

Proposed development at
Land off Lucas Lane
Hilton
Derbyshire
DE65 5FL



**PROPOSED DEVELOPMENT AT LAND
OFF LUCAS LANE, HILTON,
DERBYSHIRE, DE65 5FL**

**FLOOD RISK ASSESSMENT
NOVEMBER 2018**

Proposed development at
Land off Lucas Lane
Hilton
Derbyshire
DE65 5FL



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CLIENT'S REFERENCE:

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PREPARED BY:

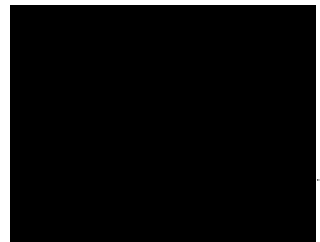
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INTRODUCTION

1.1 General

1.1.1 JNM Engineering Ltd has been commissioned to undertake a Flood Risk Assessment (FRA) on behalf of Providence Land in support of the planning application for the Proposed housing development at Princess Avenue, Arlestone, Telford, TF1 2LJ.

1.1.2 This report sets out the findings of the flood risk assessment required by the Local Planning Authority in support of this development. The assessment has been carried out in accordance with the National Planning Policy Framework (NPPF) and Technical Guidance to the NPPF.

1.2 Background Information

1.2.1 The NPPF replaced PPS25 in 2012 with tables 1 to 3 giving guidance on probability and development vulnerability.

Zone 1 Low Probability

This zone comprises of land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any one year (<0.1%).

Zone 2 Medium Probability

This zone comprises of land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% - 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5% - 0.1%) in any year.

Zone 3a High Probability

This zone comprises of land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.

Zone 3b The Functional Floodplain

This zone comprises of land where water has to flow or be stored in times of flood. Strategic FRA's should identify this Flood Zone (land which would flood with an annual probability of 1 in 20 (5%) or greater in any year or is designed to flood in an extreme (0.1%) flood, or at another probability to be agreed between the LPA and the Environment Agency (EA), including water conveyance routes.

1.2.2 As part of its general obligations under the Water Resources Act 1991, the EA has carried out surveys of its existing flood defences against flooding and has published a series of nationwide 'Indicative Floodplain Maps' based upon information from historic flood events and basic hydraulic modelling. In general terms, these maps give a good indication of the areas likely to be affected by flooding. More recently the EA have published the 'Flood Map' on their website which is based on improved hydraulic modelling and detailed local data. The Flood Map indicates areas that may be affected by a 1 in 100-year fluvial flood or a 1 in 200 year tidal/coastal flood (i.e. Zone 3 as defined in NPPF). It also indicates areas that may be affected by an extreme flood (i.e. Zone 2 as defined in NPPF). However, it should be stated that the Environment Agency flood maps only cover water courses with substantial catchment areas and do not cover all ditch courses and brooks that maybe susceptible to flooding.

1.2.3 The Environment Agency Flood Map for the proposed development shows that the site boundary is outside of the indicative floodplain and is shown in Zone 1. The extent of the indicative floodplain is shown in Appendix 1. Information issued by Environmental Agency.

1.2.4 The proposed development is shown on Appendix 5.

1.2.5 Enquiries have not been made of the Environment Agency as to any recorded flooding instances due to the site being in Flood zone 1 (Refer to Appendix 1 for information)

2 STRUCTURE OF THE REPORT

- 2.1** This report has been structured to follow the general principles set out in the National Planning Practice Guidance to the NPPF which deal specifically with flooding.

This report has been based upon desk studies supplemented by site inspections.

SITE AND CATCHMENT CHARACTERISTICS

3 DEVELOPMENT DESCRIPTION AND LOCATION

The proposed development is located in Hilton, Derbyshire.

The nearest postcode is DE65 5FL with national grid reference X:425341 Y:331003.

Hilton is a village in South Derbyshire.

According to 2017 census, Derbyshire is said to have an estimated population of 1,049,00.

The town lies at around 197 m above sea level.

- 3.1.1** Referring Table 2, within NPPF, the vulnerability class for the proposed development is “more vulnerable”. The area to be developed is shown to be outside of the floodplain on the Environment Agency’s **indicative** floodplain maps (i.e. the site is shown to fall within Zone 1: Low Probability, stated Table 1 of NPPF.) When referring to Table 3 of NPPF it shows that all development types are suitable within Zone 1.

3.2 Definition of the Flood Hazard

- 3.2.1** The main sources of flooding are from rivers, tidal waters, overflowing sewers/drains, overland runoff from high ground and high-water tables.

Flooding from Rivers

- 3.2.2** There are no rivers near to or crossing the development. Flooding from this source can be discounted.

Flooding from Overland Runoff

- 3.2.3** As shown in Appendix 3, flooding from surface water runoff cannot be discounted due to there being a low risk of surface water flooding near to the edge of the site boundary. Finished floor levels have been proposed to be raised 1.5m across the north side of the development and 1.2m on the east side of the development to prevent any risks from flooding from this source.

Flooding from Existing Sewers and Drains

- 3.2.4** Severn Trent have been contacted to confirm if flooding from existing sewers and drains have occurred. It has been confirmed that there is no surface water or foul drainage that runs through the proposed development. **(Refer to Appendix 6)**. Confirmation of flooding history will be provided once received from Severn Trent Water.

3.2.5 *Flooding from Ditches and Natural Ponds*

There is a ditch near to the site across the road from Lucas Lane. According to the Environment Agency, this source is a not at risk of flooding.

3.2.6 *Flooding from Reservoirs, Canals, and other Artificial Sources*

There are no Reservoirs, Canals or Artificial Sources near to the proposed development. Flooding from this source can be discounted. **(Refer to Appendix 4 for clarification)**

Existing Drainage

- 3.2.1** There are no gullies located around the proposed development due to site being an vacant piece of land.

3.3 Detailed Development Proposals

- 3.3.1** It is proposed to redevelop the existing site into a new housing development. The first point of discharge for surface water is to be soakaways. Percolation tests would need to be carried out to determine if soakaways would be successful. If soakaways are to deemed unsuccessful, then surface water would be discharged via 300cum proposed attenuation lagoon which will then outfall to the nearest ditch located on Lucas Lane via a Hydro-Brake manhole which is designed to have a maximum discharge rate of 5L/S from 1m head. This is to be designed not to flood in the worst case 1 in 100-year storm event **(Refer to concept drainage drawing for confirmation)**
- 3.3.2** It is proposed to discharge the sites foul network into the existing drainage systems located within the proposed sites eastern boundary. This is subject to Section 106 application and approval.
- 3.3.3** Application for a Section 106 connection to a sewer will need to be applied for if necessary.

3.4 Flood Risk Management Measures

3.4.1 As demonstrated in Point 3.2.3 and within Appendix 3, there is a very low risk of flooding associated by existing surface water flooding.

3.4.2 No flood risk management measures are required as no significant flood risks have been identified or associated within the site.

Off Site Impacts

3.4.3 Due to the site proposals, there will be no off-site impact due to the very low risk of flooding.

3.5 Residual Risks

3.5.1 There is always a possibility of a flood more than the design standards (e.g. 1 in 100 years) that, if occurred, might conceivably cause some flooding to the development. However, such an event would have a very low probability and the risk of flooding to the development would be extremely small. Buildings are to be set 1.5m across the north side of the development and 1.2m on the east side so flows would be diverted away from dwellings.

CONCLUSIONS

3.6 This report gives details of the Flood Risk Assessment, which has been carried out in relation to the proposed development site.

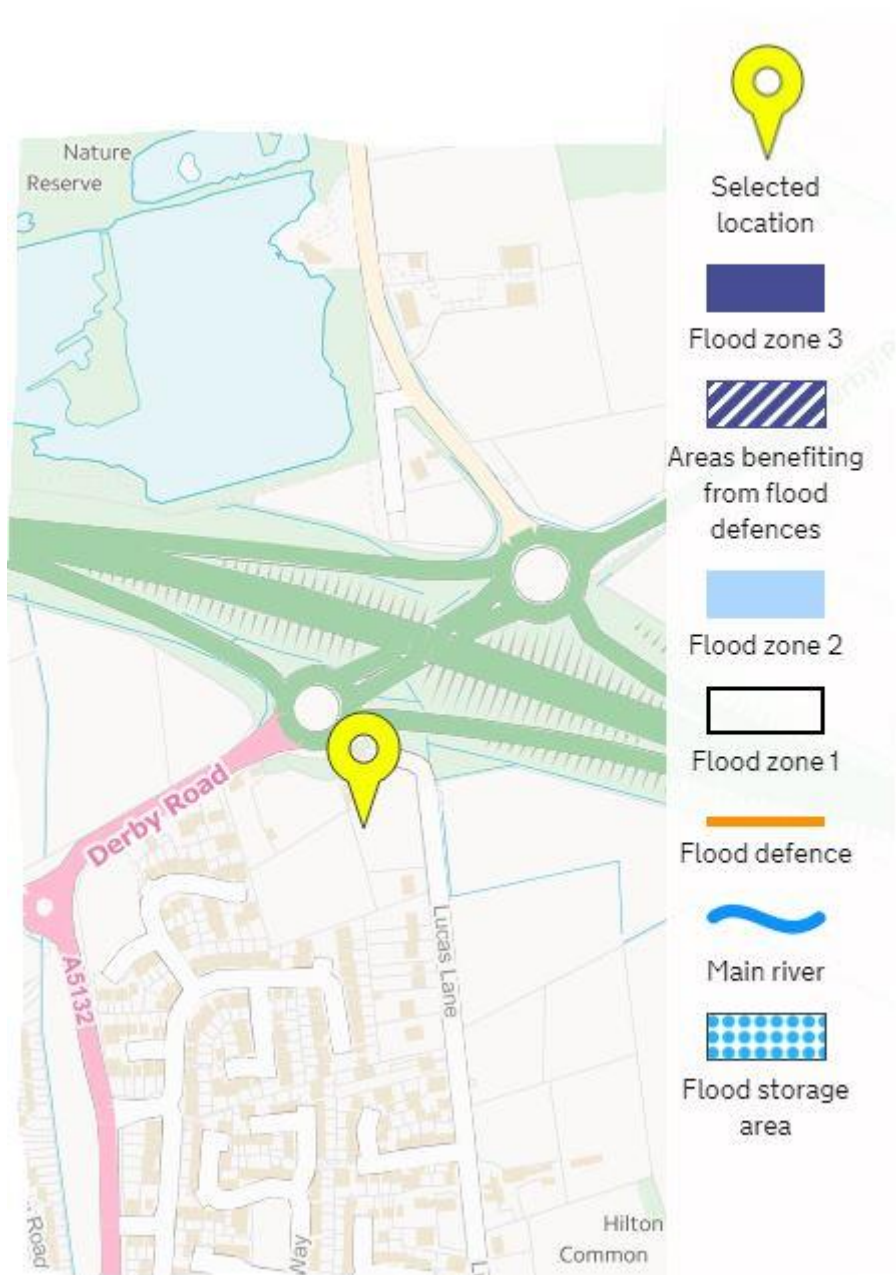
3.7 As demonstrated within the report, and as shown on Appendix 1, the proposed development lies within Flood Zone 1 and is not at significant risk of flooding.

3.8 To minimise surface water flooding, we propose that finished floor levels are to be raised 1.5m across the north side of the development and 1.2m on the east side of the development to prevent any risks from flooding.

3.9 The proposed onsite drainage systems are in accordance with NPPF and ensure no third parties are at risk from flooding.

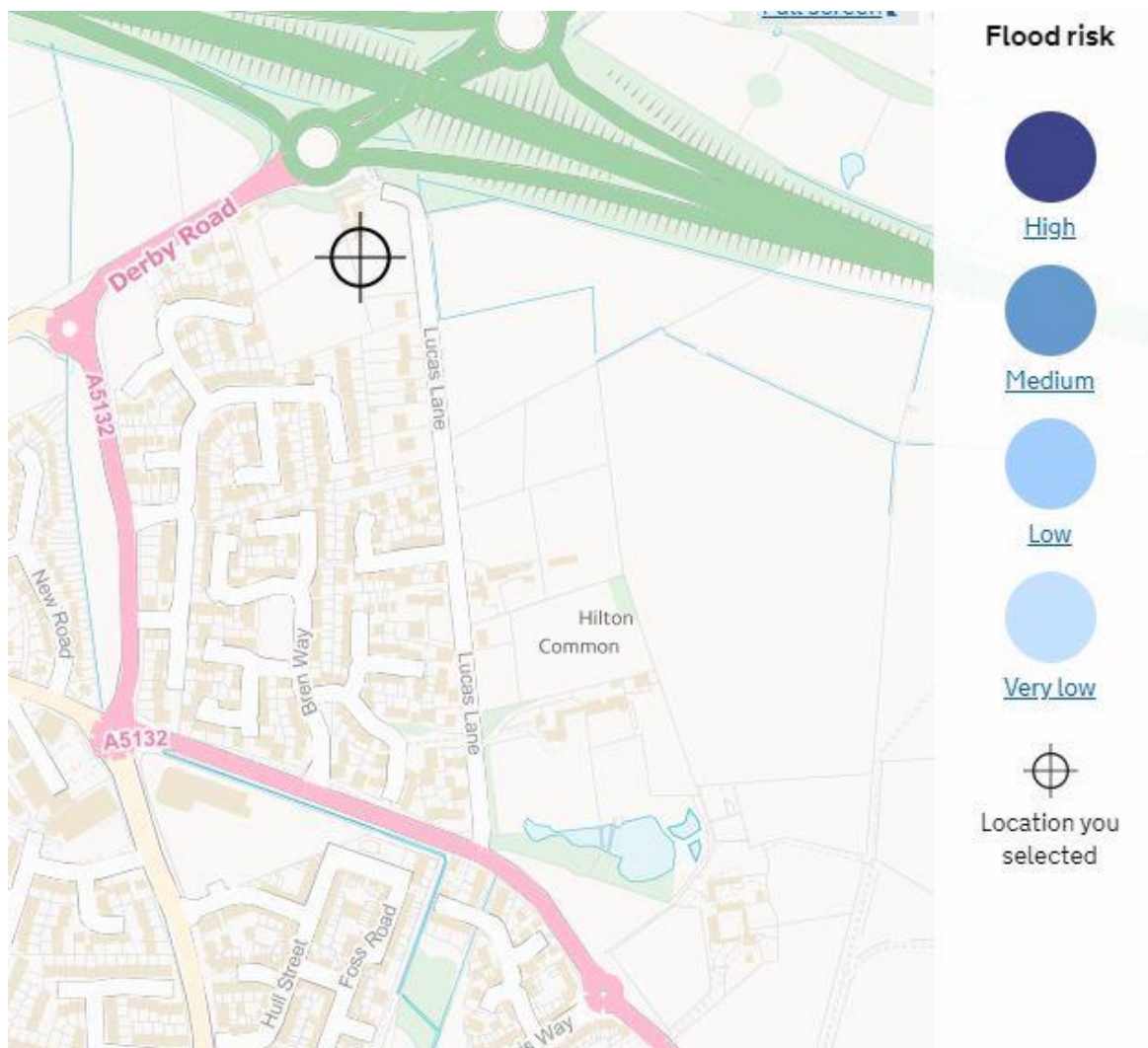
Appendix 1

Environment Agency Flood Map



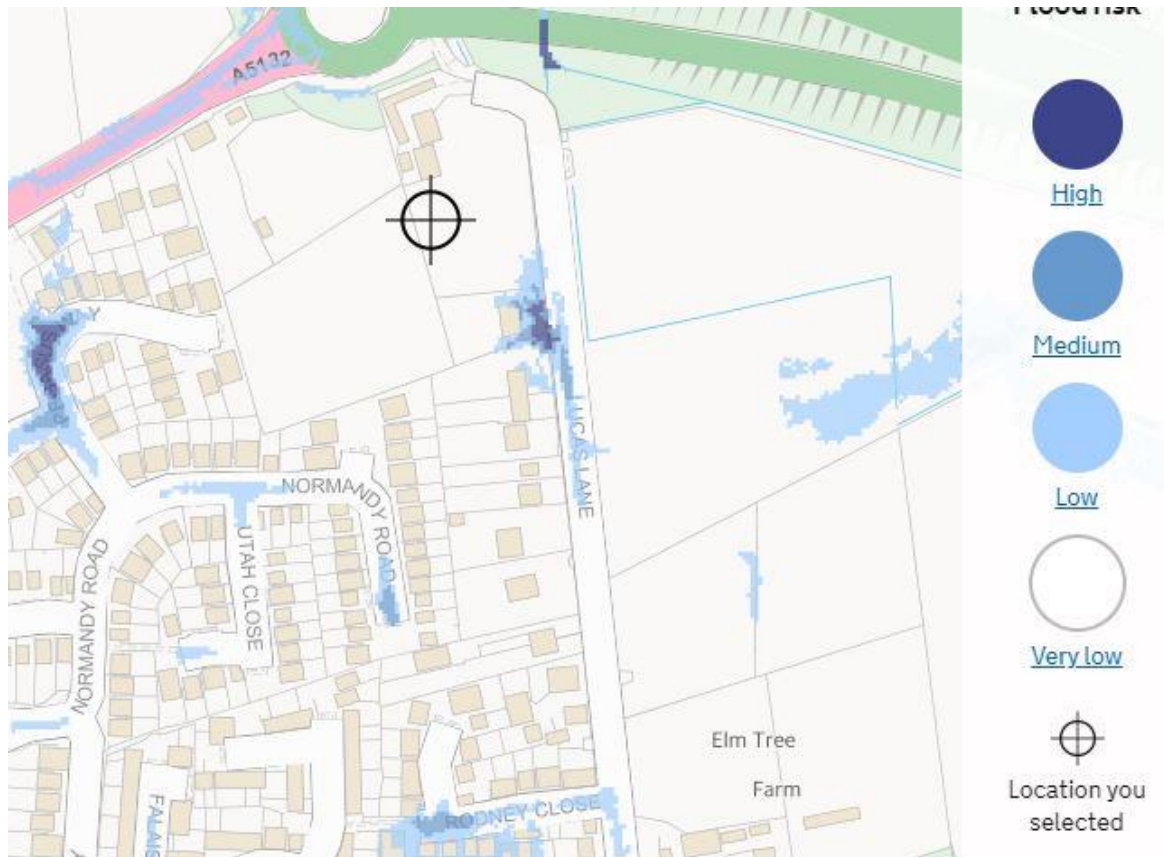
Appendix 2

Environment Agency Flood Map (Rivers & Seas)



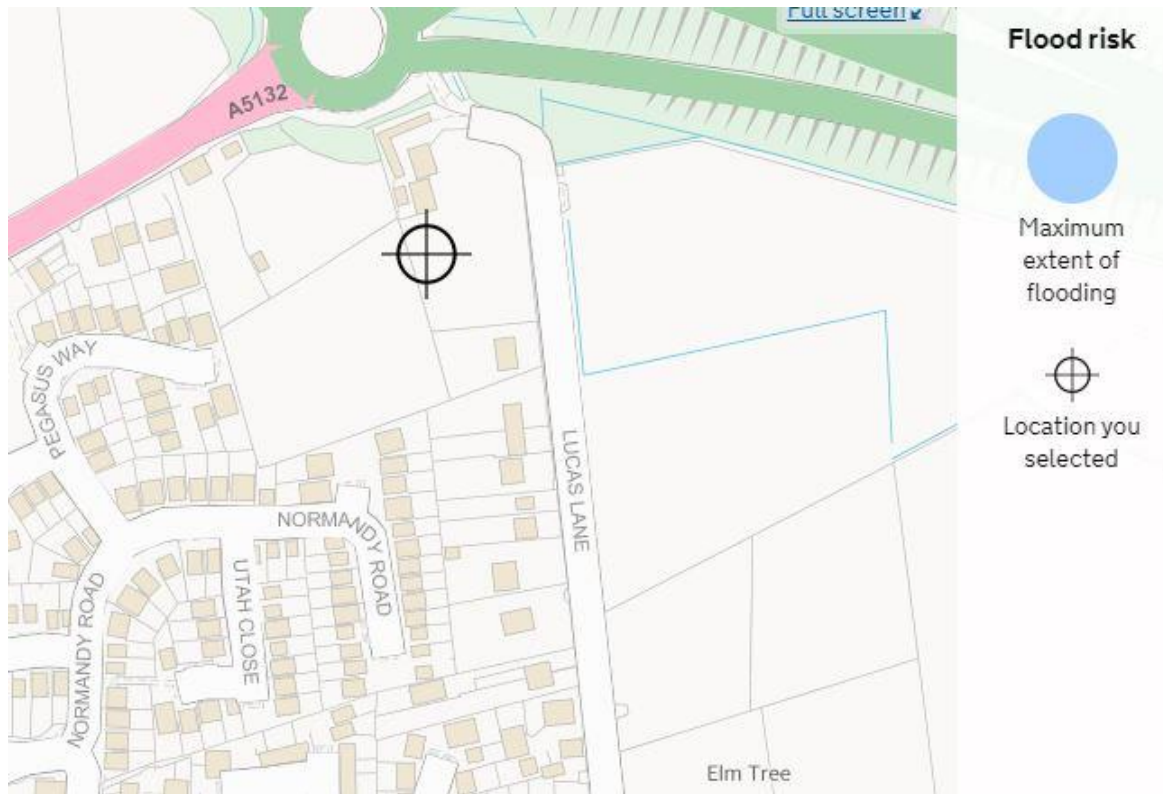
Appendix 3

Environment Agency Flood Map (Surface Water)



Appendix 4

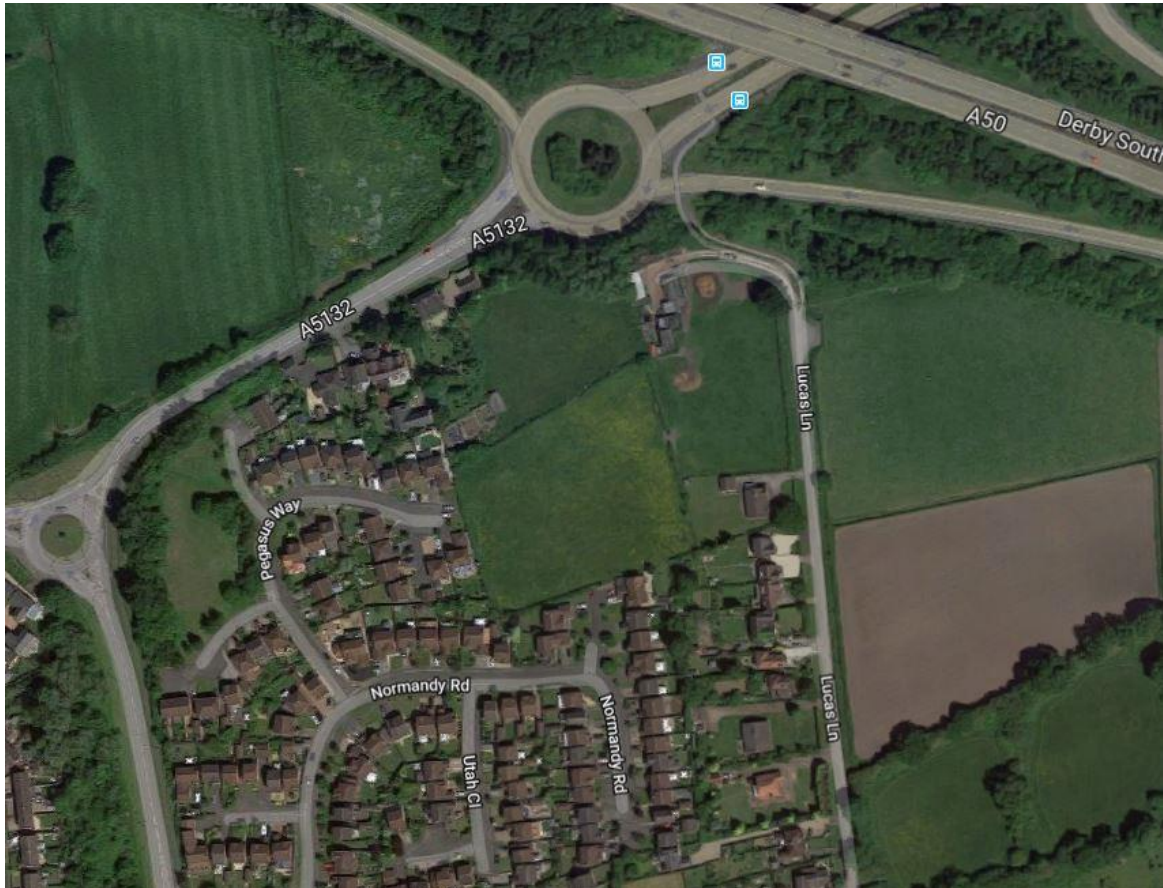
Environment Agency Flood Map (Reservoir)



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Appendix 5

Site location



Appendix 6

Sewer records



Severn Trent Sewer Record

	Public Combined Gravity Sewer		Hydrobrake		Sewerage Air Valve
	Public Foul Gravity Sewer		Lamp hole		Sewerage Hatch Box Point
	Public Surface Water Gravity Sewer		Outfall		Sewerage Isolation Valve
	Combined Use Pressurised Sewer		Overflow		Soakaway
	Foul Use Pressurised Sewer		Penstock		Surface Water Manhole
	Surface Water Pressurised Sewer		Petrol Interceptor		Blind Shaft
	Abandoned Gravity Sewer		Sewage Treatment Works		Combined Use Manhole
	Private Gravity Sewer		Sewer Blockage		Disposal Site
	Section 104 Gravity Sewer		Sewer Collapse		Flushing Chamber
	Transferred Gravity Sewer		Sewer Chemical Injection Point		Foul Use Manhole
	Highway Drain (Not STW)		Sewer Junction		Grease Trap
	Vent Column				Head Node
	Waste Water Storage				
	Culverted Watercourse (Not STW)				
	Protective Strip				
	Sewage Pumping Facility				
	Sewage Facility Connection Inlet / Outlet				

Notes

The majority of private gravity sewers and lateral drains shown in magenta transferred into public ownership in October 2011, providing they met the relevant criteria. Please note that private pressurised sewers and drains within the boundary of the property they serve remain private. Sewers shown in green which remain the subject of an adoption agreement under Section 104 of the Water Industry Act (1991) are not the responsibility of Severn Trent Water. Please refer to response to Question 8 in search report to check current status of the sewers.

All Sewers that have been transferred to Severn Trent Water after 1st October 2011, which they have a record of but have not surveyed and confirmed, are shown in orange.

Please note, the full extent and route of these sewers may not be plotted on the sewer map. By October 1st 2016 any private pumping station and associated apparatus serving a lateral drain or sewer which was operational before July 1st 2011 will have transferred over to Severn Trent Water's responsibility and become a public asset (subject to any appeals).

South Staffs Water Record

Location of property	
Existing Mains	
Abandoned Mains	

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Concept drainage drawing



DRAWING BASE UPDATED	JJM	06.06.18	A
Revision Details	By	Date	Suffix
	Check		

Drawing Number	Revision
J01814/A1/001	

LUCAS LANE

Drawing Title

CONCEPT DRAINAGE
STRATEGY

Scale at A1 1:500	Detailed	Approved James Mew's
Drawn RJS	Tech Chk JJM	Det Chk JJM
	Date 08.05.18	

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