Level 2 SFRA: Site Summary Sheets

Final Report

19th August 2021

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Revision History

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18/08/2021	Draft Report	Chris Mills (IoW Council)
19/08/2021	Final Report	Chris Mills (IoW Council)

Contract

This report describes work commissioned by Isle of Wight Council by an email dated 2nd December 2020. Isle of Wight Council's representative for the contract was Chris Mills. James Fitton and Alistair Clark of JBA Consulting carried out this work.

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Purpose

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1 Introduction

1.1 Context

JBA Consulting (JBA) were commissioned by Isle of Wight Council to undertake an assessment of 7 sites as part of their Level 2 Strategic Flood Risk Assessment (SFRA).

1.2 Methodology

The Level 2 Strategic Flood Risk Assessment is a desk-based assessment of flood risk at a site and provide flood risk information to determine whether the Exception Test will be required and/or development will be viable.

The information is split into the following sections: site details, sources of flood risk, Flood risk management infrastructure, emergency planning, climate change, drainage control and impact mitigation, and recommendations for local plan policy.

1.3 Data Sources

The following data has been used to assess each site:

- EA product 7 data – detailed hydraulic models of the River Medina and River Yar including model outputs.
- Defra Data Service Platform – Flood Zones, RoFSW, flood warning and alert areas, historic flood extents, recorded flood outlines, historic landfill sites, source protection zones, main rivers and reservoir flooding.
- Defra Magic Map – groundwater vulnerability.
- BGS – bedrock and superficial geology, borehole records, and soil types.
- Isle of Wight Level 1 and Level 2 SFRA

1.4 Climate Change

The Environment Agency released updated guidance and uplifts for climate change allowances on the 20th July 2021. Whilst the Isle of Wight is located within the 'South East' River Basin District (RBD), allowances are now allocated to catchments of which the Isle of Wight is its own. Table 1-1 details the change in peak river flow allowances.

Table 1-1: Peak river flow allowances

Allowance (2080s)	Old Uplift (RBD)	New Uplift (Catchment)
Central	35%	33%
Higher Central	45%	49%
Upper End	105%	99%

This guidance was published after the latest EA hydraulic model data was released, however a comparison between the previous allowances and the latest uplifts shows that the previous allowances are greater than the previous uplift with the exception of the 'higher central' allowance. This, therefore provides a conservative estimate of future flood risk and the outputs are deemed appropriate for the purpose of this high-level study.

The Rivers Medina and Yar are tidally influenced near sites HA018, HA044, and HA083. As such the increases in sea level in Table 1-2 should be applied.

Table 1-2: Sea level allowances

Allowance	Total sea level rise (mm)				Cumulative rise (m)
	2000 to 2035	2036 to 2065	2066 to 2099	2096 to 2125	2000 to 2125
Higher Central	200	261	348	393	1.20
Upper End	242	339	474	546	1.60

Further guidance on how to apply sea level allowances can be found here: https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances#sea-level-allowances

1.5 Sites

A list of sites assessed in this study is presented in Table 1-3.

Table 1-3: Level 2 sites

Allocation Number/ reference	Site address	Site area (ha)	Land classification	Proposed allocation type	Proposed development	Yield
HA018/ IPS035	Green Gate Industrial Estate, Thetis Road	0.15	Brownfield	Residential	Detached / semi detached	10
HA035/ IPS342	Land off Gunville Road (west)	1.72	Greenfield	Residential	Standard detached/semis / affordable	20
HA044/ IPS371	Newport Harbour	2.56	Brownfield	Residential led mixed use	Flats / commercial Class E / community uses	250
HA080/ IPS077	Former Sandham Middle School site	2.29	Brownfield	Residential	Standard detached/semis/affordable/flats	84
HA083/ IPS135 & IPS217	Land at Perowne Way, Sandown	10	Greenfield	Residential	Standard detached/semis / affordable	125
HA022/ IPS323	Somerton Farm, Newport Road	9.75	Greenfield	Residential led mixed use with commercial	Standard detached/semis / affordable	80
HA033/ IPS231	Land west of Sylvan Drive	6.51	Greenfield	Residential	Standard detached/semis / affordable	200

1.6 Mapping

Mapping has been produced for each site, detailing the fluvial flood risk, surface water flood risk and impact of climate change. Two maps have been produced for 'HA044 – Newport Harbour' detailing risk in the north and south of the site.

It is noted that the River Medina 1 in 100-year flood extent and climate change mapping is smaller than the Flood Map for Planning Flood Zone 3. These flood extents are part of the approved Medina hydraulic model supplied by the Environment Agency for use in this study and are believed to be accurate. This is present in mapping for the following sites: HA018,

HA035, HA033, and HA044. It is recommended that further modelling is undertaken at the detailed flood risk assessment stage to better understand and visualise the impact of climate change on flood risk at these sites.

1.7 Local Plan Policy

Whilst site specific recommendations have been made for each site, the following recommendations also apply to each site:

Flood Risk Assessments:

- At the planning application stage, a site-specific flood risk assessment and surface water drainage strategy will be required.
- Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage.
- All sources of flooding, particularly the risk of fluvial/tidal and surface water flooding, should be considered as part of a site-specific flood risk assessment.
- Climate change should be assessed using recommended climate change allowances at the time of the assessment (https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances) for the type of development and level of risk. The current allowances were published in February 2016 and updated in July 2021 (see Section 1.4), but may be subject to change in the future.

Guidance for site design and making development safe:

- Development must seek opportunities to reduce overall level of flood risk at the site.
- All development should adopt source control SuDS techniques. Conveyance features should be designed above ground and following natural flow paths where possible. Example features may include swales, attenuation features, green roofs, rainwater capture and reuse and permeable paving.
- Storage for runoff from the development in extreme events should be located out of flood risk areas. The design must ensure that flows resulting from rainfall in excess of a 1 in 100-year event are managed via exceedance routes that minimise the risks to people and property.
- SuDS design must follow Isle of Wight Council guidance, meet the Defra National Non-Statutory Technical Standards, and follow current best design practice (CIRIA Manual 2015).

Appendices

A Site Summary Sheets

Isle of Wight Council

Level 2 SFRA Detailed Site Summary Tables

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Level 2 SFRA Detailed Site Summary Tables

Site code	HA018
Site name	Green Gate Industrial Estate, Thetis Road

Site details	**OS Grid reference**	SZ 49894 95537				
	Area	0.15 Ha				
	Current land use	Brownfield				
	Proposed site use	Residential (10 units)				
	Flood risk vulnerability	More Vulnerable				
Sources of flood risk	**Existing watercourses**	The River Medina is located approximately 85m to the east of the site.				
	Flood history	N/A				
	Fluvial / Tidal	**Proportion of site at risk in Flood Zones**				**FZ3a+70CC**
		FZ3b	**FZ3a**	**FZ2**	**FZ1**	
		TBC	~50%	~60%	~40%	TBC
		Based on the EA's Flood Map for Planning the site is at moderate to high flood risk due to large area of the site being located within the Flood Zones. The eastern half of the site is located within Flood Zones 2 and 3. The western side of the site is located within Flood Zone 1. In this location the risk to the site is combined flood risk from fluvial and tidal sources. Flooding is likely to be inflenced by tide levels in the Medina. Risk to the site is generally low during low tide conditions however this risk is increased during periods of high tide.				
	Surface Water	**Proportion of site at risk (RoFSW)**				
		30-year		**100-year**	**1,000-year**	
		0%		0%	~25%	
		Surface water flood risk within the site is low. Along the eastern boundary and centre of the site, surface water ponds during the 1 in 1,000-year event. Depths along the eastern site boundaries are between 0.15m and 0.3m. Depths within the centre of the site are between 0.15m and 0.6m with a very small area where depths are between 0.6m and 0.9m.				
	Groundwater	**Groundwater Vulnerability**				
		The site is located within an area that is identified by the Environment Agency's groundwater vulnerability mapping as "Medium" risk. There are several boreholes in the area with the closest approximately 190m south-east of the site, located next to River Medina. Here both boreholes, dug to approximately 17m and 20m struck water at 11.2m and 11.5m respectively. Boreholes approximately 260m north-west of the site struck water at a depth of approximately 10m.				
	Reservoir	There is no risk of reservoir flooding.				
	Canal	There are no canals within 100m of the site.				

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Level 2 SFRA Detailed Site Summary Tables

Site code	HA018
Site name	Green Gate Industrial Estate, Thetis Road

<table>
<tr><td rowspan="6">Flood risk management infrastructure</td><td rowspan="2">Defences</td><td>Defence Type</td><td>Standard of Protection</td><td>Condition</td></tr>
<tr><td>No defences present</td><td></td><td></td></tr>
<tr><td colspan="4"></td></tr>
<tr><td rowspan="3">Residual risk</td><td>Culvert / structure blockage?</td><td colspan="2">No structures to pose a blockage risk.</td></tr>
<tr><td>Impounded water body failure?</td><td colspan="2">N/A</td></tr>
<tr><td>Defence breach / overtopping?</td><td colspan="2">Breach Zone
N/A</td></tr>
<tr><td rowspan="2">Emergency planning</td><td>Flood warning</td><td colspan="4">The site is located within the “Cowes, East Cowes, and Newport” Flood Warning Area and the “Isle of Wight Coast” Flood Alert Area</td></tr>
<tr><td>Access and egress</td><td colspan="4">Main access to the site will be via Thetis Road, located off the B3320. This road remains dry during all surface water events. Travelling north-east, the B3320 is at high surface water risk however remains dry to west up to the 1 in 100-year event.</td></tr>
<tr><td rowspan="3">Climate Change</td><td rowspan="2">Climate change allowances for ‘2080s’</td><td>River Basin District – Catchment</td><td>Central</td><td>Higher Central</td><td>Upper End</td></tr>
<tr><td>South East – Isle of Wight</td><td>33%</td><td>49%</td><td>99%</td></tr>
<tr><td colspan="4">The River Medina is tidally influenced within the vicinity of the site. As such the influence of climate change on sea levels should be assessedas well as the change in peak river flow, see Section 1.4 for sea level allowances.</td></tr>
<tr><td>Implications for the site</td><td colspan="4">Climate change is likely to increase fluvial flood risk to the site and should be considered. The potential impact on surface water flood risk should also be considered. See FRA recommendations below.</td></tr>
</table>

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Level 2 SFRA Detailed Site Summary Tables

Site code	HA018
Site name	Green Gate Industrial Estate, Thetis Road

Drainage control and impact mitigation	**Bedrock Geology**	Headon Hill Formation – Mudstone and limestone
	Superficial Geology	Seaclose Park Gravel Member – Sand, clay, gravel
	Soils	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils
	SuDS	Surface water management design will be required based on detailed site investigations, including infiltration testing. SuDS are possible on all sites and conveyance features should be designed above ground and following natural flow paths where possible. Example features may include swales, attenuation features, green roofs, rainwater capture and reuse and permeable paving. Storage for runoff from the develoment in extreme events should be located out of the flood risk area. Due to the size of the site, swales may not be suitable. Features such as green roofs and permeable paving may prove more viable for this site. Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Isle of Wight Council website.
	Groundwater Source Protection Zone	The site is not within an allocated groundwater source protection zone.
	Historic Landfill Site	There are no historic landfill sites within the vicinity of the site.
	Opportunities for flood risk betterment	SuDS should be implemented, following the guidance of Isle of Wight Council, across the site to reduce the current surface water risk and limit runoff rates to greenfield level.
Recommend-ations for Local Plan policy	**Sequential Test and Exception Test requirements**	
	The Sequential Test must be passed. Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all development will be sequentially located within Flood Zone 1. For this site, the Exception Test would be required: • If More Vulnerable and Essential Infrastructure is located in FZ3a or FZ3a plus climate change. • If Highly Vulnerable development is located in FZ2. • If Essential Infrastructure is located in Flood Zone 3b Development will not be permitted in the following scenarios: • Highly Vulnerable development within FZ3a or FZ3a 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	

Isle of Wight Council

Level 2 SFRA Detailed Site Summary Tables

Site code	HA018
Site name	Green Gate Industrial Estate, Thetis Road

Flood risk assessment:

- A site-specific flood risk assessment will be required because the site is within Flood Zone 3a and at risk from sources of flooding other than rivers and the sea. Government guidance on flood risk assessments must be followed (https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications).
- Other sources of flooding, particularly surface water flow routes, should also be considered as part of a site-specific flood risk assessment.
- Detailed surface water modelling should be undertaken to better understand baseline and post-development surface water risk flowing into the site, on site and downstream.

Guidance for site design and making development safe:

- 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 raising of access routes must not impact on floodplain storage capacity.
- Flow routes would need to be preserved if carrying out land-raising within the surface water risk area, including to provide a safe access route.
- SuDS are possible on all sites and a site such as this should be able to implement an exemplar scheme to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.
- All development should adopt source control SuDS techniques. Conveyance features should be designed above ground and following natural flow paths where possible.
- Example features may include swales, attenuation features, green roofs, rainwater capture and reuse and permeable paving.
- The design of SUDS schemes must take into account the seasonally high groundwater table. Infiltration techniques may be ineffective and may pose a pollution risk. SuDS may need to be shallow and take up larger areas. Above ground conveyance and attenuation can be used but care must be taken that groundwater does not enter the SuDS feature and reduce the storage capacity and structural integrity of the design.
- The level of detail and method of assessment of surface water runoff rates and volumes should be appropriate to the scale and risk of the development and should include recommended allowance for climate change and urban creep at the time of the assessment (currently +40% allowance for climate change and a 10% increase in impermeable area for urban creep).
- Storage for runoff from the development in extreme events should be located out of flood risk areas.
- The design must ensure that flows resulting from rainfall in excess of a 1 in 100-year event are managed via exceedance routes that minimise the risks to people and property.
- SuDS design must follow Isle of Wight Council guidance, meet the Defra National Non-Statutory Technical Standards, and follow current best design practice (CIRIA Manual 2015).

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Level 2 SFRA Detailed Site Summary Tables

Site code	HA035
Site name	Land off Gunville Road (west)

Site details	**OS Grid reference**	SZ 47888 89236
	Area	1.72 Ha
	Current land use	Greenfield
	Proposed site use	Residential (20 units)
	Flood risk vulnerability	More vulnerable
Sources of flood risk	**Existing watercourses**	There is an unnamed watercourse that flows through the centre of the site from north-west to east.
	Flood history	N/A
	Fluvial / Tidal	**Proportion of site at risk in Flood Zones** | **FZ3a+70CC** **FZ3b** | **FZ3a** | **FZ2** | **FZ1** TBC | ~20% | ~25% | ~75% | TBC The site is at moderate fluvial flood risk. The centre of the site, either side of the channel is located within Flood Zones 2 and 3. The west and north-east sides of the site are located within Flood Zone 1.
	Surface Water	**Proportion of site at risk (RoFSW)** **30-year** | **100-year** | **1,000-year** ~20% | ~25% | ~35% The site is at a moderate to high risk of surface water flooding with surface water flood risk located around the channel. Surface water flood risk is greatest on the north-east side of the channel. Depths in this area are generally 0.3m to 0.6m during the 1 in 30-year event, with maximum depths of 0.6m to 0.9m. During the 1 in 1,000-year event, depths are up to 1.2m around the channel.
	Groundwater	**Groundwater Vulnerability** The site is located within an area that is identified by the Environment Agency's groundwater vulnerability mapping as "Medium" risk with an area of "High" risk just to the east of the site. There are several boreholes close to the eastern boundary of the site which did not strike water. As the unnamed watercourse flows through the site, areas close to the channel are likely to be at a greater risk of high groundwater levels. Further testing should be undertaken to identify groundwater levels at the site.
	Reservoir	There is no risk of reservoir flooding.
	Canal	There are no canals within 100m of the site.

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Level 2 SFRA Detailed Site Summary Tables

Site code	HA035
Site name	Land off Gunville Road (west)

Flood risk management infrastructure	**Defences**	**Defence Type**	**Standard of Protection**	**Condition**	
		No defences present			
	Residual risk	**Culvert / structure blockage?**	The unnamed watercourse is culverted through Gunville Road at the eastern boundary of the site. A blockage at this structure is likely to increase flood risk within the site and should be investigated as part of a detailed FRA.		
		Impounded water body failure?	N/A		
		Defence breach / overtopping?	**Breach Zone**		
			N/A		
Emergency planning	**Flood warning**	The site is not within an EA flood warning or alert area.			
	Access and egress	This site is likely to be accessed from Gunville Road or Ash Lane. Gunville Road remains dry to the north-east during all surface water events. Along the eastern boundary of the site, Gunville Road is impacted from the 1 in 100-year event upwards. The junction of Ash Lane and Gunville Road is impacted by a surface water flow path from the south-west from the 1 in 30-year event upwards. Depths here are less than 0.3m during the 1 in 30-year event. As the unnamed channel divides the site, safe access and egress should be maintained to both sides of the site.			
Climate Change	**Climate change allowances for '2080s'**	**River Basin District - Catchment**	**Central**	**Higher Central**	**Upper End**
		South East – Isle of Wight	33%	49%	99%
	Implications for the site	Climate change is likely to increase fluvial flood risk to the site and should be considered. The potential impact on surface water flood risk should also be considered. See FRA recommendations below.			

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Level 2 SFRA Detailed Site Summary Tables

Site code	HA035
Site name	Land off Gunville Road (west)

Drainage control and impact mitigation	**Bedrock Geology**	Solent Group – Clay, sand and silt
	Superficial Geology	N/A
	Soils	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils
	SuDS	Surface water management design will be required based on detailed site investigations, including infiltration testing. SuDS are possible on all sites and conveyance features should be designed above ground and following natural flow paths where possible. Example features may include swales, attenuation features, green roofs, rainwater capture and reuse and permeable paving. Storage for runoff from the develoment in extreme events should be located out of the flood risk area. Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Isle of Wight Council website.
	Groundwater Source Protection Zone	The site is not within an allocated groundwater source protection zone.
	Historic Landfill Site	There are no historic landfill sites within the vicinity of the site. The nearest historic landfill site is approximately 260m north of the site.
	Opportunities for flood risk betterment	SuDS should be implemented, following the guidance of Isle of Wight Council, across the site to reduce the current surface water risk and limit runoff rates to greenfield level. There is an opportunity to reduce flood risk downstream through management of flow paths within the site. This could be achieved by capturing the surface water flow path in the south-east of the site or storing water further upstream within the site.
Recommend-ations for Local Plan policy	**Sequential Test and Exception Test requirements**	
	The Sequential Test must be passed. Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all development will be sequentially located within Flood Zone 1. For this site, the Exception Test would be required: • If More Vulnerable and Essential Infrastructure is located in FZ3a or FZ3a plus climate change. • If Highly Vulnerable development is located in FZ2. • If Essential Infrastructure is located in Flood Zone 3b Development will not be permitted in the following scenarios: • Highly Vulnerable development within FZ3a or FZ3a 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	

Isle of Wight Council

Level 2 SFRA Detailed Site Summary Tables

Site code	HA035
Site name	Land off Gunville Road (west)

Flood risk assessment:

- A site-specific flood risk assessment will be required because the site is over 1ha in area, within Flood Zone 3a, and at risk from sources of flooding other than rivers and the sea. Government guidance on flood risk assessments must be followed (https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications).
- Other sources of flooding, particularly surface water flow routes, should also be considered as part of a site-specific flood risk assessment.
- Detailed surface water modelling should be undertaken to better understand baseline and post-development surface water risk flowing into the site, on site and downstream.
- Detailed modelling should be undertaken to assess the residual risk of flooding from a blockage of the Gunville Road culvert. If an access route across the channel is made, the risk of blockage at this structure should also be assessed.
- Infiltration testing should be undertaken due to the underlying geology, which suggests the potential for high groundwater levels within the site.

Guidance for site design and making development safe:

- Residential developments are not permitted within Flood Zone 3b and as such housing should be sequentially located within the eastern and western sides of the site away from the channel.
- Resilience measures will be required if buildings are situated in the flood risk area.
- Safe access and egress should be demonstrated in the 1 in 100 plus climate change event and raising of access routes must not impact on floodplain storage capacity.
- Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change allowance, including to provide a safe access route.
- Flow routes would need to be preserved if carrying out land-raising within the surface water risk area, including to provide a safe access route. This is likely to be required to provide an access route to the western side if the site is to be accessed from Gunville Road.
- SuDS are possible on all sites and a greenfield site such as this should be able to implement an exemplar scheme to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc.
- The level of detail and method of assessment of surface water runoff rates and volumes should be appropriate to the scale and risk of the development and should include recommended allowance for climate change and urban creep at the time of the assessment (currently +40% allowance for climate change and a 10% increase in impermeable area for urban creep).

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Level 2 SFRA Detailed Site Summary Tables

Site code	HA044
Site name	Newport Harbour

Site details	**OS Grid reference**	SZ 50222 89549				
	Area	2.56 Ha				
	Current land use	Brownfield – The site currently consists of car parking in the south, and commercial units and the harbour in the north.				
	Proposed site use	Mixed Use - Residential and commercial (250 units)				
	Flood risk vulnerability	More vulnerable				
Sources of flood risk	**Existing watercourses**	The River Medina flows along the western boundary of the site. The south of the site is located near the confluence of the River Medina from the east and the Lukely Brook from the west.				
	Flood history	N/A				
	Fluvial / Tidal	**Proportion of site at risk in Flood Zones**				**FZ3a+70CC**
		FZ3b	**FZ3a**	**FZ2**	**FZ1**	
		TBC	~80%	~85%	~15%	TBC
		A large proportion of the site is at high fluvial / Tidal flood risk. The majority of the western and southern side of the site is located within Flood Zones 2 and 3. The east and north-east corners of the site are located within Flood Zone 1. In this location the risk to the site is combined flood risk from fluvial and tidal sources. Flooding is likely to be inflenced by tide levels in the Medina. Risk to the site is generally low during low tide conditions however this risk is increased during periods of high tide. Downstream of the A3020 the Medina model is 1D only and as such only the channel is shown within the modelled flood extents. Mapping that accompanied the level 2 SFRA suggests climate change is likely to increase the extent of flood zone 3a and inundate the majority of the site.				
	Surface Water	**Proportion of site at risk (RoFSW)**				
		30-year		**100-year**	**1,000-year**	
		<5%		<10%	~15%	
		Surface water flood risk within this site is low to moderate. A surface water flow path flows through the north of the site during the 1 in 30-year event upwards as a result of the natural topography. Depths here during the 1 in 30-year event are up to 0.3m and up to 0.6m during the 1 in 100-year event. There are small areas of ponding in the south-east of the site during the 1 in 1,000-year events.				
	Groundwater	**Groundwater Vulnerability**				
		The site is located within an area that is identified by the Environment Agency's groundwater vulnerability mapping as "Medium- High" and "High" risk. There are several boreholes close to the site. Several of these boreholes, on the west bank of the Medina, experienced water seepage at 2-3m below the surface. As the River Medina flows through along the western boundary of the site, areas close to the channel are likely to be at a greater risk of high groundwater levels. Further testing should be undertaken to identify groundwater levels at the site.				

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Level 2 SFRA Detailed Site Summary Tables

Site code	HA044
Site name	Newport Harbour

	Reservoir	There is no risk of reservoir flooding.		
	Canal	There are no canals within 100m of the site.		
Flood risk management infrastructure	**Defences**	**Defence Type**	**Standard of Protection**	**Condition**
		No defences present		
	Residual risk	**Culvert / structure blockage?**	The River Medina and Lkely Brook are culverted at several locations near the southern part of the site. Although reasonably large structures, a blockage at may increase residual risk to the site.	
		Impounded water body failure?	N/A	
		Defence breach / overtopping?	**Breach Zone**	
			There is risk of overtopping of the harbour walls when estuary levels rise in combination with a fluvial event.	
Emergency planning	**Flood warning**	The site is located within several alert areas outlined below: • The south-west corner is located within the “Lukely Brook” Flood Alert Area and the “Carisbrooke and Honey Hill on the Lukely Brook” Flood Warning Area. • The south-east corner is located within the “Blackwater and Newport on the River Medina” Flood Alert Area and the “River Medina” Flood Warnng Area. • The centre and north are located within the “Cowes, East Cowes, and Newport” Flood Alert Area and the “Isle of Wight coast” Flood Warning Area.		
	Access and egress	This site is likely to be accessed from the surrounding roads: To the north, Fairlee Road is impacted by a surface water flow path from the 1 in 30-year event upwards. Depths here are up to 0.6m during the 1 in 30-year event and up to 0.9m during the 1 in 1,000-year event. To the south of the A3020 most roads are impacted during the 1 in 1,000-year event. Hunny Hill is likely to be impacted from the 1 in 30-year upwards within the vicinity of the channel.		
Climate Change	**Climate change allowances for ‘2080s’**	**River Basin District - Catchment**	**Central**	**Higher Central**	**Upper End**
		South East – Isle of Wight	33%	49%	99%
		The River Medina is tidally influenced within the vicinity of the site. As such the influence of climate change on sea levels should be assessed as well as the change in peak river flow, see Section 1.4 for sea level allowances.			
	Implications for the site	Climate change is likely to increase fluvial flood risk to the site and should be considered. The potential impact on surface water flood risk should also be considered. See FRA recommendations below.			

Isle of Wight Council

Level 2 SFRA Detailed Site Summary Tables

Site code	HA044
Site name	Newport Harbour

Drainage control and impact mitigation	**Bedrock Geology**	Solent Group – Clay, sand and silt
	Superficial Geology	N/A
	Soils	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils.
	SuDS	Surface water management design will be required based on detailed site investigations, including infiltration testing. SuDS are possible on all sites and conveyance features should be designed above ground and following natural flow paths where possible. Example features may include swales, attenuation features, green roofs, rainwater capture and reuse and permeable paving. Storage for runoff from the develoment in extreme events should be located out of the flood risk area. Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Isle of Wight Council website.
	Groundwater Source Protection Zone	The site is not within an allocated groundwater source protection zone.
	Historic Landfill Site	There are no historic landfill sites within the site boundary. There are several located to the east of the site near Fairlee Road and Victoria Road.
	Opportunities for flood risk betterment	SuDS should be implemented, following the guidance of Isle of Wight Council, across the site to reduce the current surface water risk and limit runoff rates to greenfield level.
Recommend-ations for Local Plan policy	**Sequential Test and Exception Test requirements**	
	The Sequential Test must be passed. Only once the Sequential Test is passed should the Exception Test be applied. It is expected that all development will be sequentially located within Flood Zone 1, however, due to the extent of the flood zones this may not be possible. For this site, the Exception Test would be required: • If More Vulnerable and Essential Infrastructure is located in FZ3a or FZ3a plus climate change. • If Highly Vulnerable development is located in FZ2. • If Essential Infrastructure is located in Flood Zone 3b Development will not be permitted in the following scenarios: • Highly Vulnerable development within FZ3a or FZ3a 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: • A site-specific flood risk assessment will be required because the site is over 1ha in area within Flood Zone 3a and at risk from sources of flooding other than rivers and the sea. Government guidance on flood risk assessments must be followed (https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications). • Other sources of flooding, particularly surface water flow routes, should also be considered as part of a site-specific flood risk assessment. • Detailed modelling should be undertaken at the site to understand the relationship between fluvial and tidal events within the River Medina and how the risk from the combination of the two may impact the site.	

Site code	HA044
Site name	Newport Harbour

	• Detailed surface water modelling should be undertaken to better understand baseline and post-development surface water risk flowing into the site, on site and downstream. • A detailed assessment of the risk and location of high groundwater levels and groundwater emergence should be undertaken, including groundwater monitoring during the winter months. **Guidance for site design and making development safe:** • Safe access and egress should be demonstrated in the 1 in 100 plus climate change event and raising of access routes must not impact on floodplain storage capacity. • Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change allowance, including to provide a safe access route. • Non-residential ground floor uses such as car parking will reduce the footprint of the building and its impact on flood extents. Detailed modelling should be undertaken to determine the requirement for compensation storage • Resilience measures will be required if buildings are situated in the flood risk area. It is proposed that the more vulnerable residential units will be located above the ground floor of the developments with commercial uses occupying the ground floor space. If these units are designed to flood or located within the flood risk areas of the site, safe access routes to the buildings should be maintained and emergency plans in place to evacuate during flood events. • Mitigation for seasonal high groundwater levels must be considered (for example by raising finished floor levels to an appropriate height above ground level). • Flow routes would need to be preserved if carrying out land-raising within the surface water risk area, including to provide a safe access route. • SuDS are possible on all sites and a site such as this should be able to implement an exemplar scheme to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc. • The design of SUDS schemes must take into account the seasonally high groundwater table. Infiltration techniques may be ineffective and may pose a pollution risk. SuDS may need to be shallow and take up larger areas. Above ground conveyance and attenuation can be used but care must be taken that groundwater does not enter the SuDS feature and reduce the storage capacity and structural integrity of the design. • The level of detail and method of assessment of surface water runoff rates and volumes should be appropriate to the scale and risk of the development and should include recommended allowance for climate change and urban creep at the time of the assessment (currently +40% allowance for climate change and a 10% increase in impermeable area for urban creep).

Isle of Wight Council

Level 2 SFRA Detailed Site Summary Tables

Site code	HA080
Site name	Former Sandham middle School site

Site details	**OS Grid reference**	SZ 59106 84813				
	Area	2.29 Ha				
	Current land use	Brownfield				
	Proposed site use	Residential (84 units)				
	Flood risk vulnerability	More vulnerable				
Sources of flood risk	**Existing watercourses**	There is an unnamed watercourse located approximately 100m to the north-west of the site. There are several unnamed ditches and small ponds marked on OS mapping to the north of site and along the eastern boundary of the site.				
	Flood history	The north-west third of the site is located within the recorded outlines extent of a flood event that occurred in 1900. Whilst they are shown in the EA's Recorded Flood Outlines, they are not included within current flood mapping or the EA's Historic Flood Outlines.				
	Fluvial / Tidal	**Proportion of site at risk in Flood Zones**				**FZ3a+70CC**
		FZ3b	**FZ3a**	**FZ2**	**FZ1**	
		0%	0%	0%	100%	0%
		The entire site is located within Flood Zone 1, however this is likely due to the unnamed watercourse that flows to the west of the site not being represented within the EA Flood Maps. As such the RoFSW layer has been used as a proxy for fluvial flood risk within the site, see below.				
	Surface Water	**Proportion of site at risk (RoFSW)**				
		30-year		**100-year**	**1,000-year**	
		<5%		<5%	~5%	
		Surface water flood risk within the site is generally low. There are areas of high risk along the eastern boundary of the site due to unnamed ditches. The site is impacted by two surface water flow paths. The first during the 1 in 1,000-year event which originates to the south-west of the site and crosses Golf Link Road into the north of the site. Depths here are generally less than 0.15m withn the flow path and rise to up to .6m at the northern boundary of the site. The second occurs within the south-west corner of the site from the 1 in 30-year event upwards. Here depths are between 0.15m and 0.3m during the 1 in 30-year event.				
	Groundwater	**Groundwater Vulnerability**				
		The site is located within an area that is identified by the Environment Agency's groundwater vulnerability mapping as "Unproductive". To the north of the site, risk is "Low" and to the east and west, risk is "High". There are several boreholes close to the site located to the north in the "Low" vulnerability area. Several of these boreholes experienced water seepage at 3-4.5m below the surface. Soil types at the site suggest drainage may be impeded.				
	Reservoir	There is no risk of reservoir flooding.				
	Canal	There are no canals within 100m of the site.				

Isle of Wight Council

Level 2 SFRA Detailed Site Summary Tables

Site code	HA080
Site name	Former Sandham middle School site

Flood risk management infrastructure	**Defences**	**Defence Type**	**Standard of Protection**	**Condition**	
		No defences present			
	Residual risk	**Culvert / structure blockage?**	No structures to pose a blockage risk.		
		Impounded water body failure?	N/A		
		Defence breach / overtopping?	**Breach Zone**		
			N/A		
Emergency planning	**Flood warning**	The site is not within an EA flood warning or alert area.			
	Access and egress	The site is likely to be access from Golf Link Road, which remains dry travelling south during surface water events. The road is partially impacted by a surface water flow path during the 1 in 1,000-year event with depths of up to 0.15m. To the north the road is impacted from the 1 in 30-year event upwards.			
Climate Change	**Climate change allowances for '2080s'**	**River Basin District - Catchment**	**Central**	**Higher Central**	**Upper End**
		South East – Isle of Wight	33%	49%	99%
	Implications for the site	Climate change is likely to increase fluvial flood risk to the site and should be considered. The potential impact on surface water flood risk should also be considered. See FRA recommendations below.			

Isle of Wight Council

Level 2 SFRA Detailed Site Summary Tables

Site code	HA080
Site name	Former Sandham middle School site

Drainage control and impact mitigation	**Bedrock Geology**	Lower Greensand Group – Sandstone and mudstone
	Superficial Geology	The northern half of the site has deposits of Alluvium – Clay, silt and sand.
	Soils	Slightly acid loamy and clayey soils with impeded drainage.
	SuDS	Surface water management design will be required based on detailed site investigations, including infiltration testing. SuDS are possible on all sites and conveyance features should be designed above ground and following natural flow paths where possible. Example features may include swales, attenuation features, green roofs, rainwater capture and reuse and permeable paving. Storage for runoff from the develoment in extreme events should be located out of the flood risk area. Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Isle of Wight Council website.
	Groundwater Source Protection Zone	The site is not within an allocated groundwater source protection zone.
	Historic Landfill Site	There are no historic landfill sites within the vicinity of the site. There are several located to the east of the site.
	Opportunities for flood risk betterment	SuDS should be implemented, following the guidance of Isle of Wight Council, across the site to reduce the current surface water risk and limit runoff rates to greenfield level. Capturing and storing the surface water flow path through the site would reduce the volume of water entering the unnamed watercourse to the north of the site, reducing the impact of flooding downstream.
Recommend-ations for Local Plan policy	**Sequential Test and Exception Test requirements**	
	The site is within Flood Zone 1 but at risk from other sources of flooding. The Sequential Test must be passed. The Exception Test is not required under the NPPF, but it must be shown that the development will be safe for its lifetime and the risk can be managed through a sequential approach to design.	
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers	
	Flood risk assessment: • A site-specific flood risk assessment will be required because the site is over 1ha in area, and at risk from sources of flooding other than rivers and the sea. Government guidance on flood risk assessments must be followed (https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications). • Other sources of flooding, particularly surface water flow routes, should also be considered as part of a site-specific flood risk assessment. • Detailed surface water modelling should be undertaken to better understand baseline and post-development surface water risk flowing into the site, on site and downstream. • A detailed assessment of the risk and location of high groundwater levels and groundwater emergence should be undertaken, including groundwater monitoring during the winter months. **Guidance for site design and making development safe:** • Safe access and egress should be demonstrated in the 1 in 100 plus climate change event and raising of access routes must not impact on floodplain storage capacity.	

Site code	HA080
Site name	Former Sandham middle School site

	• Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change allowance, including to provide a safe access route. • Resilience measures will be required if buildings are situated in the flood risk area. • As much of the centre of the site is not at risk of fluvial or surface water flooding the majority of the development should be located in this area. • Mitigation for seasonal high groundwater levels must be considered (for example by raising finished floor levels to an appropriate height above ground level). • Flow routes would need to be preserved if carrying out land-raising within the surface water risk area, including to provide a safe access route. • SuDS are possible on all sites and a site such as this should be able to implement an exemplar scheme to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc. • The design of SUDS schemes must take into account the seasonally high groundwater table. Infiltration techniques may be ineffective and may pose a pollution risk. SuDS may need to be shallow and take up larger areas. Above ground conveyance and attenuation can be used but care must be taken that groundwater does not enter the SuDS feature and reduce the storage capacity and structural integrity of the design. • The level of detail and method of assessment of surface water runoff rates and volumes should be appropriate to the scale and risk of the development and should include recommended allowance for climate change and urban creep at the time of the assessment (currently +40% allowance for climate change and a 10% increase in impermeable area for urban creep).

Isle of Wight Council

Level 2 SFRA Detailed Site Summary Tables

Site code	HA083
Site name	Land at Perowne Way, Sandown

Site details	**OS Grid reference**	SZ 59588 85203				
	Area	10 Ha				
	Current land use	Greenfield				
	Proposed site use	Residential (125 units)				
	Flood risk vulnerability	More vulnerable				
Sources of flood risk	**Existing watercourses**	There are two unnamed watercourses the flow along the northern boundary of the site from west and east which converge with the River Yar north of the site.				
	Flood history	The north of the site is located within the recorded outlines extent of a flood event that occurred in 1900. Whilst they are shown in the EA's Recorded Flood Outlines, they are not included within current flood mapping or the EA's Historic Flood Outlines. The north-east and north-west corners of the site have small areas impacted by the River Yar in 2000.				
	Fluvial / Tidal	**Proportion of site at risk in Flood Zones**				**FZ3a+70CC**
		FZ3b	**FZ3a**	**FZ2**	**FZ1**	
		TBC	<5%	<5%	>95%	TBC
		Low fluvial flood risk. Small areas along the northern site boundary are located within Flood Zones 2 and 3. The remainder of the site is within Flood Zone 1.				
	Surface Water	**Proportion of site at risk (RoFSW)**				
		30-year		**100-year**	**1,000-year**	
		<5%		<5%	<5%	
		Surface water flood risk within the site is low. A flow path originating along Browne Way travels along Sandham Close and into the western side of the site during the 1 in 30-year event. Depths here range from up to 0.6m during the 1 in 30-year event to up to 0.9m during the 1 in 1,000-year event.				
	Groundwater	**Groundwater Vulnerability**				
		The site is located within an area that is identified by the Environment Agency's groundwater vulnerability mapping as "High" risk. The closest borehole record, located next to the western boundary of the site struck water at a depth of 8m below the surface. Soil types at the site suggest drainage may be impeded.				
	Reservoir	There is no risk of reservoir flooding.				
	Canal	There are no canals within 100m of the site.				

Isle of Wight Council

Level 2 SFRA Detailed Site Summary Tables

Site code	HA083
Site name	Land at Perowne Way, Sandown

Flood risk management infrastructure	**Defences**	**Defence Type**	**Standard of Protection**	**Condition**	
		No defences present			
	Residual risk	**Culvert / structure blockage?**	No structures to pose a blockage risk.		
		Impounded water body failure?	N/A		
		Defence breach / overtopping?	**Breach Zone**		
			N/A		
Emergency planning	**Flood warning**	The northern boundary of the site is located against the “Sandown, Brading and Bembridge on the Eastern Yar” Flood Warning Area and the “Eastern Yar” Flood Alert Area.			
	Access and egress	This site is likely to be accessed from Sandham close, Perowne Way, or Brook Close. All three roads remain dry up to the 1 in 1,000-year event where depths are up to 0.3m.			
Climate Change	**Climate change allowances for ‘2080s’**	**River Basin District - Catchment**	**Central**	**Higher Central**	**Upper End**
		South East – Isle of Wight	33%	49%	99%
	Implications for the site	Climate change is likely to increase fluvial flood risk to the site and should be considered. The potential impact on surface water flood risk should also be considered. See FRA recommendations below.			

Isle of Wight Council

Level 2 SFRA Detailed Site Summary Tables

Site code	HA083
Site name	Land at Perowne Way, Sandown

Drainage control and impact mitigation	**Bedrock Geology**	Wealden Group – Mudstone, Siltstone and Sandstone
	Superficial Geology	Alluvium – Clay, silt and sand
	Soils	Slightly acid loamy and clayey soils with impeded drainage.
	SuDS	Surface water management design will be required based on detailed site investigations, including infiltration testing. SuDS are possible on all sites and conveyance features should be designed above ground and following natural flow paths where possible. Example features may include swales, attenuation features, green roofs, rainwater capture and reuse and permeable paving. Storage for runoff from the develoment in extreme events should be located out of the flood risk area. Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Isle of Wight Council website.
	Groundwater Source Protection Zone	The site is not within an allocated groundwater source protection zone.
	Historic Landfill Site	There are no historic landfill sites within the vicinity of the site.
	Opportunities for flood risk betterment	SuDS should be implemented, following the guidance of Isle of Wight Council, across the site to reduce the current surface water risk and limit runoff rates to greenfield level. Capturing and storing the surface water flow path through the site would reduce the volume of water entering the unnamed watercourse to the north of the site, reducing the impact of flooding downstream.
Recommend-ations for Local Plan policy	**Sequential Test and Exception Test requirements**	
	The site is almost entirely within Flood Zone 1 but at risk from other sources of flooding. The Sequential Test must be passed. The Exception Test is not required under the NPPF, but it must be shown that the development will be safe for its lifetime and the risk can be managed through a sequential approach to design.	
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers	
	Flood risk assessment: • A site-specific flood risk assessment will be required because the site is over 1ha in area within Flood Zone 1 and at risk from sources of flooding other than rivers and the sea. Government guidance on flood risk assessments must be followed (https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications). • Other sources of flooding, particularly surface water flow routes, should also be considered as part of a site-specific flood risk assessment. • Detailed surface water modelling should be undertaken to better understand baseline and post-development surface water risk flowing into the site, on site and downstream. • A detailed assessment of the risk and location of high groundwater levels and groundwater emergence should be undertaken, including groundwater monitoring during the winter months. **Guidance for site design and making development safe:** • As the centre and south of the site remain mostly dry, it should be possible to locate development within flood zone 1. Climate change is likely to increase flood risk in the north	

Site code	HA083
Site name	Land at Perowne Way, Sandown

	of the site and this should be assessed as part of a detailed flood risk assessment for the site. • The River Yar is tidally influenced,the influence of higher sea levels on flood risk to the site should be investigated and applied if appropriate. • Safe access and egress should be demonstrated in the 1 in 100 plus climate change event and raising of access routes must not impact on floodplain storage capacity. • Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change allowance, including to provide a safe access route. • Resilience measures will be required if buildings are situated in the flood risk area. • Mitigation for seasonal high groundwater levels must be considered (for example by raising finished floor levels to an appropriate height above ground level). • Flow routes would need to be preserved if carrying out land-raising within the surface water risk area, including to provide a safe access route. • SuDS are possible on all sites and a site such as this should be able to implement an exemplar scheme to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc. • The design of SUDS schemes must take into account the seasonally high groundwater table. Infiltration techniques may be ineffective and may pose a pollution risk. SuDS may need to be shallow and take up larger areas. Above ground conveyance and attenuation can be used but care must be taken that groundwater does not enter the SuDS feature and reduce the storage capacity and structural integrity of the design. • The level of detail and method of assessment of surface water runoff rates and volumes should be appropriate to the scale and risk of the development and should include recommended allowance for climate change and urban creep at the time of the assessment (currently +40% allowance for climate change and a 10% increase in impermeable area for urban creep).

Isle of Wight Council

Level 2 SFRA Detailed Site Summary Tables

Site code	HA022
Site name	Somerton Farm, Newport Road

Site details	**OS Grid reference**	SZ 49211 94145				
	Area	15.25 Ha				
	Current land use	Greenfield				
	Proposed site use	Residential and commercial (80 units)				
	Flood risk vulnerability	More Vulnerable				
Sources of flood risk	**Existing watercourses**	The River Medina is located approximately 540m east of the site. There are a series of ditches within the site which drain towards the River Medina.				
	Flood history	N/A				
	Fluvial / Tidal	**Proportion of site at risk in Flood Zones**				**FZ3a+70CC**
		FZ3b	**FZ3a**	**FZ2**	**FZ1**	
		0%	0%	0%	0%	0%
		The entire site is located within Flood Zone 1, however this is likely due to the unnamed watercourse that flows to the west of the site not being represented within the EA Flood Maps. As such the RoFSW layer has been used as a proxy for fluvial flood risk within the site, see below.				
	Surface Water	**Proportion of site at risk (RoFSW)**				
		30-year		**100-year**	**1,000-year**	
		<5%		<5%	<5%	
		Surface water flood risk within this site is low. Surface water risk is mainly located in the north of the site, associated with the unnamed ditches. The 1 in 30-year depths within this part of the site are less than 0.15m. The 1 in 100-year depths are generally less than 0.15m and up to 0.3m during the 1 in 1,000-year event. Note, it appears that the ditches in the south of the site are not represented within the RoFSW mapping.				
	Groundwater	**Groundwater Vulnerability**				
		The site is located within an area that is identified by the Environment Agency's groundwater vulnerability mapping as "Medium" risk. There is one borehole record within the site, however details for this record are not available. The closest available borehole record is located to the north-west in the Northwood Business Estate. Water was struck at approximately 8m beneath the surface.				
	Reservoir	There is no risk of reservoir flooding.				
	Canal	There are no canals within 100m of the site.				

Isle of Wight Council

Level 2 SFRA Detailed Site Summary Tables

Site code	HA022
Site name	Somerton Farm, Newport Road

Flood risk management infrastructure	**Defences**	**Defence Type**	**Standard of Protection**	**Condition**	
		No defences present			
	Residual risk	**Culvert / structure blockage?**	OS mapping indicates that the unnamed ditches may be culverted at several locations within the site.		
		Impounded water body failure?	N/A		
		Defence breach / overtopping?	**Breach Zone**		
			N/A		
Emergency planning	**Flood warning**	The site is not within an EA flood warning or alert area.			
	Access and egress	The site is likely to be accessed from Newport Road. Along the north-west boundary, Newport Road is likely to be impacted from the 1 in 30-year event upwards. Depths here are up to 0.6m during the 1 in 1,000-year event			
Climate Change	**Climate change allowances for '2080s'**	**River Basin District - Catchment**	**Central**	**Higher Central**	**Upper End**
		South East – Isle of Wight	33%	49%	99%
	Implications for the site	Climate change is likely to increase fluvial flood risk to the site and should be considered. The potential impact on surface water flood risk should also be considered. See FRA recommendations below.			
Drainage control and impact mitigation	**Bedrock Geology**	Solent Group – Clay, sandstone and silt			
	Superficial Geology	The western half of the site has superficial deposits of Sand and Gravel. There are no superficial deposits in the east of the site.			
	Soils	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils			
	SuDS	Surface water management design will be required based on detailed site investigations, including infiltration testing. SuDS are possible on all sites and conveyance features should be designed above ground and following natural flow paths where possible. Example features may include swales, attenuation features, green roofs, rainwater capture and reuse and permeable paving. Storage for runoff from the develoment in extreme events should be located out of the flood risk area. Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Isle of Wight Council website.			
	Groundwater Source Protection Zone	The site is not within an allocated groundwater source protection zone.			
	Historic Landfill Site	There are no historic landfill sites within the vicinity of the site.			
	Opportunities for flood risk betterment	SuDS should be implemented, following the guidance of Isle of Wight Council, across the site to reduce the current surface water risk and limit runoff rates to greenfield level.			
	Sequential Test and Exception Test requirements				

Site code	HA022
Site name	Somerton Farm, Newport Road

Recommend-ations for Local Plan policy	The site is within Flood Zone 1 but at risk from other sources of flooding. The Sequential Test must be passed. The Exception Test is not required under the NPPF, but it must be shown that the development will be safe for its lifetime and the risk can be managed through a sequential approach to design.
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers
	Flood risk assessment: • A site-specific flood risk assessment will be required because the site is larger than 1ha and at risk from sources of flooding other than rivers and the sea. Government guidance on flood risk assessments must be followed (https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications). • Other sources of flooding, particularly surface water flow routes, should also be considered as part of a site-specific flood risk assessment. • Detailed surface water modelling should be undertaken to better understand baseline and post-development surface water risk flowing into the site, on site and downstream. • A detailed assessment of the risk and location of high groundwater levels and groundwater emergence should be undertaken, including groundwater monitoring during the winter months. **Guidance for site design and making development safe:** • Whilst the site is generally at low risk of flooding, the unnamed drains that flow through the middle and south of the site are not well represented within existing mapping and may increase flood risk in these areas of the site. • These drains appear to be culverted within the site and as such blockage modelling should be undertaken to assess residual risk to the site. Further investigations should be made on site to identify any other potential blockage locations within the site. • Development should be steered away from the surface water flood risk areas of the site, which are located around the ditches and along the north-eastern boundary of the site. • Where areas of the site are at risk of flooding, development types of a lower vulnerability, such as gardens, car parking and other water compatible developments could be located in these areas. • Given the size of the site and the area which remains dry it should be possible to locate residential dwellings outside of the flood risk areas. • Safe access and egress should be demonstrated in the 1 in 100 plus climate change event and raising of access routes must not impact on floodplain storage capacity. • Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change allowance, including to provide a safe access route. • Resilience measures will be required if buildings are situated in the flood risk area. • Mitigation for seasonal high groundwater levels must be considered (for example by raising finished floor levels to an appropriate height above ground level). • Flow routes would need to be preserved if carrying out land-raising within the surface water risk area, including to provide a safe access route. • SuDS are possible on all sites and a site such as this should be able to implement an exemplar scheme to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc. • The design of SUDS schemes must take into account the seasonally high groundwater table. Infiltration techniques may be ineffective and may pose a pollution risk. SuDS may need to be shallow and take up larger areas. Above ground conveyance and attenuation can be used but care must be taken that groundwater does not enter the SuDS feature and reduce the storage capacity and structural integrity of the design. • The level of detail and method of assessment of surface water runoff rates and volumes should be appropriate to the scale and risk of the development and should include recommended allowance for climate change and urban creep at the time of the assessment

Site code	HA022
Site name	Somerton Farm, Newport Road

	(currently +40% allowance for climate change and a 10% increase in impermeable area for urban creep).

Isle of Wight Council

Level 2 SFRA Detailed Site Summary Tables

Site code	HA033
Site name	Land west of Sylvan Drive

Site details	**OS Grid reference**	SZ 49057 89435				
	Area	10.2 Ha				
	Current land use	Greenfield				
	Proposed site use	Residential (200 units)				
	Flood risk vulnerability	More vulnerable				
Sources of flood risk	**Existing watercourses**	There is an unnamed watercourse that flows along the northern boundary of the site from west to east.				
	Flood history	N/A				
	Fluvial / Tidal	**Proportion of site at risk in Flood Zones**				**FZ3a+70CC**
		FZ3b	**FZ3a**	**FZ2**	**FZ1**	
		TBC	<5%	<5%	~95%	TBC
		Low to moderate fluvial flood risk. There is a small area along the northern boundary of the site that is within Flood Zones 2 and 3. The majority of the site is located within Flood Zone 1.				
	Surface Water	**Proportion of site at risk (RoFSW)**				
		30-year	**100-year**	**1,000-year**		
		<5%	<10%	<10%		
		Surface water flood risk within this site is low. Surface water risk within the site is mainly situated along the northern boundary of the site around the unnamed watercourse. Depths here range between up to 0.6m during the 1 in 30-year event to 1.2m during the 1 in 1,000-year event. There is a surface water flow path that develops within the centre of the site during the 1 in 1,000-year event, which flows towards the unnamed watercourse. Depths in this flow path are up to 0.15m.				
	Groundwater	**Groundwater Vulnerability**				
		The site is located within an area that is identified by the Environment Agency's groundwater vulnerability mapping as "Medium" risk. There are two borehole records within the site, located at the north-western and south-western boundaries and dug to depths of 3.2m and 5.18m respectively. Neither record documents a level at which water was struck.				
	Reservoir	There is no risk of reservoir flooding.				
	Canal	There are no canals within 100m of the site.				

Isle of Wight Council

Level 2 SFRA Detailed Site Summary Tables

Site code	HA033
Site name	Land west of Sylvan Drive

Flood risk management infrastructure	**Defences**	**Defence Type**	**Standard of Protection**	**Condition**	
		No defences present			
	Residual risk	**Culvert / structure blockage?**	OS mapping indicates a culvert may be present at the north-west boundary of the site. This is likely to be a short culvert to allow access across the watercourse into the adjacent fields. Although relatively short a blockage may increase residual risk within the site.		
		Impounded water body failure?	N/A		
		Defence breach / overtopping?	**Breach Zone**		
			N/A		
Emergency planning	**Flood warning**	The site is not within an EA flood warning or alert area.			
	Access and egress	This site is likely to be accessed from Sylvan Drive. Within the vicinity of the site, tis road remains dry up to the 1 in 1,000-year. Travelling east, towards Newport, Sylvan Road is at high risk of surface water flooding from the 1 in 30-year event upwards with depths of up to 0.9m. Travelling west, the surrounding roads are also impacted from the 1 in 30-year event upwards with 1 in 30-year depths of up 0.15-0.6m.			
Climate Change	**Climate change allowances for '2080s'**	**River Basin District - Catchment**	**Central**	**Higher Central**	**Upper End**
		South East – Isle of Wight	33%	49%	99%
	Implications for the site	Climate change is likely to increase fluvial flood risk to the site and should be considered. The potential impact on surface water flood risk should also be considered. See FRA recommendations below.			

Isle of Wight Council

Level 2 SFRA Detailed Site Summary Tables

Site code	HA033
Site name	Land west of Sylvan Drive

Drainage control and impact mitigation	**Bedrock Geology**	Solent Group – Clay, sand and silt
	Superficial Geology	N/A
	Soils	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils
	SuDS	Surface water management design will be required based on detailed site investigations, including infiltration testing. SuDS are possible on all sites and conveyance features should be designed above ground and following natural flow paths where possible. Example features may include swales, attenuation features, green roofs, rainwater capture and reuse and permeable paving. Storage for runoff from the develoment in extreme events should be located out of the flood risk area. As the site slopes from south to north, SuDS that drain by gravity may be effective within the site. Further information on SuDS is available in the CIRIA SuDS Manual (2015) and on the Isle of Wight Council website.
	Groundwater Source Protection Zone	The eastern half of the site is included within Zone 1 (Inner Catchment) of the source protection zone. This zone is intended to protect abstraction points from toxic chemicals and water-bourne diseases. The remaining area of the site is classified as Zone 2 (Outer Catchment).
	Historic Landfill Site	The site is not within an allocated groundwater source protection zone.
	Opportunities for flood risk betterment	SuDS should be implemented, following the guidance of Isle of Wight Council, across the site to reduce the current surface water risk and limit runoff rates to greenfield level.
Recommend-ations for Local Plan policy	**Sequential Test and Exception Test requirements**	
	The majority of the site is within Flood Zone 1 but at risk from other sources of flooding. The Sequential Test must be passed. The Exception Test is not required under the NPPF, but it must be shown that the development will be safe for its lifetime and the risk can be managed through a sequential approach to design. Although the northern boundary is located within Flood Zones 2 and 3, this is only a very small proportion of the site and it is unlikely that development will take place within this area.	
	Recommendations for requirements of site-specific Flood Risk Assessment, including guidance for developers	
	Flood risk assessment: • A site-specific flood risk assessment will be required because the site is over 1ha in area within Flood Zone 1 and at risk from sources of flooding other than rivers and the sea. Government guidance on flood risk assessments must be followed (https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications). • Other sources of flooding, particularly surface water flow routes, should also be considered as part of a site-specific flood risk assessment. • Detailed surface water modelling should be undertaken to better understand baseline and post-development surface water risk flowing into the site, on site and downstream. **Guidance for site design and making development safe:** • Due to higher risk of surface water and fluvial flooding within the north of the site, development should be steered towards the south of the site. • The site is a large greenfield site and as such should be able to accommodate a large housing estate.	

Site code	HA033
Site name	Land west of Sylvan Drive

	• Safe access and egress should be demonstrated in the 1 in 100 plus climate change event and raising of access routes must not impact on floodplain storage capacity. The surrounding roads are at high risk of surface water flooding and as such a safe access route should be identified. • Compensation storage would need to be provided for any land-raising within the 1 in 100 plus appropriate climate change allowance, including to provide a safe access route. • Resilience measures will be required if buildings are situated in the flood risk area. • Flow routes would need to be preserved if carrying out land-raising within the surface water risk area, including to provide a safe access route. • SuDS are possible on all sites and a site such as this should be able to implement an exemplar scheme to deliver multiple benefits including water quality, biodiversity, amenity, green infrastructure etc. • The design of SUDS schemes must take into account the seasonally high groundwater table. Infiltration techniques may be ineffective and may pose a pollution risk. SuDS may need to be shallow and take up larger areas. Above ground conveyance and attenuation can be used but care must be taken that groundwater does not enter the SuDS feature and reduce the storage capacity and structural integrity of the design. • The level of detail and method of assessment of surface water runoff rates and volumes should be appropriate to the scale and risk of the development and should include recommended allowance for climate change and urban creep at the time of the assessment (currently +40% allowance for climate change and a 10% increase in impermeable area for urban creep).

B Site Summary Mapping

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