance on runoff rates and volumes, contributing to the reduction of flood peaks downstream.
Recommendations for Local Plan policy	Sequential Test and Exception Test requirements	
	<p>The Sequential Test must be passed (see Section 4 of main report). Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all built development will be sequentially located within Flood Zone 1, but the Exception Test would be required:</p> <ul style="list-style-type: none"> • If More Vulnerable and Essential Infrastructure is located in FZ3a. • If Highly Vulnerable development is located in FZ2 or Flood Zone 3a plus climate change. • If Essential Infrastructure is located in Flood Zone 3b <p>Development will not be permitted in the following scenarios:</p> <ul style="list-style-type: none"> • Highly Vulnerable development within FZ3a or Flood Zone 3a plus climate change and FZ3b. • More Vulnerable and Less Vulnerable development within FZ3b. 	
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers	
	Flood risk assessment:	<ul style="list-style-type: none"> • At the planning application stage, a site-specific flood risk assessment (considering all sources of flooding) and surface water drainage strategy will be required. • Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage

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	<ul style="list-style-type: none"> Detailed modelling may be required to confirm Flood Zone and climate change extents. The Environment Agency and LLFA should be consulted to obtain the latest hydraulic modelling information for the site at the time of the flood risk assessment. They will advise as to whether existing detailed models need to be updated. Climate change modelling should be undertaken using the relevant allowances (February 2016) for the type of development and level of risk. <p>Guidance for site design and making development safe:</p> <ul style="list-style-type: none"> Development must seek opportunities to reduce overall level of flood risk at the site. The development should be designed using a sequential approach. Flood Zones 2 and 3, and 3a + upper end climate change (subject to a detailed flood risk assessment) should be preserved as public green space, with built development restricted to Flood Zone 1. Safe access and egress should be demonstrated in the 1 in 100 plus climate change event. Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change flood extent Onsite attenuation options would need to be tested to ensure that altering the timing of peak flows leaving the site does not exacerbate flooding downstream. All development should adopt source control SuDS techniques to reduce the risk of flooding due to post-development runoff. SuDS design should follow current best practice (CIRIA Manual, 2015) and SCC guidance on runoff rates and volumes, to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.
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