

Legend

-  Proposed preferred options
-  Wyre Forest District boundary



Reproduced from Ordnance Survey mapping with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationary Office. © Crown copyright and database rights 2016

WYRE FOREST DISTRICT COUNCIL SFRA

Overview: proposed preferred options

This document is the property of Jeremy Benn Associates Ltd. It shall not be reproduced in whole or in part, nor disclosed to a third party, without the permission of Jeremy Benn



Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	AKR/2			
	Site Name	Cheapside			
	Area	2.20ha			
	Current land use	Brownfield			
	Proposed site use	Residential			
Sources of flood risk	Existing drainage features	<ul style="list-style-type: none"> • River Stour • Staffordshire and Worcestershire Canal • River Severn Navigation 			
	Fluvial	Proportion of site at risk			
		FZ3b	FZ3a	FZ2	FZ1
		22%	0%	28%	50%
	Flood risk is predominantly in the south west of the site.				
	Surface Water	Proportion of site at risk (uFMFSW)			
		30-year	100-year	1,000-year	
		0%	0%	0%	
The uFMFSW shows no risk of surface water flooding to the site.					
Reservoir	The site is within the flood inundation extent of five Reservoirs in the event of failure. These include: Trimpley, Stackpool, Podmore Pool, Kidderminster Flood Storage Reservoir and Hurcott Upper Reservoir.				
Canal	The site is within 100 metres of the Staffordshire and Worcestershire Canal and the River Severn Navigation.				
Flood history	The Environment Agency's historic flood map shows the site has flooded in the past, in October 1998 and autumn 2000.				
Flood risk management infrastructure	Defences	Defence Type	Standard of Protection	Condition	
		-	-	-	
	This site is not protected by any formal flood defences.				
Residual risk		-			
Emergency planning	Flood warning	The site is covered, or partially covered, by the Environment Agency's flood warning service.			
	Access and egress	Although part of Cheapside is shown to be at risk from fluvial flooding, safe access and egress can be provided by Severn Side and Discovery Way.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		River Severn	25%	35%	70%
	% increase in flood extent compared to Flood Zone 3a		0%	+2%	+10%
Implications for the site		Climate change modelling shows a slight increase in the extent of Flood Zone 3 for the future allowances; however, mapping suggest the increase in extent is less than the current extent of Flood Zone 2.			

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	AKR/2
	Site Name	Cheapside
	Area	2.20ha
	Current land use	Brownfield
	Proposed site use	Residential
Requirements for drainage control and impact mitigation	Broad scale assessment of possible SuDS	<ul style="list-style-type: none"> • Source control techniques are likely to be suitable for this site. If groundwater is identified as a potential risk for the site, then non-infiltrating systems may be required. • Infiltration techniques are likely to be suitable, providing the site is not at risk from groundwater flooding. • Detention features may be feasible providing site slopes are <5% at the location of the detention feature. If groundwater is a risk to the site, then a liner may be required to mitigate against potential contamination issues. • Filtration systems are probably suitable providing site slopes are <5% and the depth to the water table is >1m. If the site has contamination issues, or at risk from groundwater, then a liner will be required. • All forms of conveyance features are likely to be suitable. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.
	Groundwater Source Protection Zone	The site is located within Zone 3. Infiltration techniques are generally accepted in this zone.
	Historic Landfill Site	The site is not designated by the Environment Agency as previously being a landfill site.
NPPF and planning implications	Exception Test requirements	<p>The Sequential test will need to be passed before the Exception test is applied.</p> <p>The Exception test will be required in the following scenarios</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. • 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 infrastructure within FZ3a and FZ3b. • More Vulnerable and Less Vulnerable Infrastructure within FZ3b.

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	AKR/2
	Site Name	Cheapside
	Area	2.20ha
	Current land use	Brownfield
	Proposed site use	Residential
Requirements and guidance for site-specific Flood Risk Assessment		<ul style="list-style-type: none"> At the planning application stage, a site-specific flood risk assessment will be required if any development is located within Flood Zones 2 or 3 or for any development greater than one hectare in Flood Zone 1. Other sources of flooding should also be considered. Climate change modelling should be undertaken using the relevant allowances for the type of development and level of risk. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage. Resilience measures will be required if buildings are situated in the flood risk area. Onsite attenuation schemes would need to be tested against the hydrographs of the River Stour and River Severn to ensure flows are not exacerbated downstream within the catchment. New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff. Assessment for runoff should include allowance for climate change effects. Risk from the Severn Navigation and the Staffordshire and Worcestershire Canal should be considered. New development must seek opportunities to reduce overall level of flood risk at the site, for example by: <ul style="list-style-type: none"> Reducing volume and rate of runoff Relocating development to zones with lower flood risk Creating space for flooding. Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development and consider using Flood Zones 2 and 3 as public open space.
Mapping Information		
Flood Zones	<p>Flood Zones 2 and 3a are based on the Environment Agency's Flood Zone 2 and 3. The SFRA has identified Flood Zone 3b as land which would flood with an annual probability of 1 in 20 years.</p> <p>Flood Zone 3b has been derived from a combination of results from Environment Agency detailed hydraulic models, generalised 2D hydraulic modelling, and additional 2D hydraulic modelling undertaken for this SFRA.</p>	
Climate change	<p>The upper end climate change allowances for the '2080's were modelled using generalised 2D modelling techniques for the purposes of the SFRA. Due to the generalised nature of the modelling, defences have not been accounted for and therefore mapping shows the 'undefended' scenario. The mapping provides a strategic assessment of climate change risk – developers should undertake detailed modelling of climate change allowances as part of a site specific FRA.</p>	
Surface Water	<p>The updated Flood Map for Surface Water has been used to define areas at risk from surface water flooding.</p>	

Mapping

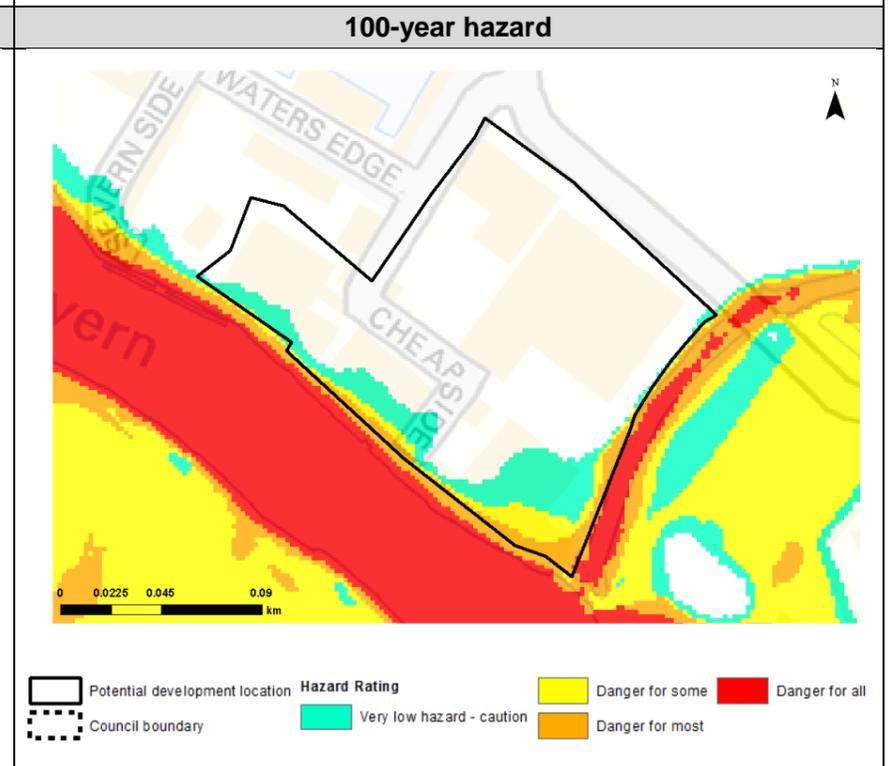
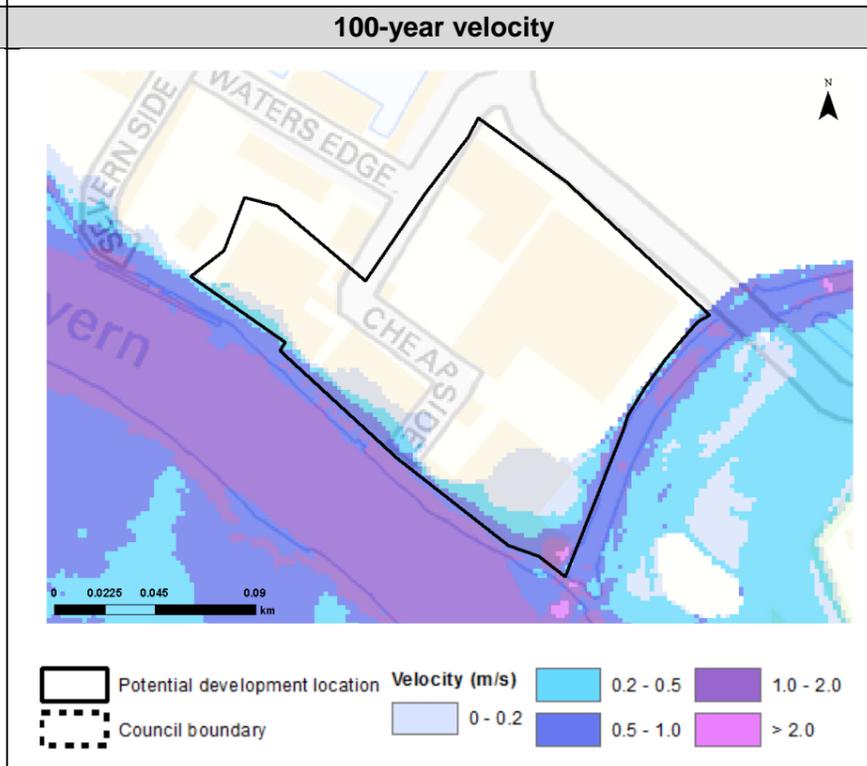
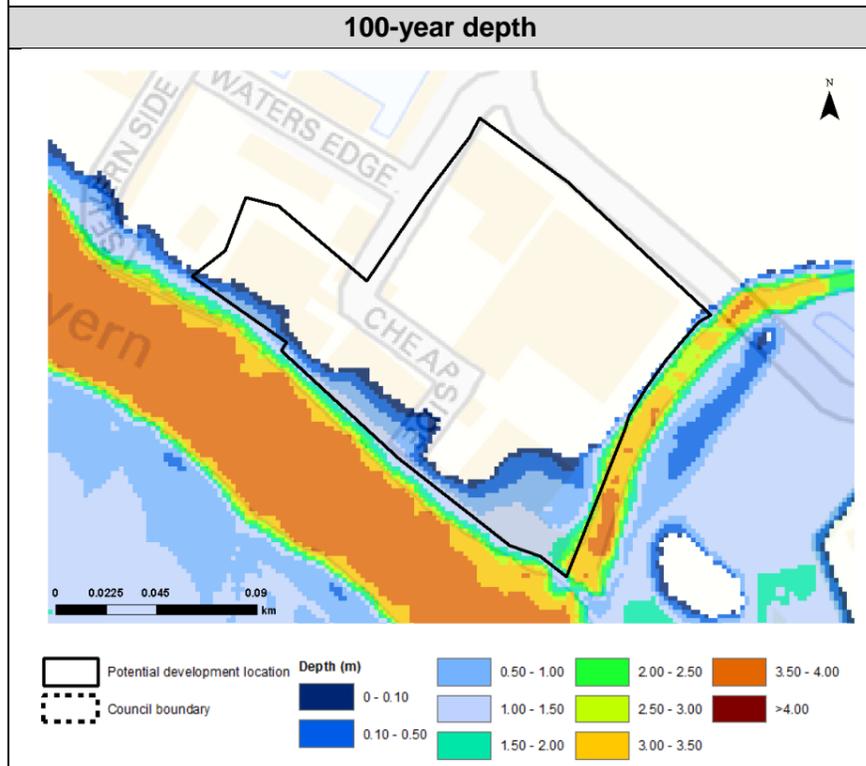
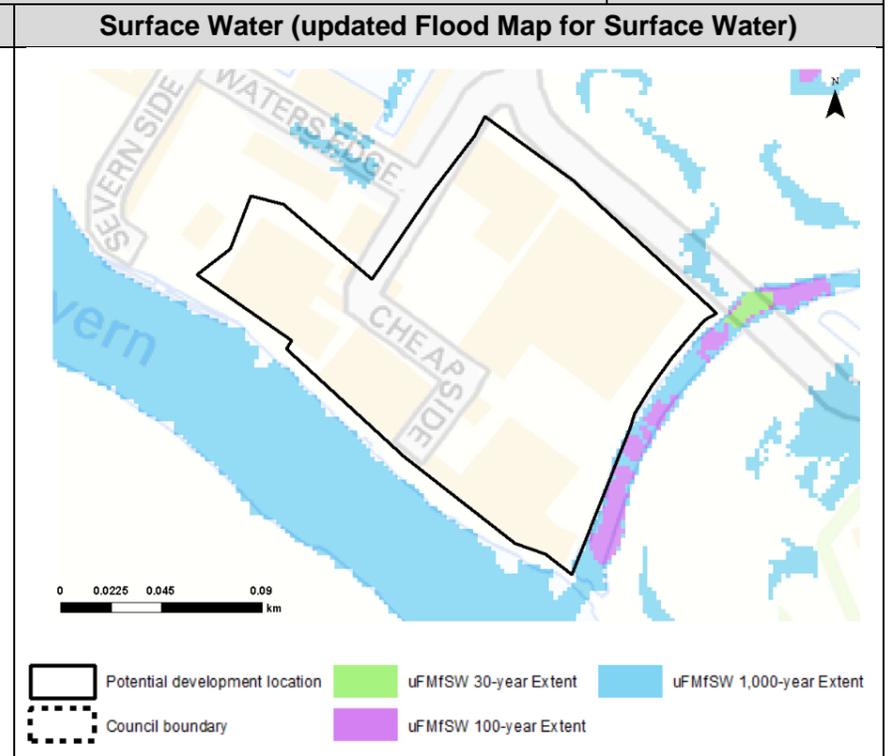
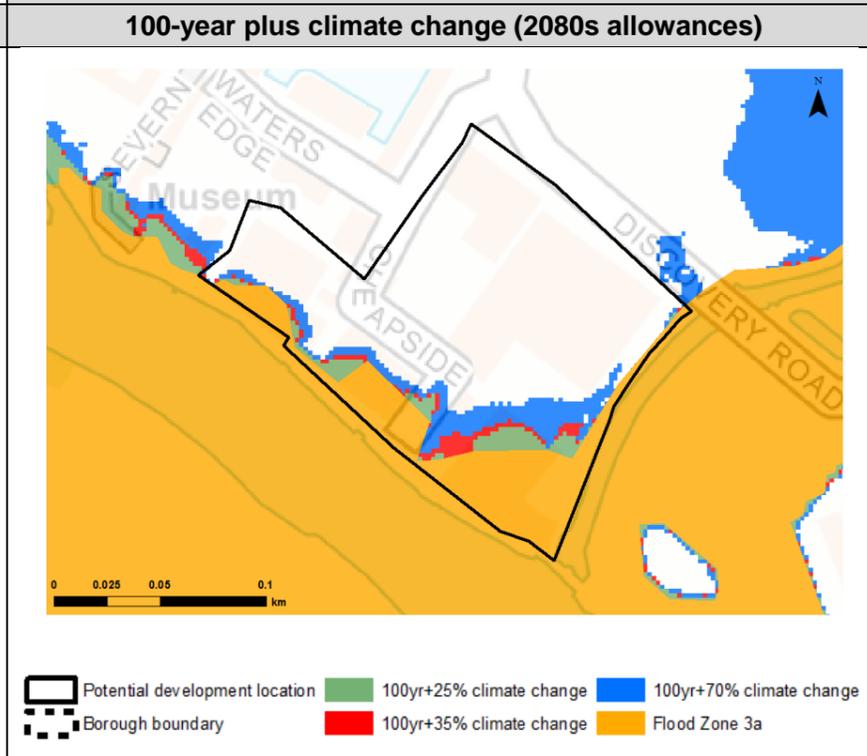
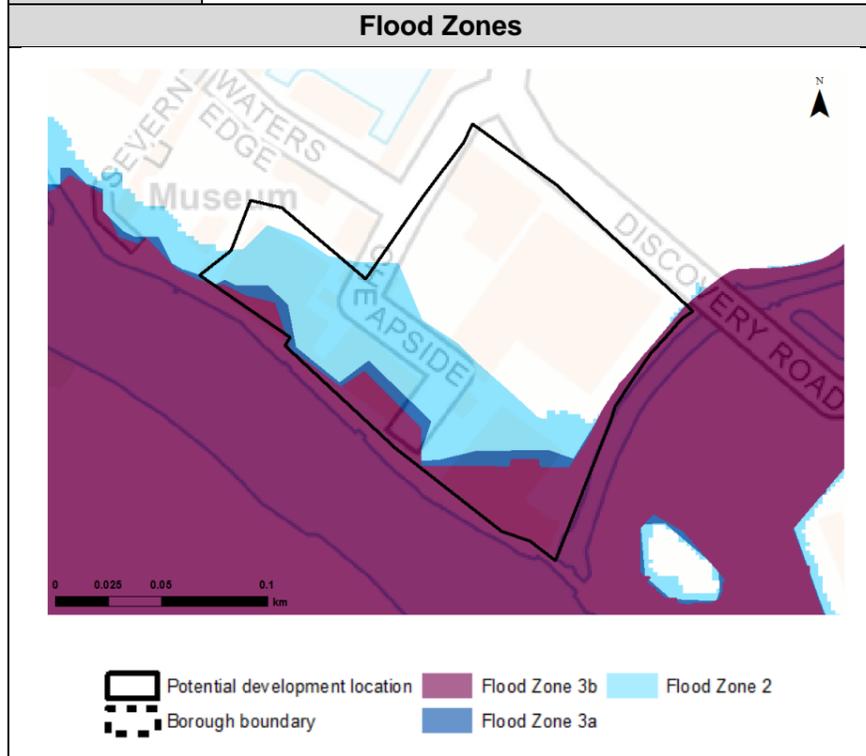
**Wyre Forest District Strategic
Flood Risk Assessment Level
2 Detailed Site Summary
Tables**



Site details	Site Code	AKR/2
	Site Name	Cheapside
	Area	2.20ha
	Current land use	Brownfield
	Proposed site use	Residential
Depth, velocity and hazard mapping	Depth, velocity and hazard mapping for the 1 in 100-year event (Flood Zone 3a) have been taken from the Environment Agency's 2011 generalised modelling as the detailed hydraulic models did not provide this information. As a result, there may be some small discrepancies between the extent of the depth, velocity and hazard grids with the extent of Flood Zone 3a.	

SITE CODE	AKR/2
SITE NAME	Cheapside

Wyre Forest District Council Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	AKR/20			
	Site Name	Carpets of Worth, Stourport on Severn			
	Area	3.31ha			
	Current land use	Brownfield			
	Proposed site use	Residential			
Sources of flood risk	Existing drainage features	<ul style="list-style-type: none"> River Stour River Severn Navigation Staffordshire and Worcestershire Canal 			
	Fluvial	Proportion of site at risk			
		FZ3b	FZ3a	FZ2	FZ1
		11%	0%	0%	89%
	The fluvial flood risk is predominantly to the eastern boundary area of the site from the River Stour.				
	Surface Water	Proportion of site at risk (uFMFSW)			
		30-year	100-year	1,000-year	
		0%	1%	13%	
Surface water ponding takes place in several small pockets across the site.					
Reservoir	The site is within the flood inundation extent of five Reservoirs in the event of failure. These include: Trimpley, Stackpool, Podmore Pool, Kidderminster Flood Storage Reservoir and Hurcott Upper Reservoir.				
Canal	The site is within 100 metres of the Staffordshire and Worcestershire Canal.				
Flood history	The Environment Agency's historic flood map shows the site has flooded in the past, in autumn 2000.				
Flood risk management infrastructure	Defences	Defence Type	Standard of Protection	Condition	
		-	-	-	
This site is not protected by any formal flood defences.					
Residual risk	-				
Emergency planning	Flood warning	The site is covered, or partially covered, by the Environment Agency's flood warning service.			
	Access and egress	Although part of Carpets of Worth is shown to be at risk from fluvial flooding, safe access and egress can be provided by Severn Side.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		River Severn	25%	35%	70%
	% increase in flood extent compared to Flood Zone 3a		0%	0%	+22%
Implications for the site	Climate change modelling shows a significant increase in the extent of Flood Zone 3 with a 70% climate change allowance with limited increases in the lower allowances.				

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	AKR/20
	Site Name	Carpets of Worth, Stourport on Severn
	Area	3.31ha
	Current land use	Brownfield
	Proposed site use	Residential
Requirements for drainage control and impact mitigation	Broad scale assessment of possible SuDS	<ul style="list-style-type: none"> • Source control techniques are likely to be suitable for this site. If groundwater is identified as a potential risk for the site, then non-infiltrating systems may be required. • Infiltration techniques are likely to be suitable, providing the site is not at risk from groundwater flooding. • Detention features may be feasible providing site slopes are <5% at the location of the detention feature. If groundwater is a risk to the site, then a liner may be required to mitigate against potential contamination issues. • Filtration systems are probably suitable providing site slopes are <5% and the depth to the water table is >1m. If the site has contamination issues, or at risk from groundwater, then a liner will be required. • All forms of conveyance features are likely to be suitable. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.
	Groundwater Source Protection Zone	The site is located within Zone 3. Infiltration techniques are generally accepted in this zone.
	Historic Landfill Site	The site is not designated by the Environment Agency as previously being a landfill site.
NPPF and planning implications	Exception Test requirements	<p>The Sequential test will need to be passed before the Exception test is applied.</p> <p>The Exception test will be required in the following scenarios</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. • 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 infrastructure within FZ3a and FZ3b. • More Vulnerable and Less Vulnerable Infrastructure within FZ3b.

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	AKR/20
	Site Name	Carpets of Worth, Stourport on Severn
	Area	3.31ha
	Current land use	Brownfield
	Proposed site use	Residential
	Requirements for site-specific Flood Risk Assessment	<ul style="list-style-type: none"> At the planning application stage, a site-specific flood risk assessment will be required if any development is located within Flood Zones 2 and 3 or for any development greater than one hectare in Flood Zone 1. Other sources of flooding should also be considered. Climate change modelling should be undertaken using the relevant allowances for the type of development and level of risk. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage. Resilience measures will be required if buildings are situated in the flood risk area. Onsite attenuation schemes would need to be tested against the hydrographs of the River Stour and River Severn to ensure flows are not exacerbated downstream within the catchment. New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff. Assessment for runoff should include allowance for climate change effects. Risk from the Severn Navigation and the Staffordshire and Worcestershire Canal should be considered. New development must seek opportunities to reduce overall level of flood risk at the site, for example by: <ul style="list-style-type: none"> Reducing volume and rate of runoff Relocating development to zones with lower flood risk Creating space for flooding. Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development and consider using Flood Zone 2 and 3 as public open space.
Mapping Information		
Flood Zones	<p>Flood Zones 2 and 3a are based on the Environment Agency's Flood Zone 2 and 3. The SFRA has identified Flood Zone 3b as land which would flood with an annual probability of 1 in 20 years.</p> <p>Flood Zone 3b has been derived from a combination of results from Environment Agency detailed hydraulic models, generalised 2D hydraulic modelling, and additional 2D hydraulic modelling undertaken for this SFRA.</p>	
Climate change	<p>The upper end climate change allowances for the '2080's were modelled using generalised 2D modelling techniques for the purposes of the SFRA. Due to the generalised nature of the modelling, defences have not been accounted for and therefore mapping shows the 'undefended' scenario. The mapping provides a strategic assessment of climate change risk – developers should undertake detailed modelling of climate change allowances as part of a site specific FRA.</p>	
Surface Water	<p>The updated Flood Map for Surface Water has been used to define areas at risk from surface water flooding.</p>	

Mapping

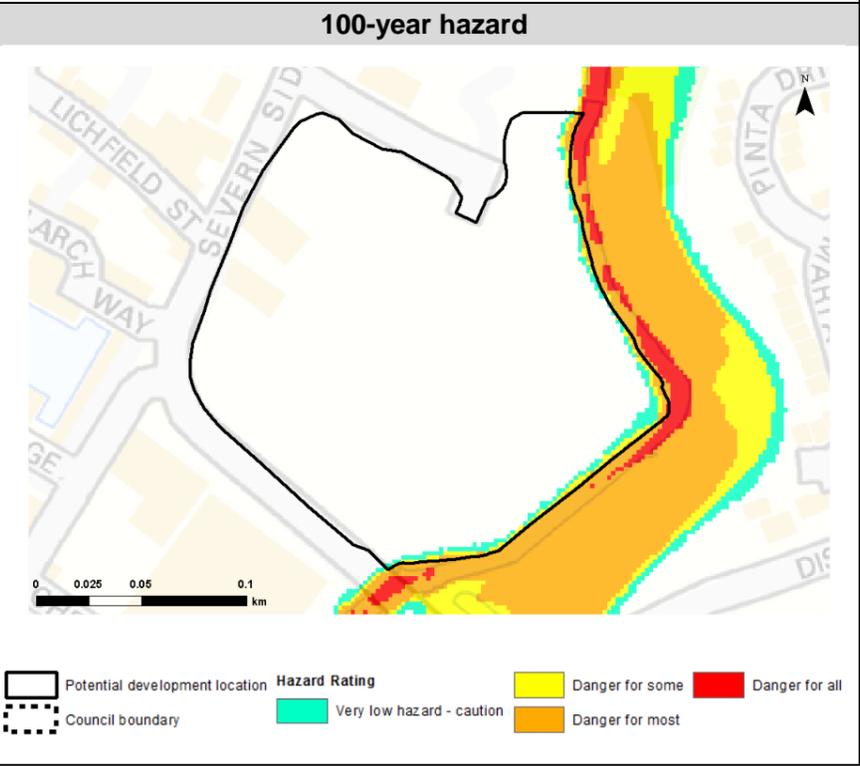
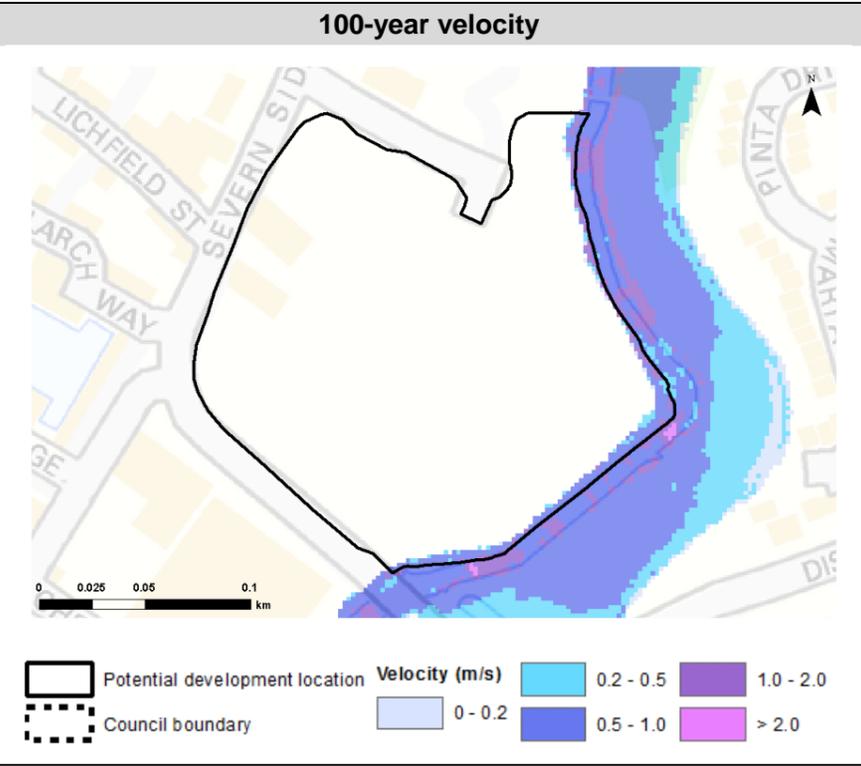
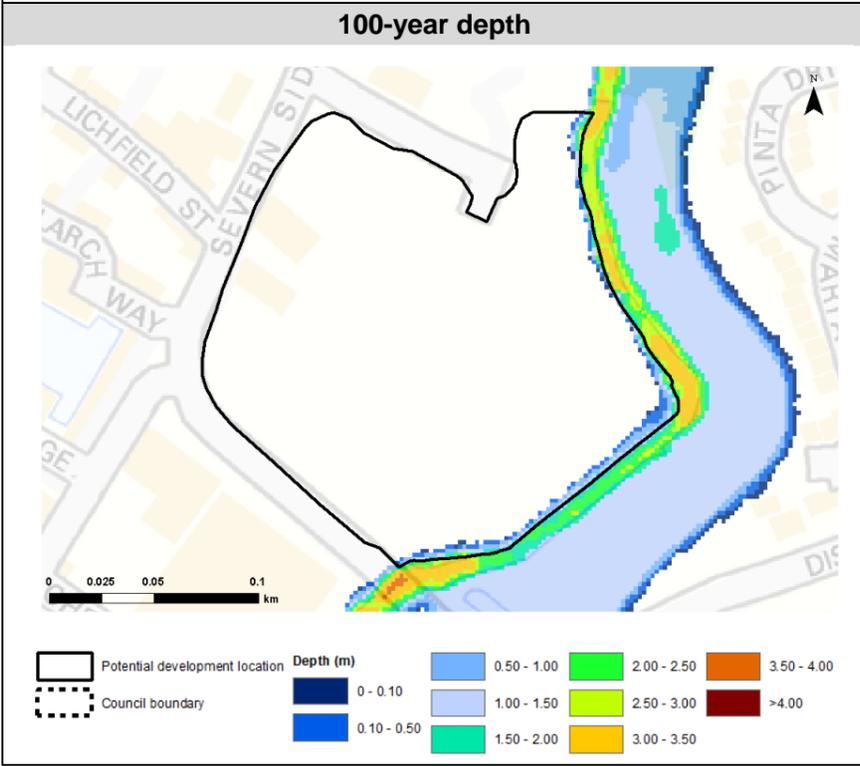
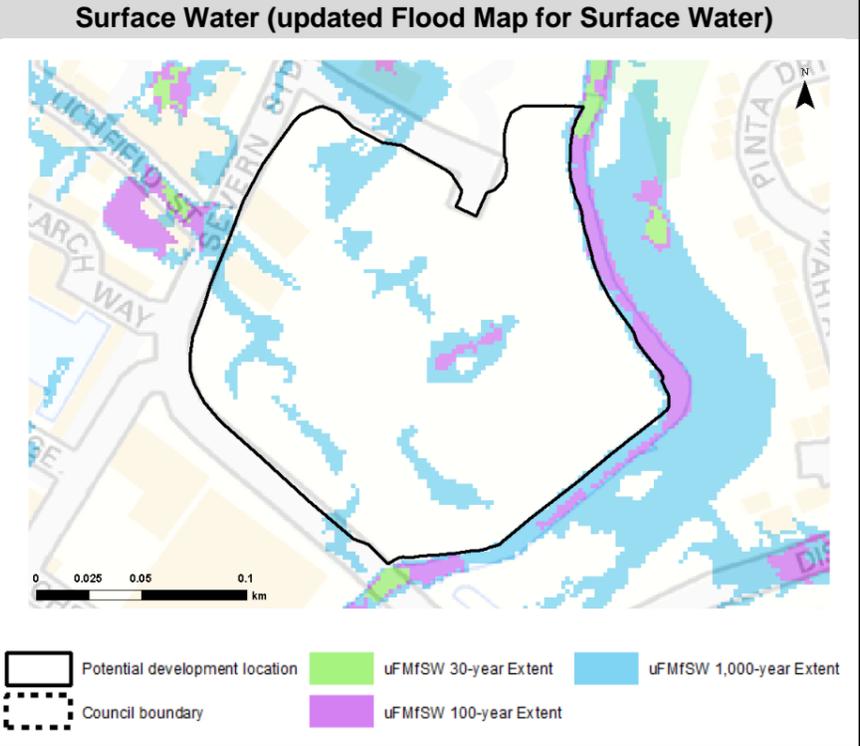
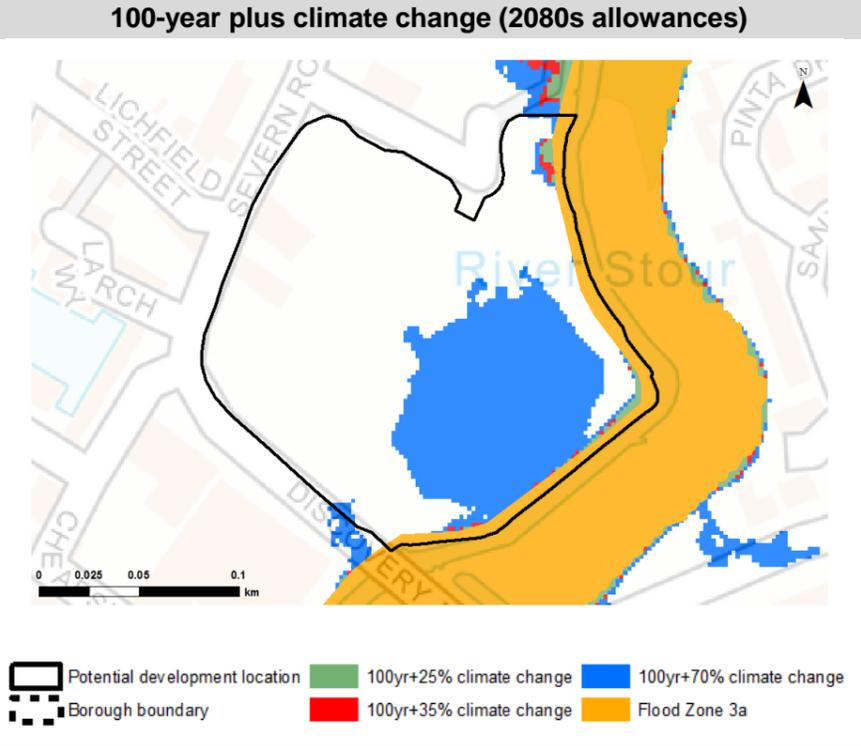
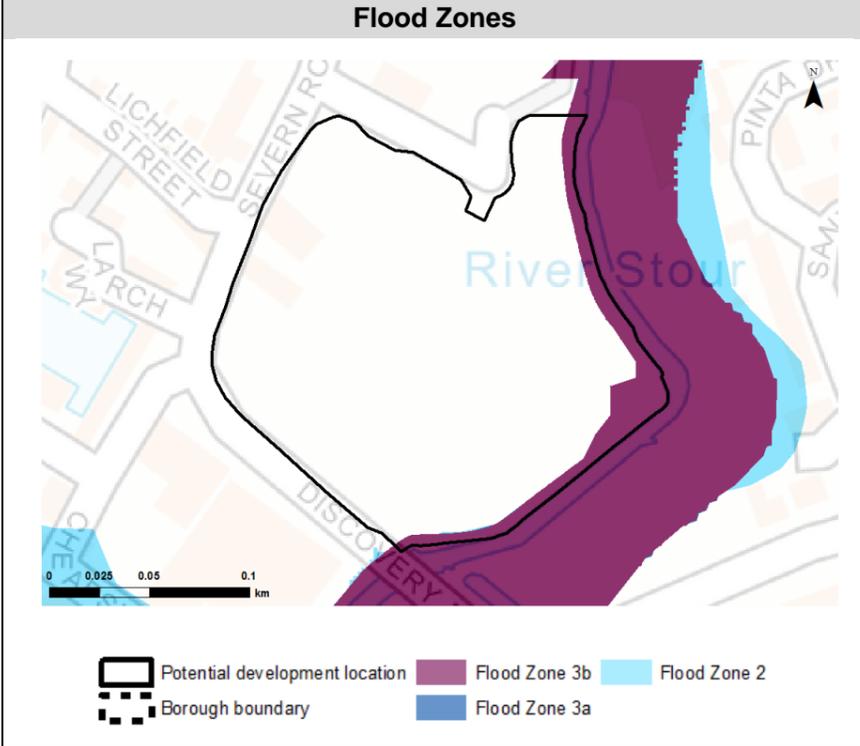
**Wyre Forest District Strategic
Flood Risk Assessment Level
2 Detailed Site Summary
Tables**

JBA
consulting

Site details	Site Code	AKR/20
	Site Name	Carpets of Worth, Stourport on Severn
	Area	3.31ha
	Current land use	Brownfield
	Proposed site use	Residential
Depth, velocity and hazard mapping	Depth, velocity and hazard mapping for the 1 in 100-year event (Flood Zone 3a) have been taken from the Environment Agency's 2011 generalised modelling as the detailed hydraulic models did not provide this information. As a result, there may be some small discrepancies between the extent of the depth, velocity and hazard grids with the extent of Flood Zone 3a.	

SITE CODE	AKR/20
SITE NAME	Carpets of Worth, Stourport on Severn

Wyre Forest District Council Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	AS/5				
	Site Name	Victoria Carpets Sports Ground				
	Area	2.21ha				
	Current land use	Greenfield				
	Proposed site use	Residential				
Sources of flood risk	Existing drainage features	<ul style="list-style-type: none"> Hoo Brook to the south Unnamed drain to the north 				
	Fluvial	Proportion of site at risk				
		FZ3b	FZ3a	FZ2	FZ1	
		0%	0%	98%	2%	
	Flooding from Hoo Brook to the south represents the greatest source of fluvial flood risk. The majority of the site would be inundated in a 1-in-1,000-year event.					
	Surface Water	Proportion of site at risk (uFMFSW)				
		30-year	100-year	1,000-year		
		17%	40%	87%		
Surface water flooding ponds in the centre of the site, and the inundation affects an increasingly large area as the return period increases.						
Reservoir	Much of the site is at risk of reservoir inundation in the event of failure from the Captains Pool or Drayton Pool.					
Canal	There is no canal within 100m of the site.					
Flood history	The Environment Agency's historic flood map does not show any past flooding to the site.					
Flood risk management infrastructure	Defences	Defence Type	Standard of Protection	Condition		
		-	-	-		
	This site is not protected by any formal flood defences.					
Residual risk	-					
Emergency planning	Flood warning	This site is not covered by the Environment Agency's Flood Warning Service				
	Access and egress	Although much of Victoria Carpets Sports Ground is shown to be at risk from fluvial flooding, safe access and egress can be provided by the A449 Chester Road South.				
Climate Change	Climate change allowances for '2080s'	River Basin District		Central	Higher Central	Upper End
		River Severn		25%	35%	70%
	% increase in flood extent compared to Flood Zone 3a		+97%	+98%	+98%	
Implications for the site	Climate change modelling shows the site would be significantly flooded by 100-year events when any of the future allowances scenarios are applied.					

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	AS/5
	Site Name	Victoria Carpets Sports Ground
	Area	2.21ha
	Current land use	Greenfield
	Proposed site use	Residential
Requirements for drainage control and impact mitigation	Broad scale assessment of possible SuDS	<ul style="list-style-type: none"> • Source control techniques are likely to be suitable for this site. • Infiltration techniques are likely to be suitable, providing the site is not at risk from groundwater flooding. • Detention features may be feasible providing site slopes are <5% at the location of the detention feature. • Filtration systems are probably suitable providing site slopes are <5% and the depth to the water table is >1m. • All forms of conveyance features are likely to be suitable. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.
	Groundwater Source Protection Zone	The site is located within Zone 3. Infiltration techniques are generally accepted in this zone.
	Historic Landfill Site	The site is not designated by the Environment Agency as previously being a landfill site.
NPPF and planning implications	Exception Test requirements	The Sequential test will need to be passed before the Exception test is applied. The Exception test will be required if Highly Vulnerable development is located in FZ2.

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	AS/5
	Site Name	Victoria Carpets Sports Ground
	Area	2.21ha
	Current land use	Greenfield
	Proposed site use	Residential
	Requirements for site-specific Flood Risk Assessment	<ul style="list-style-type: none"> At the planning application stage, a site-specific flood risk assessment will be required if any development is located within Flood Zone 2 or for any development greater than one hectare in Flood Zone 1. Other sources of flooding should also be considered. Climate change modelling should be undertaken using the relevant allowances for the type of development and level of risk. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage. Resilience measures will be required if buildings are situated in the flood risk area. Onsite attenuation schemes would need to be tested against the hydrographs of the Hoo Brook and unnamed watercourse to ensure flows are not exacerbated downstream within the catchment. New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff. Assessment for runoff should include allowance for climate change effects. New development must seek opportunities to reduce overall level of flood risk at the site, for example by: <ul style="list-style-type: none"> Reducing volume and rate of runoff Relocating development to zones with lower flood risk Creating space for flooding. Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development.
Mapping Information		
Flood Zones	<p>Flood Zones 2 and 3a are based on the Environment Agency's Flood Zone 2 and 3. The SFRA has identified Flood Zone 3b as land which would flood with an annual probability of 1 in 20 years.</p> <p>Flood Zone 3b has been derived from a combination of results from Environment Agency detailed hydraulic models, generalised 2D hydraulic modelling, and additional 2D hydraulic modelling undertaken for this SFRA.</p>	
Climate change	<p>The upper end climate change allowances for the '2080's were modelled using generalised 2D modelling techniques for the purposes of the SFRA. Due to the generalised nature of the modelling, defences have not been accounted for and therefore mapping shows the 'undefended' scenario. The mapping provides a strategic assessment of climate change risk – developers should undertake detailed modelling of climate change allowances as part of a site specific FRA.</p>	
Surface Water	<p>The updated Flood Map for Surface Water has been used to define areas at risk from surface water flooding.</p>	

Mapping

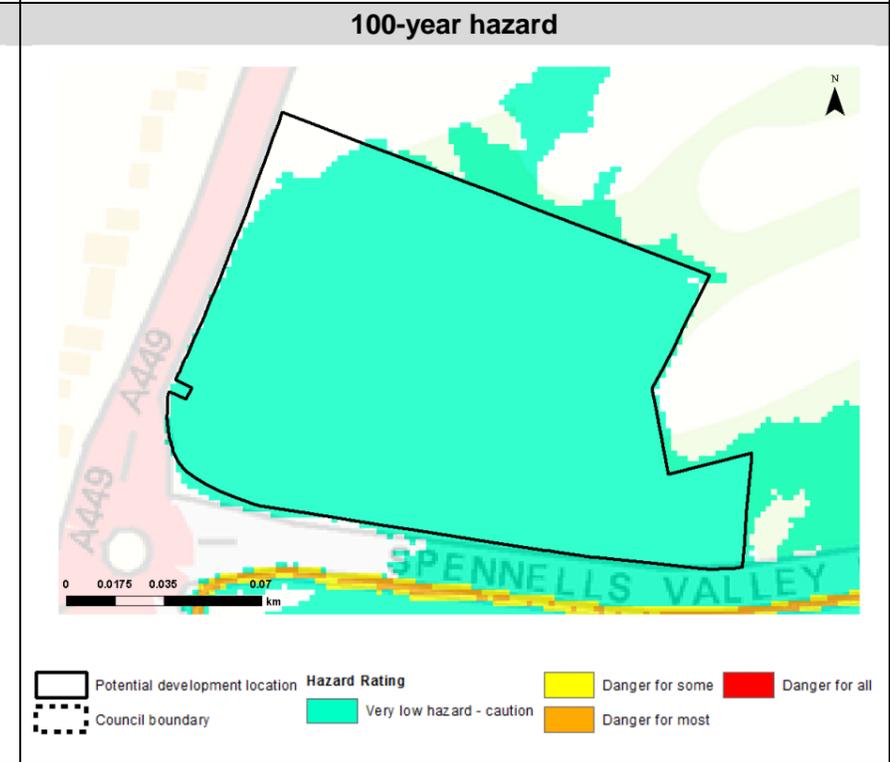
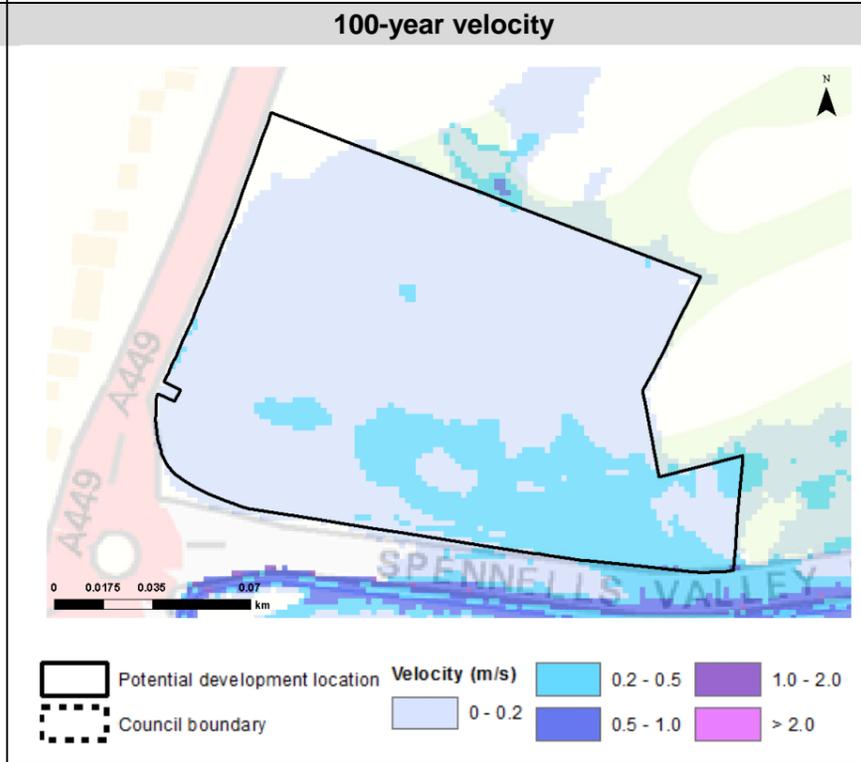
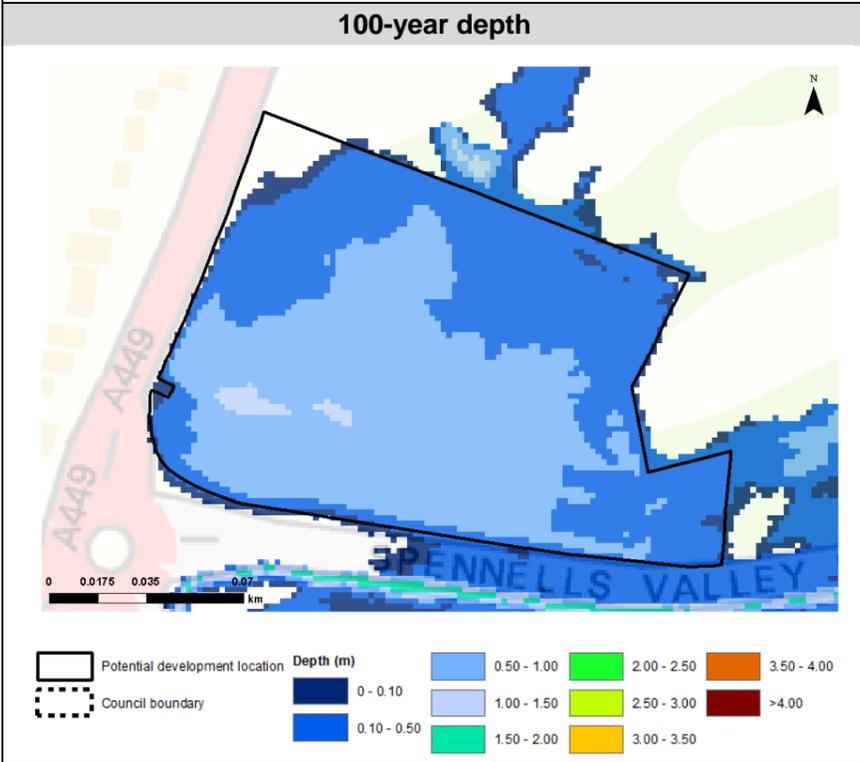
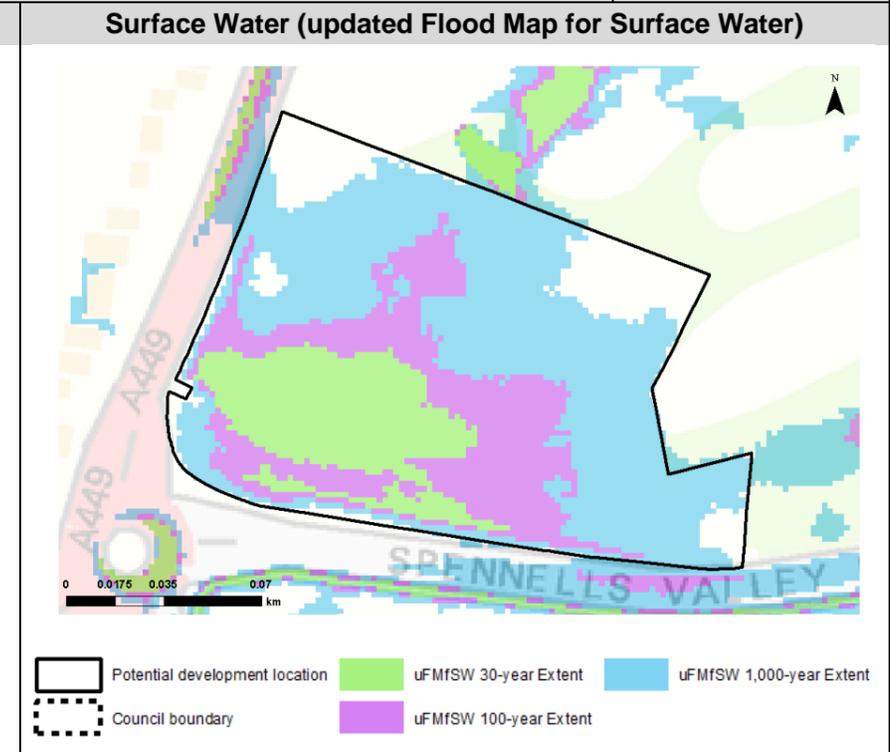
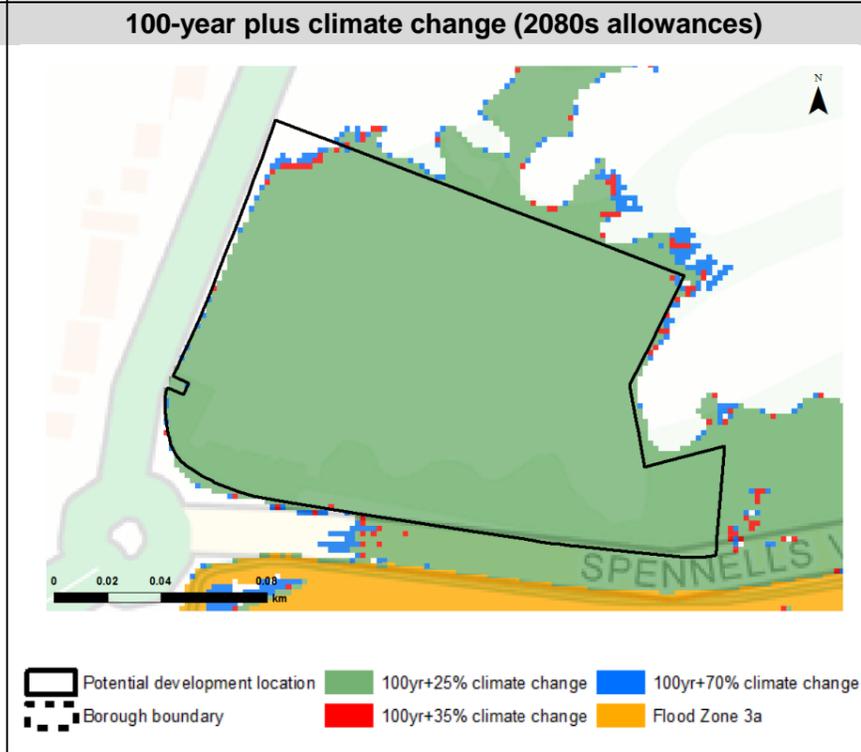
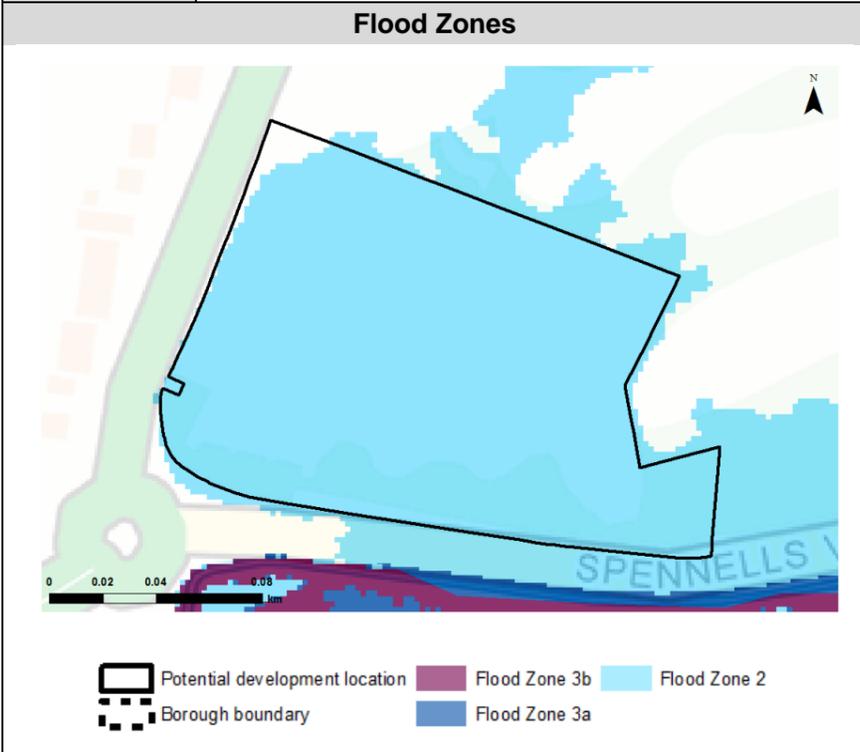
**Wyre Forest District Strategic
Flood Risk Assessment Level
2 Detailed Site Summary
Tables**



Site details	Site Code	AS/5
	Site Name	Victoria Carpets Sports Ground
	Area	2.21ha
	Current land use	Greenfield
	Proposed site use	Residential
Depth, velocity and hazard mapping	Depth, velocity and hazard mapping for the 1 in 100-year event (Flood Zone 3a) have been taken from the Environment Agency's 2011 generalised modelling as the detailed hydraulic models did not provide this information. As a result, there may be some small discrepancies between the extent of the depth, velocity and hazard grids with the extent of Flood Zone 3a.	

SITE CODE	AS/5
SITE NAME	Victoria Carpets, Sports Ground

Wyre Forest District Council Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	BHS/11				
	Site Name	WFDC Depot, Green Street, Kidderminster				
	Area	0.46ha				
	Current land use	Brownfield				
	Proposed site use	Commercial				
Sources of flood risk	Existing drainage features	<ul style="list-style-type: none"> Two branches of the River Stour flow to the north and south of the site in a south westerly direction. 				
	Fluvial	Proportion of site at risk				
		FZ3b	FZ3a	FZ2	FZ1	
		0%	0%	98%	2%	
	Almost the whole of the site is located within Flood Zone 2 with fluvial flood risk from the River Stour.					
	Surface Water	Proportion of site at risk (uFMFSW)				
		30-year	100-year	1,000-year		
		11%	23%	43%		
Ponding takes place in isolated areas across the site in 30iyer return periods with increasing extents in higher return periods.						
Reservoir	The site is at risk of inundation in the event of reservoir failure from the Stackpool and Kidderminster Flood Storage Reservoir.					
Canal	There are no canals within 100m of the site.					
Flood history	The Environment Agency's historic flood map does not show any past flooding to the site.					
Flood risk management infrastructure	Defences	Defence Type	Standard of Protection	Condition		
		-	-	-		
	Although not shown in the Environment Agency's Areas Benefitting from Defences layer, this site is afforded some protection from the Kidderminster Flood Alleviation Scheme.					
Residual risk	-					
Emergency planning	Flood warning	This site is not covered by the Environment Agency's Flood Warning Service				
	Access and egress	Access and egress for the site is available via Green Street and A451 Ring way. However, the area of Green Street adjacent to the site boundary is within Flood Zone 2 – therefore there may be issues with the availability of safe access and egress in the event of a flood.				
Climate Change	Climate change allowances for '2080s'	River Basin District		Central	Higher Central	Upper End
		River Severn		25%	35%	70%
	% increase in flood extent compared to Flood Zone 3a			0%	31%	100%
Implications for the site	In 25% allowance there is no increase in flood risk for the site. At 35% areas centrally become at risk of 1-100-year food events and within the 70% allowance the whole of the site is at risk of 1-100-year flood events.					

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	BHS/11
	Site Name	WFDC Depot, Green Street, Kidderminster
	Area	0.46ha
	Current land use	Brownfield
	Proposed site use	Commercial
Requirements for drainage control and impact mitigation	Broad scale assessment of possible SuDS	<ul style="list-style-type: none"> • Source control techniques are likely to be suitable for this site. • Infiltration techniques are likely to be suitable, providing the site is not at risk from groundwater flooding. • Detention features may be feasible providing site slopes are <5% at the location of the detention feature. • Filtration systems are probably suitable providing site slopes are <5% and the depth to the water table is >1m. • All forms of conveyance features are likely to be suitable. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.
	Groundwater Source Protection Zone	The site is located within Zone 1. As such infiltration techniques should only be used where there are suitable levels of treatment and permits, although it is possible that infiltration may not be permitted. Proposed SuDS should be discussed with relevant stakeholders (LPA, LLFA and EA) at an early stage to understand possible constraints.
	Historic Landfill Site	The site is not designated by the Environment Agency as previously being a landfill site.
NPPF and planning implications	Exception Test requirements	The Sequential test will need to be passed before the Exception test is applied. The Exception test will be required if Highly Vulnerable development is located in Flood Zone 2.

Mapping

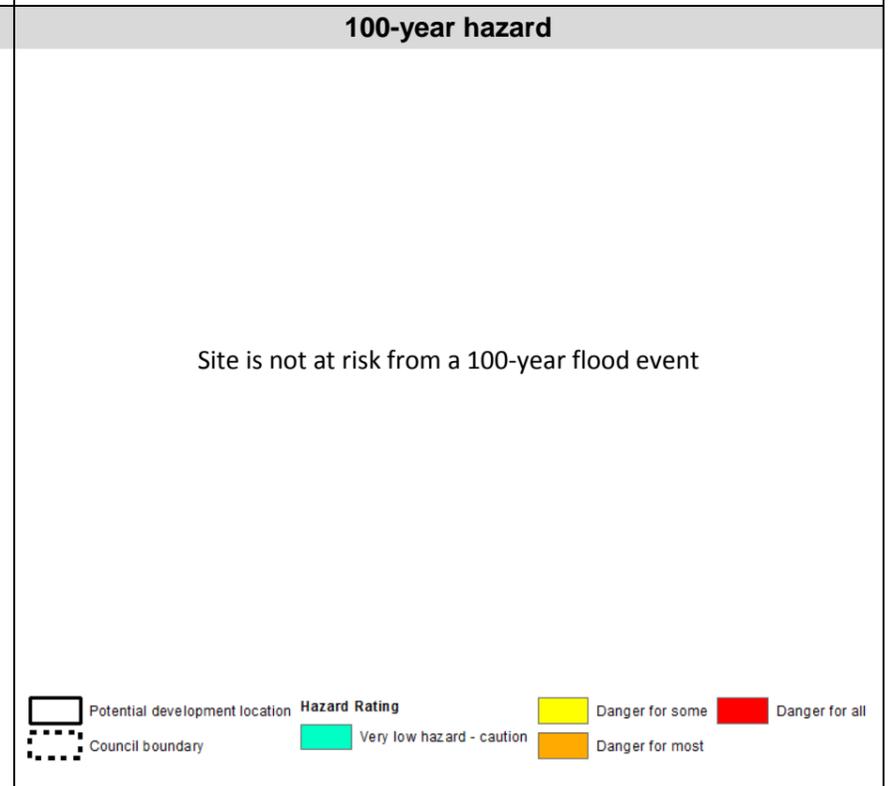
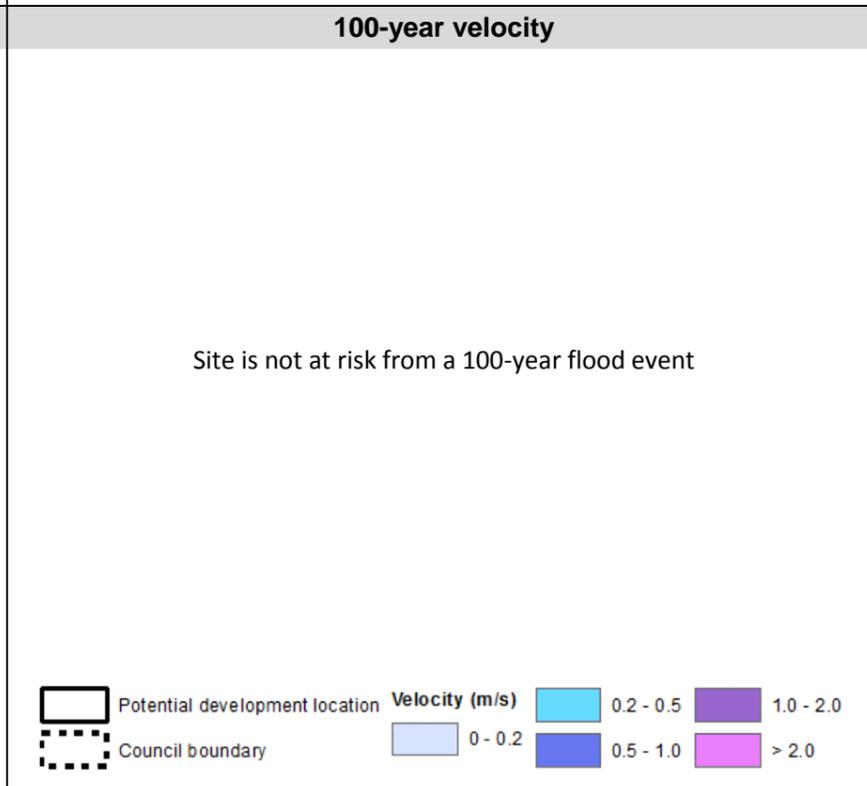
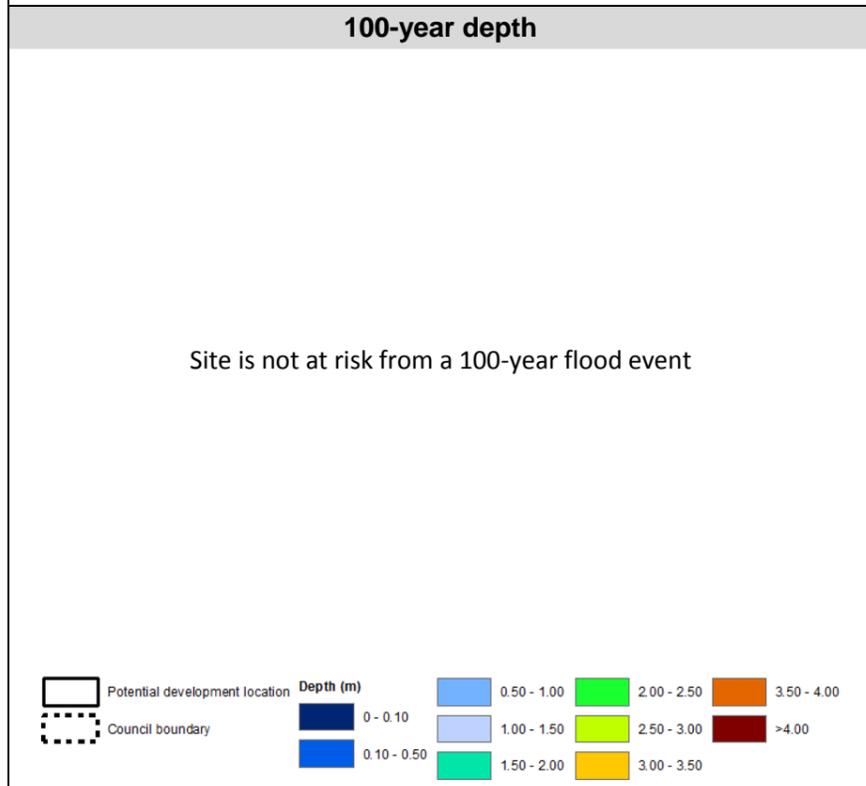
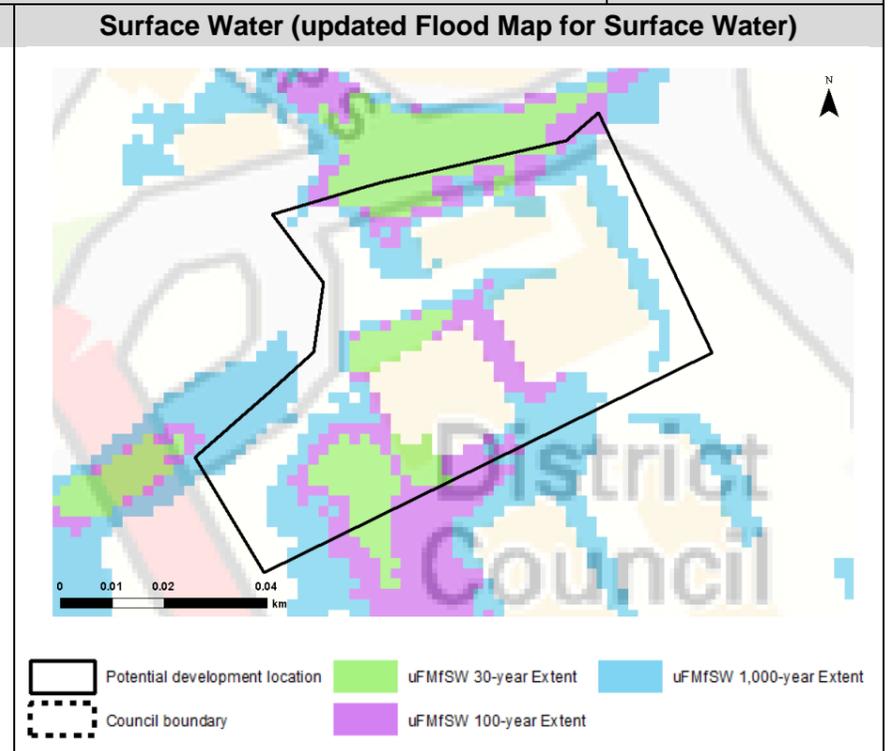
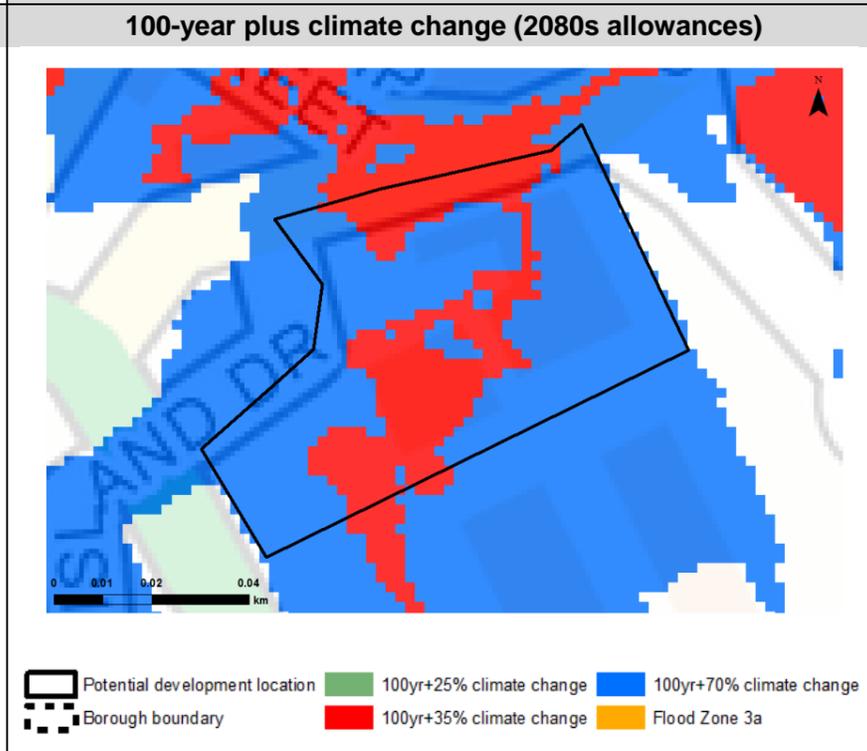
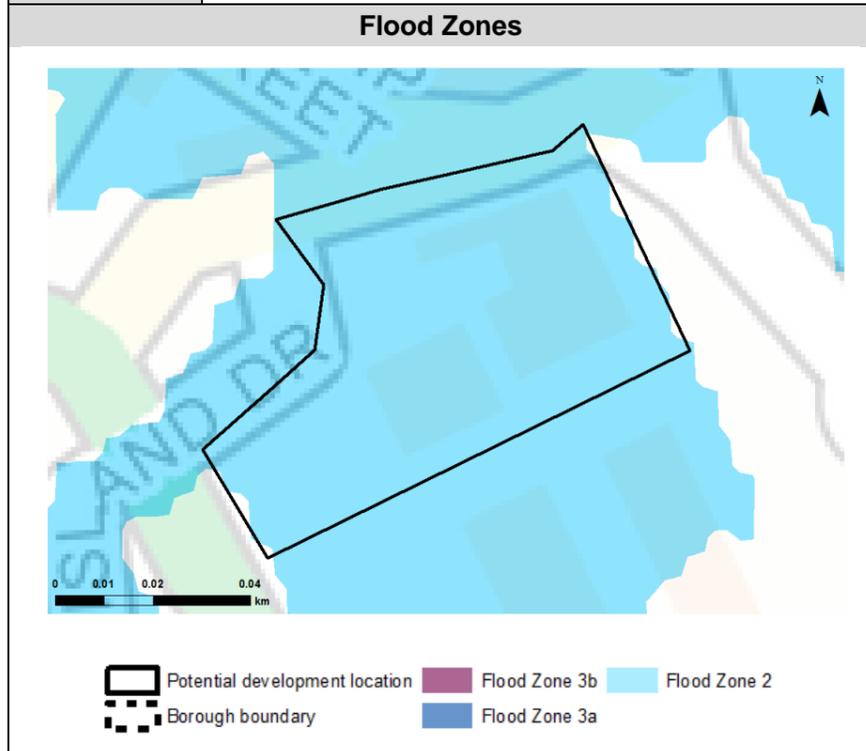
Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	BHS/11
	Site Name	WFDC Depot, Green Street, Kidderminster
	Area	0.46ha
	Current land use	Brownfield
	Proposed site use	Commercial
	Requirements for site-specific Flood Risk Assessment	<ul style="list-style-type: none"> At the planning application stage, a site-specific flood risk assessment will be required if any development is located within Flood Zones 2. Other sources of flooding should also be considered. Climate change modelling should be undertaken using the relevant allowances for the type of development and level of risk. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage. Resilience measures will be required if buildings are situated in the flood risk area. Onsite attenuation schemes would need to be tested against the hydrograph of the River Stour to ensure flows are not exacerbated downstream within the catchment. New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff. Assessment for runoff should include allowance for climate change effects. New development must seek opportunities to reduce overall level of flood risk at the site, for example by: <ul style="list-style-type: none"> Reducing volume and rate of runoff Relocating development to zones with lower flood risk Creating space for flooding. Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development.
Mapping Information		
Flood Zones	<p>Flood Zones 2 and 3a are based on the Environment Agency's Flood Zone 2 and 3. The SFRA has identified Flood Zone 3b as land which would flood with an annual probability of 1 in 20 years.</p> <p>Flood Zone 3b has been derived from a combination of results from Environment Agency detailed hydraulic models, generalised 2D hydraulic modelling, and additional 2D hydraulic modelling undertaken for this SFRA.</p>	
Climate change	<p>The upper end climate change allowances for the '2080's were modelled using generalised 2D modelling techniques for the purposes of the SFRA. Due to the generalised nature of the modelling, defences have not been accounted for and therefore mapping shows the 'undefended' scenario. The mapping provides a strategic assessment of climate change risk – developers should undertake detailed modelling of climate change allowances as part of a site specific FRA.</p>	
Surface Water	<p>The updated Flood Map for Surface Water has been used to define areas at risk from surface water flooding.</p>	
Depth, velocity and hazard mapping	<p>Depth, velocity and hazard mapping for the 1 in 100-year event (Flood Zone 3a) have been taken from the Environment Agency's 2011 generalised modelling as the detailed hydraulic models did not provide this information. As a result, there may be some small discrepancies between the extent of the depth, velocity and hazard grids with the extent of Flood Zone 3a.</p>	

SITE CODE	BHS/11
SITE NAME	WFDC Depot, Green Street, Kidderminster

Wyre Forest District Council Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	BHS/16			
	Site Name	Park Lane, Canalside (Timber Yard)			
	Area	2.10ha			
	Current land use	Predominantly brownfield			
	Proposed site use	Residential			
Sources of flood risk	Existing drainage features	<ul style="list-style-type: none"> River Stour Staffordshire & Worcestershire Canal 			
	Fluvial	Proportion of site at risk			
		FZ3b	FZ3a	FZ2	FZ1
		0%	23%	29%	48%
	Fluvial flood risk to the site comes from the River Stour and the Staffordshire and Worcestershire Canal located to the east of the site.				
	Surface Water	Proportion of site at risk (uFMFSW)			
		30-year	100-year	1,000-year	
		5%	16%	23%	
The area most affected by surface water risk is along the east of the site, adjacent to the Staffordshire & Worcestershire Canal with additional ponding taking place in the north of the site.					
Reservoir	The site is at risk of reservoir flood inundation in the event of reservoir failure, with Ladies Pool, Stackpool, Podmore Pool and Kidderminster Flood Storage Reservoir shown as able to affect the site.				
Canal	The site is within 100m of the Staffordshire & Worcestershire Canal.				
Flood history	The Environment Agency's historic flood map does not show any flooding to the site in the past.				
Flood risk management infrastructure	Defences	Defence Type	Standard of Protection	Condition	
		-	-	-	
	Although not shown in the Environment Agency's Areas Benefitting from Defences layer, this site is afforded some protection from the Kidderminster Flood Alleviation Scheme.				
Residual risk	-				
Emergency planning	Flood warning	The site is covered, or partially covered, by the Environment Agency's flood warning service.			
	Access and egress	Although part of the site is shown to be at risk from fluvial flooding, safe access and egress can be provided by Park Lane.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		River Severn	25%	35%	70%
	% increase in flood extent compared to Flood Zone 3a			0%	0%

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	BHS/16
	Site Name	Park Lane, Canalside (Timber Yard)
	Area	2.10ha
	Current land use	Predominantly brownfield
	Proposed site use	Residential
	Implications for the site	There is little change in the extent of the site flooded or potential changes in Flood Zones in any of the climate change allowance scenarios compared to present.
Requirements for drainage control and impact mitigation	Broad scale assessment of possible SuDS	<ul style="list-style-type: none"> • Source control techniques are likely to be suitable for this site. • Infiltration techniques are likely to be suitable, providing the site is not at risk from groundwater flooding. • Detention features may be feasible providing site slopes are <5% at the location of the detention feature. • Filtration systems are probably suitable providing site slopes are <5% and the depth to the water table is >1m. • All forms of conveyance features are likely to be suitable. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.
	Groundwater Source Protection Zone	The site is predominantly located within Zone 3. Infiltration techniques are generally accepted in this zone.
	Historic Landfill Site	The site is not designated by the Environment Agency as previously being a landfill site.
NPPF and planning implications	Exception Test requirements	<p>The Sequential test will need to be passed before the Exception test is applied.</p> <p>The Exception test will be required in the following scenarios</p> <ul style="list-style-type: none"> • If More Vulnerable and Essential Infrastructure development is located in FZ3a • If Highly Vulnerable development is located in FZ2. <p>Development will not be permitted in the following scenarios</p> <ul style="list-style-type: none"> • Highly Vulnerable infrastructure within FZ3a.

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	BHS/16
	Site Name	Park Lane, Canalside (Timber Yard)
	Area	2.10ha
	Current land use	Predominantly brownfield
	Proposed site use	Residential

Requirements for site-specific Flood Risk Assessment		<ul style="list-style-type: none"> At the planning application stage, a site-specific flood risk assessment will be required if any development is located within Flood Zones 2 or 3 or for any development greater than one hectare in Flood Zone 1. Other sources of flooding should also be considered. Climate change modelling should be undertaken using the relevant allowances for the type of development and level of risk. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage. Resilience measures will be required if buildings are situated in the flood risk area. Onsite attenuation schemes would need to be tested against the hydrographs of the River Stour to ensure flows are not exacerbated downstream within the catchment. New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff. Assessment for runoff should include allowance for climate change effects. Risk from the Staffordshire and Worcestershire Canal should be considered. New development must seek opportunities to reduce overall level of flood risk at the site, for example by: <ul style="list-style-type: none"> Reducing volume and rate of runoff Relocating development to zones with lower flood risk Creating space for flooding. Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development and consider using Flood Zones 2 and 3 as public open space.

Mapping Information

Flood Zones	<p>Flood Zones 2 and 3a are based on the Environment Agency's Flood Zone 2 and 3. The SFRA has identified Flood Zone 3b as land which would flood with an annual probability of 1 in 20 years.</p> <p>Flood Zone 3b has been derived from a combination of results from Environment Agency detailed hydraulic models, generalised 2D hydraulic modelling, and additional 2D hydraulic modelling undertaken for this SFRA.</p>
Climate change	<p>The upper end climate change allowances for the '2080's were modelled using generalised 2D modelling techniques for the purposes of the SFRA. Due to the generalised nature of the modelling, defences have not been accounted for and therefore mapping shows the 'undefended' scenario. The mapping provides a strategic assessment of climate change risk – developers should undertake detailed modelling of climate change allowances as part of a site specific FRA.</p>
Surface Water	<p>The updated Flood Map for Surface Water has been used to define areas at risk from surface water flooding.</p>

Mapping

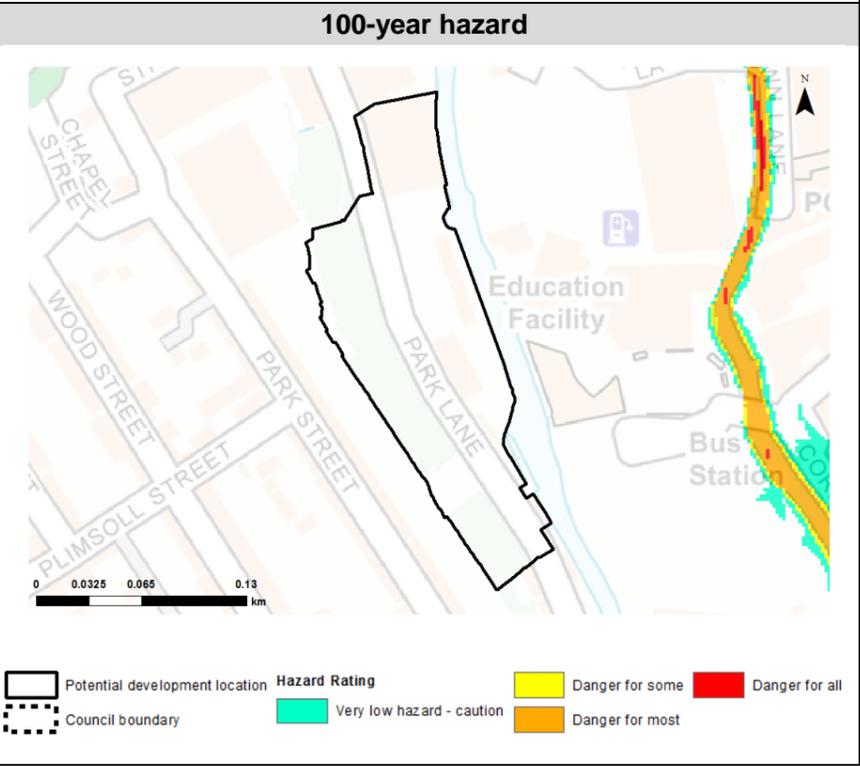
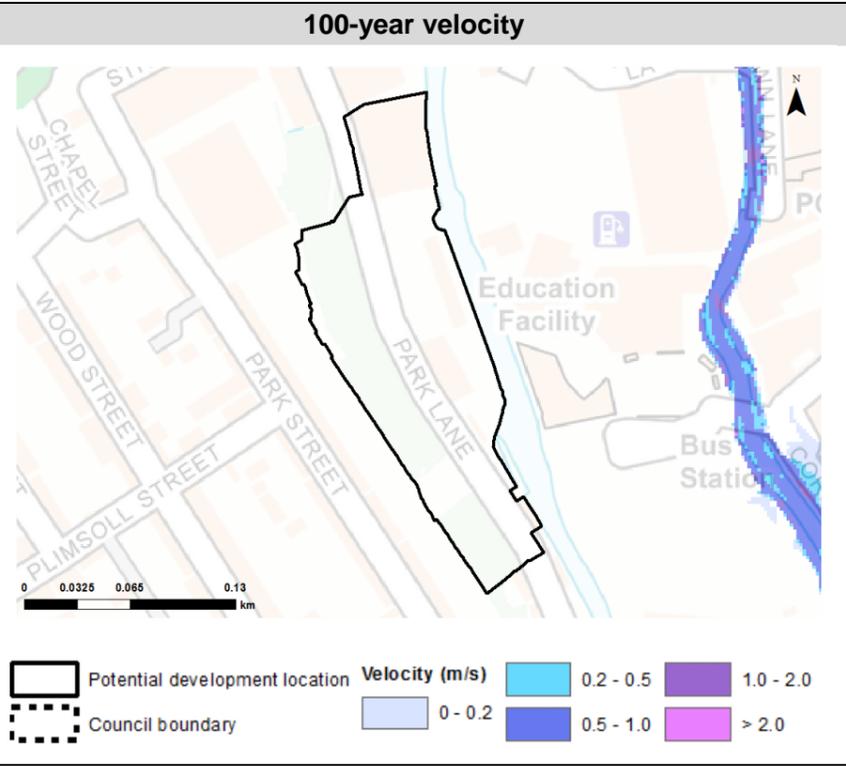
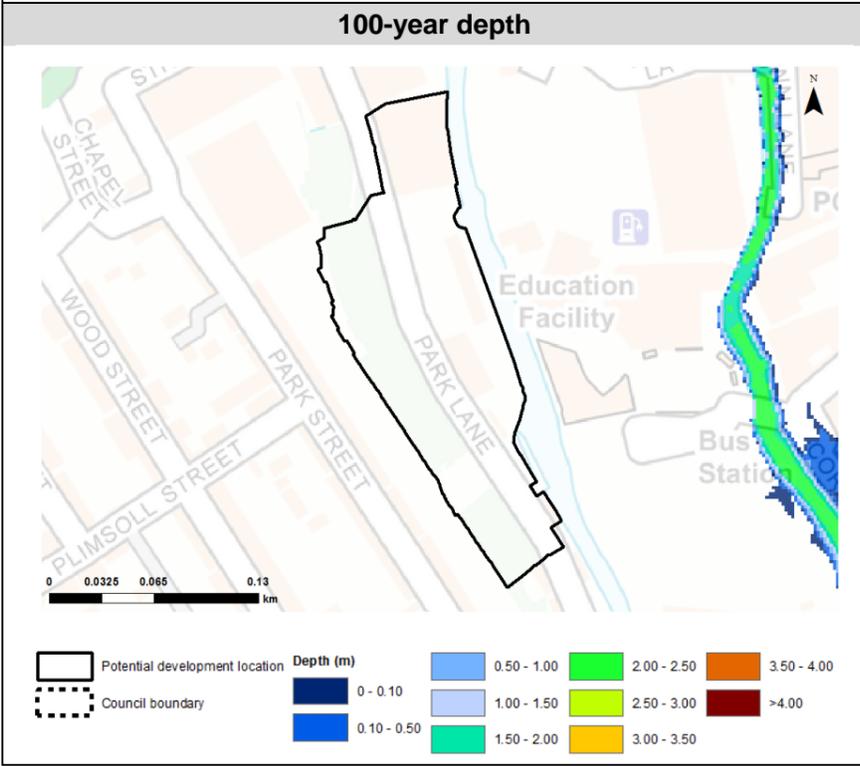
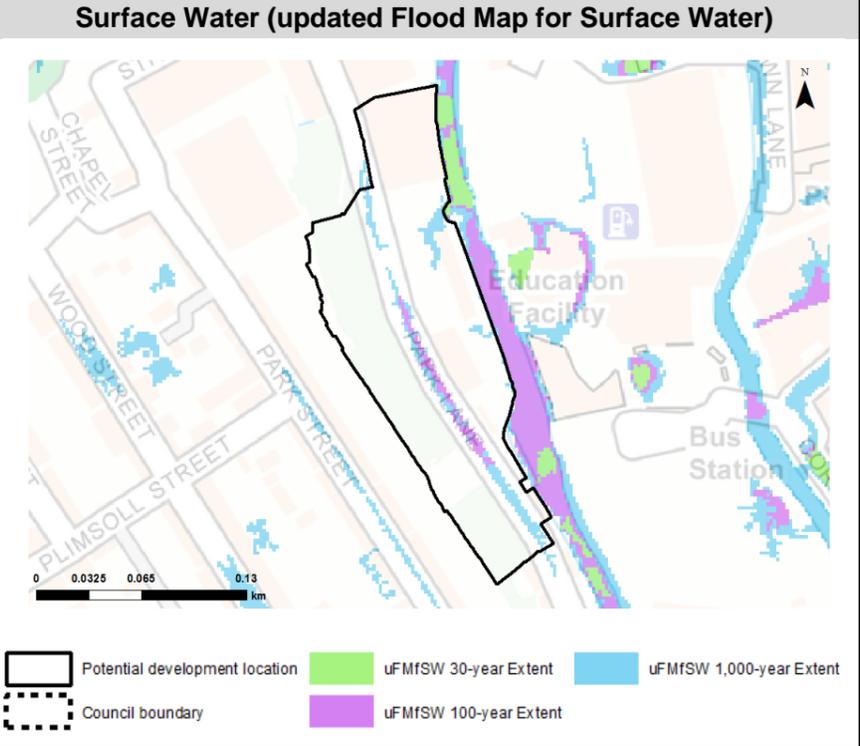
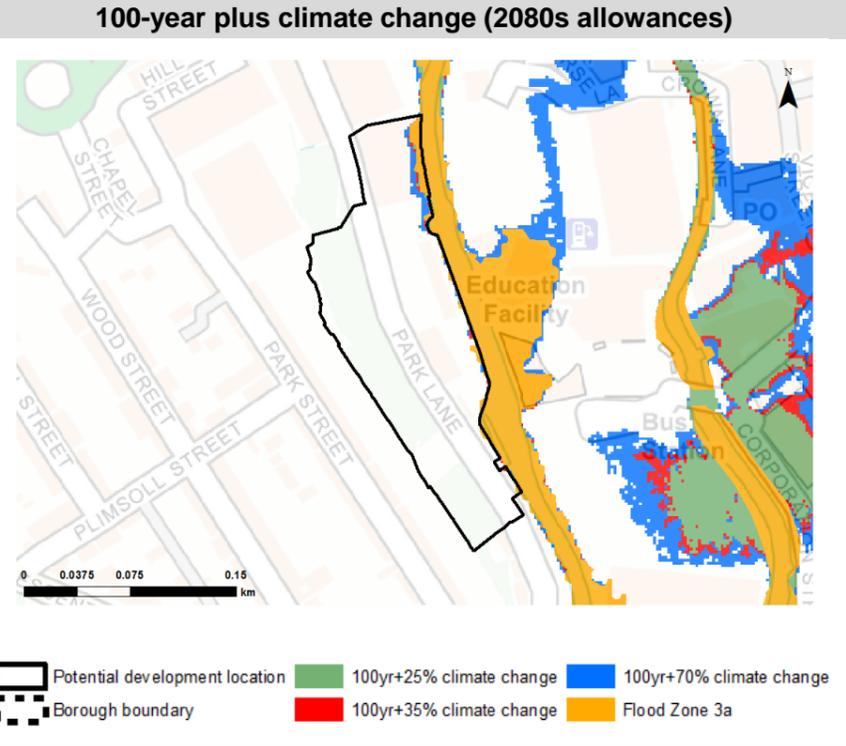
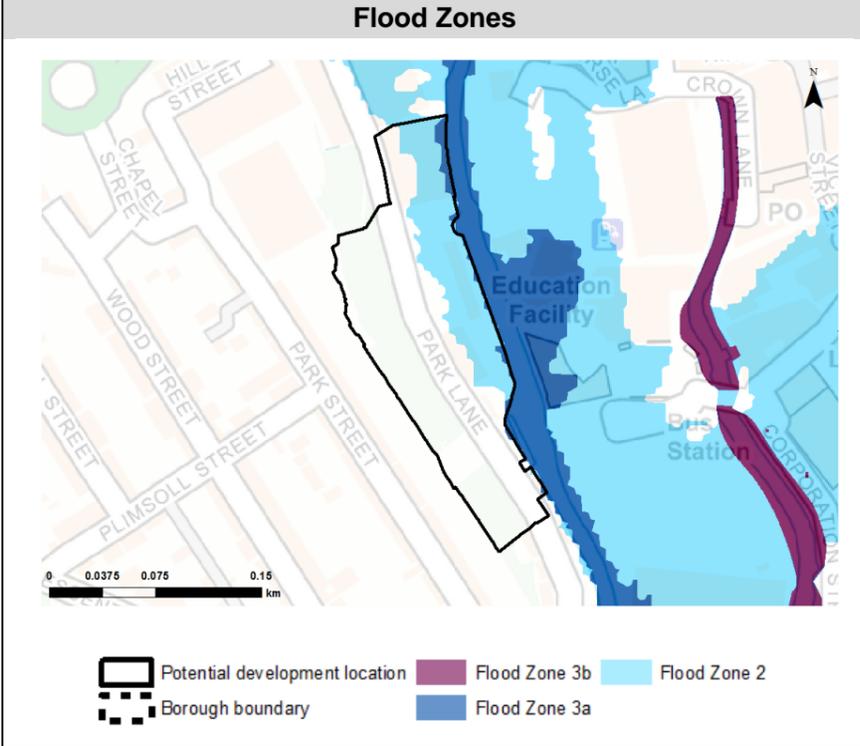
**Wyre Forest District Strategic
Flood Risk Assessment Level
2 Detailed Site Summary
Tables**



Site details	Site Code	BHS/16
	Site Name	Park Lane, Canalside (Timber Yard)
	Area	2.10ha
	Current land use	Predominantly brownfield
	Proposed site use	Residential
Depth, velocity and hazard mapping	Depth, velocity and hazard mapping for the 1 in 100-year event (Flood Zone 3a) have been taken from the Environment Agency's 2011 generalised modelling as the detailed hydraulic models did not provide this information. As a result, there may be some small discrepancies between the extent of the depth, velocity and hazard grids with the extent of Flood Zone 3a.	

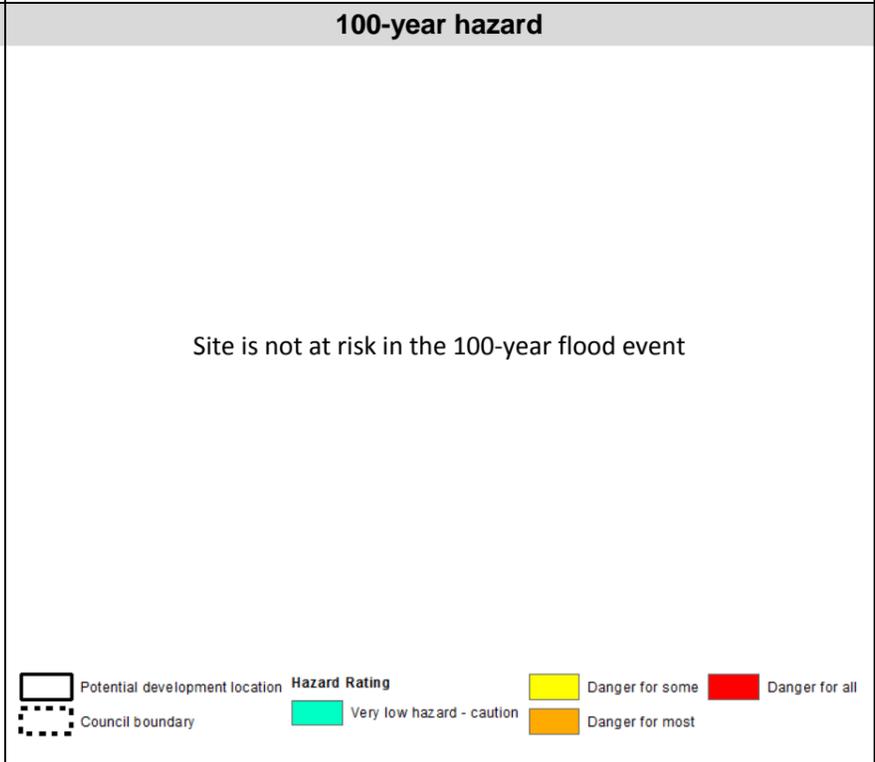
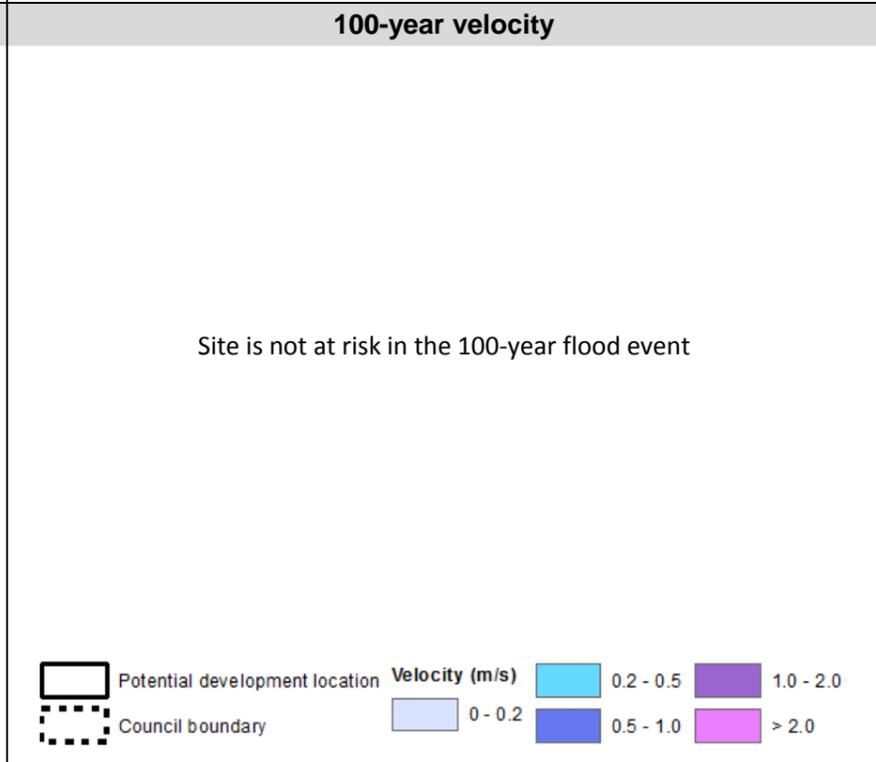
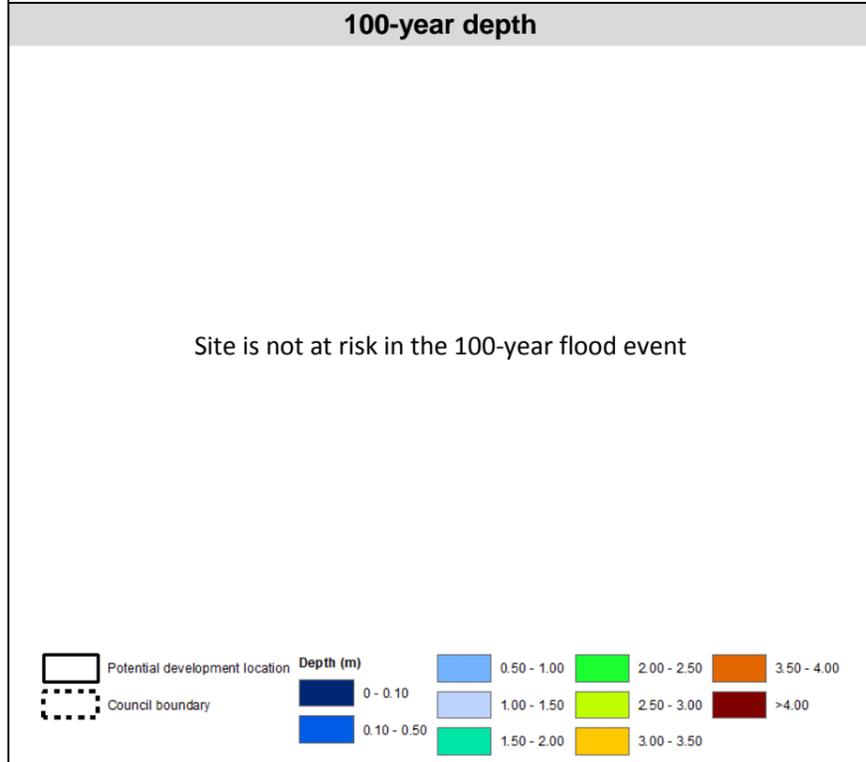
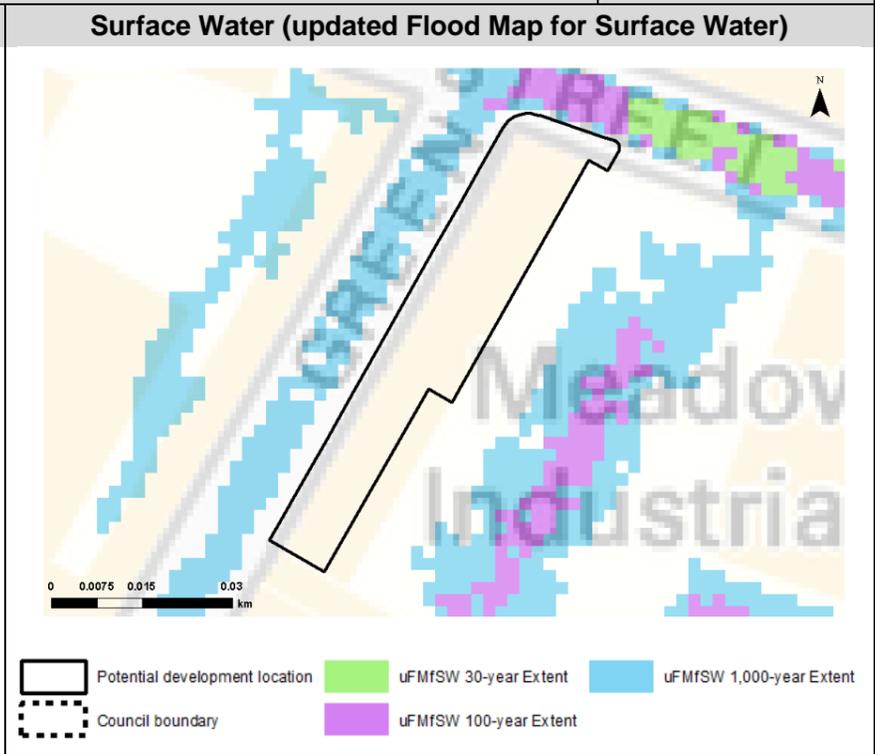
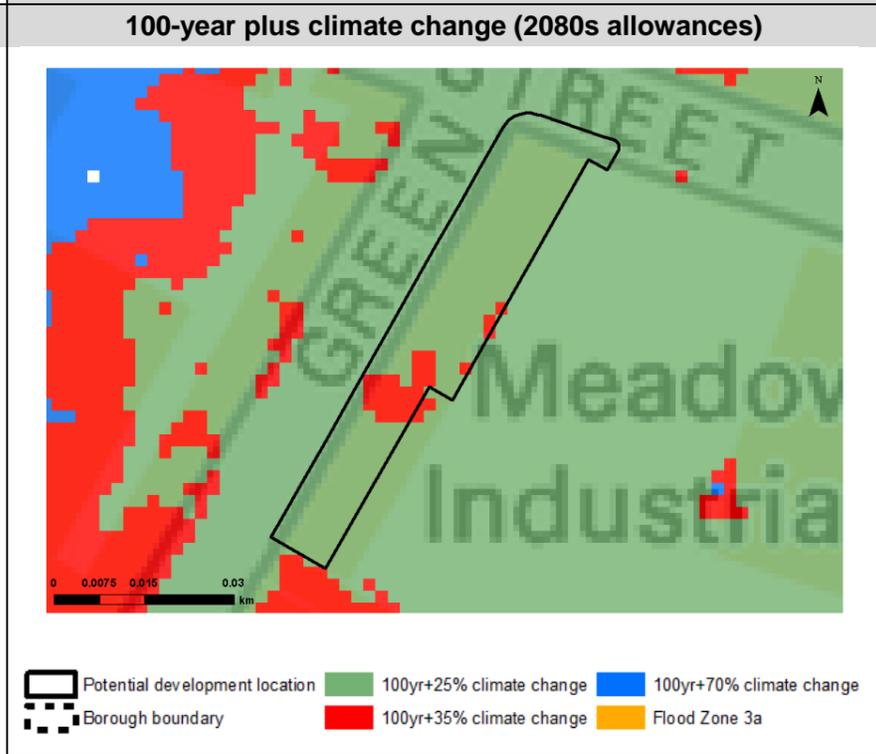
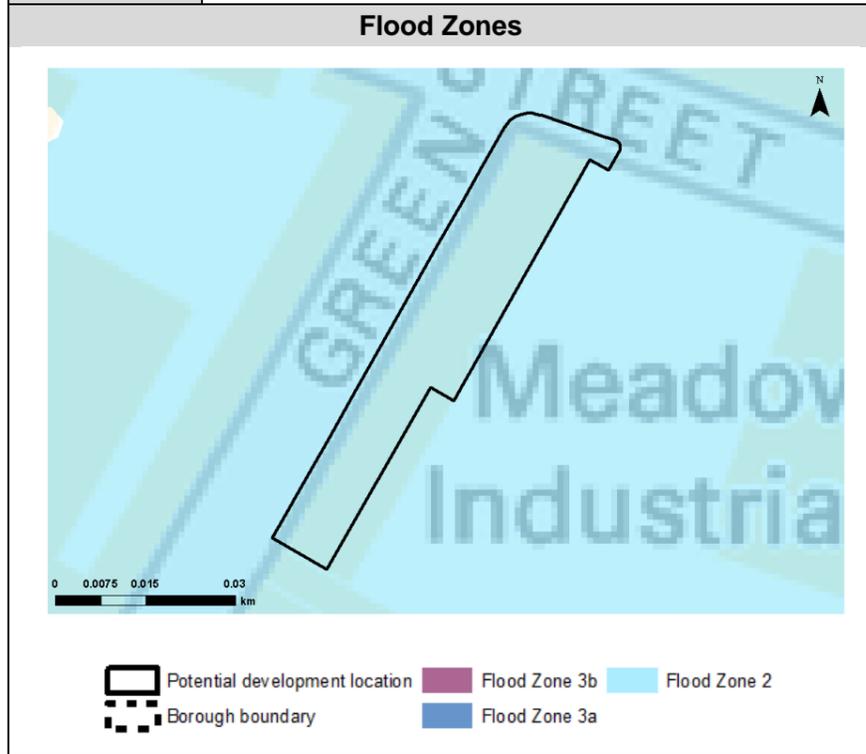
SITE CODE	BHS/16
SITE NAME	Park Lane, Canalside (Timber Yard)

Wyre Forest District Council Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



SITE CODE	BHS/30
SITE NAME	Elgar House, Green Street, Kidderminster

Wyre Forest District Council Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	FHN/9			
	Site Name	78 Mill Street, Kidderminster			
	Area	0.20ha			
	Current land use	Brownfield			
	Proposed site use	Residential			
Sources of flood risk	Existing drainage features	<ul style="list-style-type: none"> River Stour 			
	Fluvial	Proportion of site at risk			
		FZ3b	FZ3a	FZ2	FZ1
		4%	1%	95%	0%
	Fluvial flood risk from the River Stour is mostly to the northern most corner of the site as well as small section at the eastern boundary. The whole of the site is located within the Flood Zones.				
	Surface Water	Proportion of site at risk (uFMFSW)			
		30-year	100-year	1,000-year	
		0%	0%	1%	
	The northern boundary area and a small part near the eastern boundary are affected by 1-in-1000-year events only.				
	Reservoir	The site is at risk of reservoir inundation in the event of failure, the following reservoirs pose a flood risk: Hurcott Pool, Ladies Pool, Stackpool, Podmore Pool, Kidderminster Flood Storage Reservoir, Hurcott Upper Reservoir.			
Canal	There is no canal within 100m of the site.				
Flood history	The Environment Agency's historic flood map shows the site has not been affected by flooding in the past.				
Flood risk management infrastructure	Defences	Defence Type	Standard of Protection	Condition	
		-	-	-	
	Although not shown in the Environment Agency's Areas Benefitting from Defences layer, this site is afforded some protection from the Kidderminster Flood Alleviation Scheme.				
Residual risk	-				
Emergency planning	Flood warning	The site is covered, or partially covered, by the Environment Agency's flood warning service.			
	Access and egress	Access and egress off the site onto the cul-de-sac off Mill Street would be within Flood Zone 2.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		River Severn	25%	35%	70%
	% increase in flood extent compared to Flood Zone 3a			0%	+21%

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	FHN/9
	Site Name	78 Mill Street, Kidderminster
	Area	0.20ha
	Current land use	Brownfield
	Proposed site use	Residential
	Implications for the site	The extent of the site at risk of 1-in-100-year flood events increases in the 35% and 70% allowance scenarios, with approximately half the site within Flood Zone 3 in the 70% allowance.
Requirements for drainage control and impact mitigation	Broad scale assessment of possible SuDS	<ul style="list-style-type: none"> • Source control techniques are likely to be suitable for this site. • Infiltration techniques are likely to be suitable, providing the site is not at risk from groundwater flooding. • Detention features may be feasible providing site slopes are <5% at the location of the detention feature. • Filtration systems are probably suitable providing site slopes are <5% and the depth to the water table is >1m. • All forms of conveyance features are likely to be suitable. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.
	Groundwater Source Protection Zone	The site is located within Zone 3. Infiltration techniques are generally accepted in this zone.
	Historic Landfill Site	The site is not designated by the Environment Agency as previously being a landfill site.
NPPF and planning implications	Exception Test requirements	<p>The Sequential test will need to be passed before the Exception test is applied.</p> <p>The Exception test will be required in the following scenarios</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. • 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 infrastructure within FZ3a and FZ3b. • More Vulnerable and Less Vulnerable Infrastructure within FZ3b.

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	FHN/9
	Site Name	78 Mill Street, Kidderminster
	Area	0.20ha
	Current land use	Brownfield
	Proposed site use	Residential
	Requirements for site-specific Flood Risk Assessment	<ul style="list-style-type: none"> At the planning application stage, a site-specific flood risk assessment will be required if any development is located within Flood Zones 2 or 3. Other sources of flooding should also be considered. Climate change modelling should be undertaken using the relevant allowances for the type of development and level of risk. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage. Resilience measures will be required if buildings are situated in the flood risk area. Onsite attenuation schemes would need to be tested against the hydrographs of the River Stour to ensure flows are not exacerbated downstream within the catchment. New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff. Assessment for runoff should include allowance for climate change effects. New development must seek opportunities to reduce overall level of flood risk at the site, for example by: <ul style="list-style-type: none"> Reducing volume and rate of runoff Relocating development to zones with lower flood risk Creating space for flooding. Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development and consider using Flood Zone 2 and 3 as public open space.
Mapping Information		
Flood Zones	<p>Flood Zones 2 and 3a are based on the Environment Agency's Flood Zone 2 and 3. The SFRA has identified Flood Zone 3b as land which would flood with an annual probability of 1 in 20 years.</p> <p>Flood Zone 3b has been derived from a combination of results from Environment Agency detailed hydraulic models, generalised 2D hydraulic modelling, and additional 2D hydraulic modelling undertaken for this SFRA.</p>	
Climate change	<p>The upper end climate change allowances for the '2080's were modelled using generalised 2D modelling techniques for the purposes of the SFRA. Due to the generalised nature of the modelling, defences have not been accounted for and therefore mapping shows the 'undefended' scenario. The mapping provides a strategic assessment of climate change risk – developers should undertake detailed modelling of climate change allowances as part of a site specific FRA.</p>	
Surface Water	<p>The updated Flood Map for Surface Water has been used to define areas at risk from surface water flooding.</p>	

Mapping

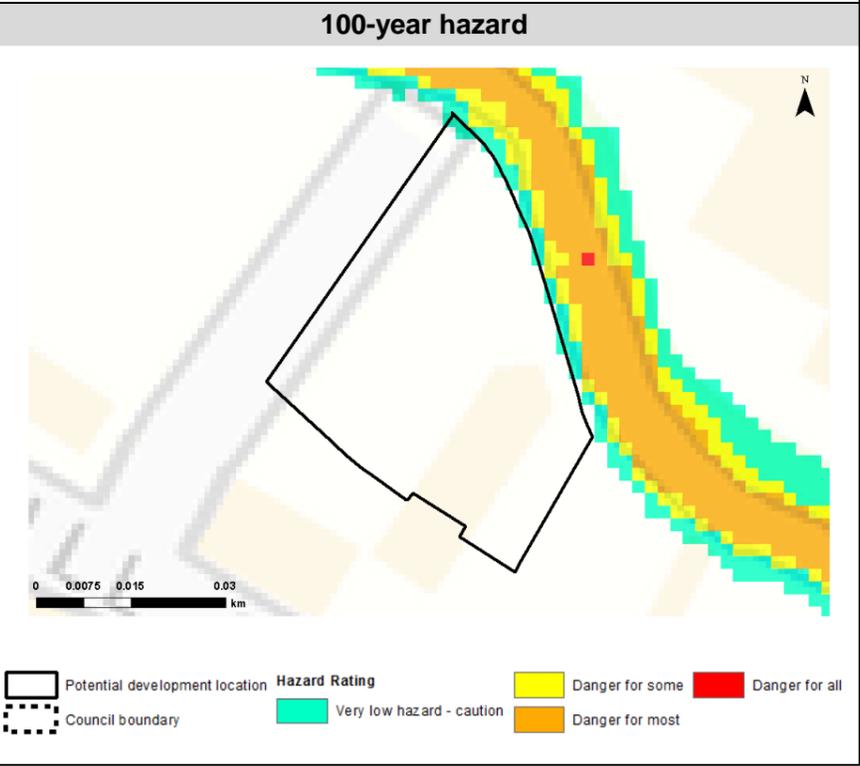
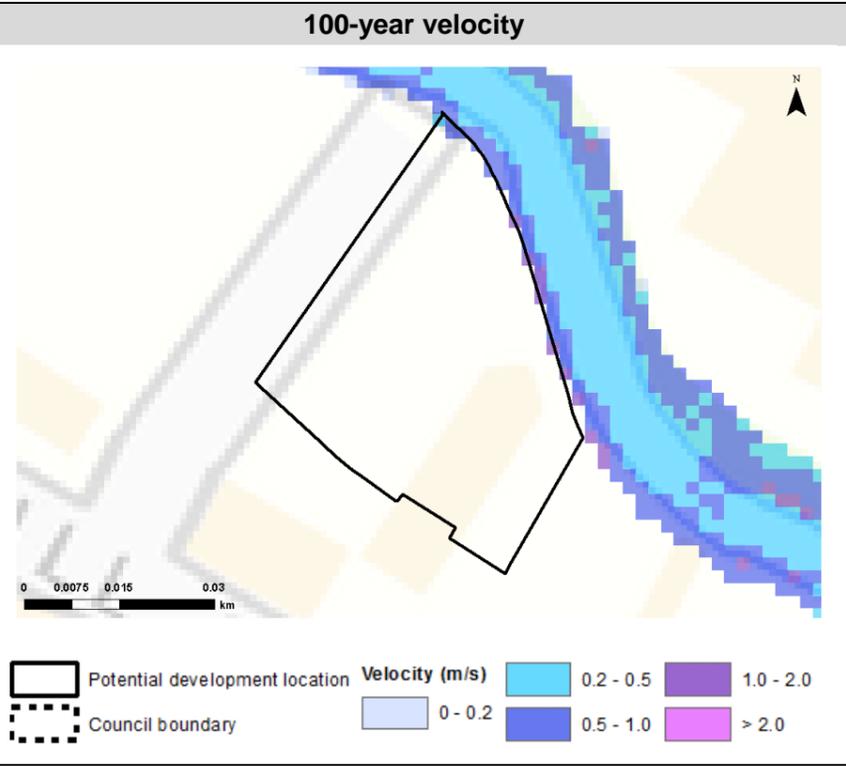
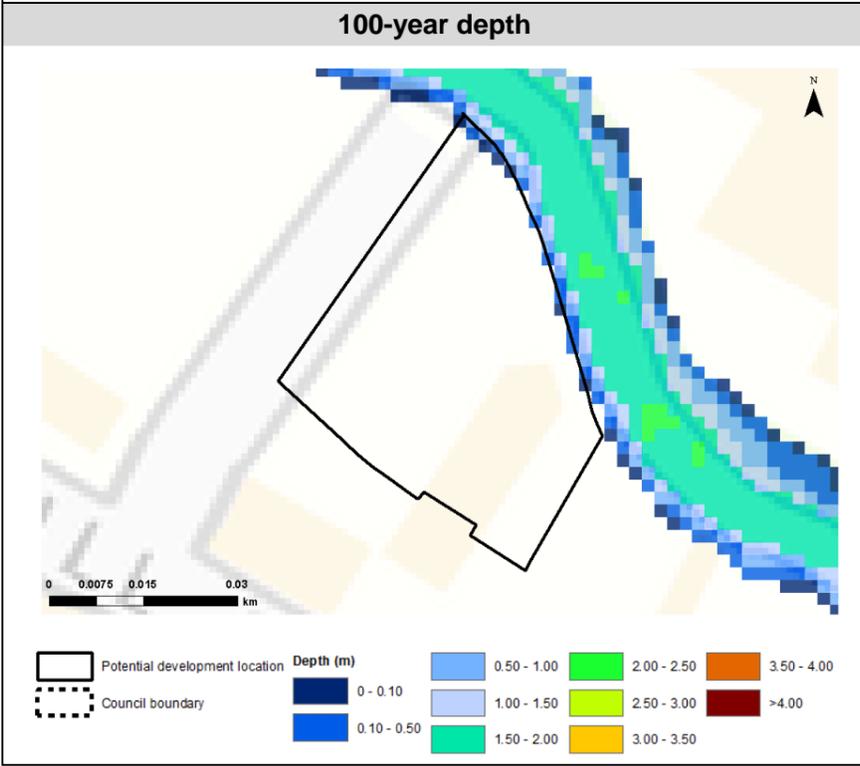
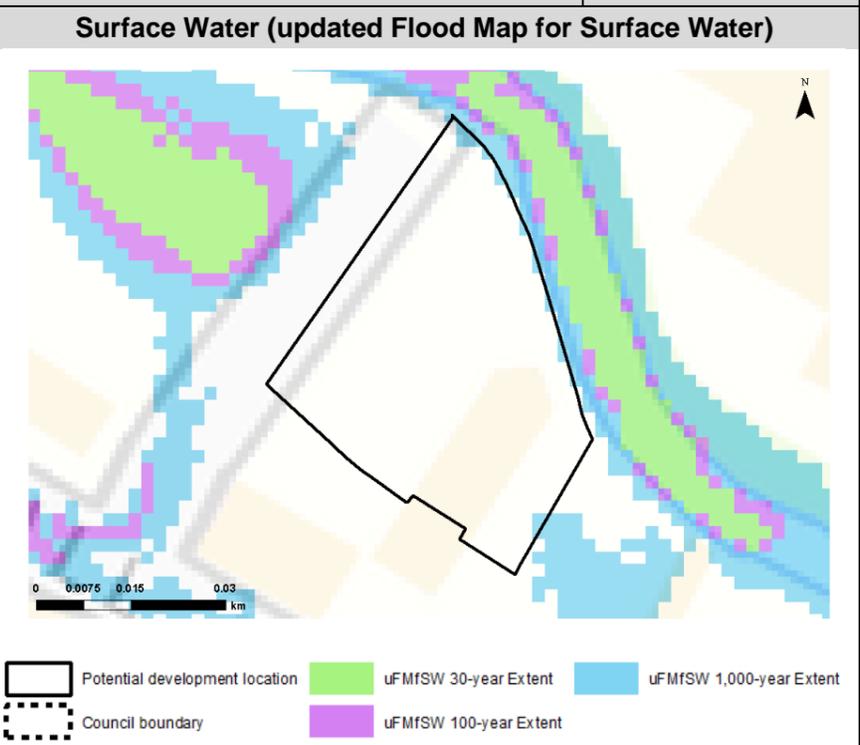
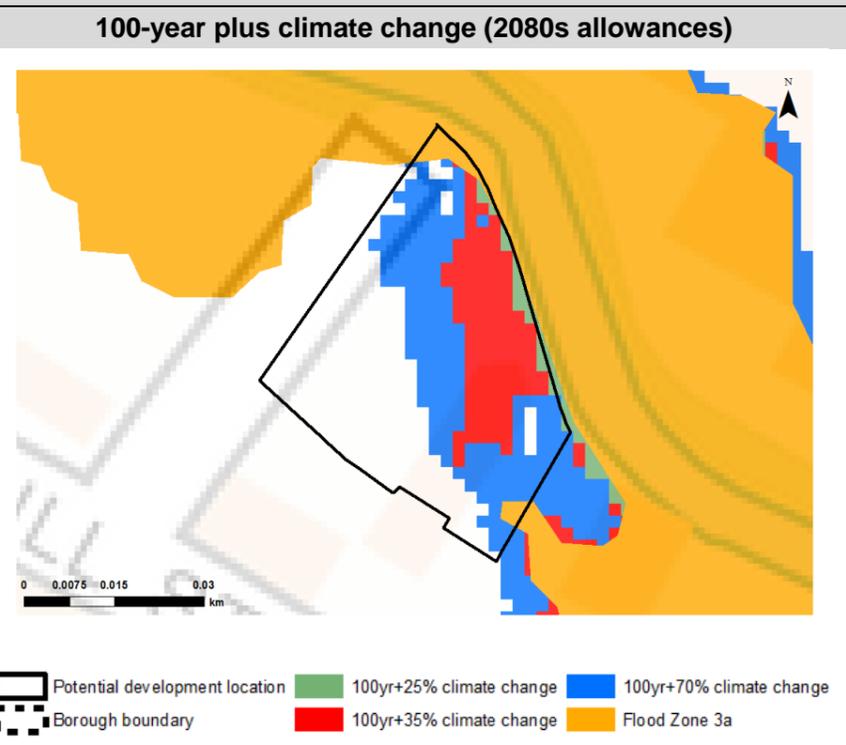
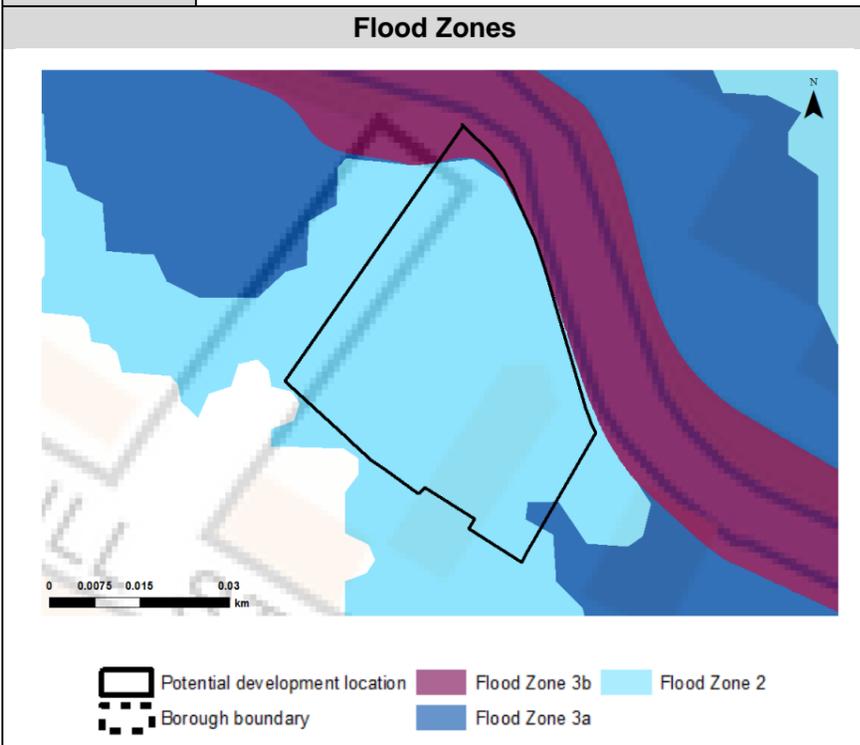
**Wyre Forest District Strategic
Flood Risk Assessment Level
2 Detailed Site Summary
Tables**



Site details	Site Code	FHN/9
	Site Name	78 Mill Street, Kidderminster
	Area	0.20ha
	Current land use	Brownfield
	Proposed site use	Residential
Depth, velocity and hazard mapping	Depth, velocity and hazard mapping for the 1 in 100-year event (Flood Zone 3a) have been taken from the Environment Agency's 2011 generalised modelling as the detailed hydraulic models did not provide this information. As a result, there may be some small discrepancies between the extent of the depth, velocity and hazard grids with the extent of Flood Zone 3a.	

SITE CODE	FHN/9
SITE NAME	78 Mill Street, Kidderminster

Wyre Forest District Council Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	FPH/1			
	Site Name	Settling ponds, Wilden Lane			
	Area	4.06ha			
	Current land use	Greenfield			
	Proposed site use	Commercial			
Sources of flood risk	Existing drainage features	<ul style="list-style-type: none"> • River Stour • Hoo Brook • Unnamed Drain (north) • Unnamed Drain (south) • Staffordshire and Worcestershire Canal 			
	Fluvial	Proportion of site at risk			
		FZ3b	FZ3a	FZ2	FZ1
		0%	0%	4%	96%
	Fluvial flood risk is primarily from the River Stour flowing past the west of the site. Overtopping of the river channel places a small area along the eastern boundary within Flood Zone 2. Flood waters from Hoo Brook also encroach upon the northern boundary.				
	Surface Water	Proportion of site at risk (uFMFSW)			
		30-year	100-year	1,000-year	
		0%	0%	1%	
Isolated cases of surface water ponding take place centrally within the site in the 1,000-year scenario.					
Reservoir	The site is potentially at risk from reservoir inundation in the event of failure from the Kidderminster Flood Storage Reservoir.				
Canal	The Staffordshire and Worcestershire Canal is located approximately 150m to the west of the site.				
Flood history	The Environment Agency's historic flood map shows the site has not flooded in the past.				
Flood risk management infrastructure	Defences	Defence Type	Standard of Protection	Condition	
		-	-	-	
		This site is not protected by any formal flood defences.			
	Residual risk	-			
Emergency planning	Flood warning	The site is covered, or partially covered, by the Environment Agency's flood warning service.			
	Access and egress	Safe access and egress for the site is possible via Wilden Lane.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		River Severn	25%	35%	70%
	% increase in flood extent compared to Flood Zone 3a		0%	0%	+1%

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	FPH/1
	Site Name	Settling ponds, Wilden Lane
	Area	4.06ha
	Current land use	Greenfield
	Proposed site use	Commercial
	Implications for the site	There are limited implications of climate change shown to the site with no increase in extents; however, a small part currently within FZ2 would become FZ3 in the 70% allowance scenario.
Requirements for drainage control and impact mitigation	Broad scale assessment of possible SuDS	<ul style="list-style-type: none"> • Source control techniques are likely to be suitable for this site. If groundwater is identified as a potential risk for the site, then non-infiltrating systems may be required. • Infiltration techniques are likely to be suitable, providing the site is not at risk from groundwater flooding. • Detention features may be feasible providing site slopes are <5% at the location of the detention feature. If groundwater is a risk to the site, then a liner may be required to mitigate against potential contamination issues. • Filtration systems are probably suitable providing site slopes are <5% and the depth to the water table is >1m. If the site has contamination issues, or at risk from groundwater, then a liner will be required. • All forms of conveyance features are likely to be suitable. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.
	Groundwater Source Protection Zone	The site is located within Zone 3. Infiltration techniques are generally accepted in this zone.
	Historic Landfill Site	This site has areas within its boundary designated by the Environment Agency as being a landfill site. A thorough ground investigation will be required as part of a detailed FRA to determine the extent of the contamination and the impact this may have on SuDS. As such proposed SuDS should be discussed with the relevant stakeholders (LPA, LLFA and EA) at an early stage to understand possible constraints.
NPPF and planning implications	Exception Test requirements	The Sequential test will need to be passed before the Exception test is applied. The Exception test will be required If Highly Vulnerable development is located in FZ2.

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	FPH/1
	Site Name	Settling ponds, Wilden Lane
	Area	4.06ha
	Current land use	Greenfield
	Proposed site use	Commercial
	Requirements for site-specific Flood Risk Assessment	<ul style="list-style-type: none"> At the planning application stage, a site-specific flood risk assessment will be required if any development is located within Flood Zone 2 or for any development greater than one hectare in Flood Zone 1. Other sources of flooding should also be considered. Climate change modelling should be undertaken using the relevant allowances for the type of development and level of risk. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage. Resilience measures will be required if buildings are situated in the flood risk area. Onsite attenuation schemes would need to be tested against the hydrographs of the River Stour and Hoo Brook to ensure flows are not exacerbated downstream within the catchment. New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff. Assessment for runoff should include allowance for climate change effects. Risk from the Unnamed Drains and Staffordshire and Worcestershire Canal should be considered. New development must seek opportunities to reduce overall level of flood risk at the site, for example by: <ul style="list-style-type: none"> Reducing volume and rate of runoff Relocating development to zones with lower flood risk Creating space for flooding. Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development and consider using Flood Zones 2 as public open space.
Mapping Information		
Flood Zones	<p>Flood Zones 2 and 3a are based on the Environment Agency's Flood Zone 2 and 3. The SFRA has identified Flood Zone 3b as land which would flood with an annual probability of 1 in 20 years.</p> <p>Flood Zone 3b has been derived from a combination of results from Environment Agency detailed hydraulic models, generalised 2D hydraulic modelling, and additional 2D hydraulic modelling undertaken for this SFRA.</p>	
Climate change	<p>The upper end climate change allowances for the '2080's were modelled using generalised 2D modelling techniques for the purposes of the SFRA. Due to the generalised nature of the modelling, defences have not been accounted for and therefore mapping shows the 'undefended' scenario. The mapping provides a strategic assessment of climate change risk – developers should undertake detailed modelling of climate change allowances as part of a site specific FRA.</p>	

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables

JBA
consulting

Site details	Site Code	FPH/1
	Site Name	Settling ponds, Wilden Lane
	Area	4.06ha
	Current land use	Greenfield
	Proposed site use	Commercial
Surface Water	The updated Flood Map for Surface Water has been used to define areas at risk from surface water flooding.	
Depth, velocity and hazard mapping	Depth, velocity and hazard mapping for the 1 in 100-year event (Flood Zone 3a) have been taken from the Environment Agency's 2011 generalised modelling as the detailed hydraulic models did not provide this information. As a result, there may be some small discrepancies between the extent of the depth, velocity and hazard grids with the extent of Flood Zone 3a.	

SITE CODE	FPH_1
SITE NAME	Settling ponds, Wilden Lane

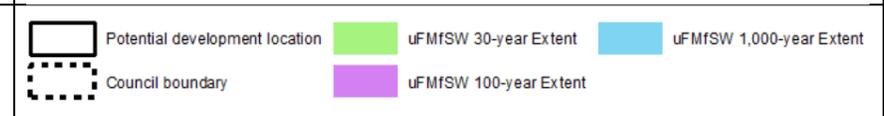
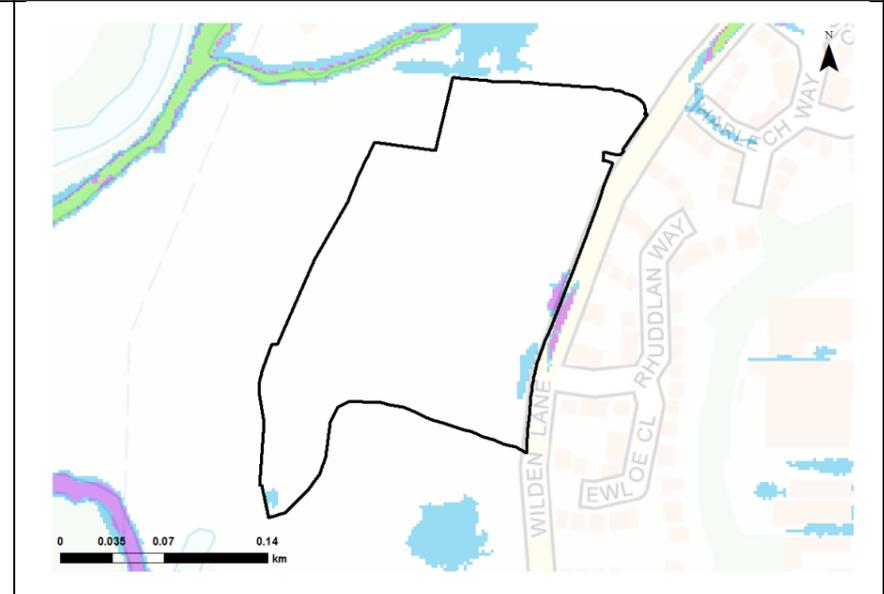
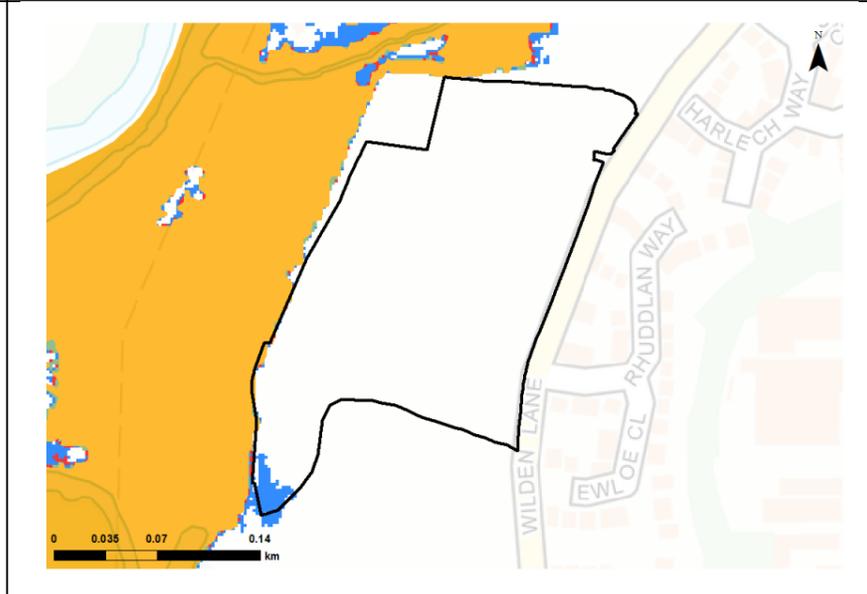
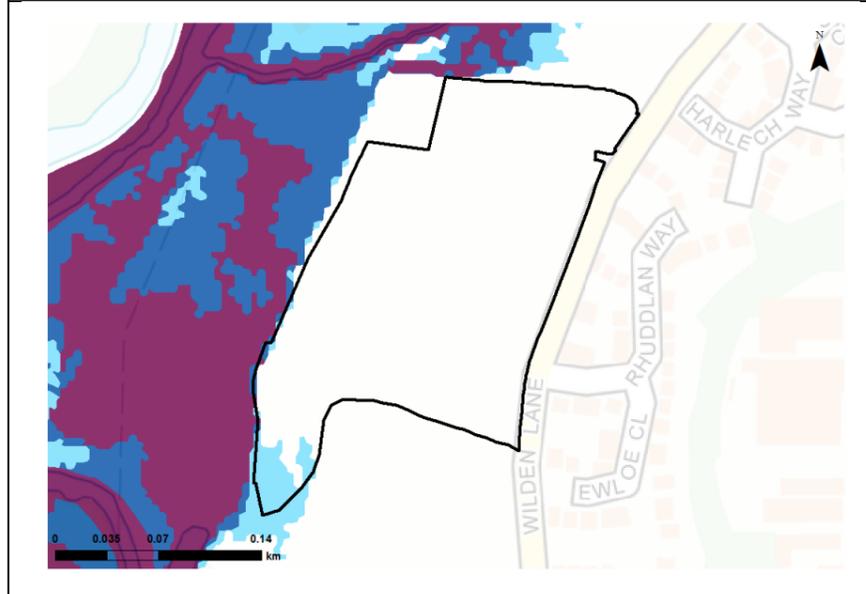
Wyre Forest District Council Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Flood Zones

100-year plus climate change (2080s allowances)

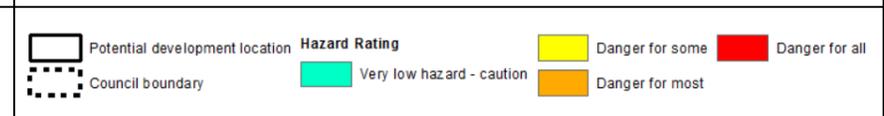
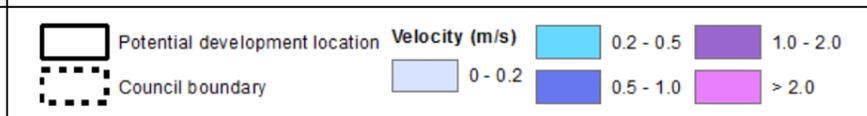
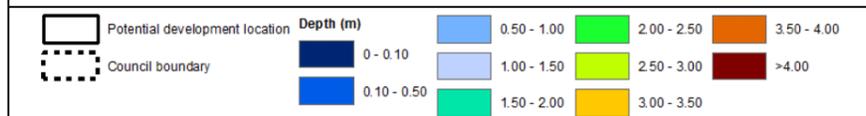
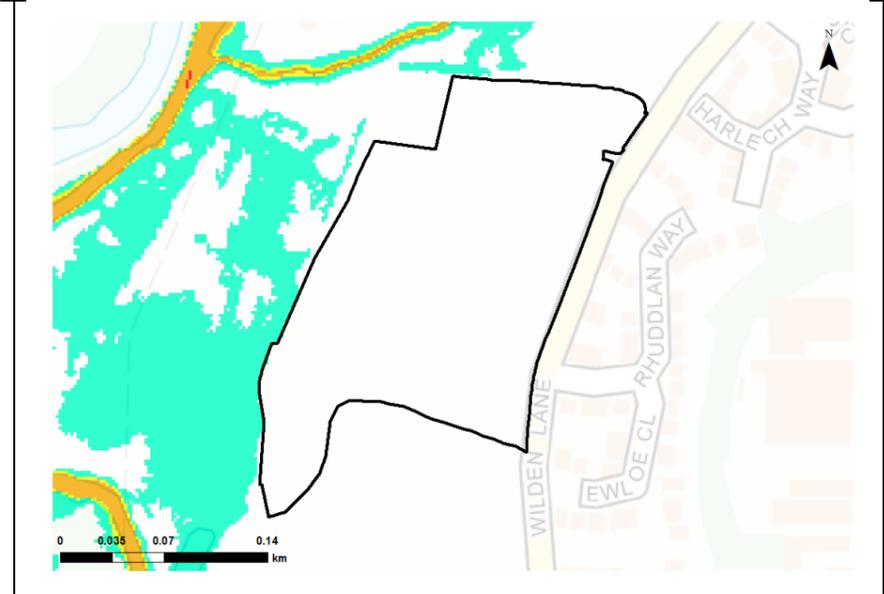
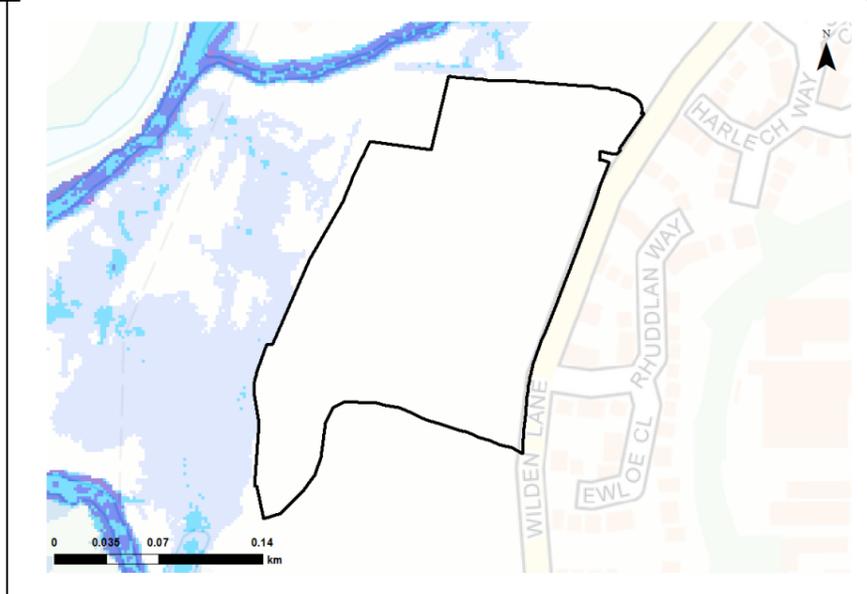
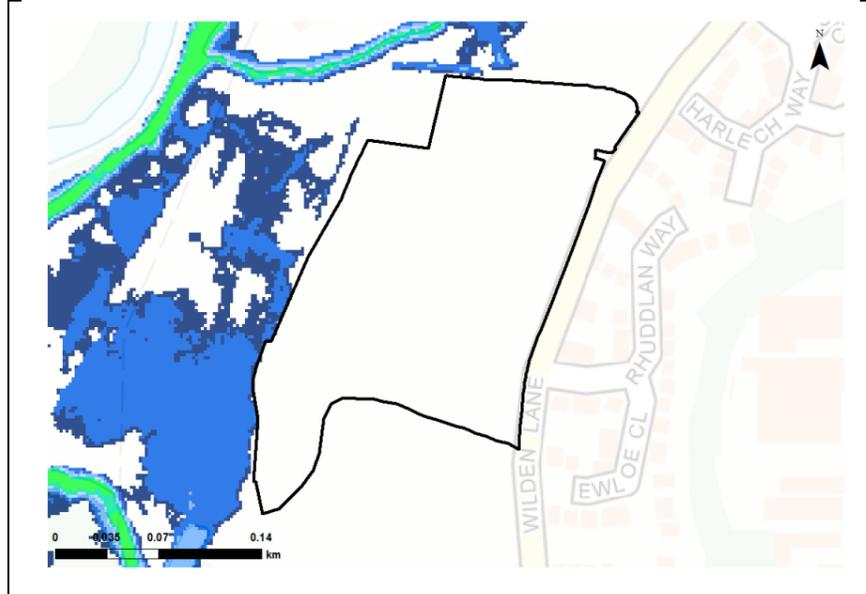
Surface Water (updated Flood Map for Surface Water)



100-year depth

100-year velocity

100-year hazard



Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	MI/5			
	Site Name	Baldwin Road			
	Area	2.06ha			
	Current land use	Mixed greenfield / brownfield			
	Proposed site use	Residential			
Sources of flood risk	Existing drainage features	<ul style="list-style-type: none"> River Stour Staffordshire and Worcestershire Canal 			
	Fluvial	Proportion of site at risk			
		FZ3b	FZ3a	FZ2	FZ1
		13%	31%	1%	55%
	The primary fluvial flood risk to the site is from the River Stour to the south. Much of the south of the site is located within FZ3a with the south west corner also within FZ3b				
	Surface Water	Proportion of site at risk (uFMFSW)			
		30-year	100-year	1,000-year	
		1%	1%	11%	
Surface water flooding takes place in isolated pockets of pooling across the site increasing in number and size as the return period increases.					
Reservoir	The site is susceptible to flooding from the Kidderminster Flood Storage Reservoir should it fail.				
Canal	The site is within 100 metres of the Staffordshire and Worcestershire Canal.				
Flood history	The Environment Agency's historic flood map shows no flooding to the site in the past.				
Flood risk management infrastructure	Defences	Defence Type	Standard of Protection	Condition	
		-	-	-	
	This site is not protected by any formal flood defences.				
Residual risk	-				
Emergency planning	Flood warning	The site is covered, or partially covered, by the Environment Agency's flood warning service			
	Access and egress	Safe access and egress for the site could be an issues as the adjacent roads of Baldwin road and Baldwin Grove are within Flood Zone 3.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		River Severn	25%	35%	70%
	Implications for the site	There is some discrepancy between the Flood Zones and climate change outlines in this area, with climate change extents less than that of the 1 in 100-year. This is likely due to the Flood Zones being based upon a detailed hydraulic model, whilst the climate change outlines were modelled using 2D generalised techniques. Developers should undertake detailed modelling of climate change allowances as part of a site specific FRA.			

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	MI/5
	Site Name	Baldwin Road
	Area	2.06ha
	Current land use	Mixed greenfield / brownfield
	Proposed site use	Residential
Requirements for drainage control and impact mitigation	Broad scale assessment of possible SuDS	<ul style="list-style-type: none"> • Source control techniques are likely to be suitable for this site. If groundwater is identified as a potential risk for the site, then non-infiltrating systems may be required. • Infiltration techniques are likely to be suitable, providing the site is not at risk from groundwater flooding. • Detention features may be feasible providing site slopes are <5% at the location of the detention feature. If groundwater is a risk to the site, then a liner may be required to mitigate against potential contamination issues. • Filtration systems are probably suitable providing site slopes are <5% and the depth to the water table is >1m. If the site has contamination issues, or at risk from groundwater, then a liner will be required. • All forms of conveyance features are likely to be suitable. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.
	Groundwater Source Protection Zone	The site is located within Zone 3. Infiltration techniques are generally accepted in this zone.
	Historic Landfill Site	The site is not designated by the Environment Agency as previously being a landfill site.
NPPF and planning implications	Exception Test requirements	<p>The Sequential test will need to be passed before the Exception test is applied.</p> <p>The Exception test will be required in the following scenarios</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. • 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 infrastructure within FZ3a and FZ3b. • More Vulnerable and Less Vulnerable Infrastructure within FZ3b.

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	MI/5
	Site Name	Baldwin Road
	Area	2.06ha
	Current land use	Mixed greenfield / brownfield
	Proposed site use	Residential

Requirements for site-specific Flood Risk Assessment	<ul style="list-style-type: none"> At the planning application stage, a site-specific flood risk assessment will be required if any development is located within Flood Zone 2 or 3 or for any development greater than one hectare in Flood Zone 1. Other sources of flooding should also be considered. Climate change modelling should be undertaken using the relevant allowances for the type of development and level of risk. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage. Resilience measures will be required if buildings are situated in the flood risk area. Onsite attenuation schemes would need to be tested against the hydrographs of the River Stour to ensure flows are not exacerbated downstream within the catchment. New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff. Assessment for runoff should include allowance for climate change effects. Risk from the Staffordshire and Worcestershire Canal should be considered. New development must seek opportunities to reduce overall level of flood risk at the site, for example by: <ul style="list-style-type: none"> Reducing volume and rate of runoff Relocating development to zones with lower flood risk Creating space for flooding. Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development and consider using Flood Zones 2 and 3 as public open space.
---	---

Mapping Information

Flood Zones	<p>Flood Zones 2 and 3a are based on the Environment Agency's Flood Zone 2 and 3. The SFRA has identified Flood Zone 3b as land which would flood with an annual probability of 1 in 20 years.</p> <p>Flood Zone 3b has been derived from a combination of results from Environment Agency detailed hydraulic models, generalised 2D hydraulic modelling, and additional 2D hydraulic modelling undertaken for this SFRA.</p>
Climate change	<p>The upper end climate change allowances for the '2080's were modelled using generalised 2D modelling techniques for the purposes of the SFRA. Due to the generalised nature of the modelling, defences have not been accounted for and therefore mapping shows the 'undefended' scenario. The mapping provides a strategic assessment of climate change risk – developers should undertake detailed modelling of climate change allowances as part of a site specific FRA.</p>
Surface Water	<p>The updated Flood Map for Surface Water has been used to define areas at risk from surface water flooding.</p>

Mapping

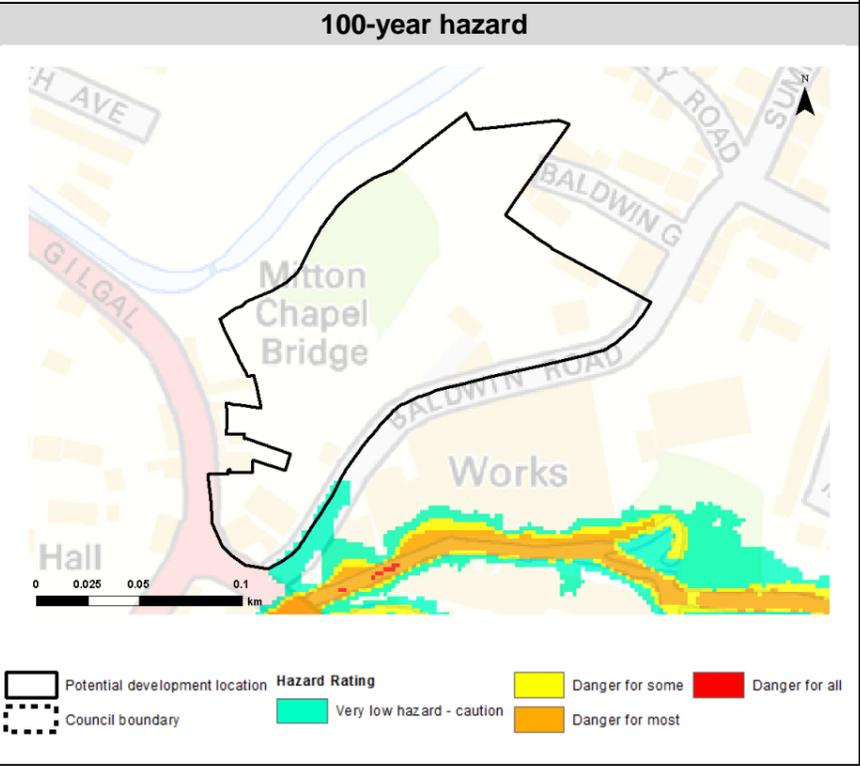
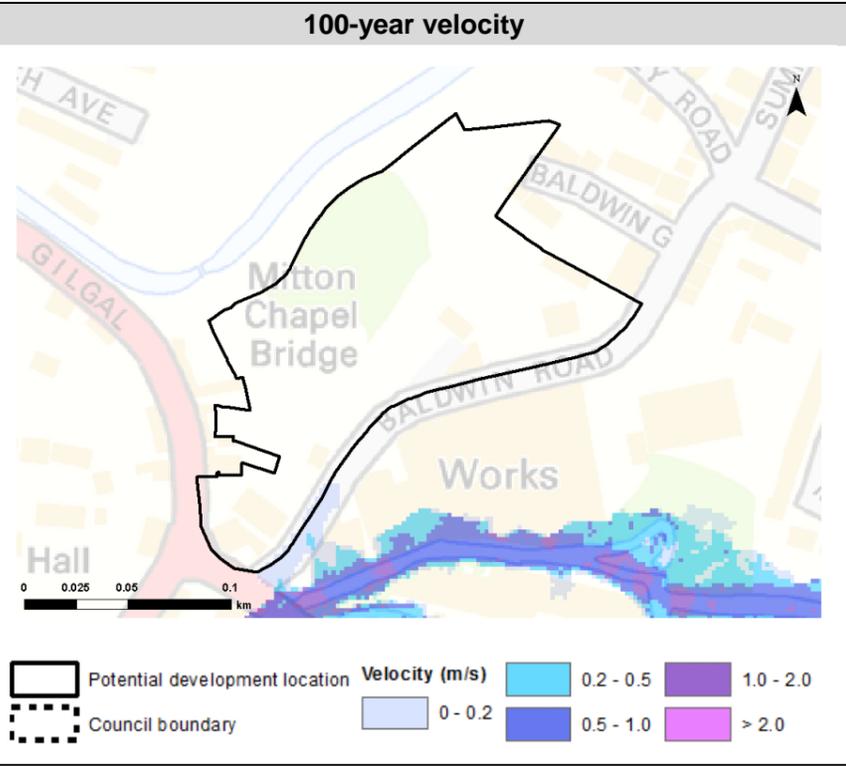
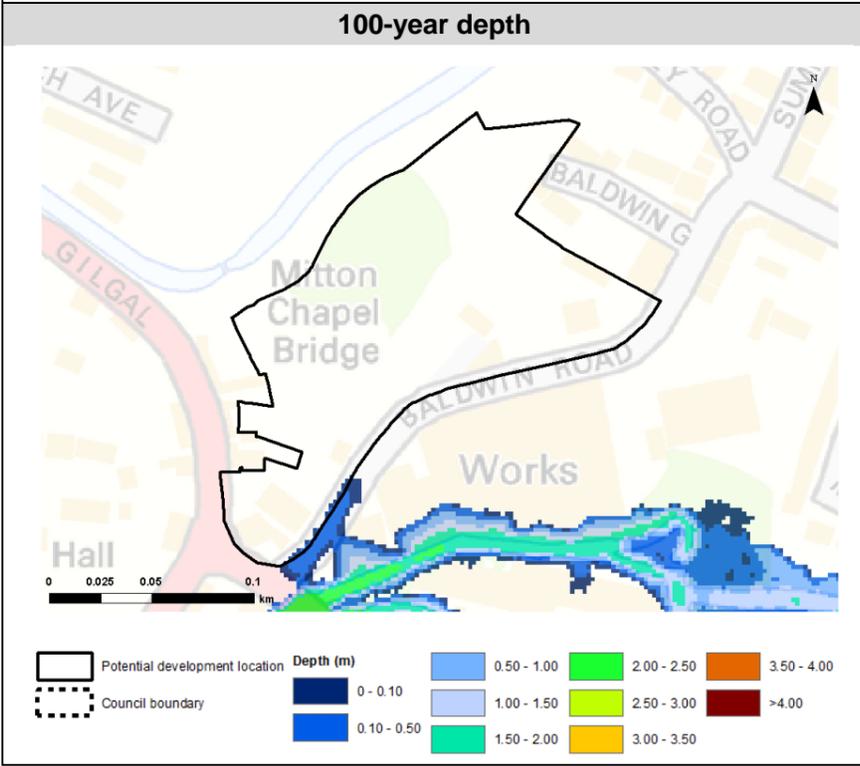
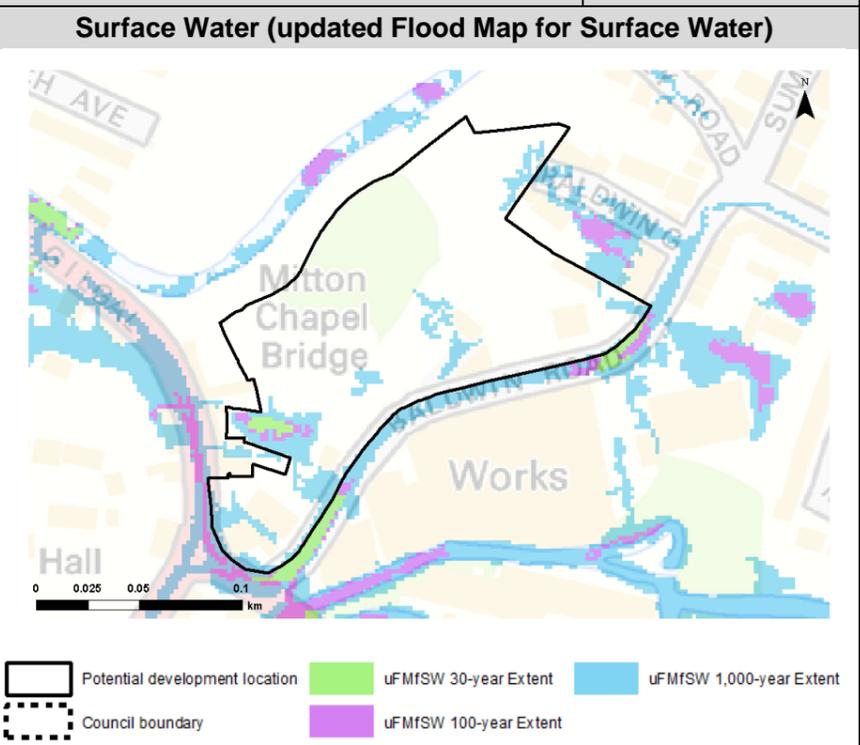
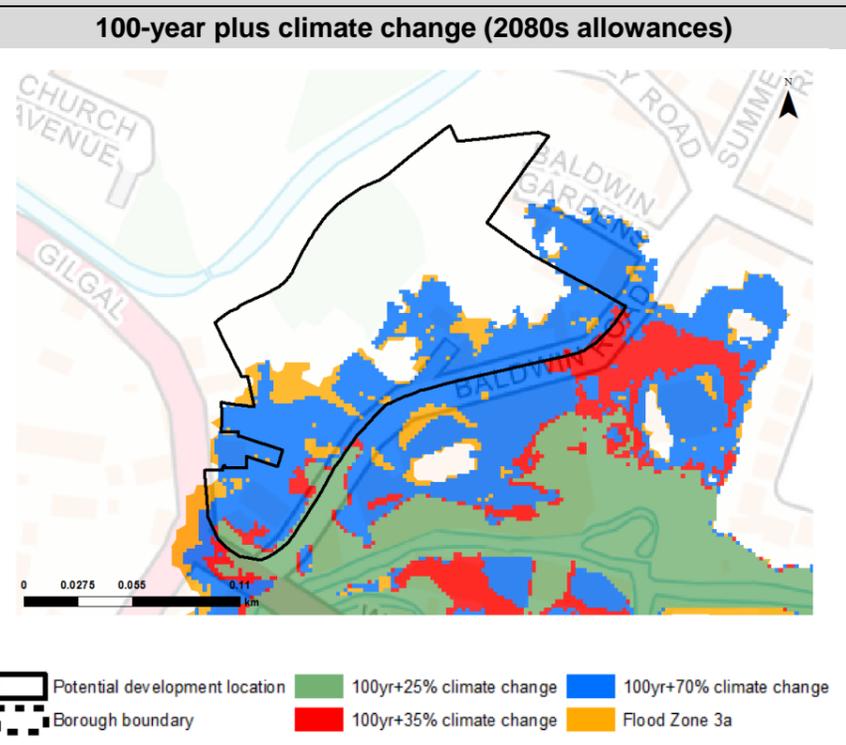
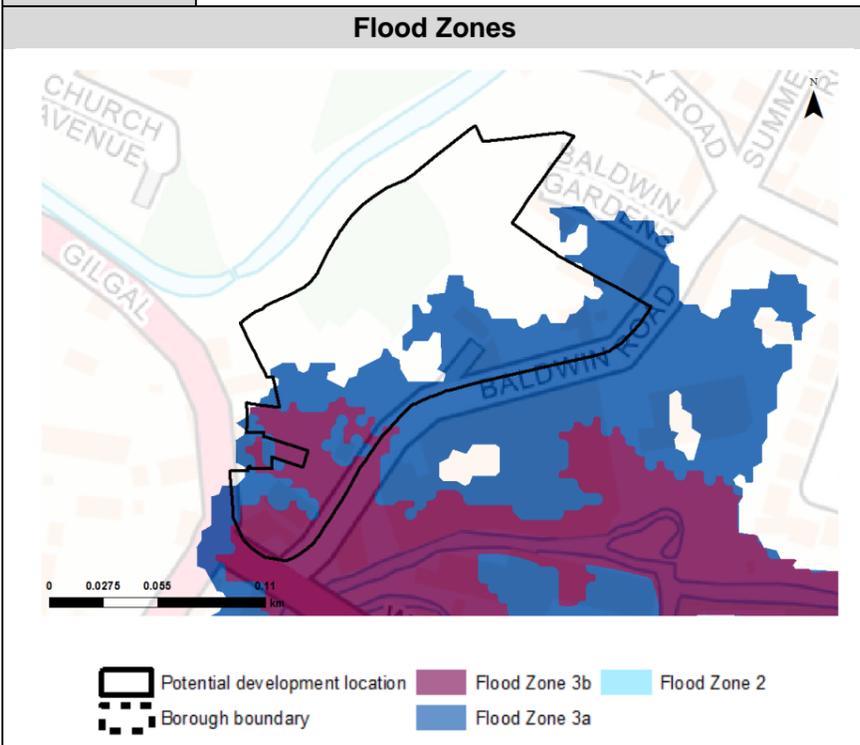
**Wyre Forest District Strategic
Flood Risk Assessment Level
2 Detailed Site Summary
Tables**



Site details	Site Code	MI/5
	Site Name	Baldwin Road
	Area	2.06ha
	Current land use	Mixed greenfield / brownfield
	Proposed site use	Residential
Depth, velocity and hazard mapping	Depth, velocity and hazard mapping for the 1 in 100-year event (Flood Zone 3a) have been taken from the Environment Agency's 2011 generalised modelling as the detailed hydraulic models did not provide this information. As a result, there may be some small discrepancies between the extent of the depth, velocity and hazard grids with the extent of Flood Zone 3a.	

SITE CODE	MI/5
SITE NAME	Baldwin Road

Wyre Forest District Council Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	MI/18			
	Site Name	North of Wilden Lane Industrial Estate			
	Area	0.22ha			
	Current land use	Brownfield			
	Proposed site use	Commercial			
Sources of flood risk	Existing drainage features	River Stour			
	Fluvial	Proportion of site at risk			
		FZ3b	FZ3a	FZ2	FZ1
		5%	0%	0%	95%
	The River Stour which runs past the western site boundary puts the land. The affects a small part in the west of the site.				
	Surface Water	Proportion of site at risk (uFMFSW)			
		30-year	100-year	1,000-year	
		-	-	<1%	
Surface water flood risk is limited to a small area in the south west of the site adjacent to the River Stour and it shown only in the 1,000-year event.					
Reservoir	The west of the site is potentially at risk of inundation in the event of reservoir failure. Potential sources include Stackpool, Podmore Pool, Kidderminster Flood Storage Reservoir and Hurcott Upper Reservoir.				
Canal	There are no canals within 100m of the site.				
Flood history	The Environment Agency's historic flood map has no data that relates to historic flood extents to the site.				
Flood risk management infrastructure	Defences	Defence Type	Standard of Protection	Condition	
		-	-	-	
	This site is not protected by any formal flood defences.				
Residual risk	-				
Emergency planning	Flood warning	The site is covered, or partially covered, by the Environment Agency's flood warning service.			
	Access and egress	Safe access and egress for the site is possible via the cul-de-sac off Wilden Lane.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		River Severn	25%	35%	70%
	Implications for the site	There is some discrepancy between the Flood Zones and climate change outlines in this area, with climate change extents less than that of the 1 in 100-year. This is likely due to the Flood Zones being based upon a detailed hydraulic model, whilst the climate change outlines were modelled using 2D generalised techniques. Developers should undertake detailed modelling of climate change allowances as part of a site specific FRA.			

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	MI/18
	Site Name	North of Wilden Lane Industrial Estate
	Area	0.22ha
	Current land use	Brownfield
	Proposed site use	Commercial
Requirements for drainage control and impact mitigation	Broad scale assessment of possible SuDS	<ul style="list-style-type: none"> • Source control techniques are likely to be suitable for this site. • Infiltration techniques are likely to be suitable, providing the site is not at risk from groundwater flooding. • Detention features may be feasible providing site slopes are <5% at the location of the detention feature. • Filtration systems are probably suitable providing site slopes are <5% and the depth to the water table is >1m. • All forms of conveyance features are likely to be suitable. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.
	Groundwater Source Protection Zone	The site is located within Zone 3. Infiltration techniques are generally accepted in this zone.
	Historic Landfill Site	The site is not designated by the Environment Agency as previously being a landfill site.
NPPF and planning implications	Exception Test requirements	<p>The Sequential test will need to be passed before the Exception test is applied.</p> <p>The Exception test will be required in the following scenarios</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. • 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 infrastructure within FZ3a and FZ3b. • More Vulnerable and Less Vulnerable Infrastructure within FZ3b.

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	MI/18
	Site Name	North of Wilden Lane Industrial Estate
	Area	0.22ha
	Current land use	Brownfield
	Proposed site use	Commercial
	Requirements for site-specific Flood Risk Assessment	<ul style="list-style-type: none"> At the planning application stage, a site-specific flood risk assessment will be required if any development is located within Flood Zones 2 or 3 or for any development greater than one hectare in Flood Zone 1. Other sources of flooding should also be considered. Climate change modelling should be undertaken using the relevant allowances for the type of development and level of risk. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage. Resilience measures will be required if buildings are situated in the flood risk area. Onsite attenuation schemes would need to be tested against the hydrographs of the River Stour to ensure flows are not exacerbated downstream within the catchment. New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff. Assessment for runoff should include allowance for climate change effects. New development must seek opportunities to reduce overall level of flood risk at the site, for example by: <ul style="list-style-type: none"> Reducing volume and rate of runoff Relocating development to zones with lower flood risk Creating space for flooding. Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development and consider using Flood Zones 2 and 3 as public open space.
Mapping Information		
Flood Zones	<p>Flood Zones 2 and 3a are based on the Environment Agency's Flood Zone 2 and 3. The SFRA has identified Flood Zone 3b as land which would flood with an annual probability of 1 in 20 years.</p> <p>Flood Zone 3b has been derived from a combination of results from Environment Agency detailed hydraulic models, generalised 2D hydraulic modelling, and additional 2D hydraulic modelling undertaken for this SFRA.</p>	
Climate change	<p>The upper end climate change allowances for the '2080's were modelled using generalised 2D modelling techniques for the purposes of the SFRA. Due to the generalised nature of the modelling, defences have not been accounted for and therefore mapping shows the 'undefended' scenario. The mapping provides a strategic assessment of climate change risk – developers should undertake detailed modelling of climate change allowances as part of a site specific FRA.</p>	
Surface Water	<p>The updated Flood Map for Surface Water has been used to define areas at risk from surface water flooding.</p>	

Mapping

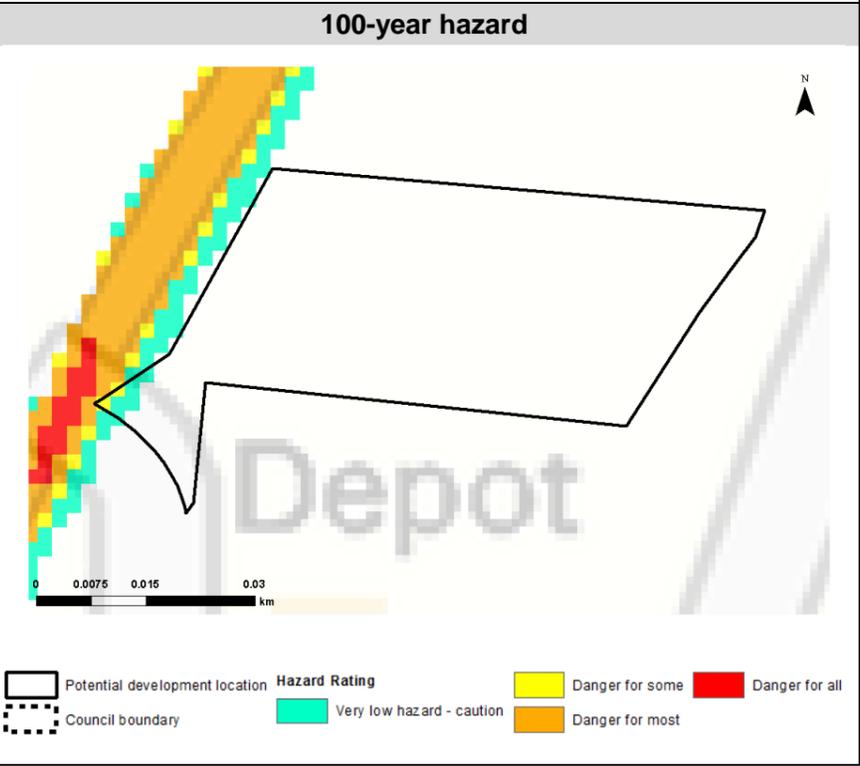
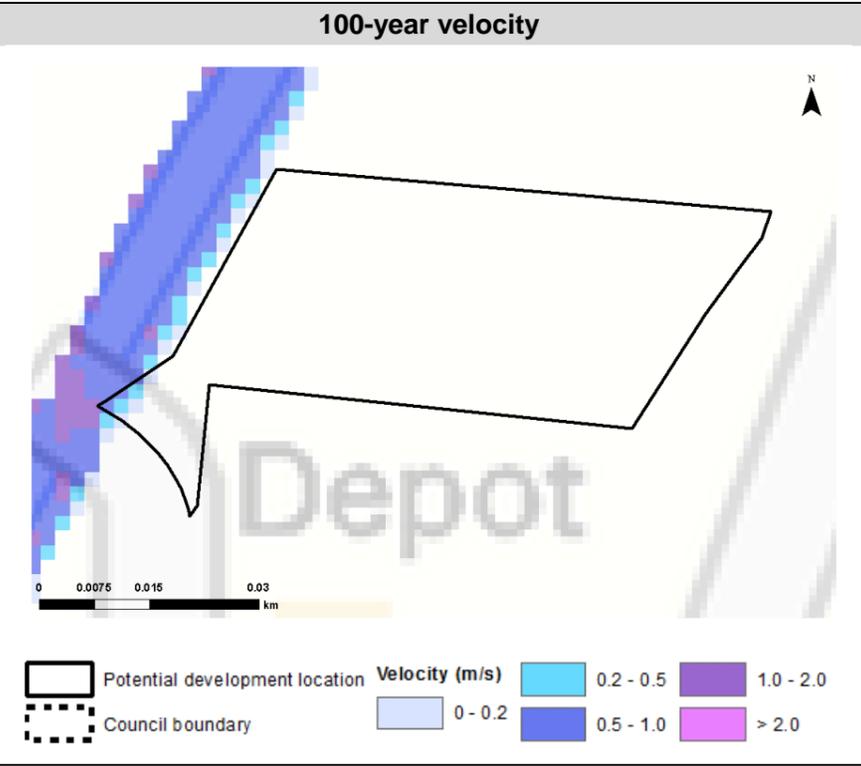
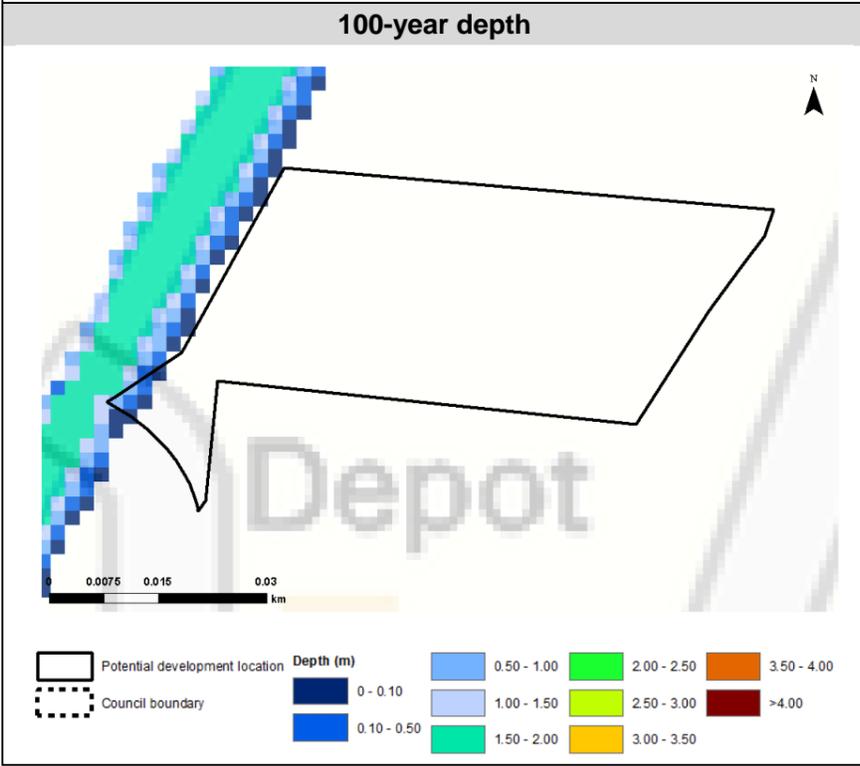
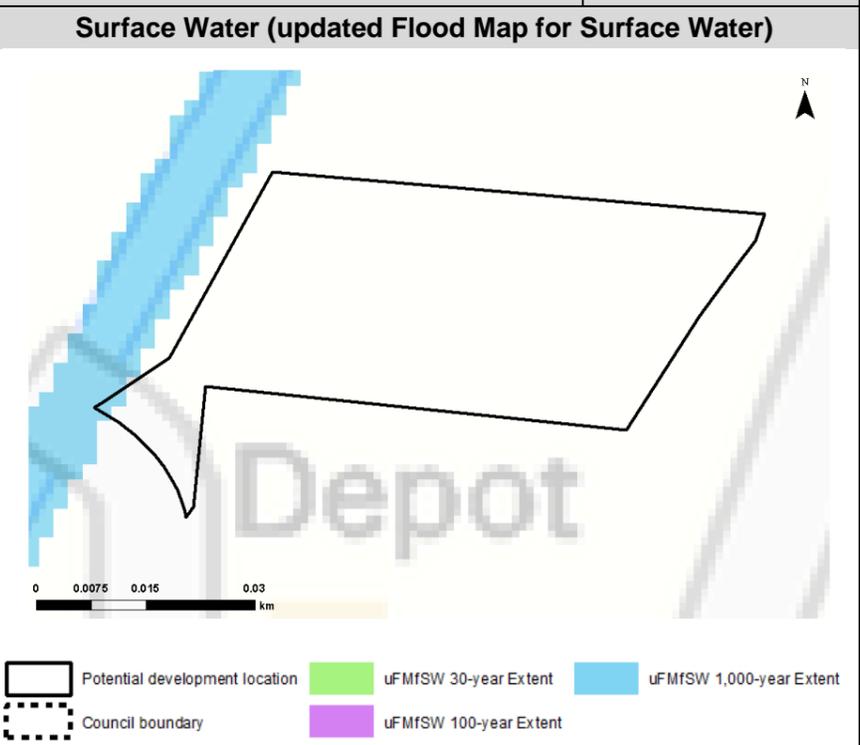
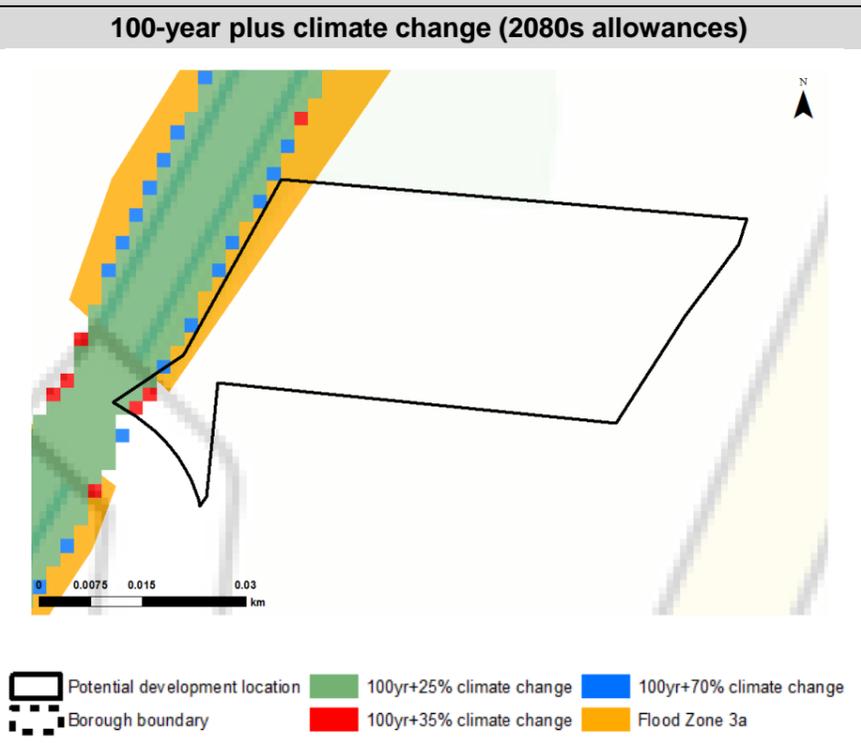
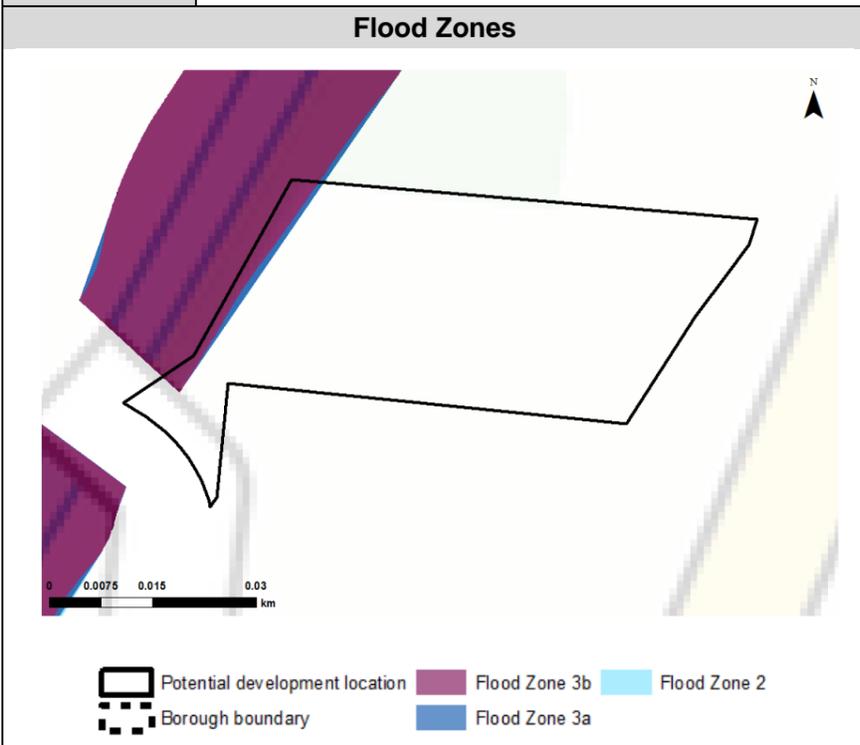
**Wyre Forest District Strategic
Flood Risk Assessment Level
2 Detailed Site Summary
Tables**



Site details	Site Code	MI/18
	Site Name	North of Wilden Lane Industrial Estate
	Area	0.22ha
	Current land use	Brownfield
	Proposed site use	Commercial
Depth, velocity and hazard mapping	Depth, velocity and hazard mapping for the 1 in 100-year event (Flood Zone 3a) have been taken from the Environment Agency's 2011 generalised modelling as the detailed hydraulic models did not provide this information. As a result, there may be some small discrepancies between the extent of the depth, velocity and hazard grids with the extent of Flood Zone 3a.	

SITE CODE	MI/18
SITE NAME	North of Wilden Lane Industrial Estate

Wyre Forest District Council Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	MI/28			
	Site Name	35 Mitton Street, Stourport			
	Area	0.22ha			
	Current land use	Brownfield			
	Proposed site use	Residential			
Sources of flood risk	Existing drainage features	<ul style="list-style-type: none"> River Stour Unnamed drain to the east (converges with the Stour on the opposite bank) 			
	Fluvial	Proportion of site at risk			
		FZ3b	FZ3a	FZ2	FZ1
		23%	0%	0%	77%
	The site is at fluvial flood risk in the eastern portion with the area adjacent to the eastern boundary within Flood Zone 3b.				
	Surface Water	Proportion of site at risk (uFMFSW)			
		30-year	100-year	1,000-year	
		1%	2%	3%	
Surface water flood risk to the site is largely limited to the area adjacent the River Stour.					
Reservoir	The site is potentially at risk from inundation in the event of reservoir failure. Potential sources include Stackpool, Podmore Pool, Kidderminster Flood Storage Reservoir and Hurcott Upper Reservoir.				
Canal	There are no canals within 100m of the site.				
Flood history	The Environment Agency's historic flood map shows the site has flooded in the past, in autumn 2000.				
Flood risk management infrastructure	Defences	Defence Type	Standard of Protection	Condition	
		-	-	-	
	This site is not protected by any formal flood defences.				
Residual risk	-				
Emergency planning	Flood warning	The site is covered, or partially covered, by the Environment Agency's flood warning service.			
	Access and egress	Despite part of the site being at flood risk, safe access and egress for the site is available via Mitton Street.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		River Severn	25%	35%	70%
	Implications for the site	There is some discrepancy between the Flood Zones and climate change outlines in this area, with climate change extents less than that of the 1 in 100-year. This is likely due to the Flood Zones being based upon a detailed hydraulic model, whilst the climate change outlines were modelled using 2D generalised techniques. Developers should undertake detailed modelling of climate change allowances as part of a site specific FRA.			

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	MI/28
	Site Name	35 Mitton Street, Stourport
	Area	0.22ha
	Current land use	Brownfield
	Proposed site use	Residential
Requirements for drainage control and impact mitigation	Broad scale assessment of possible SuDS	<ul style="list-style-type: none"> • Source control techniques are likely to be suitable for this site. • Infiltration techniques are likely to be suitable, providing the site is not at risk from groundwater flooding. • Detention features may be feasible providing site slopes are <5% at the location of the detention feature. • Filtration systems are probably suitable providing site slopes are <5% and the depth to the water table is >1m. • All forms of conveyance features are likely to be suitable. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.
	Groundwater Source Protection Zone	The site is located within Zone 3. Infiltration techniques are generally accepted in this zone.
	Historic Landfill Site	The site is not designated by the Environment Agency as previously being a landfill site.
NPPF and planning implications	Exception Test requirements	<p>The Sequential test will need to be passed before the Exception test is applied.</p> <p>The Exception test will be required in the following scenarios</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. • 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 infrastructure within FZ3a and FZ3b. • More Vulnerable and Less Vulnerable Infrastructure within FZ3b.

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	MI/28
	Site Name	35 Mitton Street, Stourport
	Area	0.22ha
	Current land use	Brownfield
	Proposed site use	Residential
	Requirements for site-specific Flood Risk Assessment	<ul style="list-style-type: none"> At the planning application stage, a site-specific flood risk assessment will be required if any development is located within Flood Zones 2 or 3. Other sources of flooding should also be considered. Climate change modelling should be undertaken using the relevant allowances for the type of development and level of risk. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage. Resilience measures will be required if buildings are situated in the flood risk area. Onsite attenuation schemes would need to be tested against the hydrographs of the River Stour and unnamed drain to ensure flows are not exacerbated downstream within the catchment. New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff. Assessment for runoff should include allowance for climate change effects. New development must seek opportunities to reduce overall level of flood risk at the site, for example by: <ul style="list-style-type: none"> Reducing volume and rate of runoff Relocating development to zones with lower flood risk Creating space for flooding. Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development and consider using Flood Zones 2 and 3 as public open space.
Mapping Information		
Flood Zones	<p>Flood Zones 2 and 3a are based on the Environment Agency's Flood Zone 2 and 3. The SFRA has identified Flood Zone 3b as land which would flood with an annual probability of 1 in 20 years.</p> <p>Flood Zone 3b has been derived from a combination of results from Environment Agency detailed hydraulic models, generalised 2D hydraulic modelling, and additional 2D hydraulic modelling undertaken for this SFRA.</p>	
Climate change	<p>The upper end climate change allowances for the '2080's were modelled using generalised 2D modelling techniques for the purposes of the SFRA. Due to the generalised nature of the modelling, defences have not been accounted for and therefore mapping shows the 'undefended' scenario. The mapping provides a strategic assessment of climate change risk – developers should undertake detailed modelling of climate change allowances as part of a site specific FRA.</p>	
Surface Water	<p>The updated Flood Map for Surface Water has been used to define areas at risk from surface water flooding.</p>	

Mapping

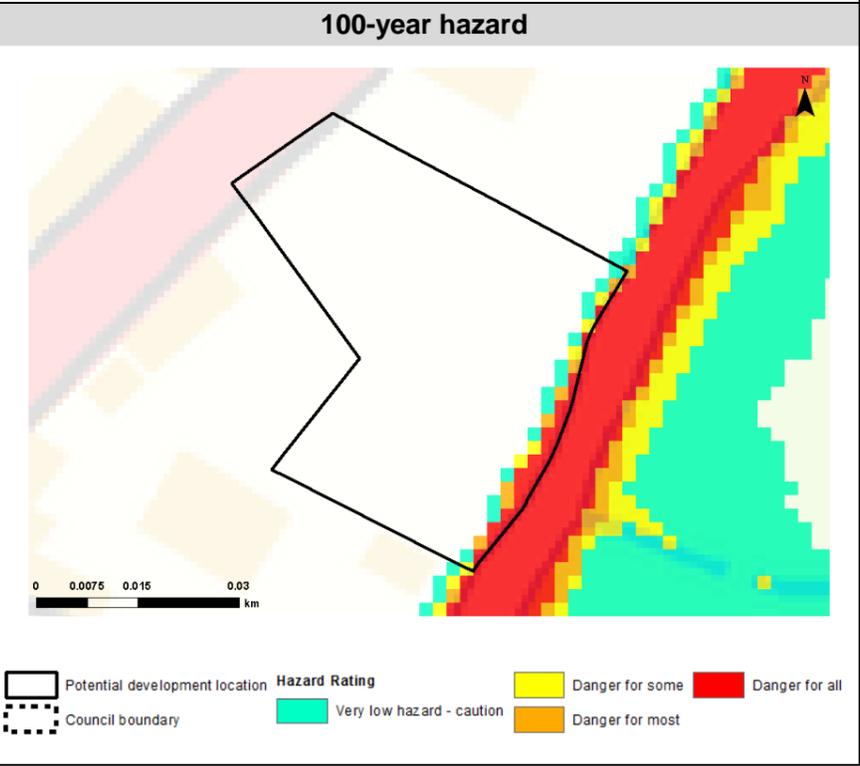
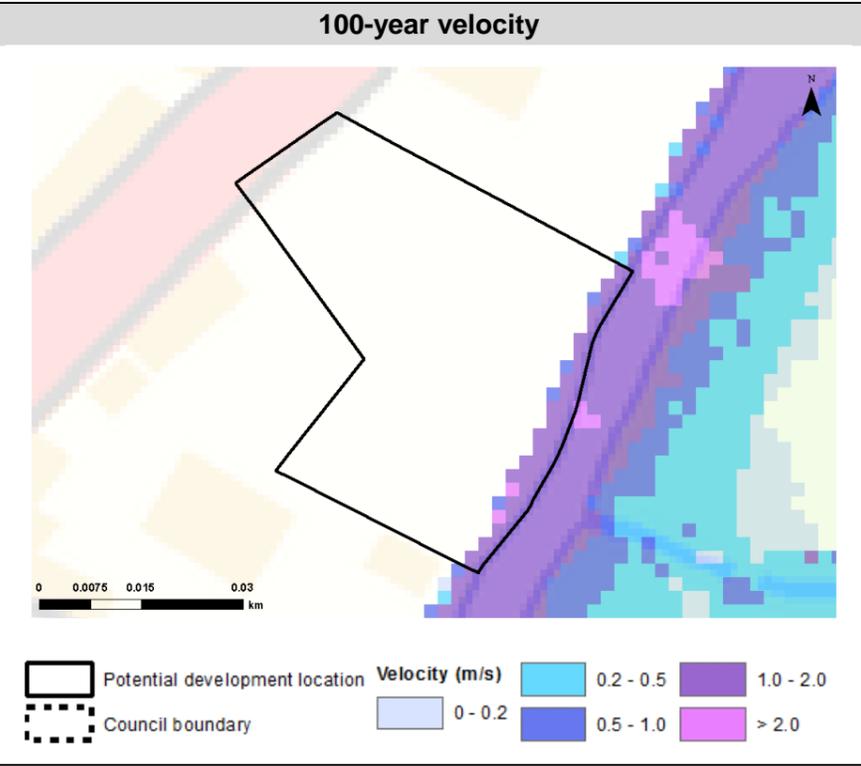
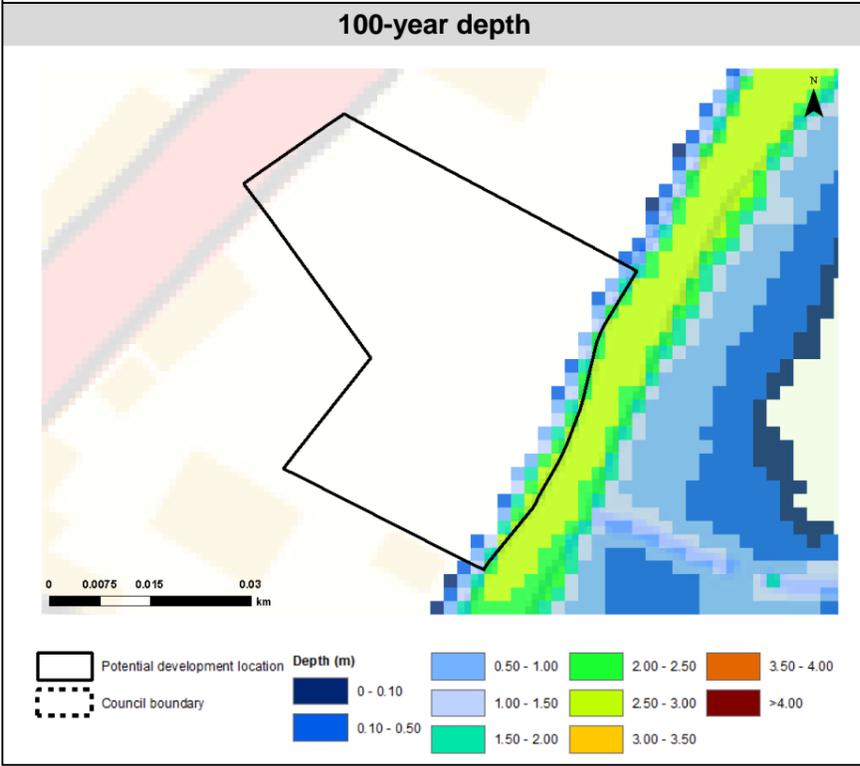
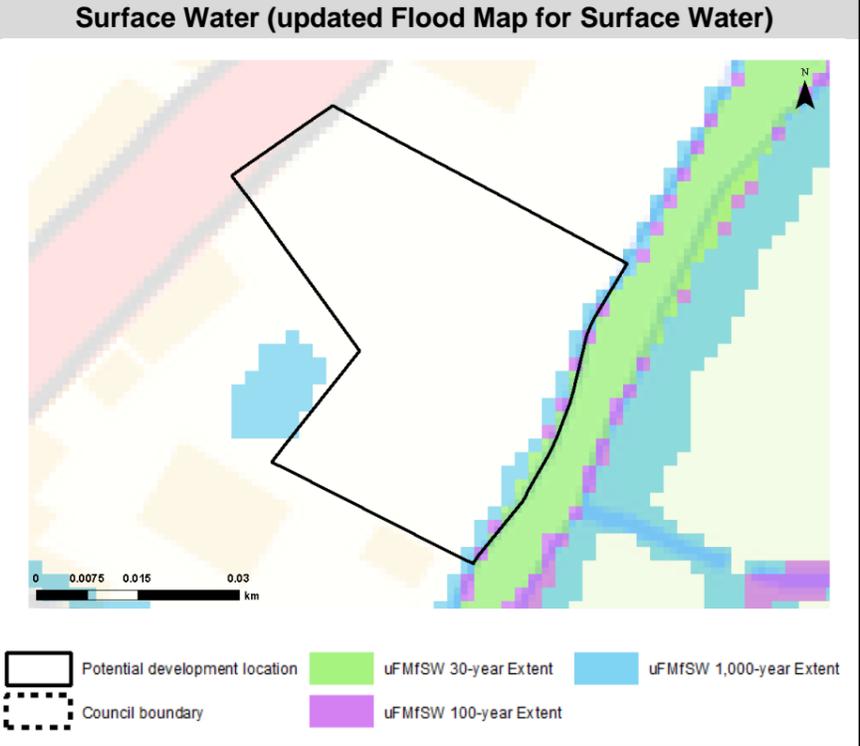
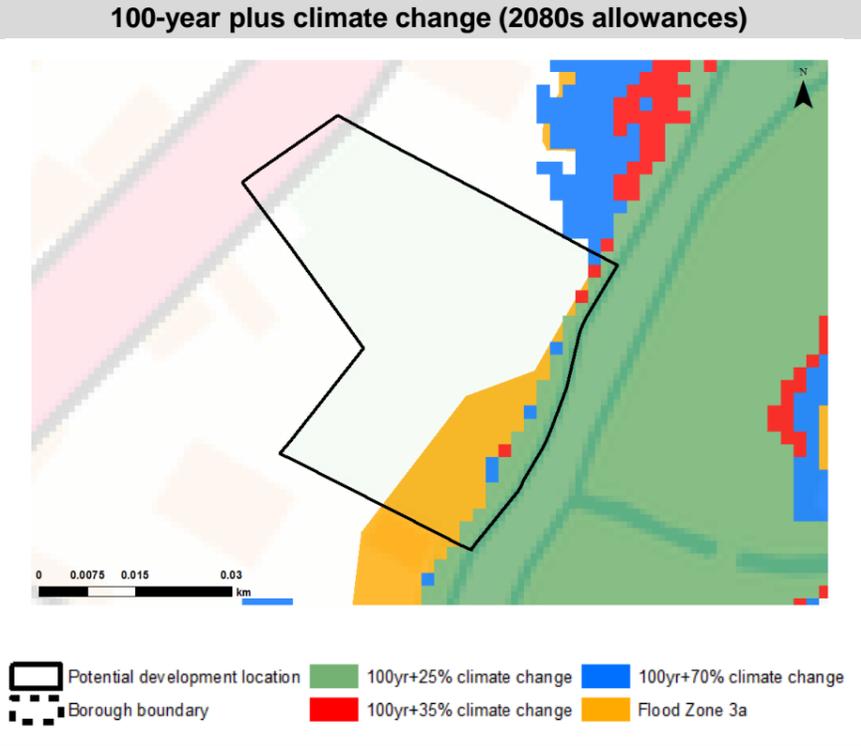
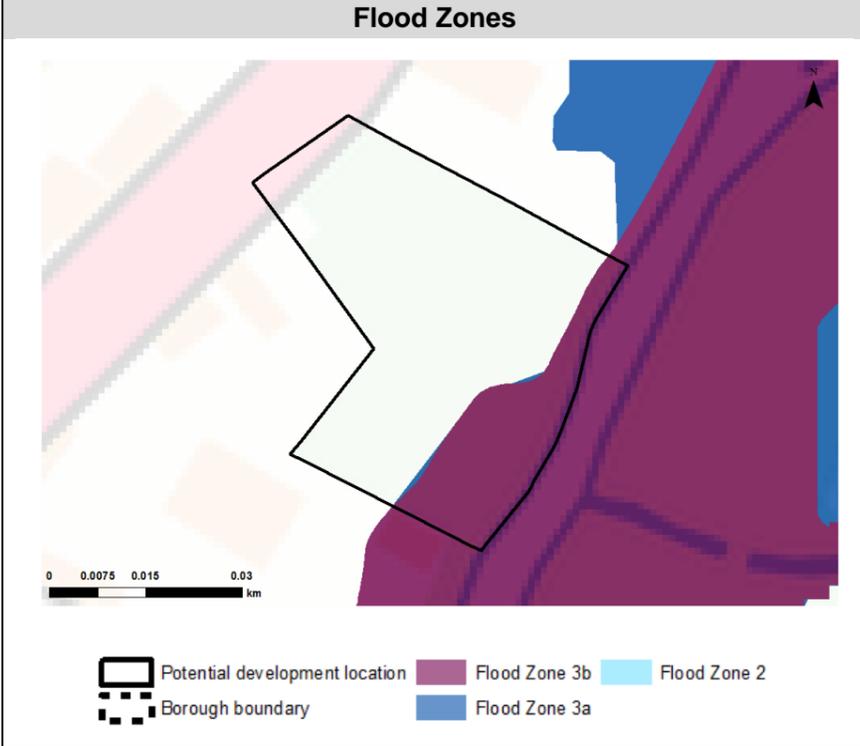
**Wyre Forest District Strategic
Flood Risk Assessment Level
2 Detailed Site Summary
Tables**

JBA
consulting

Site details	Site Code	MI/28
	Site Name	35 Mitton Street, Stourport
	Area	0.22ha
	Current land use	Brownfield
	Proposed site use	Residential
Depth, velocity and hazard mapping	Depth, velocity and hazard mapping for the 1 in 100-year event (Flood Zone 3a) have been taken from the Environment Agency's 2011 generalised modelling as the detailed hydraulic models did not provide this information. As a result, there may be some small discrepancies between the extent of the depth, velocity and hazard grids with the extent of Flood Zone 3a.	

SITE CODE	MI/28
SITE NAME	35 Mitton Street, Stourport

Wyre Forest District Council Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	OC/12			
	Site Name	Comberton Lodge Nursery			
	Area	0.84ha			
	Current land use	Mixed greenfield / brownfield			
	Proposed site use	Residential			
Sources of flood risk	Existing drainage features	<ul style="list-style-type: none"> Hoo Brook 			
	Fluvial	Proportion of site at risk			
		FZ3b	FZ3a	FZ2	FZ1
		19%	4%	11%	66%
	The site is at risk from fluvial flooding from Hoo Brook along the northern and western boundary. The largest extent of flooding is in the north east corner, much of which is within Flood Zone 3b and 3a.				
	Surface Water	Proportion of site at risk (uFMFSW)			
		30-year	100-year	1,000-year	
		1%	2%	5%	
Surface water risk is located along the boundary area adjacent with Hoo Brook.					
Reservoir	The site is potentially at risk of inundation in the event of reservoir failure from Drayton Pool along much of the north and west of the site.				
Canal	There are no canals within 100m of the site.				
Flood history	The Environment Agency's historic flood map shows no flooding to the site in the past.				
Flood risk management infrastructure	Defences	Defence Type	Standard of Protection	Condition	
		-	-	-	
	This site is not protected by any formal flood defences.				
Residual risk	-				
Emergency planning	Flood warning	This site is not covered by the Environment Agency's Flood Warning Service			
	Access and egress	Despite part of the site being vulnerable to flooding, safe access and egress for the site is possible via the A448.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		River Severn	25%	35%	70%
	% increase in flood extent compared to Flood Zone 3a			+2%	+3%
Implications for the site	Climate change allowances of show slightly more of the site as being at risk from a 100-year flood risk in the future.				

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	OC/12
	Site Name	Comberton Lodge Nursery
	Area	0.84ha
	Current land use	Mixed greenfield / brownfield
	Proposed site use	Residential
Requirements for drainage control and impact mitigation	Broad scale assessment of possible SuDS	<ul style="list-style-type: none"> • Source control techniques are likely to be suitable for this site. If groundwater is identified as a potential risk for the site, then non-infiltrating systems may be required. • Infiltration techniques are likely to be suitable, providing the site is not at risk from groundwater flooding. • Detention features may be feasible providing site slopes are <5% at the location of the detention feature. If groundwater is a risk to the site, then a liner may be required to mitigate against potential contamination issues. • Filtration systems are probably suitable providing site slopes are <5% and the depth to the water table is >1m. If the site has contamination issues, or at risk from groundwater, then a liner will be required. • All forms of conveyance features are likely to be suitable. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.
	Groundwater Source Protection Zone	The site is located within Zone 3. Infiltration techniques are generally accepted in this zone.
	Historic Landfill Site	The site is not designated by the Environment Agency as previously being a landfill site.
NPPF and planning implications	Exception Test requirements	<p>The Sequential test will need to be passed before the Exception test is applied.</p> <p>The Exception test will be required in the following scenarios</p> <ul style="list-style-type: none"> • If More Vulnerable and Essential Infrastructure development is located in FZ3a • If Highly Vulnerable development is located in FZ2. • Essential Infrastructure in Flood Zone 3b <p>Development will not be permitted in the following scenarios</p> <ul style="list-style-type: none"> • Highly Vulnerable infrastructure within FZ3a and FZ3b. • More Vulnerable and Less Vulnerable Infrastructure within FZ3b.

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	OC/12
	Site Name	Comberton Lodge Nursery
	Area	0.84ha
	Current land use	Mixed greenfield / brownfield
	Proposed site use	Residential
	Requirements for site-specific Flood Risk Assessment	<ul style="list-style-type: none"> At the planning application stage, a site-specific flood risk assessment will be required if any development is located within Flood Zones 2 or 3. Other sources of flooding should also be considered. Climate change modelling should be undertaken using the relevant allowances for the type of development and level of risk. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage. Resilience measures will be required if buildings are situated in the flood risk area. Onsite attenuation schemes would need to be tested against the hydrographs of Hoo Brook to ensure flows are not exacerbated downstream within the catchment. New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff. Assessment for runoff should include allowance for climate change effects. New development must seek opportunities to reduce overall level of flood risk at the site, for example by: <ul style="list-style-type: none"> Reducing volume and rate of runoff Relocating development to zones with lower flood risk Creating space for flooding. Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development and consider using Flood Zones 2 and 3 as public open space.
Mapping Information		
Flood Zones	<p>Flood Zones 2 and 3a are based on the Environment Agency's Flood Zone 2 and 3. The SFRA has identified Flood Zone 3b as land which would flood with an annual probability of 1 in 20 years.</p> <p>Flood Zone 3b has been derived from a combination of results from Environment Agency detailed hydraulic models, generalised 2D hydraulic modelling, and additional 2D hydraulic modelling undertaken for this SFRA.</p>	
Climate change	<p>The upper end climate change allowances for the '2080's were modelled using generalised 2D modelling techniques for the purposes of the SFRA. Due to the generalised nature of the modelling, defences have not been accounted for and therefore mapping shows the 'undefended' scenario. The mapping provides a strategic assessment of climate change risk – developers should undertake detailed modelling of climate change allowances as part of a site specific FRA.</p>	
Surface Water	<p>The updated Flood Map for Surface Water has been used to define areas at risk from surface water flooding.</p>	

Mapping

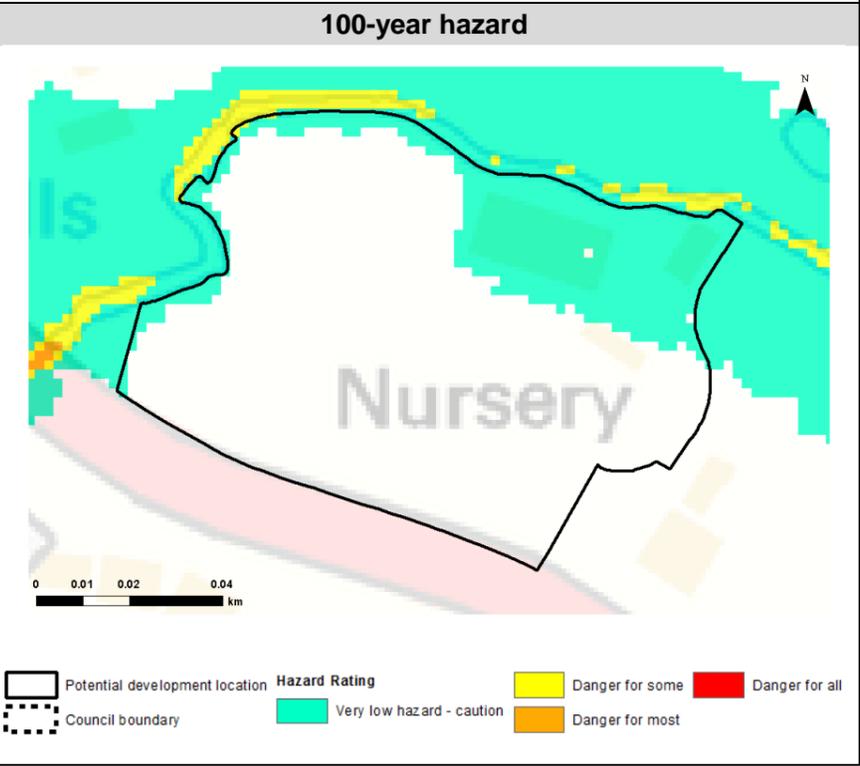
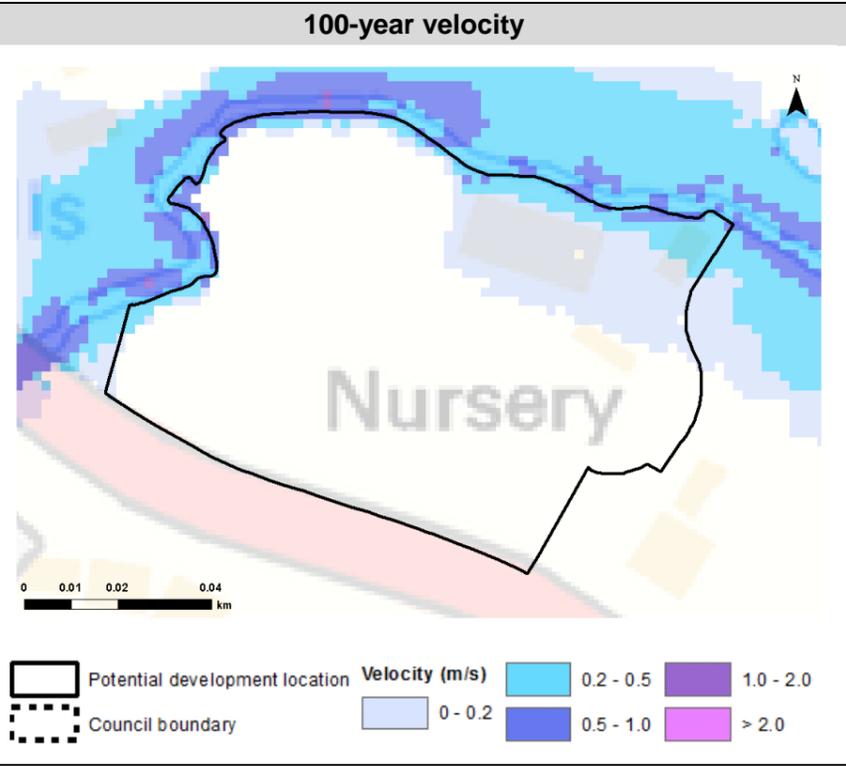
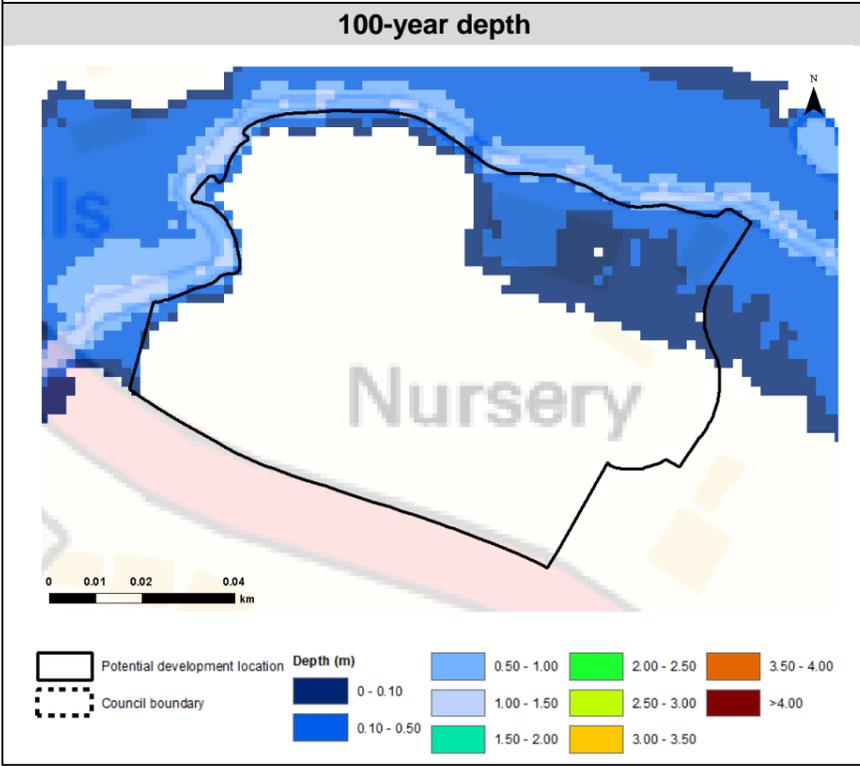
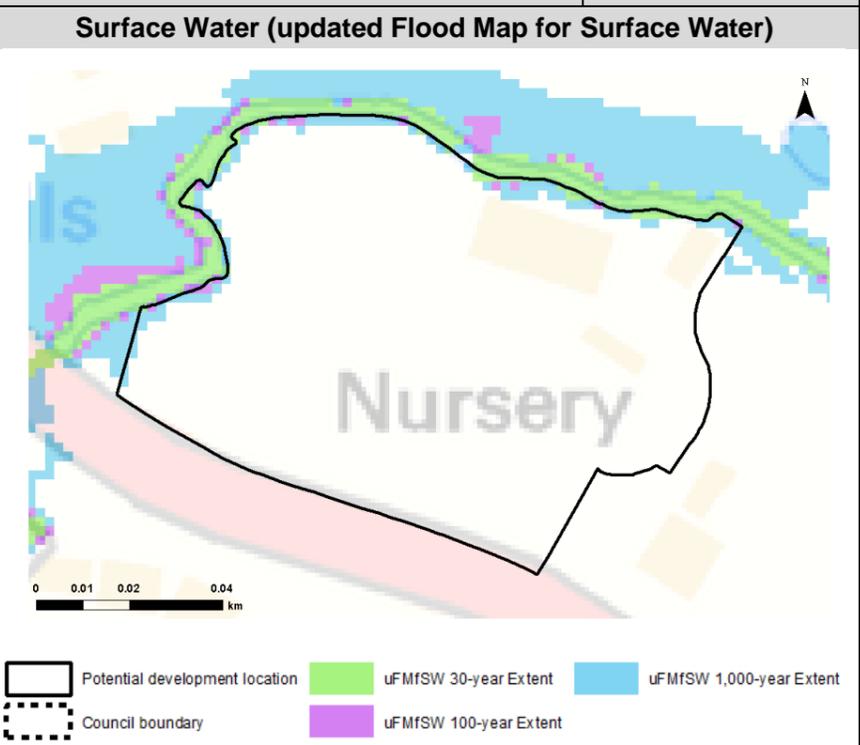
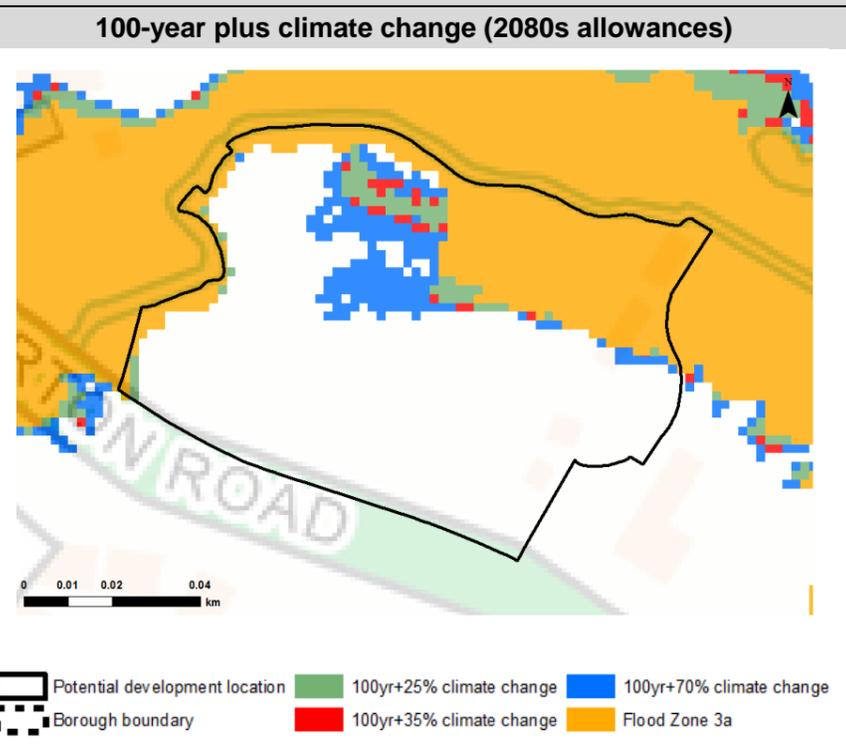
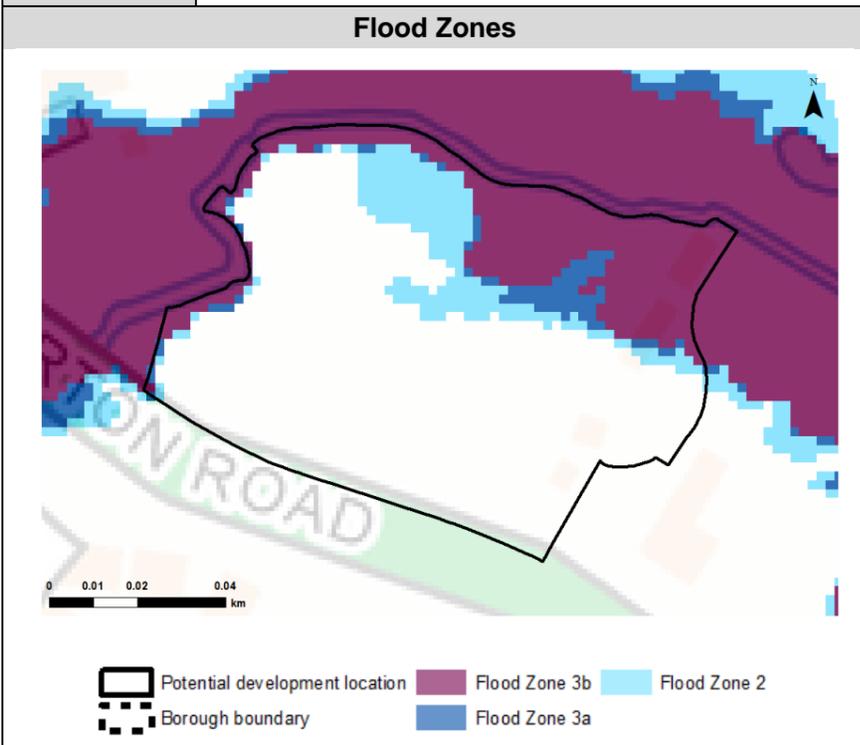
**Wyre Forest District Strategic
Flood Risk Assessment Level
2 Detailed Site Summary
Tables**



Site details	Site Code	OC/12
	Site Name	Comberton Lodge Nursery
	Area	0.84ha
	Current land use	Mixed greenfield / brownfield
	Proposed site use	Residential
Depth, velocity and hazard mapping	Depth, velocity and hazard mapping for the 1 in 100-year event (Flood Zone 3a) have been taken from the Environment Agency's 2011 generalised modelling as the detailed hydraulic models did not provide this information. As a result, there may be some small discrepancies between the extent of the depth, velocity and hazard grids with the extent of Flood Zone 3a.	

SITE CODE	OC/12
SITE NAME	Comberton Lodge Nursery

Wyre Forest District Council Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	OC/13b			
	Site Name	Land at Stone Hill			
	Area	57.31ha			
	Current land use	Predominantly greenfield			
	Proposed site use	Residential			
Sources of flood risk	Existing drainage features	<ul style="list-style-type: none"> Hoo Brook Captains Pool two unnamed drains that cross the site (culverted in sections) two further unnamed drains along the western and northern site boundaries 			
	Fluvial	Proportion of site at risk			
		FZ3b	FZ3a	FZ2	FZ1
		4%	0%	2%	94%
	Fluvial flood risk stems primarily from Hoo Brook which flows across the site from east to west. Secondary risks include the western boundary drain.				
	Surface Water	Proportion of site at risk (uFMFSW)			
		30-year	100-year	1,000-year	
		1%	2%	6%	
	Surface water flood risk includes isolated cases of ponding and an overland flow route adjacent to the western unnamed drain.				
	Reservoir	The area of the site adjacent to Hoo Brook is susceptible to flood inundation in the event of reservoir failure			
Canal	There are no canals within 100m of the site.				
Flood history	The Environment Agency's historic flood map shows no records of past flooding to the site.				
Flood risk management infrastructure	Defences	Defence Type	Standard of Protection	Condition	
		-	-	-	
	This site is not protected by any formal flood defences.				
Residual risk	-				
Emergency planning	Flood warning	This site is not covered by the Environment Agency's Flood Warning Service			
	Access and egress	Safe access and egress to site is available via Stanklyn Lane in the south as well as the A448 and Comberton Road in the centre.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		River Severn	25%	35%	70%
	% increase in flood extent compared to Flood Zone 3a			+1%	+2%

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	OC/13b
	Site Name	Land at Stone Hill
	Area	57.31ha
	Current land use	Predominantly greenfield
	Proposed site use	Residential
	Implications for the site	There is a slight increase in the extent of flooding in the site in climate change allowances but the majority of the site remains outside the 100-year flood event.
Requirements for drainage control and impact mitigation	Broad scale assessment of possible SuDS	<ul style="list-style-type: none"> • Source control techniques are likely to be suitable for this site. If groundwater is identified as a potential risk for the site, then non-infiltrating systems may be required. • Infiltration techniques are likely to be suitable, providing the site is not at risk from groundwater flooding. • Detention features may be feasible providing site slopes are <5% at the location of the detention feature. If groundwater is a risk to the site, then a liner may be required to mitigate against potential contamination issues. • Filtration systems are probably suitable providing site slopes are <5% and the depth to the water table is >1m. If the site has contamination issues, or at risk from groundwater, then a liner will be required. • All forms of conveyance features are likely to be suitable. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.
	Groundwater Source Protection Zone	The site is located within Zone 3. Infiltration techniques are generally accepted in this zone.
	Historic Landfill Site	The site is not designated by the Environment Agency as previously being a landfill site.
NPPF and planning implications	Exception Test requirements	<p>The Sequential test will need to be passed before the Exception test is applied.</p> <p>The Exception test will be required in the following scenarios</p> <ul style="list-style-type: none"> • If More Vulnerable and Essential Infrastructure development is located in FZ3a • If Highly Vulnerable development is located in FZ2. • Essential Infrastructure in Flood Zone 3b <p>Development will not be permitted in the following scenarios</p> <ul style="list-style-type: none"> • Highly Vulnerable infrastructure within FZ3a and FZ3b. • More Vulnerable and Less Vulnerable Infrastructure within FZ3b.

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	OC/13b
	Site Name	Land at Stone Hill
	Area	57.31ha
	Current land use	Predominantly greenfield
	Proposed site use	Residential

Requirements for site-specific Flood Risk Assessment	<ul style="list-style-type: none"> • At the planning application stage, a site-specific flood risk assessment will be required if any development is located within Flood Zones 2 or 3 or for any development greater than one hectare in Flood Zone 1. Other sources of flooding should also be considered. • Climate change modelling should be undertaken using the relevant allowances for the type of development and level of risk. • Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage. • Resilience measures will be required if buildings are situated in the flood risk area. • Onsite attenuation schemes would need to be tested against the hydrographs of the Hoo Brook to ensure flows are not exacerbated downstream within the catchment. • New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff. • Assessment for runoff should include allowance for climate change effects. • Flood risk from the unnamed drains on and in close proximity to the site will need to be considered by developers including the consideration of blockage of the culverts. • New development must seek opportunities to reduce overall level of flood risk at the site, for example by: <ul style="list-style-type: none"> ○ Reducing volume and rate of runoff ○ Relocating development to zones with lower flood risk ○ Creating space for flooding. • Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development and consider using Flood Zones 2 and 3 as public open space.
---	--

Mapping Information

Flood Zones	<p>Flood Zones 2 and 3a are based on the Environment Agency's Flood Zone 2 and 3. The SFRA has identified Flood Zone 3b as land which would flood with an annual probability of 1 in 20 years.</p> <p>Flood Zone 3b has been derived from a combination of results from Environment Agency detailed hydraulic models, generalised 2D hydraulic modelling, and additional 2D hydraulic modelling undertaken for this SFRA.</p>
--------------------	---

Climate change	<p>The upper end climate change allowances for the '2080's were modelled using generalised 2D modelling techniques for the purposes of the SFRA. Due to the generalised nature of the modelling, defences have not been accounted for and therefore mapping shows the 'undefended' scenario. The mapping provides a strategic assessment of climate change risk – developers should undertake detailed modelling of climate change allowances as part of a site specific FRA.</p>
-----------------------	---

Mapping

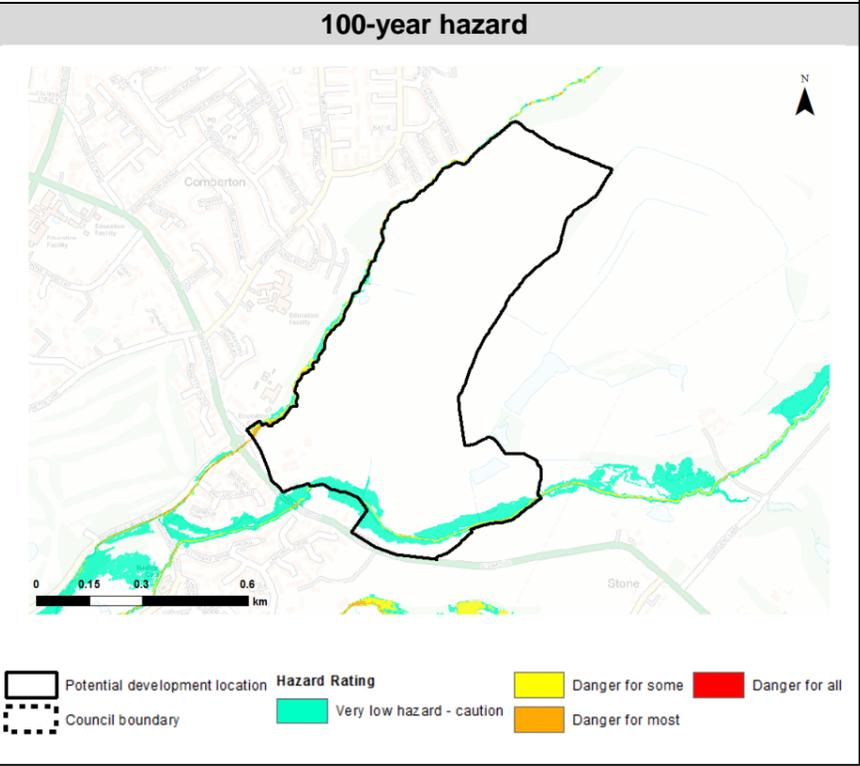
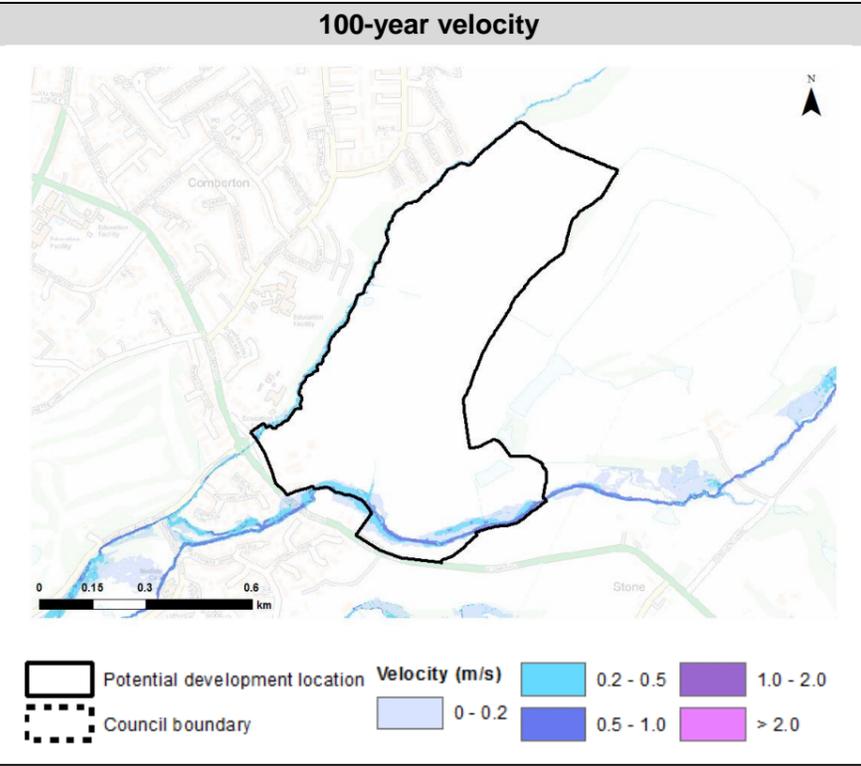
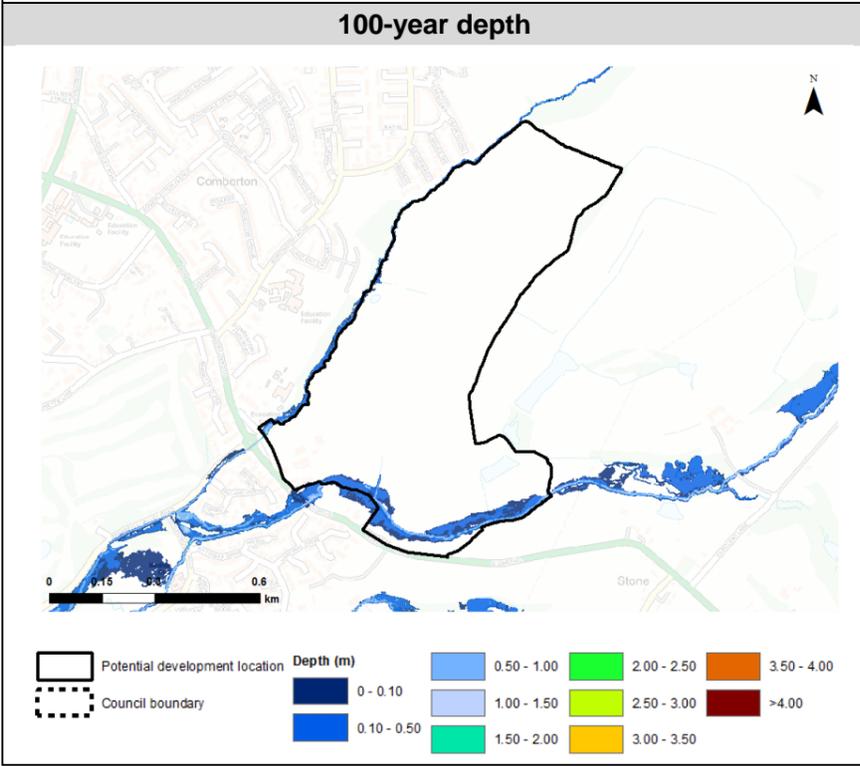
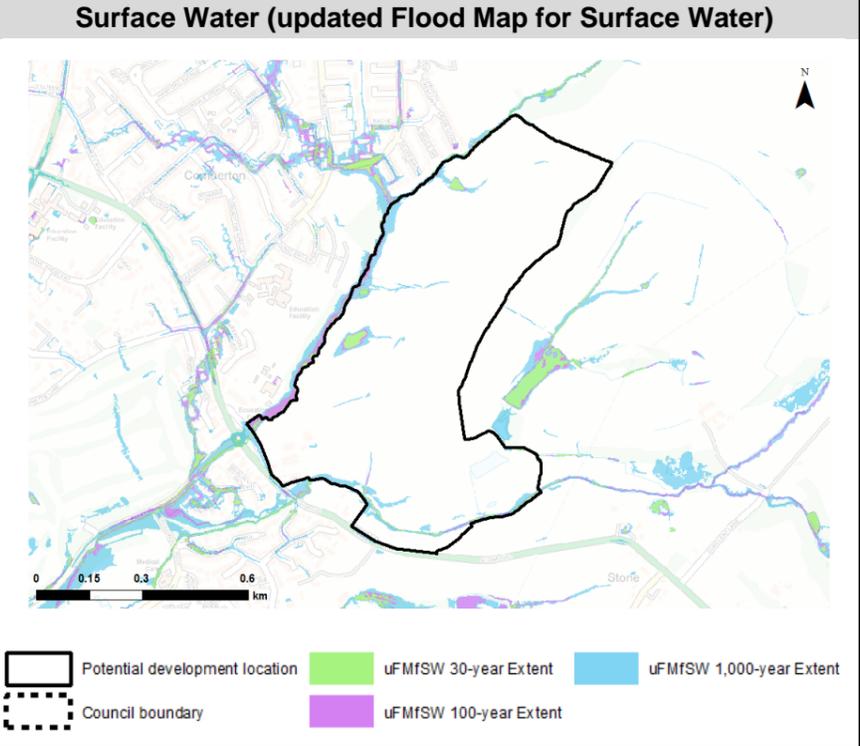
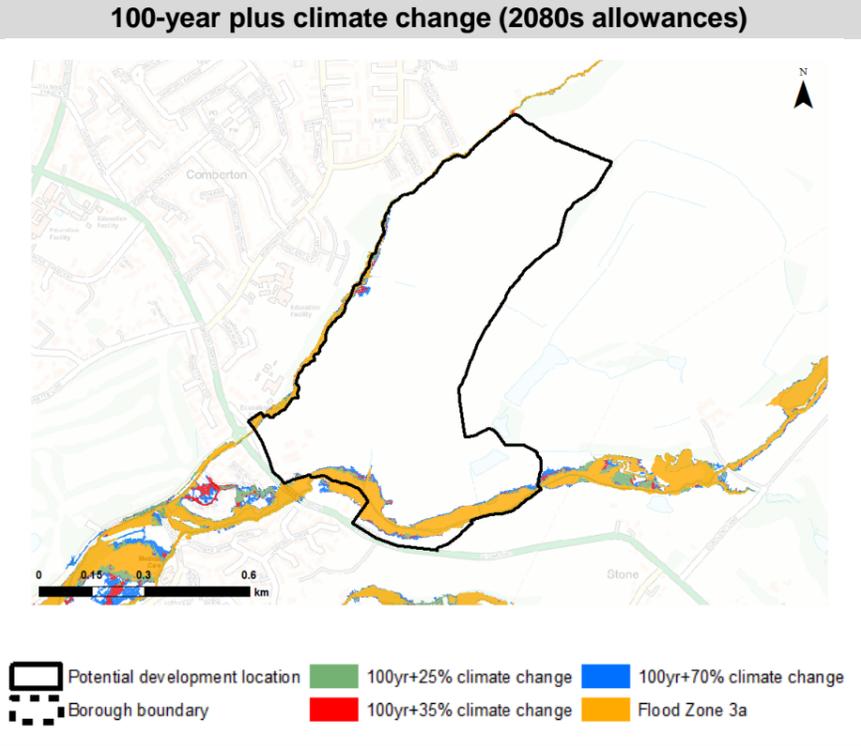
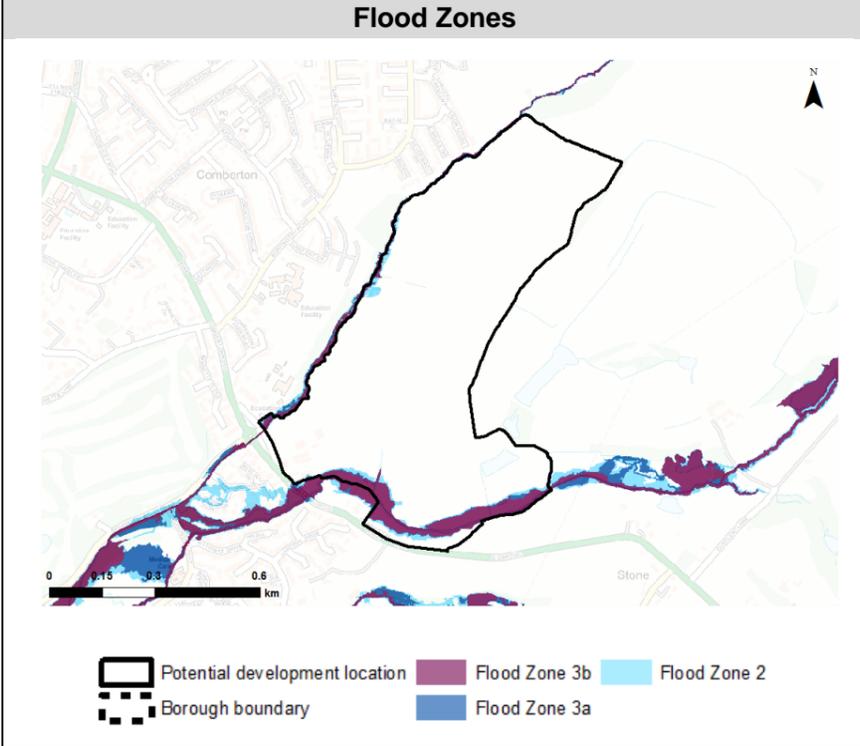
Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	OC/13b
	Site Name	Land at Stone Hill
	Area	57.31ha
	Current land use	Predominantly greenfield
	Proposed site use	Residential
Surface Water		The updated Flood Map for Surface Water has been used to define areas at risk from surface water flooding.
Depth, velocity and hazard mapping		Depth, velocity and hazard mapping for the 1 in 100-year event (Flood Zone 3a) have been taken from the Environment Agency's 2011 generalised modelling as the detailed hydraulic models did not provide this information. As a result, there may be some small discrepancies between the extent of the depth, velocity and hazard grids with the extent of Flood Zone 3a.

SITE CODE	OC/13b
SITE NAME	Land at Stone Hill

Wyre Forest District Council Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	WA/UA/4			
	Site Name	Allotments, Upper Arley			
	Area	0.46ha			
	Current land use	Greenfield			
	Proposed site use	Residential			
Sources of flood risk	Existing drainage features	<ul style="list-style-type: none"> • Unnamed drain to the east of the site • River Severn 			
	Fluvial	Proportion of site at risk			
		FZ3b	FZ3a	FZ2	FZ1
		7%	2%	2%	89%
	The fluvial flood risk to site stems from the unnamed watercourse that runs along the eastern site boundary. The majority of the site remains within Flood Zone 1.				
	Surface Water	Proportion of site at risk (uFMFSW)			
		30-year	100-year	1,000-year	
		1%	1%	2%	
A small area of the site adjacent to the unnamed watercourse is at risk of surface water flooding.					
Reservoir	This site is not at risk of inundation in the event of reservoir failure.				
Canal	There are no canals within 100m of the site.				
Flood history	The Environment Agency's historic flood map has no data that relates to historic flood extents to the site.				
Flood risk management infrastructure	Defences	Defence Type	Standard of Protection	Condition	
		-	-	-	
	This site is not protected by any formal flood defences.				
Residual risk	-				
Emergency planning	Flood warning	This site is not covered by the Environment Agency's Flood Warning Service			
	Access and egress	Despite the risk of flooding in the east of the site safe access and egress should be available via Arley Lane to the west of the site.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		River Severn	25%	35%	70%
	% increase in flood extent compared to Flood Zone 3a			+7%	+7%
Implications for the site	The allowances for climate change see only a slight increase in flood risk in the future.				

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	WA/UA/4
	Site Name	Allotments, Upper Arley
	Area	0.46ha
	Current land use	Greenfield
	Proposed site use	Residential
Requirements for drainage control and impact mitigation	Broad scale assessment of possible SuDS	<ul style="list-style-type: none"> • Source control techniques are likely to be suitable for this site. If groundwater is identified as a potential risk for the site, then non-infiltrating systems may be required. • Infiltration techniques are likely to be suitable, providing the site is not at risk from groundwater flooding. • Detention features may be feasible providing site slopes are <5% at the location of the detention feature. If groundwater is a risk to the site, then a liner may be required to mitigate against potential contamination issues. • Filtration systems are probably suitable providing site slopes are <5% and the depth to the water table is >1m. If the site has contamination issues, or at risk from groundwater, then a liner will be required. • All forms of conveyance features are likely to be suitable. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.
	Groundwater Source Protection Zone	The site is not located within any Environment Agency designated Source Protection Zone.
	Historic Landfill Site	The site is not designated by the Environment Agency as previously being a landfill site.
NPPF and planning implications	Exception Test requirements	<p>The Sequential test will need to be passed before the Exception test is applied.</p> <p>The Exception test will be required in the following scenarios</p> <ul style="list-style-type: none"> • If More Vulnerable and Essential Infrastructure development is located in FZ3a • If Highly Vulnerable development is located in FZ2. • Essential Infrastructure in Flood Zone 3b <p>Development will not be permitted in the following scenarios</p> <ul style="list-style-type: none"> • Highly Vulnerable infrastructure within FZ3a and FZ3b. • More Vulnerable and Less Vulnerable Infrastructure within FZ3b.

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	WA/UA/4
	Site Name	Allotments, Upper Arley
	Area	0.46ha
	Current land use	Greenfield
	Proposed site use	Residential
	Requirements for site-specific Flood Risk Assessment	<ul style="list-style-type: none"> At the planning application stage, a site-specific flood risk assessment will be required if any development is located within Flood Zones 2 or 3. Other sources of flooding should also be considered. Climate change modelling should be undertaken using the relevant allowances for the type of development and level of risk. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage. Resilience measures will be required if buildings are situated in the flood risk area. Onsite attenuation schemes would need to be tested against the hydrographs of the unnamed watercourse and River Severn to ensure flows are not exacerbated downstream within the catchment. New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff. Assessment for runoff should include allowance for climate change effects. New development must seek opportunities to reduce overall level of flood risk at the site, for example by: <ul style="list-style-type: none"> Reducing volume and rate of runoff Relocating development to zones with lower flood risk Creating space for flooding. Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development and consider using Flood Zones 2 and 3 as public open space.
Mapping Information		
Flood Zones	<p>Flood Zones 2 and 3a are based on the Environment Agency's Flood Zone 2 and 3. The SFRA has identified Flood Zone 3b as land which would flood with an annual probability of 1 in 20 years.</p> <p>Flood Zone 3b has been derived from a combination of results from Environment Agency detailed hydraulic models, generalised 2D hydraulic modelling, and additional 2D hydraulic modelling undertaken for this SFRA.</p>	
Climate change	<p>The upper end climate change allowances for the '2080's were modelled using generalised 2D modelling techniques for the purposes of the SFRA. Due to the generalised nature of the modelling, defences have not been accounted for and therefore mapping shows the 'undefended' scenario. The mapping provides a strategic assessment of climate change risk – developers should undertake detailed modelling of climate change allowances as part of a site specific FRA.</p>	
Surface Water	<p>The updated Flood Map for Surface Water has been used to define areas at risk from surface water flooding.</p>	

Mapping

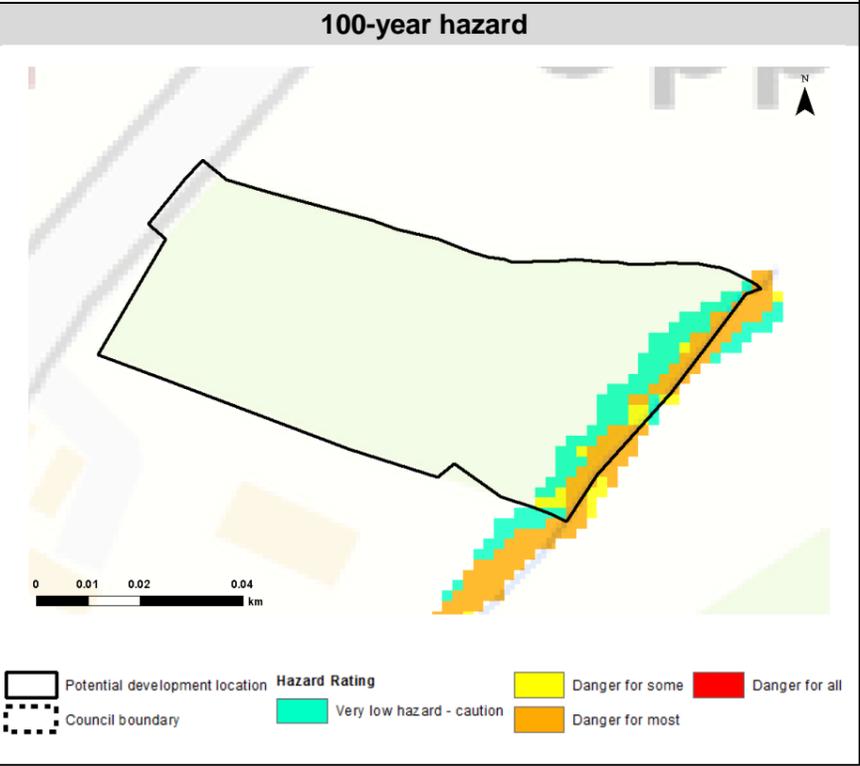
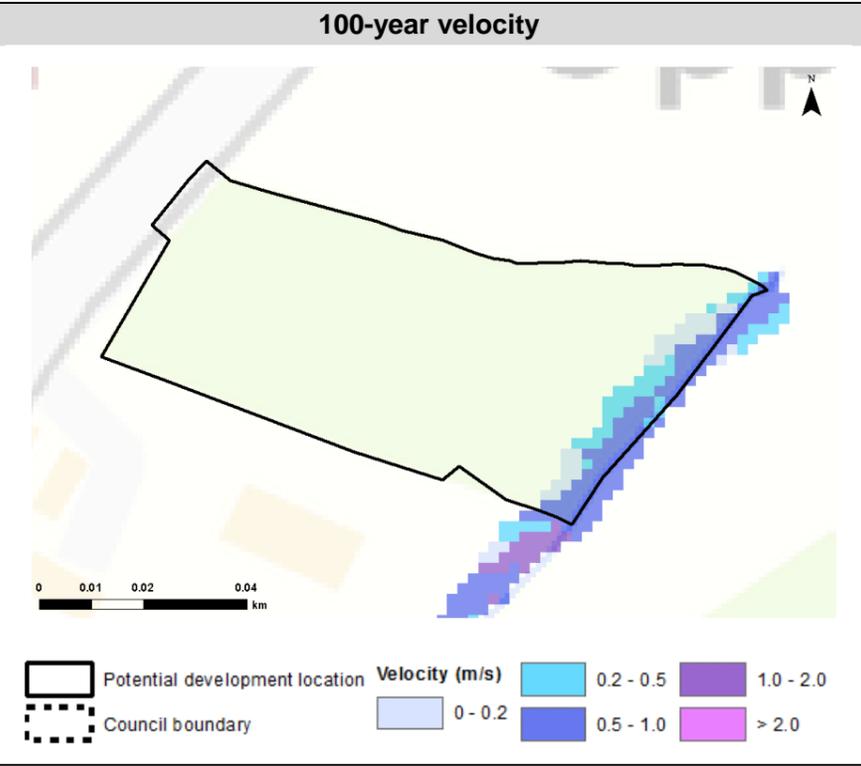
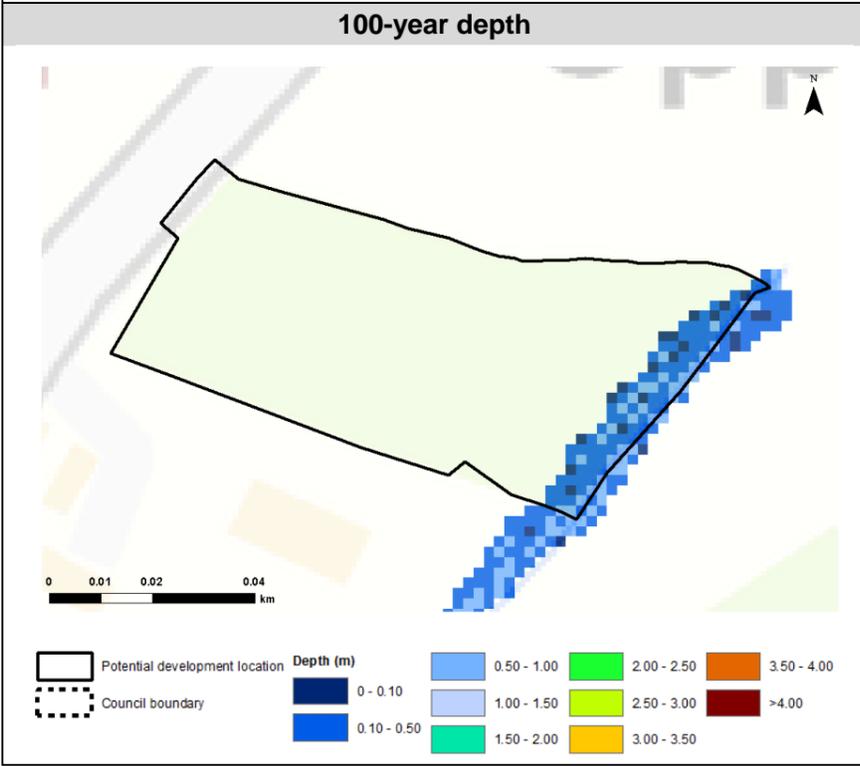
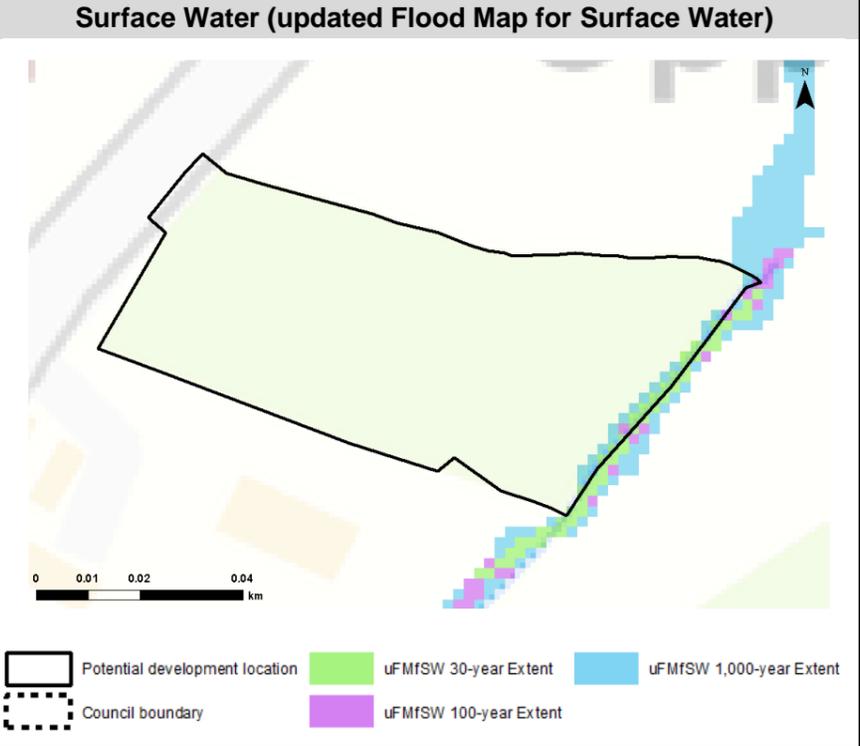
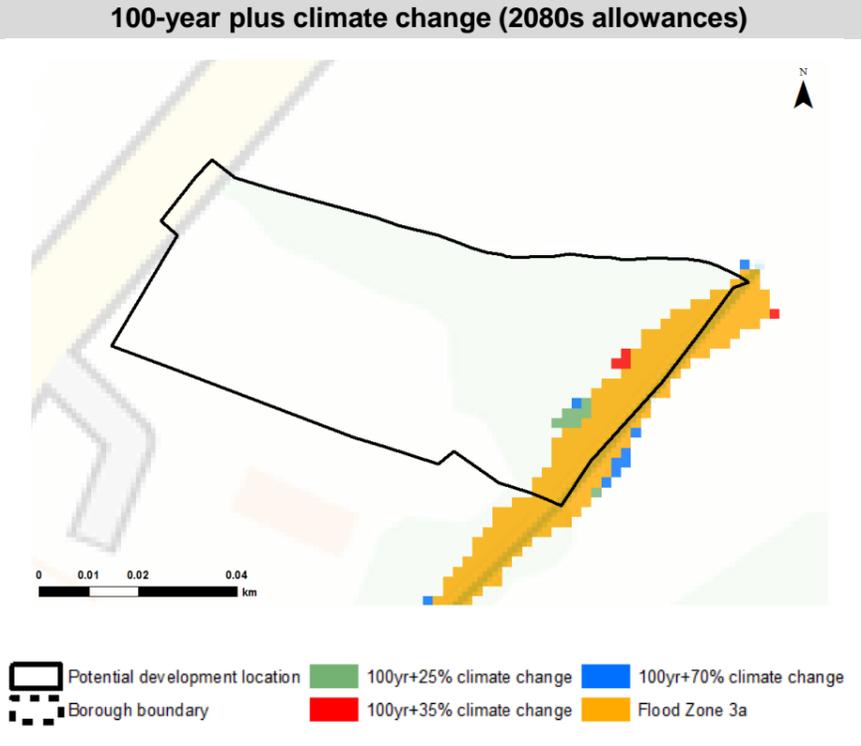
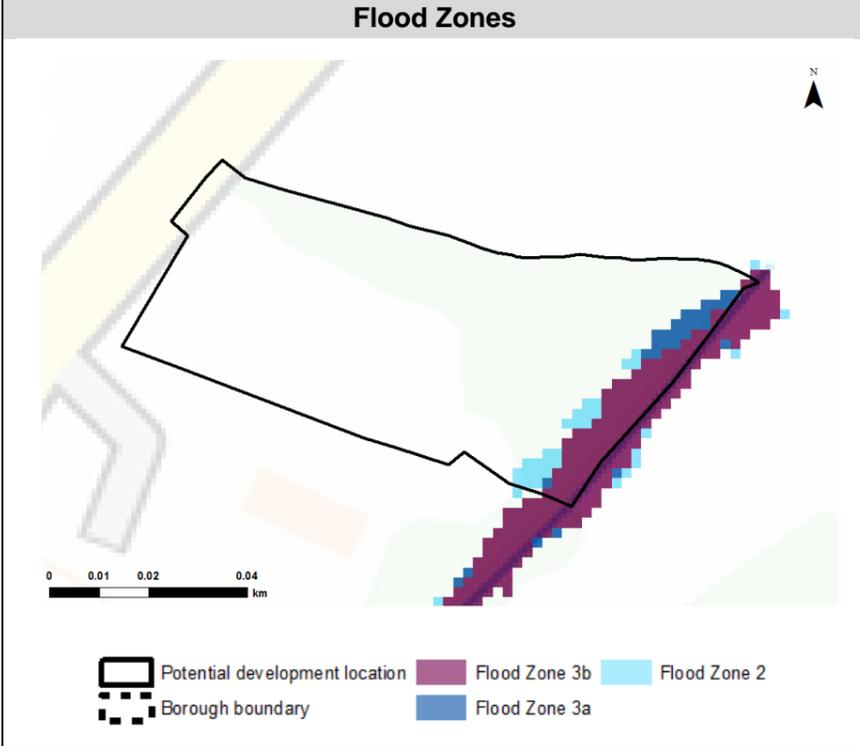
**Wyre Forest District Strategic
Flood Risk Assessment Level
2 Detailed Site Summary
Tables**



Site details	Site Code	WA/UA/4
	Site Name	Allotments, Upper Arley
	Area	0.46ha
	Current land use	Greenfield
	Proposed site use	Residential
Depth, velocity and hazard mapping	Depth, velocity and hazard mapping for the 1 in 100-year event (Flood Zone 3a) have been taken from the Environment Agency's 2011 generalised modelling as the detailed hydraulic models did not provide this information. As a result, there may be some small discrepancies between the extent of the depth, velocity and hazard grids with the extent of Flood Zone 3a.	

SITE CODE	WA/AU/4
SITE NAME	Allotments, Upper Arley

Wyre Forest District Council Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	WA/BE/1			
	Site Name	Stourport Road Triangle, Bewdley			
	Area	3.67ha			
	Current land use	Greenfield			
	Proposed site use	Residential			
Sources of flood risk	Existing drainage features	<ul style="list-style-type: none"> Riddings Brook (culverted in sections) River Severn 			
	Fluvial	Proportion of site at risk			
		FZ3b	FZ3a	FZ2	FZ1
		0%	3%	2%	95%
	<p>The primary fluvial flood risk to the site is due to the potential for overtopping and surging of the Riddings Brook watercourse (partially culverted) that runs along the east of the site before its confluence with the River Severn. The flood zones cover parts of the site along the west boundary.</p> <p>The A456 may become a flow route for flood water. The culvert under the bypass is reasonably large but if it were to become blocked then the potential for flood flow along the A456 would be greater.</p>				
	Surface Water	Proportion of site at risk (uFMFSW)			
		30-year	100-year	1,000-year	
		0%	0%	0%	
Surface water flooding on site is limited to several isolated cases of ponding.					
Reservoir	This site is not at risk of inundation in the event of reservoir failure.				
Canal	The site is not in proximity to any canal assets.				
Flood history	The Environment Agency's historic flood map shows no flooding to the site has occurred in the past. Records for North Worcestershire Water Management show Sandbourne Lane flooded from the Riddings Brook in 2007.				
Flood risk management infrastructure	Defences	Defence Type	Standard of Protection	Condition	
		-	-	-	
	This site is not protected by any formal flood defences.				
Residual risk	-				
Emergency planning	Flood warning	This site is not covered by the Environment Agency's Flood Warning Service			
	Access and egress	Safe Access and egress should always be available via Stourport Road B4196 in the south. Other routes including the A 456 and an unnamed cul-de-sac of Stourport Road are within the Flood Zones 3.			

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	WA/BE/1			
	Site Name	Stourport Road Triangle, Bewdley			
	Area	3.67ha			
	Current land use	Greenfield			
	Proposed site use	Residential			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		River Severn	25%	35%	70%
	% increase in flood extent compared to Flood Zone 3a	0%	+1%	+34%	
Implications for the site	There is a considerable increase in the extent of the site at risk of 100-year flooding with much of the south and west of the site being at risk although only with a 70% allowance. Extents at 25% and 35% remain much the same as present.				
Requirements for drainage control and impact mitigation	Broad scale assessment of possible SuDS	<ul style="list-style-type: none"> Source control techniques are likely to be suitable for this site. If groundwater is identified as a potential risk for the site, then non-infiltrating systems may be required. Infiltration techniques are likely to be suitable, providing the site is not at risk from groundwater flooding. Detention features may be feasible providing site slopes are <5% at the location of the detention feature. If groundwater is a risk to the site, then a liner may be required to mitigate against potential contamination issues. Filtration systems are probably suitable providing site slopes are <5% and the depth to the water table is >1m. If the site has contamination issues, or at risk from groundwater, then a liner will be required. All forms of conveyance features are likely to be suitable. Where slopes are >5%, features should follow contours or utilise check dams to slow flows. 			
	Groundwater Source Protection Zone	The site is predominantly located within Zone 2. As such infiltration techniques should only be used where there are suitable levels of treatment and permits, although it is possible that infiltration may not be permitted. Proposed SuDS should be discussed with relevant stakeholders (LPA, LLFA and EA) at an early stage to understand possible constraints.			
	Historic Landfill Site	The site is not designated by the Environment Agency as previously being a landfill site.			
NPPF and planning implications	Exception Test requirements	<p>The Sequential test will need to be passed before the Exception test is applied.</p> <p>The Exception test will be required in the following scenarios</p> <ul style="list-style-type: none"> If More Vulnerable and Essential Infrastructure development is located in FZ3a If Highly Vulnerable development is located in FZ2. <p>Development will not be permitted in the following scenarios</p> <ul style="list-style-type: none"> Highly Vulnerable infrastructure within FZ3a. 			

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	WA/BE/1
	Site Name	Stourport Road Triangle, Bewdley
	Area	3.67ha
	Current land use	Greenfield
	Proposed site use	Residential
	Requirements for site-specific Flood Risk Assessment	<ul style="list-style-type: none"> At the planning application stage, a site-specific flood risk assessment will be required if any development is located within Flood Zones 2 or 3 or for any development greater than one hectare in Flood Zone 1. Other sources of flooding should also be considered. Blockage of the bypass culvert should be considered as part of a site specific flood risk assessment Climate change modelling should be undertaken using the relevant allowances for the type of development and level of risk. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage. Resilience measures will be required if buildings are situated in the flood risk area. Onsite attenuation schemes would need to be tested against the hydrographs of the Riddings Brook and River Severn to ensure flows are not exacerbated downstream within the catchment. New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff. Assessment for runoff should include allowance for climate change effects. New development must seek opportunities to reduce overall level of flood risk at the site, for example by: <ul style="list-style-type: none"> Reducing volume and rate of runoff Relocating development to zones with lower flood risk Creating space for flooding. Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development and consider using Flood Zones 2 and 3 as public open space.
Mapping Information		
Flood Zones	<p>Flood Zones 2 and 3a are based on the Environment Agency's Flood Zone 2 and 3. The SFRA has identified Flood Zone 3b as land which would flood with an annual probability of 1 in 20 years.</p> <p>Flood Zone 3b has been derived from a combination of results from Environment Agency detailed hydraulic models, generalised 2D hydraulic modelling, and additional 2D hydraulic modelling undertaken for this SFRA.</p>	
Climate change	<p>The upper end climate change allowances for the '2080's were modelled using generalised 2D modelling techniques for the purposes of the SFRA. Due to the generalised nature of the modelling, defences have not been accounted for and therefore mapping shows the 'undefended' scenario. The mapping provides a strategic assessment of climate change risk – developers should undertake detailed modelling of climate change allowances as part of a site specific FRA.</p>	

Mapping

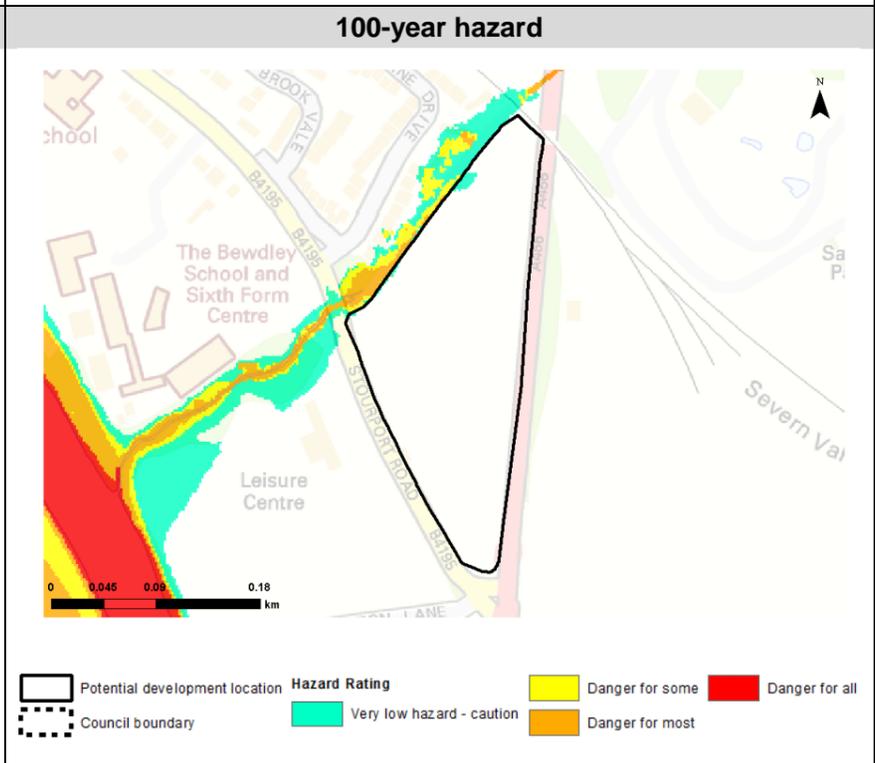
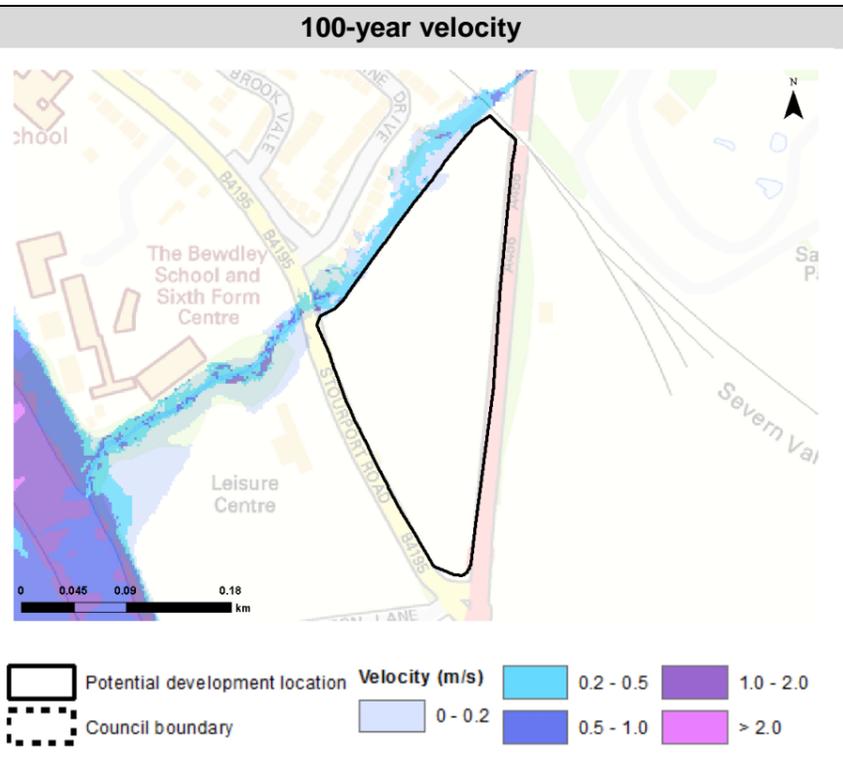
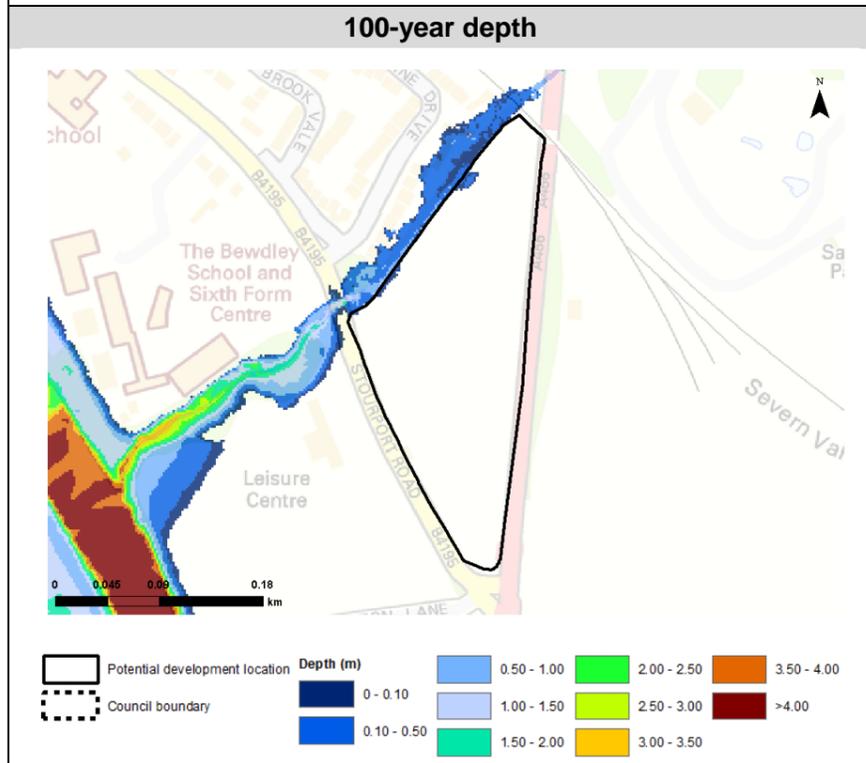
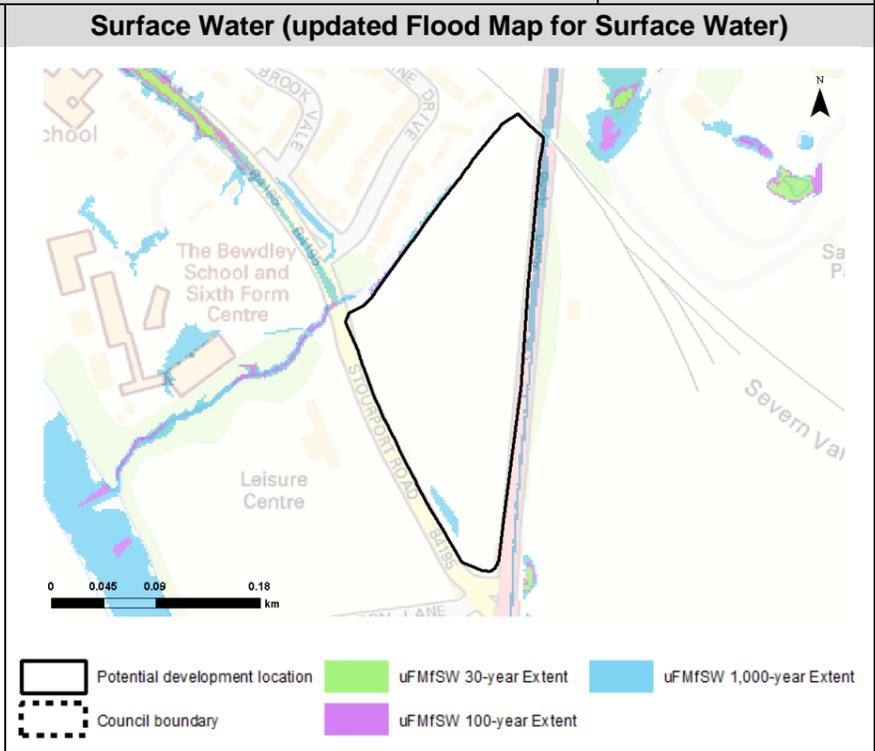
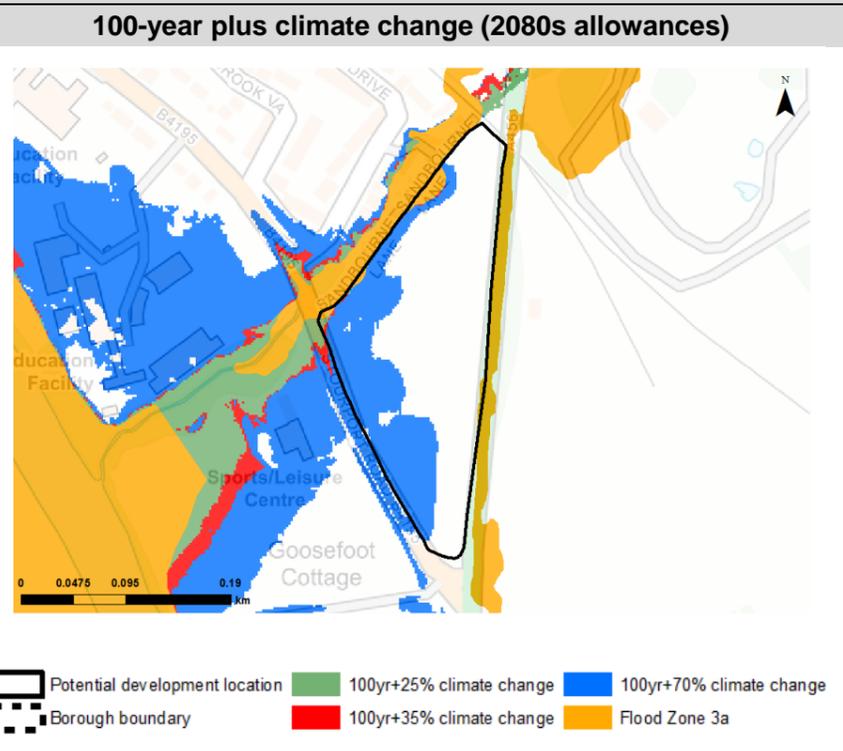
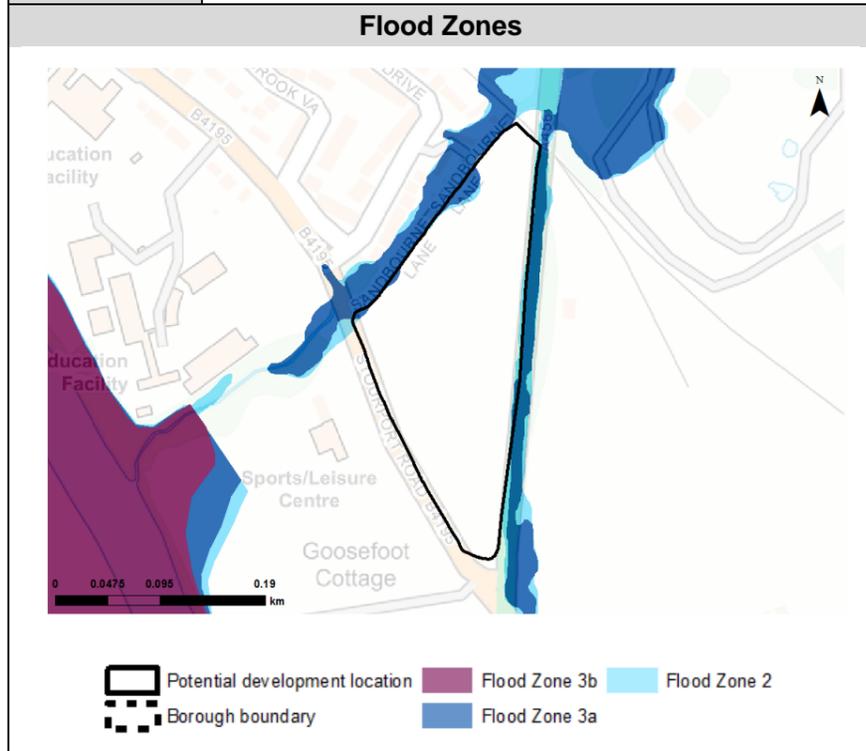
Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	WA/BE/1
	Site Name	Stourport Road Triangle, Bewdley
	Area	3.67ha
	Current land use	Greenfield
	Proposed site use	Residential
Surface Water		The updated Flood Map for Surface Water has been used to define areas at risk from surface water flooding.
Depth, velocity and hazard mapping		Depth, velocity and hazard mapping for the 1 in 100-year event (Flood Zone 3a) have been taken from the Environment Agency's 2011 generalised modelling as the detailed hydraulic models did not provide this information. As a result, there may be some small discrepancies between the extent of the depth, velocity and hazard grids with the extent of Flood Zone 3a.

SITE CODE	WA/BE/1
SITE NAME	Stourport Road Triangle, Bewdley

Wyre Forest District Council Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	WFR/ST/3			
	Site Name	Land north of Stone Hill			
	Area	2.82ha			
	Current land use	Greenfield			
	Proposed site use	Residential			
Sources of flood risk	Existing drainage features	<ul style="list-style-type: none"> Hoo Brook Unnamed drain to the north west of the site Unnamed drain to the north of the site that joins Hoo Brook along the site boundary 			
	Fluvial	Proportion of site at risk			
		FZ3b	FZ3a	FZ2	FZ1
		1%	0%	0%	99%
	The primary fluvial flood risk stems from Hoo Brook which runs through the site and along the site boundary. It has the potential to overtop and inundate the surrounding area of the site in the north with flood water.				
	Surface Water	Proportion of site at risk (uFMFSW)			
		30-year	100-year	1,000-year	
		0%	0%	0%	
There are a few instances of surface water flooding during the lower return periods; however, there are cases of ponding and generally expand slightly as the return period increases.					
Reservoir	The site is potential at risk from inundation in the event of failure from Drayton Pool.				
Canal	There are no canals within 100m of the site.				
Flood history	The Environment Agency's historic flood map has no data that relates to historic flood extents to the site.				
Flood risk management infrastructure	Defences	Defence Type	Standard of Protection	Condition	
		-	-	-	
	This site is not protected by any formal flood defences.				
Residual risk	-				
Emergency planning	Flood warning	This site is not covered by the Environment Agency's Flood Warning Service			
	Access and egress	Despite flooding elsewhere on the site, safe access and egress should always be available onto the A448 Stone Hill.			
Climate Change	Climate change allowances for '2080s'	River Basin District	Central	Higher Central	Upper End
		River Severn	25%	35%	70%
	% increase in flood extent compared to Flood Zone 3a		0%	0%	0%
	Implications for the site	No increase in flood extent is seen with the 2080s allowances.			

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	WFR/ST/3
	Site Name	Land north of Stone Hill
	Area	2.82ha
	Current land use	Greenfield
	Proposed site use	Residential
Requirements for drainage control and impact mitigation	Broad scale assessment of possible SuDS	<ul style="list-style-type: none"> • Source control techniques are likely to be suitable for this site. If groundwater is identified as a potential risk for the site, then non-infiltrating systems may be required. • Infiltration techniques are likely to be suitable, providing the site is not at risk from groundwater flooding. • Detention features may be feasible providing site slopes are <5% at the location of the detention feature. If groundwater is a risk to the site, then a liner may be required to mitigate against potential contamination issues. • Filtration systems are probably suitable providing site slopes are <5% and the depth to the water table is >1m. If the site has contamination issues, or at risk from groundwater, then a liner will be required. • All forms of conveyance features are likely to be suitable. Where slopes are >5%, features should follow contours or utilise check dams to slow flows.
	Groundwater Source Protection Zone	The site is located within Zone 3. Infiltration techniques are generally accepted in this zone.
	Historic Landfill Site	The site is not designated by the Environment Agency as previously being a landfill site.
NPPF and planning implications	Exception Test requirements	<p>The Sequential test will need to be passed before the Exception test is applied.</p> <p>The Exception test will be required in the following scenarios</p> <ul style="list-style-type: none"> • If More Vulnerable and Essential Infrastructure development is located in FZ3a • If Highly Vulnerable development is located in FZ2. • Essential Infrastructure in Flood Zone 3b <p>Development will not be permitted in the following scenarios</p> <ul style="list-style-type: none"> • Highly Vulnerable infrastructure within FZ3a and FZ3b. • More Vulnerable and Less Vulnerable Infrastructure within FZ3b.

Mapping

Wyre Forest District Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables



Site details	Site Code	WFR/ST/3
	Site Name	Land north of Stone Hill
	Area	2.82ha
	Current land use	Greenfield
	Proposed site use	Residential
Requirements for site-specific Flood Risk Assessment		<ul style="list-style-type: none"> At the planning application stage, a site-specific flood risk assessment will be required if any development is located within Flood Zones 2 or 3 or for any development greater than one hectare in Flood Zone 1. Other sources of flooding should also be considered. Climate change modelling should be undertaken using the relevant allowances for the type of development and level of risk. Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage. Resilience measures will be required if buildings are situated in the flood risk area. Onsite attenuation schemes would need to be tested against the hydrographs of Hoo Brook to ensure flows are not exacerbated downstream within the catchment. New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff. Assessment for runoff should include allowance for climate change effects. Risk from the unnamed watercourses to the north of the site should also be considered. New development must seek opportunities to reduce overall level of flood risk at the site, for example by: <ul style="list-style-type: none"> Reducing volume and rate of runoff Relocating development to zones with lower flood risk Creating space for flooding. Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development and consider using Flood Zones 2 and 3 as public open space.
Mapping Information		
Flood Zones	Flood Zones 2 and 3a are based on the Environment Agency's Flood Zone 2 and 3. The SFRA has identified Flood Zone 3b as land which would flood with an annual probability of 1 in 20 years. Flood Zone 3b has been derived from a combination of results from Environment Agency detailed hydraulic models, generalised 2D hydraulic modelling, and additional 2D hydraulic modelling undertaken for this SFRA.	
Climate change	The upper end climate change allowances for the '2080's were modelled using generalised 2D modelling techniques for the purposes of the SFRA. Due to the generalised nature of the modelling, defences have not been accounted for and therefore mapping shows the 'undefended' scenario. The mapping provides a strategic assessment of climate change risk – developers should undertake detailed modelling of climate change allowances as part of a site specific FRA.	
Surface Water	The updated Flood Map for Surface Water has been used to define areas at risk from surface water flooding.	

Mapping

**Wyre Forest District Strategic
Flood Risk Assessment Level
2 Detailed Site Summary
Tables**

JBA
consulting

Site details	Site Code	WFR/ST/3
	Site Name	Land north of Stone Hill
	Area	2.82ha
	Current land use	Greenfield
	Proposed site use	Residential
Depth, velocity and hazard mapping	Depth, velocity and hazard mapping for the 1 in 100-year event (Flood Zone 3a) have been taken from the Environment Agency's 2011 generalised modelling as the detailed hydraulic models did not provide this information. As a result, there may be some small discrepancies between the extent of the depth, velocity and hazard grids with the extent of Flood Zone 3a.	

SITE CODE	WFR_ST_3
SITE NAME	Land north of Stone Hill

Wyre Forest District Council Strategic Flood Risk Assessment Level 2 Detailed Site Summary Tables

