Shropshire Council: Shropshire Local Plan

Representation Form

*Please complete a separate **Part B Representation Form** (this part) for each representation that you would like to make. One **Part A Representation Form** must be enclosed with your **Part B Representation Form(s).***

*We have also published a separate **Guidance Note** to explain the terms used and to assist in making effective representations.*

Part B: Representation

Name and Organisation:	Mr & Mrs Redge

Q1. To which document does this representation relate?

- [x] Regulation 19: Pre-Submission Draft of the Shropshire Local Plan
- [x] Sustainability Appraisal of the Regulation 19: Pre-Submission Draft of the Shropshire Local Plan
- [ ] Habitats Regulations Assessment of the Regulation 19: Pre-Submission Draft of the Shropshire Local Plan

(Please tick one box)

Q2. To which part of the document does this representation relate?

Paragraph:		Policy:	S12.1	Site:	MIN018	Policies Map:	

Q3. Do you consider the Regulation 19: Pre-Submission Draft of the Shropshire Local Plan is:

	Yes:	No:
A. Legally compliant	[x]	[ ]
B. Sound	[ ]	[x]
C. Compliant with the Duty to Co-operate	[x]	[ ]

(Please tick as appropriate).

Q4. Please give details of why you consider the Regulation 19: Pre-Submission Draft of the Shropshire Local Plan is not legally compliant or is unsound or fails to comply with the duty to co-operate. Please be as precise as possible.

If you wish to support the legal compliance or soundness of the Regulation 19: Pre-Submission Draft of the Shropshire Local Plan or its compliance with the duty to co-operate, please also use this box to set out your comments.

Please see following page.

(Please continue on a separate sheet if necessary)

Shropshire Local Plan – Regulation 19 consultation

Settlement Policy S12.1 in relation to Minsterley and Allocation MIN018

Introduction

Mr and Mrs Redge agree that the Plan is 'sound' in relation to the allocation of site MIN018 for residential development, however the proposed guideline of 20 dwellings is a low density that does not meet the '*justified*' or *'consistent with national policy'* tests of soundness.

The settlement housing guideline for Minsterley represents a reduction in development compared to the previous rate of development and fails the *'consistent with national policy'* test.

Minsterley development guideline

Mr & Mrs Redge support the designation of Minsterley as a Community Hub as this will help the vitality and viability of the village over the plan period.

Policy S12.1 sets a housing guideline of 155 dwellings for Minsterley and 175 dwellings for Pontesbury. Policy SP7 (Managing Housing Development) and SP8 (Managing Development in Community Hubs) seek to prevent exceeding these housing guidelines, with section f of policy SP8 requiring that, *"The granting of permission would not result in the settlement's residential guideline being exceeded".*

The proposed housing guidelines are significantly lower than the rate of development that has been achieved over the past 12 years. Over 2006/7-2018/19 Minsterley and Pontesbury delivered 211 completed dwellings, equivalent to 17.6 dwellings per annum[1]. This period included the housing market downturn that followed the 2008 financial crash. If recent delivery rates of 17.6 dwellings per annum are projected forwards into the next plan period then Minsterley and Pontesbury Community Hub would deliver 387 dwellings over the 22 year period 2016-2038. This is 57 dwellings more than the current total in policy S12.1.

The National Planning Policy Framework sets out in paragraph 59 the Government's objective of "*significantly boosting the supply of homes*". This has been reiterated in more recent ministerial statements and in the proposals for reforming the planning system. The reduction in the planned rate of development for Minsterley and Pontesbury is inconsistent with national policy and on this basis fails the 'tests of soundness'.

Principle of development on site MIN018

Mr and Mrs Redge strongly support the Plan's allocation of site MIN018 for residential development. A summary of the benefits of development on site MIN018 is attached at Appendix 1 to this representation.

[1] Figures from Shropshire Council's Five Year Housing Land Supply Statement (March 2020)

A Flood Risk Assessment, attached as Appendix 2 to this representation, demonstrates that development will not increase flood risk and in fact offers an opportunity to reduce pre-existing flood risk issues in this area of Minsterley.

The proposed guideline of 20 dwellings

The guideline figure for this site does not meet the '*justified*' or *'consistent with national policy'* tests of soundness. It is internally inconsistent with other policies in the Plan and does not reflect the Council's evidence base.

The proposed guideline of 20 dwellings on a 1.05 hectare site equates to only 19 dwellings per hectare. This is unjustifiably low and conflicts with the following policies:

- Policy SP1: The Shropshire Test requires in section 1f that development, "*Makes efficient use of land*".

- Policy SP3: Climate Change requires in section 1b that carbon emissions are reduced by, *"Supporting the principle of delivering higher density development on the most accessible urban sites."*

- Policy SP5: High Quality Design requires in section 3k, "*making efficient and effective use of land and topography."*

- Policy DP1: Residential Mix sets a default housing mix of 25% 2 bed or smaller and 25% 3 bed or smaller. In combination with the proposed low housing guideline for this site, it limits the amount of residential floorspace that can be delivered, compounding the low density to an even more inefficient use of a sustainably located site.

- Paragraph 122 of the National Planning Policy Framework which requires that, *"Planning policies and decisions should support development that makes efficient use of land".*

A scheme that meets policies SP1, SP3, SP5 and DP1 will necessitate a higher density. We therefore suggest that the site's guideline figure is increased to 30 dwellings. This figure reflects the indicative capacity of 31 dwellings for site MIN018 on page 35 of the Council's Minsterley Site Assessments report.

The proposed density is lower than the adjoining Linden Fields development which delivered 16 dwellings on 0.51 hectares of land, equivalent to a density of 31.4 dwellings per hectare.

Figure 1. Comparison with adjoining site

Mix	Adjoining Linden Fields development (15/00809/REM)	MIN018
Total	16 dwellings on 0.51ha	20 dwellings on 1.05ha
Density	31.4 dwellings per hectare	19.0 dwellings per hectare

A more appropriate minimum density for this 1.05 hectare site would be at least 30 dwellings per hectare, resulting in a housing guideline figure of 30 dwellings.

Modifications necessary to make the Plan sound

To pass the 'consistent with national policy' test of soundness and match the Framework's objective of significantly boosting the supply of homes, Policy S12.1 section 1 should be amended to at least match the previous rates of delivery. If split proportionately[2] this would require the following modification:

> *"The residential development guidelines for Minsterley and Pontesbury Community Hubs are ~~around~~ **at least** ~~155~~ **185** and ~~around~~ at least ~~175~~ 205 dwellings respectively. "*

To ensure the development guidelines are consistent with the evidence base, the Plan's policies DP1, SP1, SP3 and SP5 and the National Planning Policy Framework, the housing guideline for this site should be increased from 20 to 30 dwellings as shown in the extract from the Plan below.

Schedule S12.1(i). Residential Allocations: Community Hubs in the Minsterley and Pontesbury Place Plan Area		
Site Allocation	**Development Guidelines**	**Provision**
Minsterley Community Hub		
Land west of A488, Minsterley (MIN018)	Appropriate access arrangements will be required. The 30mph zone should be extended to reflect site extent, together with any necessary traffic calming. To improve accessibility to services and facilities a footway should be provided along the site's road frontage to form a continuous footway link with that existing to the south west and a crossing facility provided to link to the footpath/cycleway on the opposite side of the A488. The site will incorporate appropriate sustainable drainage, informed by a sustainable drainage strategy. Any residual surface water flood risk will be managed by excluding development from the affected areas of the site, development will also be excluded from the elements of the site located in Flood Zones 2 and/or 3, these areas will form part of the Green Infrastructure network. Flood and water management measures must not displace water elsewhere. Design and layout should minimise noise impact from adjacent road. Mature trees on the site should be retained and the environmental network to western boundary buffered. Relevant supporting studies should be undertaken particularly ecology, tree and hedgerow surveys, flood risk and drainage with their recommendations clearly reflected in the proposed development scheme.	~~20~~ 30 dwellings

[2] Policy S12.1 currently splits the 330 dwellings total 47% for Minsterley and 53% for Pontesbury. If the total were increased to 387 dwellings to match previous delivery in the Community Hub, Minsterley's share would be 182 dwellings.

Q5. Please set out the modification(s) you consider necessary to make the Regulation 19: Pre-Submission Draft of the Shropshire Local Plan legally compliant and sound, in respect of any legal compliance or soundness matters you have identified at Q4 above.

Please note that non-compliance with the duty to co-operate is incapable of modification at examination. You will need to say why each modification will make the Regulation 19: Pre-Submission Draft of the Shropshire Local Plan legally compliant or sound. It will be helpful if you are able to put forward your suggested revised wording of any policy or text. Please be as precise as possible.

Please see previous page.

(Please continue on a separate sheet if necessary)

Please note: *In your representation you should provide succinctly all the evidence and supporting information necessary to support your representation and your suggested modification(s). You should not assume that you will have a further opportunity to make submissions.*

After this stage, further submissions may only be made if invited by the Inspector, based on the matters and issues he or she identifies for examination.

Q6. If your representation is seeking a modification to the Regulation 19: Pre-Submission Draft of the Shropshire Local Plan, do you consider it necessary to participate in examination hearing session(s)?

Please note that while this will provide an initial indication of your wish to participate in hearing session(s), you may be asked at a later point to confirm your request to participate.

☐ No, I do not wish to participate in hearing session(s)

☑ Yes, I wish to participate in hearing session(s)

(Please tick one box)

Q7. If you wish to participate in the hearing session(s), please outline why you consider this to be necessary:

Mr & Mrs Redge wish to reserve the right to appear at the Minsterley hearing.

(Please continue on a separate sheet if necessary)

Please note: *The Inspector will determine the most appropriate procedure to adopt to hear those who have indicated that they wish to participate in hearing session(s). You may be asked to confirm your wish to participate when the Inspector has identified the matters and issues for examination.*

Signature: Helen Howie on behalf of Mr & Mrs Redge

Date: 25/01/2021

Office Use Only	Part A Reference:
	Part B Reference:

APPENDIX 1: SITE MIN018, Land west of A488, Minsterley

The Council's reasoning for allocating the site notes, "*the site is well placed in relation to the bus route and the cycleway to Pontesbury where the nearest secondary school and other additional services and facilities are located. It is believed that an acceptable access and an appropriate site layout can be achieved to avoid flood constraints. A FRA should inform the development scheme*." (page 86 of the Site Assessments Report).

The site is suitable for development with 94% of site MIN018 in flood zone 1 (low risk of flooding). Development can also benefit adjoining land and alleviate existing flood issues that originate on the A488, by helping channel surface water into the Little Minsterley Brook. The site is not part of the problem, but it can be part of the solution.

We consider that site MIN018 offers Minsterley the opportunity for:

- a crossing point of the A488 for pedestrians using the footpath/cycle link to Pontesbury;
- a site that is well located for both Minsterley's facilities and Pontesbury's additional facilities including the secondary school;
- slowing traffic entering the village by moving the 30mph speed limit extent and providing visual cues that encourage drivers to slow down on approach to the village;
- an attractive entrance to the village that helps meet local needs for a range of housing;
- a site that is relatively unobtrusive in the landscape and that will not affect the Area of Outstanding Natural Beauty to the south of Minsterley;
- better management of surface water draining down the A488 into Little Minsterley Brook.

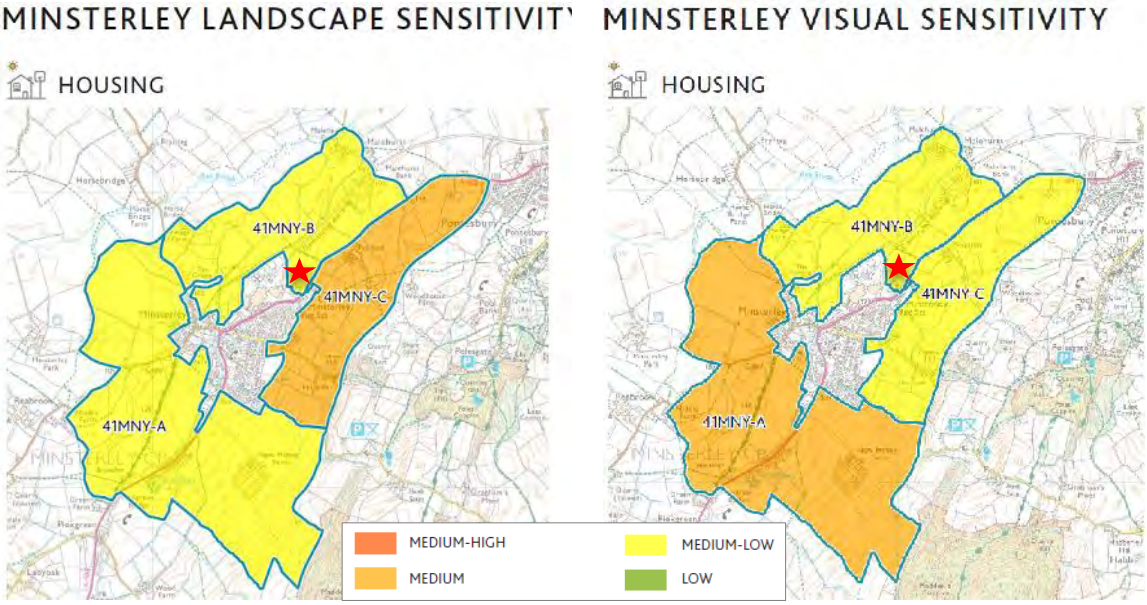
The improvements that the site's development could provide for these existing issues are described in paragraphs 2.16 - 2.19 of the Flood Risk Assessment which in summary are as follows:

- To reduce surface water on the A488 and alleviate downstream flood risk at Little Minsterley, provide a 1 metre wide grip in the verge of the A488 to direct water from the road directly to the ditchcourse that runs along the north-east boundary of site MIN018;
- Improve the existing highway drain running from the A488 through site MIN018 to Little Minsterley Brook;
- Improve drainage at Linden Fields by directing surface water flows from the Linden Fields development to the Little Minsterley Brook through channels created for this purpose in the public open space designed as part of the development of site MIN018.

The development guidelines for MIN018 reflect these opportunities in their requirement for studies including, "*flood risk and drainage with their recommendations clearly reflected in the proposed development scheme.*" The existing FRA includes the above proposals and provides certainty over the benefits that will derive from development on the site.

In landscape terms, the southern side of Minsterley is visually sensitive, with long distance rolling views of the Shropshire Hills Area of Outstanding Natural Beauty to the south, as shown in the right-hand map in the extract below from the Council's Landscape and Visual Sensitivity Assessment.

Figure 2. The site (starred) in relation to landscape areas



In terms of landscape sensitivity (left-hand map) the site falls within parcel 41MNY-B, which is rated as 'low' landscape sensitivity. The Council's Site Assessment for site MIN018 does not accurately reflect this fact as it fails to score the site positively for landscape criteria 15 on page 13 of that document.

Landscape parcel 41MNY-B to the north of Minsterley has the lowest combined landscape and visual sensitivity (the right-hand and left-hand maps together) of any of the parcels measured by the Council's Landscape and Visual Sensitivity Assessment.

Landscape parcel 41MNY-A to the south of Minsterley has a number of byways and rights of way across it which would be adversely affected by alternative sites such as MIN019.

In contrast, the preferred allocation MIN018 does not affect any public rights of way, making it more suitable than alternative sites around Minsterley. Indeed, MIN018 will provide new pedestrian routes along its frontage, to link with the pedestrian footway between Minsterley and Pontesbury along the A488.

Environment Agency Flood Map for Planning (Fluvial) and Topographic Survey Overlay

Environment Agency Flood Map for Planning (Fluvial) Key:

- Selected point
- Flood zone 3
- Flood zone 3: areas benefitting from flood defences
- Flood zone 2
- Flood zone 1
- Flood defence
- Main river
- Flood storage area

Environment Agency Surface Water Flood Map and Topographic Survey Overlay

Environment Agency Surface Water Flood Map Key:

Flood risk

- High
- Medium
- Low
- Very low

Indicative flow route arrow

Notes:

1. Topographic survey carried out on site by Berrys.
2. This drawing is indicative only and uses Environment Agency publicly available mapping data.

Drawing Revisions:

BERRYS
PROPERTY | BUSINESS | PLANNING
01743 271697 | SY2 6FG
www.berrys.uk.com

Client: Mrs Irene Redge

Project: Preferred Allocation MIN018, Minsterley, SY5 0BW

Drawing: Topo Survey and Flood Map Overlay

Drawing Number:	Rev.	Scale	Paper	Drawn By: RSH
SA34361_H_01		1:1000	A1	Date: Sept 2019

BERRYS

PROPERTY | BUSINESS | PLANNING

FLOOD RISK ASSESSMENT

AND

SURFACE WATER MANAGEMENT PLAN

IN RELATION TO

LAND AT MINSTERLEY

PREFERRED ALLOCATION MIN018, SY5 0BW

ON BEHALF OF

MR & MRS REDGE

RTPI mediation of space - making of place

RICS

PREFERRED ALLOCATION
MIN018 MINSTERLEY

FLOOD RISK ASSESSMENT

APPLICANT'S DETAILS

Mr & Mrs Redge
14 Hunter Street
Shrewsbury
SY3 8QN

PROJECT

Proposed development land, Minsterley

ISSUED BY

Richard Harman IEng FIHE
Principal Highway Engineer

APPROVED BY

Stuart Thomas BA (Hons) MA MRTPI
Partner and Head of Planning

BERRYS
1890

Beech House
Shrewsbury Business Park
Shropshire
SY2 6FG
01743 271697
berrys.uk.com

September 2019

CONTENTS

1. INTRODUCTION

1.1 This Flood Risk Assessment (FRA) and Surface Water Management Plan report has been prepared and written by Richard Harman IEng FIHE for and on behalf of Berrys, in support of the proposed allocation of a 'preferred' development site with the reference MIN018 located at Minsterley, SY5 0BW. Richard Harman is a Principal Highway Engineer and a Fellow of the Institute of Highway Engineers, with over 17 years industry experience working in both the public and private sector.

1.2 This report has been written to comply with chapter 14 of the National Planning Policy Framework (NPPF) and the Shropshire Council Surface Water Management: Interim Guidance for Developers. A small part of the site is located in Flood Zone 2 and the Environment Agency (EA) 'long-term flood risk map' shows that the lower lying areas of the site are at risk from surface water flooding. Consequently, this report will explore flood risk in relation to the proposed development of the site and detail any action required by designers and developers to manage both on-site and off-site flood risk.

1.3 The FRA is being carried out in accordance with the requirements of local Shropshire Council guidance and the NPPF for new developments to take a risk-based approach to consider the current and future impacts of climate change, in order to avoid flood risk to people and property. The FRA aims to demonstrate to the Local Planning Authority (LPA) that the foreseeable sources of flood risk to the proposed development have been considered and appropriately dealt with during the design and planning process. The report will also show that the proposed development will not increase the risk of flooding to nearby and/or downstream properties.

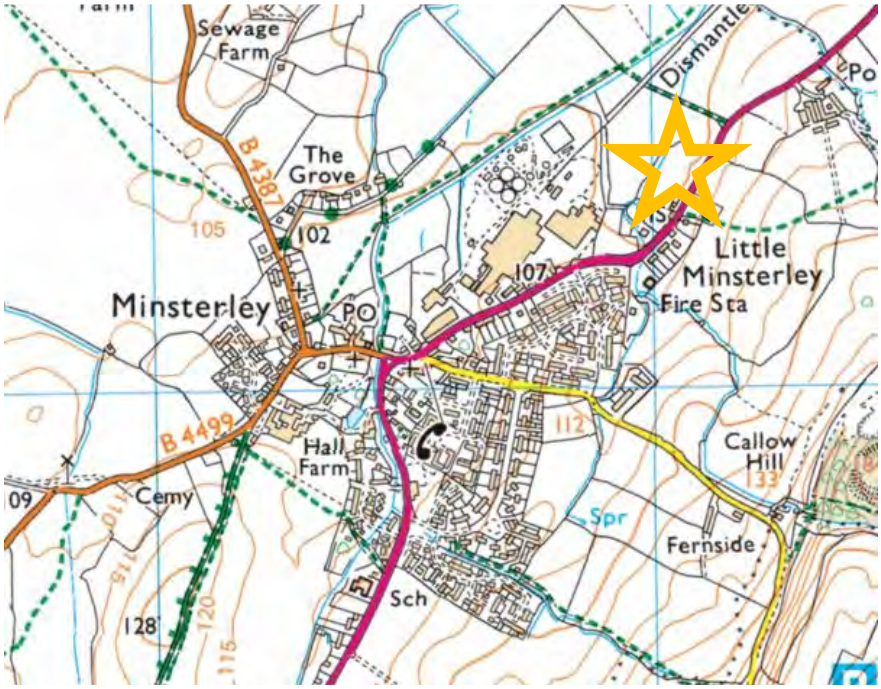
1.4 The second part of this report provides a Surface Water Management Plan in accordance with Shropshire Council requirements. This will set out the proposed measures to collect, treat, convey, attenuate and discharge surface water for the proposed development using Sustainable Drainage (SuDS) principles and methods.

1.5 This report (including any attachments) has been prepared with care and due diligence in relation to the Proposed Development at Minsterley and solely for the purpose for which it is provided. Unless we provide express prior written consent, no part of this report should be reproduced, distributed or communicated to any third party. We do not accept any liability if this report is used for an alternative purpose from which it is intended, nor to any third party in respect of this report.

2. FLOOD RISK ASSESSMENT

Site overview

2.1 The site is greenfield agricultural land located to the north of the A488 Station Road at the eastern end of Minsterley, SY5 0BW. The O.S. grid reference for the site is 338060, 305436. The site location is shown in Map 1 below:



Map 1 showing the site location.

2.2 The settlement of Minsterley is identified in the Shropshire Council 'Surface Water Management: Interim Guidance for Developers' Appendix A Surface Water Flood Risk Map as being in a 'high risk' area for surface water flooding. Parts of Minsterley are known to be at risk from surface water 'pluvial' flooding and from 'fluvial' flooding from the watercourses running through the village.

2.3 The proposed development site is located at a lower level than the A488, which sits to the south east of the site and falls in a north-east to south-west direction. The site levels generally fall from the south-east at approximately 103m AOD to the north-west towards the Little Minsterley Brook ordinary watercourse, which runs along the western site boundary and its banks have a lower level of approximately 97.5m AOD. A drainage ditch runs along the northern site boundary, falling from a culvert passing beneath the A488 down to the brook located to the west. Agricultural pasture land surrounds the western and northern site boundaries and forms flood plain for the Little Minsterley Brook and the Minsterley Brook lying to the north. The recently completed 'Linden Fields' development lies to the south of the site. Since completion we understand this development has suffered surface water flooding through the site, with water eventually entering the bottom south-western corner of this site now under consideration for development. This issue will be discussed in more detail later in this report.

Photo 1: view across the site from the north east corner down to the south western corner.

2.4 A Severn Trent sewer pumping station is located approximately 100m to the south of the site adjacent to the A488. This collects effluent from the surrounding properties in Little Minsterley and pumps it west via a pressurised main underneath the A488 and discharges to a gravity sewer near the petrol station to the south west.

2.5 The Little Minsterley Brook passes through the site along the western boundary. The brook runs from the Callow Hill localised catchment to the south and eventually joins the Rea Brook approximately 900m north east of the site near Malehurst Farm. However, prior to this the Little Minsterley Brook is culverted beneath the disused railway line and Minsterley Brook approximately 200m north east of the site. The Little Minsterley Brook runs through the site in an open, steep sided, fairly straight narrow channel, which has a bed depth of approximately 1m below the level of the adjacent land. A fence line and immature hedge is located on the banks of the site side of the watercourse and a mature hedge lies along the neighbouring side of the brook. The bed level of the brook as it enters the site is measured at 97.27m AOD and where it leaves the site is 96.26m AOD.

Photo 2: image of the steep-sided Little Minsterley Brook watercourse running along the northern site boundary. Water was running at the bottom of the channel.

2.6 The site has not been previously developed and the land is presently classed as agricultural. A 150mm diameter clay highway drain is understood to pass through the site from the A488 to a point around where the Little Minsterley Brook leaves the site boundary off to the north. This is indicated on a land conveyance plan dated July 1981 and is shown in the following Figure 1. We understand from the site owner that this drain is still in place, however the position of a gully or gullies on the A488 are not presently clear or apparent. From the local topographic survey carried out on the site it appears that the A488 has a 'balanced' or 'crowned' crossfall where is passes by the proposed development site. Therefore, we would normally expect gullies to be located on either side of the road, but it appears that these may have become overgrown and lost in the verges over the years. Further survey work to trace this drain and the gully connection(s) will be required if the development is taken forwards. A Severn Trent water main is also believed to run along the eastern site boundary near the A488, although its exact position is unknown.

Figure 1: July 1981 conveyance plan, with the dashed blue line indicating the approximate alignment of a 150mm diameter highway drain passing through the site and discharging to the Little Minsterley Brook.

2.7 Parts of the site are shown on the EA flood risk map for planning as being in Flood Zone 2. This concerns a low-lying area in the northern part of the site adjacent to the Little Minsterley Brook and ditch and is believed to be flood water 'backed-up' from the Minsterley Brook and Rea Brook located to the north. On-site surface water flood risk is also identified on the EA long-term flood risk map, where surface water is shown to enter the site in the south-west corner from the adjacent development and also from the Little Minsterley Brook. Some surface water is also shown to enter the site from the A488 in the north-eastern corner of the site before entering the ditch. A topographic survey has been carried out to inform the FRA and surface water strategy/design for any future development on the site. Drawing number SA34361_H_01 in Appendix A. shows the topographic survey and site contours laid above the areas of flood risk. An extract from the drawing is shown in the following Figure 2. As can be seen from the site contours, any water falling onto the existing site will run in a generally north-western direction, so any water not percolating into the ground will run towards the Little Minsterley Brook and ditch.

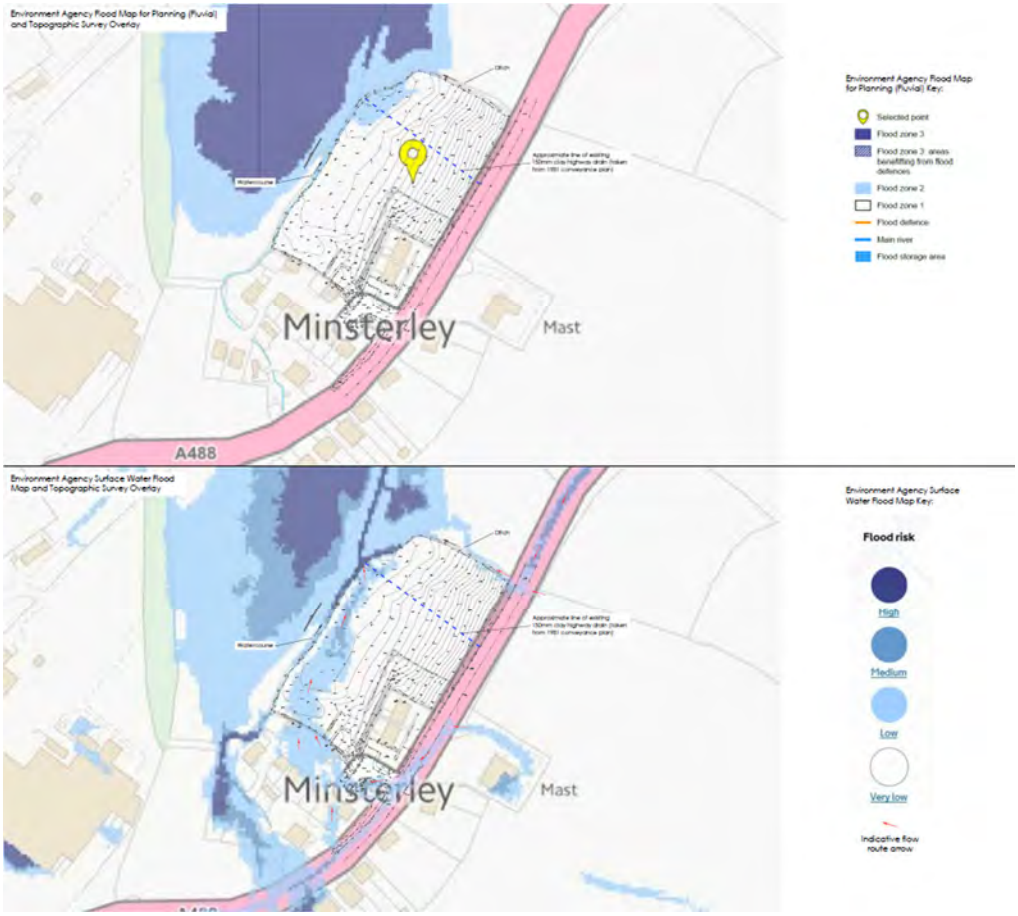


Figure 2: extract from drawing number SA34361_H_01 showing the mapped fluvial and surface water flood zones on and at the site. Refer to Appendix A for the full drawing.

2.8 A residential development is proposed on the site, should it be allocated within the updated local development plan. No site layouts have been designed as yet, but the details and findings of this report are to be used to inform the site layout, should the land be successfully allocated for development. This will be explored further later in the report. It is understood that access to the development land is likely to be made from the Linden Fields development site, where an access route has been retained by the site owners.

Site ground conditions

2.9 A desktop study has been carried out on the existing underlying ground conditions at the site, using public data available from the British Geological Survey (BGS) mapping services and from the UK Soil Observatory (UKSO). Data has been obtained to give details of the underlying bedrock, superficial deposits and surface soils along with the results from a borehole log carried out on the nearby former bus depot site to the south west. An extract of the data is shown in Map 3 below:

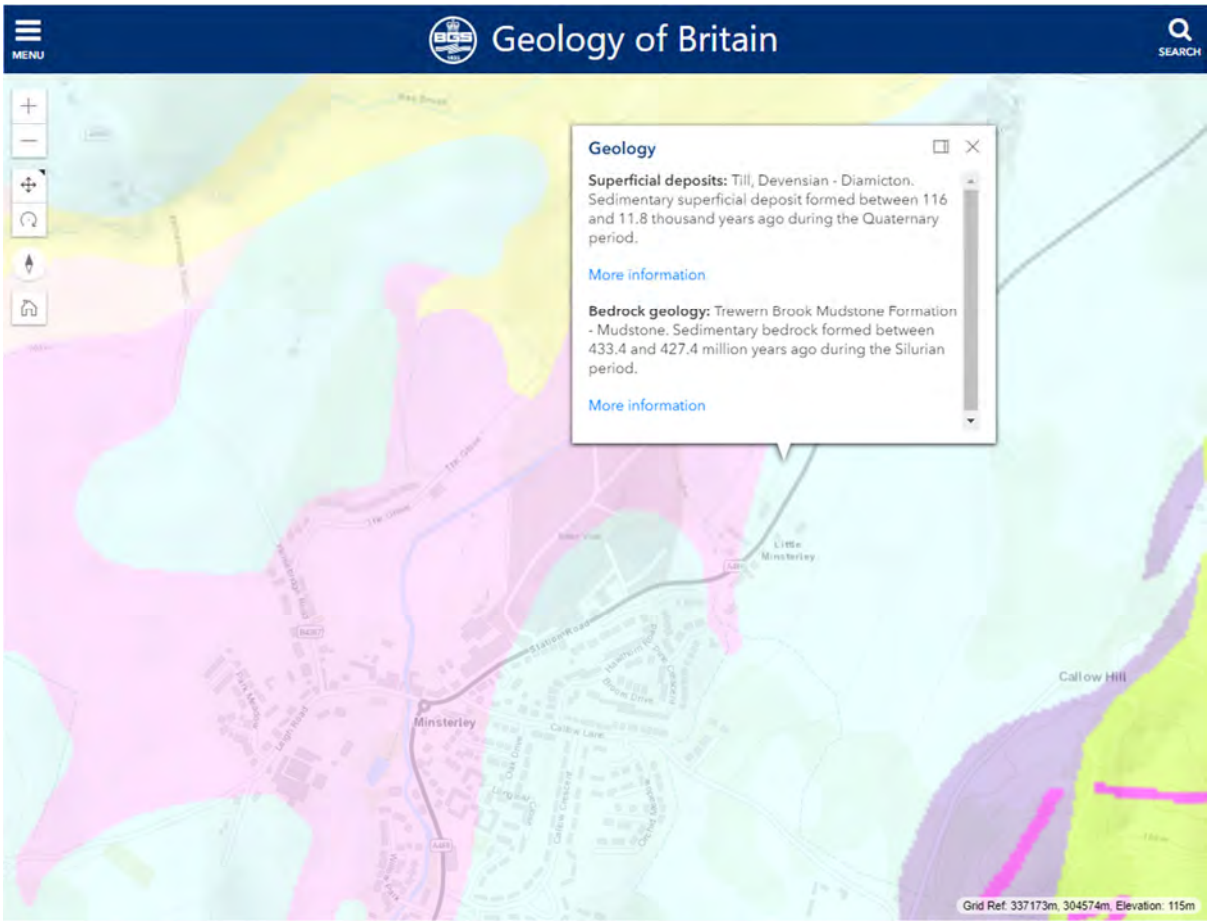


Figure 3: extract from the British Geological Survey map service, source: https://www.bgs.ac.uk/data/mapViewers/home.html

2.10 The results of the desktop study show that the site ground comprises of underlying mudstone bedrock deposits, with varying superficial deposits consisting of glaciofluvial Devensian sand and gravels in the lower areas of the site, and Diamicton till in the eastern parts of the site. The varying nature of these superficial deposits means that the underlying ground above bedrock could consist of varying materials ranging from fine silty clays, sandy clays, sand, and gravels. The nearby borehole was carried out at a similar ground level to the site (99.27m AOD) within the area identified on the BGS map as being 'Glaciofluvial Fan Deposits' matching the lower areas of this site. The borehole scan shows an upper layers of made ground with varying layers of silty clays, sandy and/or gravelly clays below. Mudstone bedrock is encountered at a depth of 10.3m below ground level (BGL) and was extracted as gravel. Ground water is encountered at a depth of 3.4m BGL. The UKSO map shows that this area of Minsterley has 'slowly permeable seasonally wet acid loamy and clayey soils.

2.11 Consequently to the above paragraph, the site ground is not considered to be suitable for soakaway drainage due to the clay deposits having poor porosity potential. This is supported by the Shropshire Council Appendix B SuDS Applicability Map which shows the site as being located in an 'attenuation' area. However, it is recommended that percolation tests in accordance with BRE Digest 365 are carried out at appropriate locations on the site to confirm if soakaways can be used for surface water drainage.

Site flood risk

2.12 Flood risk comes from a number of sources including coastal, fluvial (rivers and watercourses), reservoirs (breaches or capacity related), pluvial (surface water 'overland' flows), groundwater and from drains and sewers. Table 1 below provides a summary of flood sources and their anticipated risk to the site. The following sections provide greater detail and justification for the selected risk level.

Flood Consideration	Potential Risk **(prior to mitigation)**				Description
	High	Medium	Low	None	
Fluvial	x				Low lying parts of the site are in Flood Zone 2, ACTION REQUIRED
Groundwater		x			Nearby borehole log identifies the groundwater level to be 3.4mBGL, however clay ground anticipated, ACTION REQUIRED
Reservoirs					Site is outside areas at risk
Surface water	x				EA maps surface water flooding within the site boundary, ACTION REQUIRED
Sewers		x			Potential for flooding from nearby pumping station, ACTION REQUIRED
Highway drainage		x			Highway drain running through the site, ACTION REQUIRED
Culverts			x		A small upstream culvert passes below the A488 to a ditch on site, but this is perceived to have a low risk
Access/egress		x			Access road levels to consider local surface water flood risk, ACTION REQUIRED
Effect of development on wider catchment			x		Site discharge to be attenuated and limited to greenfield run-off rates

Figure 1: Flood Sources and Risk prior to mitigation. 'ACTION REQUIRED' indicates that mitigatory works or actions stated in this report must be carried out to achieve a low flood risk.

2.13 As discussed earlier in the report, we have consulted the Environment Agency's Flood map for planning and long-term flood risk map. A reasonably small part of the site adjacent to the Little Minsterley Brook is shown in fluvial Flood Zone 2. Surface water flooding is shown to run into the site from the adjacent Linden Fields development and follows the contours across the lower parts of the site, towards a low point adjacent to the Little Minsterley Brook at the top north-west corner of the site. Surface water is also shown to enter the site from the A488 in the north-eastern corner at the culvert headwall, which discharges to the ditch in the site. This water is then shown to run to the north west through the ditch and over the neighbouring land to the north, before eventually entering the Little Minsterley Brook. Surface water flood risk is mostly shown in the 'low' risk category, which concerns a flood event with an annual probability between 1 in 1000 (0.1%) and 1 in 100 (1%). Figure 2 above and drawing number SA34361_H_01 in Appendix A. shows the topographic survey and site contours laid above the EA flood maps.

2.14 The fluvial flooding on the site is expected to reach a maximum level of 97.75m AOD and this is constrained to a reasonably small area of the site and is well constrained within existing contours. To manage the flood risk posed by this, it is recommended that in the northern part of the site any properties are positioned at a minimum level of 98.0m AOD and have a finished floor level (FFL) at least 150mm above the highest surrounding ground level.

2.15 The mitigation works required to manage the surface water pluvial flood risk are more onerous, as this involves a potentially larger volume of water running at an albeit shallow depth across a reasonably large area alongside the western site boundary and near the Little Minsterley Brook. As was discussed previously in this report, water is predicted to flow into the site from the adjacent Linden Fields development, with 'exceedance' water originating further upstream from the Callow Hill localised catchment lying to the south of the site. A number of options are available to manage and mitigate against the risks of surface water flooding to any future development of this site from water running off the adjacent Linden Fields site, as outlined in the following paragraph.

2.16 One option for managing the Linden Fields surface water flow route is to allocate the modelled area of surface water flooding in the site as open space and for it to remain largely undeveloped. Any landscaping work proposed to this area should broadly retain the existing topography to manage and direct the exceedance water through the site and to direct it to the Little Minsterley Brook. Clearly this will have an impact on the 'developable' area of the site and could impact on the development density and viability. An alternative option could be to manage the flow route of this surface water through the site through engineered landscaping, in order to direct it to discharge to the Little Minsterley Brook at a higher level than it presently does. Ultimately this should not impact on flooding to the adjacent downstream land which is already shown to be in flood and forms part of the brook floodplain. This will require a careful design to manage flow routes, velocities and erosion control but it could yield additional developable land within the site.

2.17 Some action is also required to manage the surface water flood risk from the predicted flow route from the A488 into the site at north eastern corner boundary. Here it is recommended that a wide grip (min width 1.0m) is provided in the verge adjacent to the A488 to direct water from the road channel directly to the ditch located on the site boundary. The design of this will need to consider the impacts to the existing culvert headwall and road foundations here to ensure they cannot be damaged or washed away by exceedance water. The grip should be constructed in concrete or similar material to ensure it is at a low risk of becoming obstructed, blocked or eroded. Also, consideration should be given to providing a low landscaped bund to ensure that any water running into this area of the site from the A488 is directed to the ditch. These measures should prevent water entering the development from the A488 at an undesirable location, which may otherwise result in flood to property. This also has the potential of reducing downstream flood risk from water running down the A488, which may be presently be contributing to flood risk at Little Minsterley.

2.18 The existing highway drain running through the site shown in Figure 1 could pose a potential flood risk to future development if this isn't considered during the design of a site layout and it were to become blocked or damaged. As was previously discussed in this report, further survey work is required to locate and trace the full extent of this drain and this will need to be considered during the site layout and drainage design. There are numerous scenarios for managing and mitigating this issue, but they might include redirecting the drain to a ditch, swale or new drainage system, or providing landscaping along the line of the drain to direct any exceedance water towards the Little Minsterley Brook via a defined flow route. As the serviceability of this drain and any upstream gullies is presently questionable, it could presently be having an impact on local flood risk at Little Minsterley. Therefore, if it is cleared and possibly improved as part of any forthcoming development, this may have a positive impact on local flood risk.

2.19 We understand that the access to the site is likely to be made from the recently completed Linden Fields access road via the land owners retained access route. It appears that the road levels and profiles of Linden Fields direct any water running off the A488 to flow along the south channel line of the road and down towards the private road running towards the Little Minsterley Brook. In establishing a new access to the development site, there may be scope to reprofile the existing road levels around the turning head to better direct exceedance water into this site and along a designated flow route to the Little Minsterley Brook. The ability to achieve this will depend upon the cover levels of the existing service and drainage network in Linden Fields and it should also be noted that this will add to the development costs of the site. However, the effectiveness of this measure and its potential to positively contribute towards reducing local flood risk is dependent upon the volume of water entering the Linden Fields junction from the A488.

Photo 3: view to the north west along Linden Fields towards to existing site access and potential development access route.

2.20 As it is unlikely the site ground will suitable for infiltration drainage, it is probable that surface water will be positively drained to attenuation storage and discharged to the Little Minsterley Brook. Sufficient capacity will need to be provided for a 100-year return period storm +35% climate change and discharge to the Little Minsterley Brook will be restricted to greenfield runoff rates via a flow control device. Consequently, the proposed development won't contribute to an increase of downstream fluvial flood risk as water presently falling on the site is discharging to the Little Minsterley Brook at 'greenfield' rates. Given the gently sloping levels of the site down to the Little Minsterley Brook, we consider that the site has good potential for 'above ground' landscaped SuDS components. However, it should be considered that as some parts of the site are undevelopable due to the flood risk this will have an impact on site density, which could preclude the use of at surface drainage features as these generally take up more space on a site.

2.21 Whilst the site does not have a known history of groundwater flooding, given the likely makeup of the underlying ground as discussed previously in this report, on site geotechnical surveys will be required to further explore the underlying ground conditions and level of any ground water. If groundwater is encountered close to the surface, then the risk of ground water flooding should be managed by minimising the reduction of any site levels from the existing. Also, the profile of any new landscaping and paved surfaces should designed to convey any water appearing at the surface to travel along designated flow paths down to the Little Minsterley Brook or the existing ditch. Finally, all new buildings are to have a finished floor level of at least 150mm above the surrounding ground levels. These measures will ensure that any risk of groundwater flooding on site is sufficiently managed and mitigated.

2.22 The existing sewer pumping station located to the south of the site is positioned within the area of EA mapped surface water flooding, which is modelled to discharge to the Little Minsterley Brook upstream of this site. Therefore, there is a possibility of foul sewer water being conveyed by surface flood water through the lower level of the site, should surface water enter the pumping station tanks. However, this water will travel at a very low level through site along the Little Minsterley Brook channel and the risk is dealt with in the proposed mitigation works discussed in paragraphs 2.13 to 2.15 above. Furthermore, an above-ground pumping discharge coupling is provided at the pumping station, so we assume that Severn Trent manage the issue to foul flood risk here during flood events by providing additional over ground pumps. We are not aware of any other foul drainage infrastructure sitting at a higher level above the site, which could have a flood risk potential to any future development. Consequently to the above, the site is considered to have a low risk of flooding from foul sewers.

Flood risk assessment conclusion

2.23 Further to the above assessment, we are of the view that all foreseeable sources and receptors of flood risk as a result of the proposed development have been considered and appropriately mitigated where required. Consequently, provided the above recommendations are actioned by the planning and design team, any proposed development on this site will have an overall low risk of on-site or off-site flooding. It should also be considered that by developing the site, there are potential opportunities available to reduce the existing local flood risk issue in this area of Minsterley.

3. SURFACE WATER MANAGEMENT PLAN

3.1 This surface water management plan is to be read in conjunction with the FRA and it will provide more detail on the approach and steps to be taken to develop the site drainage design. This document is produced to meet the requirements of the Shropshire Council document Surface water Management: Interim guidance for Developers Appendix C.

3.2 This outline drainage strategy has been produced to meet both local and national good practice guidance and complies with the requirements of the NPPF. The existing topography of the site has been utilised to inform the drainage strategy and will also be used to influence the site layout design. Exceedance flow routes of any surface water flooding are to be considered in the site layout design. No site layout designs have been produced at this early stage, but we understand that design work will commence if the site is allocated in the updated local development plan.

3.3 In accordance with SuDS guidance, infiltration is taken as the most favourable method of disposing of surface water. However as is discussed in the above FRA, this site is considered to have a low potential for infiltration due to the anticipated underlying ground conditions. This is supported by the Shropshire Council SuDS Applicability Map, which shows this area of Minsterley only with ‘attenuation’ potential. However, percolation testing in accordance with BRE Digest 365 is recommended to confirm if infiltration ‘soakaway’ drainage can be accommodated at any parts of the site.

3.4 If any parts of the site are confirmed as being unsuitable for infiltration drainage, an alternative SuDS scheme will be developed and modelled with attenuation to accommodate a 100-year return period +35% for climate change. Surface water will then be discharged to the existing on-site Little Minsterley Brook watercourse and or the ditch located at the northern boundary. Landscaped ‘above ground SuDS components are to be considered for use through the design process in order to achieve a ‘treatment train’ for surface water, as this will improve its quality at the point of discharge. Vortex or similar flow control devices are to be provided to control site discharge to equivalent greenfield run-off rates.

3.5 For the areas of proposed adoptable roads, surface water is proposed to be collected via gullies and conveyed by pipes below ground, unless the layout lends itself to discharge to open swale channels via ‘filter strip’ verges or engineered grips. Permeable paving is to be considered and utilised where feasible for access roads and parking areas, in order to provide improved source control and a water treatment stage.

3.6 Foul drainage for the site will be dealt with at detailed design stage and it's anticipated that an adoptable design will be prepared and a s104 agreement made with Severn Trent. Whilst no consultations have been made with Severn Trent Water at this stage, we anticipate that a package pumping station will be required on site, which will pump to an existing nearby gravity sewer located in the A488. The position of the pumping station should be positioned away from any areas of on-site flood water or exceedance routes in order to reduce the risk of foul water flooding.

3.7 We consider that the Surface Water Management plan outlined above provides a sufficient level of detail on the methodology to be used to develop a surface water and foul drainage strategy and design for the proposed development site.

APPENDIX A

Drawing number SA34361_H_01 Topo Survey and Flood Map Overlay