9	e(Oris	sk	3		Tel: 01: email: e	k Manager 21 553 40 enquiries@ eorisk-uk.c	44 georisk-uk.com	Borehole No BH13 Sheet 1 of 1
	m a N ject Na		ENT		Pi	roject N	lo.		Hole Type
		rive, Che	adle			3052		Co-ords: -	WLS
				ussive samp		7.7.		Level: -	Scale 1:30
_									Logged By
Clie	ent:	David \	Wilson	Homes Merc	ia			Dates: 28/08/2013	GD
/ell	Water	Sample	es & In	Situ Testing	Depth	Level	rougust	Control of the Contro	
en	Strikes	Sample Depth (m)	Туре	Results	(m)	(m AOD)	Legend	Stratum Description	
					0.10			Grass over brown sandy TOPSOIL. MADE GROUND: Orange-brown silty sand.	
П			250		0,50		*****	MADE GROUND: Black to grey sandy gravel of ash,	
		0,60	D		0.70		*****		
		1.00	СРТ	N=7 (1,2,2,1,2,2)	2.70			MADE GROUND: Firm becoming stiff below 1.0m dark g many mudstone lithorelicts.	rey CLAY with
		1.50	D				****		
	1		/##C				****		

				41			****		-
		2.00	CPT	N=8 (1,1,2,2,2,2)			****		

							****		-
							****		-
							****		i e
							****		+
		3,00	CPT	N=4 (1,1,1,1,1)	3.00			MADE GROUND: Soft grey locally brown CLAY with occ	asional gravel
				(1,1,1,1,1,1)			****	of angular fine to coarse mudstone.	100

							****		1
							****		+
	46		CDT	A1-E			****		L.
	a	4.00	CPT	N=5 (1,2,1,1,1,2)			****		

							****		-

:							*****		

		5,00	CPT	N=0			****		-
		Sektes	18/6/24	(1,0,0,0,0,0)					

									-

		ı	Туре	Results			XXXXXX	End of Borehole at 6.00 m	

Results Remarks: Groundwater encountered at 3.0m begl during drilling. Monitoring point installed upon completion.



9	e	Orig	sk	(Georisk Manage Tel: 0121 553 40 email: enquiries(www.georisk-uk.	44 Rgeorisk-uk.com	Borehole No BH14
	m a N ject N		IEN	T	Tp	roject No.		Sheet 1 of 1 Hole Type
5.3377	Print Committee	rive, Ch	eadle			3052	Co-ords: -	WLS
		and the state of the state of		ercussive sampli			Level: -	Scale 1:30
Clie	nt:			on Homes Mercia	a		Dates: 28/08/2013	Logged By GD
Well	Water Strikes	Sampl Depth (m)	OS & I	n Situ Testing Results	Depth (m)	(m AOD) Legend	Stratum Description	
		1.00	СРТ	N=7 (1,1,1.2,2.2)	0.90		MADE GROUND: Grass over orange-brown silty S brick fragments. MADE GROUND: Firm locally stiff below 2.0m pair locally slightly gravelly CLAY. Gravel is angular fin- coal and shale.	e grey and groy
		2.00	CPT	N=5 (1,1,1,2,1,1)				-2
		3,00	CPT	N=5 (1,1,1,1,2,1)	2.80		MADE GROUND: Firm orange-brown mottled grey slightly gravelly CLAY. Gravel is angular fine to coamudatone.	slightly sandy ree -3
		4,00	СРТ	N=16 (0.2.3.3.5.5)	3.50		Firm to stiff dark grey to black locally gravelly CLAY is angular fine to coarse coal. (PENNINE LOWER COAL MEASURES)	. Gravel
		4.50	СРТ	25/100mm 100mm - Abandoned	4,20		Sliff pale grey CLAY. (PENNINE LOWER COAL MEASURES)	
					4.85 5.00		Highly weathered pale groy MUDSTONE. (PENNINE LOWER COAL MEASURES) End of Borehole at 6,00 m	5
Rem	arks:	Groundv Borehole	Type vater back	Results not encountered kfilled with arisin	during gs upo	g drilling, n completion,		

ge	oris	SK	,		Tel: 01: email: 6	k Manage 21 553 40 enquiries(eorisk-uk,	44 @georisk-uk.com	ê	Borehole N BH15 Sheet 1 of
Project N Thorley D		adle			roject N 3052	lo.	Co-ords:	194 1	Hole Type WLS
			rcussive samplin	g rig			Level:	-	Scale 1:30
Client:	David '	Wilson	n Homes Mercia	0.50			Dates:	28/08/2013	Logged By GD
Well Water	Sample Depth (m)	es & Ir	Situ Testing	Depth (m)	(m AOD)	Legend		Stratum Description	1
	1.00 1.20 1.50	D CPT D CPT	N=27 (2.4.4,6,7,10) 25/150mm 150mm - Abandoned					ER COAL MEASURES)	
				2.00			Highly weathere (PENNINE LOW	d red-purple-brown MUDSTON ER COAL MEASURES) End of Borehole at 2,00 m	E.
						-			

Remarks: Groundwater not encountered during drilling. Borehole backfilled with arisings upon completion.

Results



MAN	Oris	SK	<u> </u>		www.georisk-uk	044 @georisk-uk.com	BH16 Sheet 1 of 1
	orive, Che			13	roject No. 3052	Co-ords: -	Hole Type WLS
Equipme	nt: Dynam	ic pe	rcussive samplin	ig rig		Level: -	Scale 1:30
Client:	David \	Vilso	n Homes Mercia			Dates: 28/08/2013	Logged By GD
Well Water Strikes	Sample Depth (m)	es & Ir Type	Situ Testing Results	Depth (m)	Level (m AOD) Legend	Stratum Description Grass over brown clayey TOPSOIL.	
	1.00	CPT	N=17 (1.1.2,3,6,6)	0,30		Firm to stiff red-brown slightly sandy CLAY, (PENNINE LOWER COAL MEASURES)	-1
	1.50	CPT	48/205mm 205mm - Abandoned	1.40 1.50		Highly weathered red-purple-brown MUDSTON (PENNINE LOWER COAL MEASURES) End of Borehole at 1.59 m	i
							-2
							3
							4
							.5
Remarks:	Groundy	Type vater	Results not encountered kfilled with arisin	during	g drilling.		

9	e(Oris	SK			Georisk Manage Tel: 0121 553 40 email: enquiriest www.georisk-uk.	144 ⊕georisk-uk.com BH	17
Pro	ject N	the second section is a first of the second	100		10000	roject No. 3052	Co-ords: - WL	2270 (5)
				cussive sampli	ng rig		Level: - Sca	
Clie	ent:	David '	Wilson	Homes Merci	a		Dates: 28/08/2013 Logge	Description.
Well	Water Strikes	Sampl Depth (m)	es & In	Situ Testing Results	Depth (m)	(m AOD) Legend	Stratum Description Grass over brown clayey TOPSOIL.	
		0.20	D		0.30		Control of the Property of the Control of the Contr	_
		0.50	D		-2000		Firm to stiff red-brown slightly sandy CLAY. (PENNINE LOWER COAL MEASURES)	
		1.00 1.10	CPT D	N=10 (1,1,2,2,3,3)				-1 -1
) 	1,80	СРТ	25/200mm 200mm - Abandoned	1,45 1,60		Highly weathered red-purple-brown MUDSTONE. (PENNINE LOWER COAL MEASURES) End of Borehole at 1.60 m	
								3
8								-
								-5
			Туре	Results			T-MAX	
Rei	marks	: Ground Boreho	lwater le bac	not encountere kfilled with aris	ed duri ings u	ng drilling. oon completior		CS

9	e(Oris	sk		E.	Tel: 012 email: e	1 553 40	@georisk-uk.com		Borehole No BH18 Sheet 1 of 1
	ject N				Р	roject N	0.			Hole Type
		rive, Ch				3052		Co-ords:	•	WLS
Equ	ipmer	nt: Dynan	nic per	cussive samp	ling rig			Level:	(H)	Scale 1:30
Clie	(2000) 1000			Homes Merc	100	137-11		Dates:	28/08/2013	Logged By GD
Well	Water Strikes	Depth (m)	Type	Situ Testing Results	Depth (m)	Level (m AOD)	Legend		Stratum Description	
								Grass over brow	n sandy TOPSOIL.	
		0,40	D		0.25			occasional grave	orange-brown slightly sandy CLAY with of angular fine to coarse mudstone. ER COAL MEASURES)	
		1.00	СРТ	N=25 (2,5,6,6,6,7)						-10.
1		1.30	D				-5-5			
					1.50			Red-purple-brow (PENNINE LOW)	n MUDSTONE. ER COAL MEASURES)	
.目:		2.00	CPT	N=50 (4,16,25,25)	2.00			7.2.	End of Borehole at 2.00 m	2
										-3
Rem	arks:	Groundy	Type /ater no	Results of encountered	d during	drilling				
		Monitorin	ng poin	t installed upo	n comp	letion.	10			

9	ec MAN) ris	SK			Tel: 01 email:	k Manage 21 553 40 enquiries@ eorisk-uk.	44 Zgeorisk-uk.com	Borehole N BH19 Sheet 1 of	
Proj	ect Na	ime			P	roject N	۱o.	0	Hole Typ	е
Tho	rley D	rive, Che	adle		1	3052		Co-ords: -	WLS	
Equ	ipmen	t: Dynam	ic pe	rcussive samplir	ng rig			Level: -	Scale 1:30	
2011:2		David	Aflas	n Homes Mercia				Dates: 28/08/2013	Logged B	у
Clie	nc			A STATE OF THE STA	1			Dates. 20/00/2013	GD	
Well	Water Strikes	Sample Depth (m)		n Situ Testing Results	Depth (m)	(m AOD)	Legend	Stratum Description		
								Grass over brown clayey TOPSOIL.		0
		0.40	D	l u	0.25			MADE GROUND: Firm to stiff orange-brown slightly send	dy CLAY.	68
					0,50			MADE GROUND: Pale grey angular gravel of SANDSTC	INE.	
		1.00	CPT	N=21 (2,4,4,4,6,7)	0,80			Stiff to very stiff red-brown slightly sandy locally gravelly CLAY, Gravel is angular fine to coarse mudstone. (PENNINE LOWER COAL MEASURES)		-
		1,45	DCPT	50/100mm 100mm - Abandoned	1.40			Red-purple-brown MUDSTONE. (PENNINE LOWER COAL MEASURES) End of Borehole at 1,50 m		-4
			Tuno	Davilla						

Remarks: Groundwater not encountered during drilling.
Borehole backfilled with arisings upon completion.





Georisk Management Ltd Tel: 0121 553 4044 email: enquiries@georisk-uk.com www.georisk-uk.com Borehole No BH20

Project Name

Project No. 13052

Co-ords: -

Sheet 1 of 1 Hole Type

Thorley Drive, Cheadle 1 Equipment: Dynamic percussive sampling rig

Level: -

Scale 1:30

Client:

David Wilson Homes Mercia

Dates: 28/08/2013

Logged By

17000							Dates: 28/08/2013	GD
ell Wate Strike	Sampl Depth (m)	es & II	n Situ Testing Results	Depth (m)	Level (m AOD)	Legend	Stratum Description	0.00
19	1	534	1133413			XXX	Grass over brown clayey TOPSOIL.	
15	0.20	D						
				0.30			Stiff red-brown CLAY, (PENNINE LOWER COAL MEASURES)	
			1	0.50				
							Stiff orange-brown mottled grey CLAY. (PENNINE LOWER COAL MEASURES)	
	1,00	CPT	N=38 (3,4,6,8,11,13)	1.00			Orange-brown mottled grey-green MUDSTONE with mu-	ch clavev
	1.20	D	(3,4,5,5,11,15)				matrix. (PENNINE LOWER COAL MEASURES)	
							V = 1.11 = 1.21 = 1.21 = 1.21 = 1.21	
	1.50	CPT	18/150mm	1.50				
			150mm - Abandoned				End of Borehole at 1.50 m	
.,		Тура	Results					

Remarks: Groundwater not encountered during drilling. Monitoring point installed upon completion.



APPENDIX D: Proposed Site Layout



Subject to:

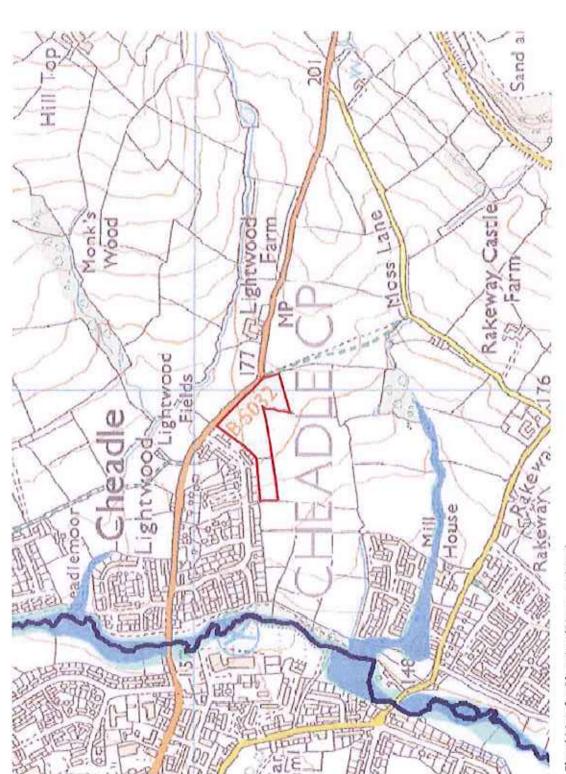
Utilities searches

LA comments

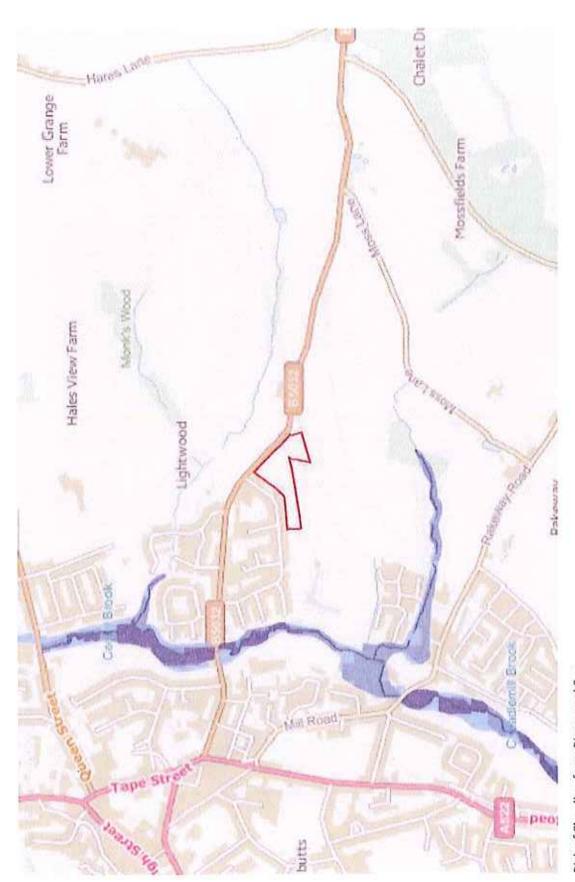
Charle	PYTY BORGE .	40.11	l
7007	Thomas Dive	Chade	ı
Overship time	BALL AND	,	ı
Descriptions	85580	×	8
Seption	103036		
Dete	28.248		ı

***	PYW dense .	40.13		
	Thomas Dise	Chada		
ART SHARE	A 14 C 1 A 16 C	i		
Service Resident	85580	×	63	Services
coper	10.8354			
100	20,7945			

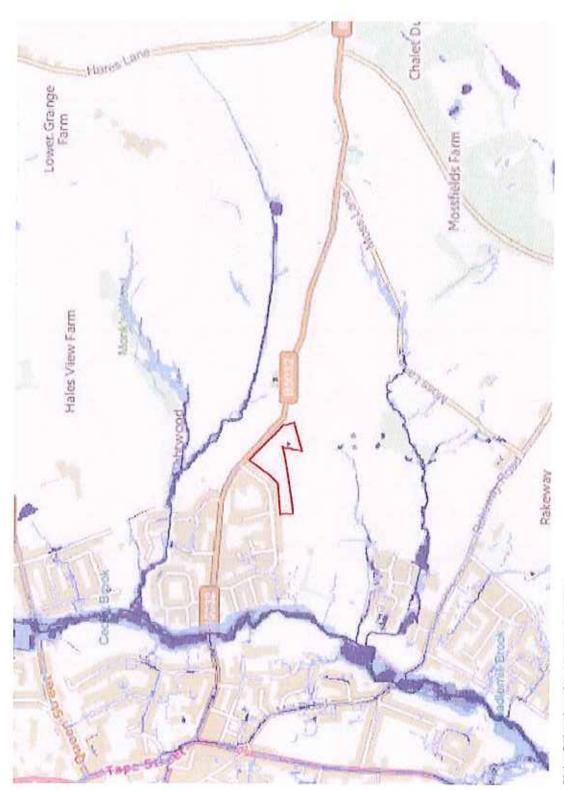
APPENDIX E: EA Maps and Staffordshire Moorlands Level 1 Strategic Flood
Risk Assessment Update



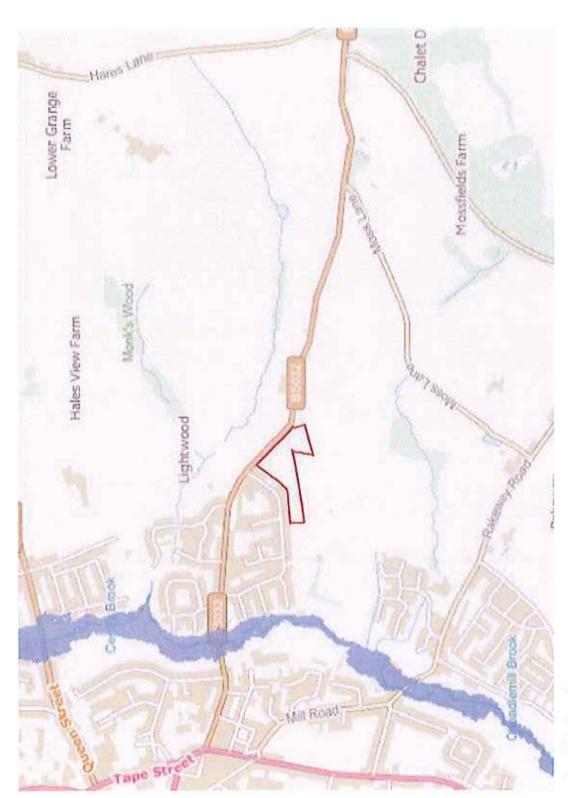
Flood Map for Planning (Rivers and Sea)



Risk of Flooding from Rivers and Sea



Risk of Flooding from Surface Water



0

Risk of Flooding from Reservoirs



Flood and Water Management Submitted to Staffordshire Moorlands District Council Submitted by AECOM Infrastructure & Environment UK Ltd Royal Court Basil Close Chesterfield S41 7SL United Kingdom

Staffordshire Moorlands Level 1 Strategic Flood Risk Assessment Update

Final Report October 2015

Staffordshire Moorlands Level 1 Strategic Flood Risk Assessment Update

Prepared by:

Craig Boorman

Assistant Hydrologist

Checked by:

Heten Borton Senior Consultant

Approved by:

Andrew Woodliffe Associate Director

9ev No	Comments	Checked by	Approved by	Date
0	Oraft	H8	AW	29/07/2015
1	Final	H8	AW	01/10/2015

AECOM Infrastructure & Environment UK Limited

Royal Court, Basil Close, Chesterfield, S41 7SL, United Kingdom

Tel: +44(0)1246 209 221 Fax: 444 (0)1246 209 229 Website: http://www.aecom.com

Job No: 47074340

Date Created: October 2015

Limitations

AECOM Infrastructure & Environment UK Limited ("AECOM") has prepared this Report for the sole use of Staffordshire Moorlands District Council ("Client") in accordance with the Agreement under which our services were performed (Proposal dated 24th March 2015). No other warranty, expressed or implied, is made as to the professional advice included in this Report or any other services provided by AECOM. This Report is confidential and may not be disclosed by the Client nor relied upon by any other party without the prior and express written agreement of AECOM.

The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by AECOM has not been independently verified by AECOM, unless otherwise stated in the Report.

The methodology adopted and the sources of information used by AECOM in providing its services are outlined in this Report. The work described in this Report was undertaken between **May 2015** and **October 2015** and is based on the conditions encountered and the information available during the said period of time. The scope of this Report and the services are accordingly factually limited by these circumstances.

Where assessments of works or costs identified in this Report are made, such assessments are based upon the information available at the time and where appropriate are subject to further investigations or information which may become available.

AECOM disclaim any undertaking or obligation to advise any person of any change in any matter affecting the Report, which may come or be brought to AECOM's attention after the date of the Report.

Certain statements made in the Report that are not historical facts may constitute estimates, projections or other forward-looking statements and even though they are based on reasonable assumptions as of the date of the Report, such forward-looking statements by their nature involve risks and uncertainties that could cause actual results to differ materially from the results predicted. AECOM specifically does not guarantee or warrant any estimate or projections contained in this Report.

Copyright

© This Report is the copyright of AECOM Infrastructure & Environment UK Limited. Any unauthorised reproduction or usage by any person other than the addressee is strictly prohibited.

Table of Contents

1 Intro	months and the control of the contro	,,,,,, 1
1.1	Terms of Reference	1
1.2	Project Aims and Objectives.	
1.3	User Guide	
1.4	Level 1 SFRA Methodology	
	ly Area Overview	
2 5100		
2.1	Location	5
2.2	Topography	€
2.3	Geology	
2.4	Watercourses	
2.5	Arlificial Water Bodies	
2.6	Hydrogeology	8
3 Legi	islative and Planning Policy Context	10
3.1	Introduction	10
3.2	National Planning Policy Framework (2012)	10
3.3	Planning Practice Guidance (2014)	
3,4	The Flood and Water Management Act (2010)	11
3.5	NPPF PPG for Sustainable Drainage Systems (2015)	
3.6	Flood Risk Regulations (2009)	
3.7	Staffordshire Moorlands District Council Local Plan (2014)	
3.8	Peak District National Park Management Plan (2012 – 2017)	
3.9	Water Framework Directive (WFD) (2000)	
4 Floo	d Risk Sources within Staffordshire Moorlands	
4.1	Introduction	18
4.2	Overview of Historic Flooding	
4.3	Flooding from Rivers (Fluvial)	18
4.4	Flooding from Surface Water (Pluvial)	
4.5	Flooding from Groundwater	
4.6	Flooding from Sewers	26
4.7	Flooding from Reservoirs, Canals and other Artificial Sources.	
4.8	Flood Risk Management Measures	
5 Floo	od Risk Management Policy Recommendations	
5,1	Policy Considerations	35
5.2	Council Specific Policy Recommendations.	37
5.3	Draft Staffordshire County Council SuDS Handbook	38
5.4	Sensitive Development Locations	38
6 Guid	dance for Applying the Sequential and Exception Tests	39
6.1	Sequential Test	39
6.2	Applying the Sequential Test - Plan-Making	39
6.3	Applying the Sequential Test – Planning Applications.	
6.4	Exception Test	
•	dance for Preparing Site-Specific FRAs	
	•	
7.1	Overview	47
7.2	When is a Flood Risk Assessment required?	
7.3	What should a Flood Risk Assessment address?	
7.4	Proposed Development in Flood Zone 3b Functional Floodplate	
7.5	Guidance on Flood Risk Management Measures.	
8 Gui	dance for the Application of SuDS	
8.1	introduction	
8.2	Type of SuDS	59
8.3	National SuDS Standards	
8.4	Use of SuDS in Staffordshire Moorlands	
8.5	Outline Planning Application Recommendations	63

8.6	Full Planning Application, Reserved Matters, Discharge of Conditions Recommendations	.63
9 Sum	mary and Recommendations	. 65
9.1	Site Allocation Process	.65
	Council Policy	
9.3	Emergency Planning	
9.4	Future Updates to the SFRA	
	Level 2 SFRA	

List of Appendices

Appendix A.	Data Register
-------------	---------------

Appendix B. Level 1 SFRA Flood Risk Mapping Figures
Appendix C. SFRA Update Checklist

List of Tables

Table 1-1: Strategic Flood Risk Maps in Appendix B	4
Table 2-1: Main Rivers within the Statfordshire Moorlands District	7
Table 2-2: Lakes and Reservoirs within the Staffordshire Moorlands District	8
Table 4-1: Fluvial Flood Zones (extracted from the PPG, 2014)	. 19
Table 4-2: Hydrautic models for main rivers in Statfordshire Moorlands	. 20
Table 4-3: Table Changes to river flood flows by river basin district compared to a 1961-90 baseline	, 22
Table 4-4: Change to extreme rainfall intensity compared to a 1961-90 baseline	. 23
Table 4-5: AIMS Flood Defences within Statfordshire Moortands	. 31
Table 6-1: Flood Risk Vulnerability Classification (PPG, 2014)	. 40
Table 6-2: Flood Flisk Vulnerability and Flood Zone 'Compatibility' (PPG, 2014)	.41
Table 7-1: Levels of Site-Specific Flood Risk Assessment.	. 48
Table 7-2: Site-Specific Flood Risk Assessment Checklist (Planning Practice Guidance)	. 48
Table 8-1: Typical SuDS Components	. 59
List of Figures	
Figure 1-1: Taking flood risk into account in the preparation of a Local Plan (Adapted from the Planning Practice Guida for Flood Risk and Coastal Change, p6)	nce 2
Figure 2-1: Staffordshire Moorlands Level 1 SFRA Study Area	5
Figure 6-1: Application of Sequential Test for Local Plan Preparation	39
Floure 8-2: Determining when the Sequential Test is required for Planning Applications	., 43
Figure 7-1: Rationale for Flood Resilient Design Strategies, Improving Flood Performance, (Figure 4.1 from CLG 2007)	. 53

List of Acronyms

ASD Areas Benefiting from Defences
AEP Annual Exceedance Probability

AIMS Asset Information Management System

AOD Above Ordnance Datum

AONB Area of Outstanding Natural Beauty

ASIGWF Areas Susceptible to Groundwater Flooding ASISWF Areas Susceptible to Surface Water Flooding

BGS British Geological Survey

CFMP Catchment Flood Management Plan

CRT Canal and River Trust

DCLG Department for Communities and Local Government
Detra Department for Environment, Flood and Rural Affairs

FCERM National Strategy for Flood and Coastal Erosion Risk Management

FMfSW Flood Map for Surface Water FRA Flood Risk Assessment FRMP Flood Risk Management Plan

FSA Flood Storage Area FWD Flood Warning Direct

FWEP Flood Warning and Evacuation Plan FWMA Flood and Water Management Act 2010

GES Good Ecological Status

GIS Geographical Information System

HFM Historic Flood Map
IDB Internal Drainage Soard
LDF Local Development Framework

LFRMS Local Flood Risk Management Strategy

LIDAR Eight Detection and Ranging
LLFA Lead Local Flood Authority
LPA Local Planning Authority
LRF Local Resilience Forum

NPPF National Planning Policy Framework

NS National Standards

PFRA Preliminary Flood Risk Assessment
SMDC Staffordshire Moorlands District Council

PPG Planning Practice Guidance
PPS Planning Policy Statement
RBMP River Basin Management Plan
SA Sustainability Appraisal
SCC Statfordshire County Council
SFRA Strategic Flood Risk Assessment
SMDC Staffordshire Moorlands District Council

SPZ Source Protection Zone ST Severn Trent Water

SuDS Sustainable Drainage Systems uFMISW Updated Flood Map for Surface Water

UU Unitied Utilities

WFD Water Framework Directive

Staffordshire Moorlands Level 1 SFRA

Glossary of Terms

TERM	DEFINITION
1D Hydraulic Model	Hydraulic model which computes flow in a single dimension, suitable for representing systems with a defined flow direction such as river channels, pipes and culverts
2D Hydraulic Model	Hydraulic model which computes flow in multiple dimensions, suitable for representing systems without a defined flow direction including topographic surfaces such as floodplains
Annual probability	Annual probability of occurrence in any one year, expressed as a percentage. For example, a 1% annual probability event has a 1 in 100 chance of occurring in any year.
Areas Benefitting from Defences (ABD)	Areas Benefiting from Flood Defences shows those areas that would benefit from the presence of formal flood defences in the event of flooding from rivers with a 1% (1 in 100) chance in any given year. If the defences were not there, these areas would be flooded.
Asset Information Management System (AIMS)	Environment Agency database of assets associated with main rivers including defences, structures and channel types. Information regarding location, standard of service, dimensions and condition.
Aquifer	A source of groundwater comprising water bearing rock, sand or gravel capable of yielding significant quantities of water.
Attenuation	In the context of this report - the storing of water to reduce peak discharge of water.
Catchment Flood Management Plan (CFMP)	A high-level planning strategy through which the Environment Agency works with their key decision makers within a river catchment to identify and agree policies to secure the long-term sustainable management of flood risk.
Climate Change	Long term variations in global temperature and weather patterns caused by natural and human actions. For fluvial events a 20% increase in river flow is applied and for rainfall events, a 30% increase. These climate change values are based upon information within the NPPF and Planning Practice Guidance.
Culvert	A channel or pipe that carries water below the level of the ground.
DG5 Register	A water-company held register of properties which have experienced sewer flooding due to hydraulic overload, or properties which are 'at risk' of sewer flooding more frequently than once in 20 years.
Exception Test	A tool that should be applied following the application of the sequential test. Conditions need to be met before the Exception Test can be applied.
Flood Defence	Infrastructure used to protect an area against floods as floodwalls and embankments; they are designed to a specific standard of protection (design standard).
Flood Resilience	Measures that minimise water ingress and promotes fast drying and easy cleaning, to prevent any permanent damage.
Flood Resistant	Measures to prevent flood water entering a building or damaging its fabric. This has the same meaning as flood proof.
Flood Risk	The level of flood risk is the product of the frequency or likelihood of the flood events and their consequences (such as loss, damage, harm, distress and disruption).
Flood Storage Area	An area of land designated to attenuate/store flood water.
Flood Zone	Flood Zones show the probability of flooding, ignoring the presence of existing defences

TERM	DEFINITION
Fluvial	Relating to the actions, processes and behaviour of a watercourse (river or stream).
Freeboard	Height of flood defence crest level (or building level) above designed water level
Functional Floodplain	Land where water has to flow or be stored in times of flood.
Groundwater	Water that is in the ground, this is usually referring to water in the saturated zone below the water table.
Lead Local Flood Authority (LLFA)	As defined by the Flood and Water Management Act, in relation to an area in England, this means the unitary authority or where there is no unitary authority, the county council for the area. Essex County Council is therefore the LLFA.
Local Planning Authority (LPA)	Body that is responsible for controlling planning and development through the planning system.
Main River	Watercourse defined on a 'main river map designated by Defra. The Environment Agency has permissive powers to carry out flood defence works, maintenance and operational activities for main rivers. However overall responsibility for maintenance lies with the riparian owner.
Mitigation measure	An element of development design which may be used to manage flood risk or avoid an increase in flood risk elsewhere.
Ordinary Watercourse	A watercourse that does not form part of a main river. This includes "all rivers and streams and all ditches, drains, cuts, culverts, dikes, sluices (other than public sewers within the meaning of the Water Industry Act 1991) and passages, through which water flows" according to the Land Drainage Act 1991.
Residual Flood Risk	The remaining flood risk after risk reduction measures have been taken into account.
Return Period	The average time period between rainfall or flood events with the same intensity and effect.
Risk	Risk is a factor of the probability or likelihood of an event occurring multiplied by consequence: Risk = Probability x Consequence. It is also referred to in this report in a more general sense.
Sequential Test	A tool that aims to steer vulnerable development to areas of lowest flood risk.
Sewer Flooding	Flooding caused by a blockage or overflowing in a sewer or urban drainage system.
Source Protection Zone (SPZ)	Defined areas in which certain types of development are restricted to ensure that groundwater sources remain free from contaminants.
Surface Water	Flooding caused when intense rainfall exceeds the capacity of the drainage systems or when, during prolonged periods of wet weather, the soit is so saturated such that it cannot accept any more water.
Sustainable Drainage Systems (SuDS)	Methods of management practices and control structures that are designed to drain surface water in a more sustainable manner than some conventional techniques.
Topographic survey	A survey of ground levels.

Introduction 1

Terms of Reference

AECOM were commissioned by Staffordshire Moorlands District Council (SMDC) in April 2015 to review and revise the Level 1 Strategic Flood Risk Assessment (SFRA) for the Staffordshire Moorlands District administrative area.

Project Aims and Objectives

The National Planning Policy Framework¹ (NPPF) and associated Planning Practice Guidance (PPG) for Flood Risk and Coastal Change² emphasise the active role Local Planning Authorities (LPAs) should take to ensure that flood risk is understood and managed effectively and sustainably throughout all stages of the planning process,

The NPPF outlines that Local Plans should be supported by a Strategic Flood Risk Assessment (SFRA) and LPAs should use the findings to inform strategic land use planning. Figure 1-1 overleaf, reproduced from the PPG, illustrates how flood risk should be taken into account in the preparation of a Local Plan.

The original Level 1 SFRA was produced for SMDC in collaboration with the Stafford, Lichtield and Tamworth local authorities by in 20082. The SFRA was produced to satisfy the Sustainability Appraisal (SA) of the Development Plan Documents which make up the Local Development Framework (LDF) and outline the spatial planning strategy for the District. A key commitment made by the Council in the Core Strategy is to undertake an early review of the Core Strategy by 2017, extending the plan period to 2031 to ensure that future provision will continue to adequately meet objectively assessed needs and reflect development potential. This is to become part of a single Local Plan, combined with the work currently underway on site specific allocations.

The Local Plan covers only that part of the District for which SMDC has responsibility as a LPA and therefore excludes the Peak District National Park which is covered by a separate LDF prepared by the Peak District National Park Authority.

Since the publication of the original Level 1 SFRA, there have been a number of changes in logislation and guidance relating to planning and flood risk. The introduction of the Localism Act in 2011 was intended to create a planning system oriented around consideration of local planning issues. Planning Policy Statements (PPS), covering all aspects of national planning policy have since been replaced by the NPPF including Planning Policy Statement 25 (PPS25) Development and Flood Risk⁴. Its accompanying PPS25 Practice Guidance⁵ document relating to flood risk, has been recently replaced by the PPG. Furthermore, the wider planning system has been subject to considerable change since 2008 with the withdrawal of the previous regional planning framework and the revocation of Regional Spatial Strategies (RSS) in 2010.

As well as legislative and planning policy changes, a number of new and revised datasets have been made available since the release of the original Level 1 SFRA. Environment Agency flood risk mapping has been revised and updated national surface water flood risk mapping has been released by the Environment Agency. These can both be used by LPAs in their SFRAs.

Staffordshire Moorlands Level 1 SFRA

October 2015

³ Department for Communities and Local Government (2012) National Planning Policy Framework, Available at:

https://www.gov.uk/government/publications/national-planning-policy-framework--2

Department for Communities and Local Government (2014) Planning Practice Guidance: Flood Risk and Coastal Change. Available at: http://planningquidance.planningqortal.gov.uk/blog/guidance/flood-risk-and-coastal-change/

Historiow (January 2008), Staffordshire Moorlands District Council Strategic Flood Risk Assessment for Local Development Framework,

Department for Communities and Local Government (2010) 'Planning Policy Statement 25: Development and Flood Risk, TSO: London. 5 Department for Communities and Local Government (2009) Planning Policy Statement 25: Development and Flood Risk Practice Guide', TSO: Lordon.

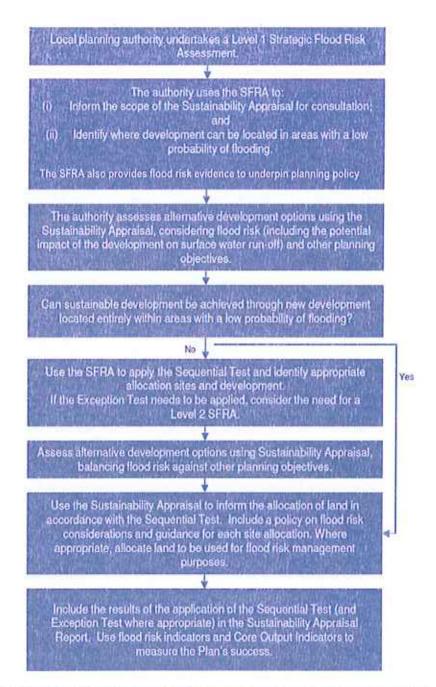


Figure 1-1: Taking flood risk into account in the preparation of a Local Plan (Adapted from the Planning Practice Guidance for Flood Risk and Coastal Change, p6)

The objectives of the Level 1 SFRA update are to:

- Collate and analyse the most up to date flood risk information across the SMDC administrative area, and incorporate the findings from more recent studies;
- Provide an up to date, robust flood risk evidence base to inform SMDC's Local Plan, taking into account all sources of flooding;
- Provide an up to date evidence base for applying the Sequential Test and Exception Test to inform and enable the sequential approach towards spatial planning, as required by NPPF; and
- Support prudent decision-making by Development Management Officers on a day-to-day basis and satisfy the Sustainability Appraisal.