



hendeca

---



Supplementary Report  
to the Spatial Context  
and Sites Report

**Herefordshire Minerals and Waste Local Plan**

**March 2020, updated August 2020**  
HENDECA LTD



## Contents

<b>1. Introduction</b> .....	<b>1-1</b>
1.1 Background and Purpose of the Report.....	1-1
1.2 Format of the Report.....	1-1
<b>2. Additional Site Analysis</b> .....	<b>2-1</b>
2.1 Introduction .....	2-1
2.2 Approach.....	2-1
2.3 Dark Skies.....	2-3
2.4 Outcome.....	2-7
<b>3. M23: Land at Arrow Green</b> .....	<b>3-1</b>
3.1 Introduction .....	3-1
3.2 Site Details.....	3-1
3.3 Assessment.....	3-3
3.4 Conclusion .....	3-3

## Annex

Annex A Each of the sites proposed to be allocated and the additional analysis undertaken



## 1. Introduction

### 1.1 Background and Purpose of the Report

- 1.1.1 Consultation on the Draft Minerals and Waste Local Plan (dated December 2018, the 'Draft MWLP 2018') and its accompanying evidence base documents occurred over the period 21 January to 4 March 2019. The Spatial Context and Sites Report (March 2018) was one of those accompanying documents.
- 1.1.2 Representations were received in response to the sites proposed to be allocated, as set out in Annex A to the Draft MWLP 2018. This included a detailed response from Historic England that sought greater detail regarding the analysis undertaken on those sites, principally focussing on nearby heritage assets and how resultant impacts from development at each of the proposed sites could be mitigated effectively.
- 1.1.3 In addition, the representations included a new site proposed for mineral extraction. This site has been subjected to the same analysis as the sites discussed in the Spatial Context and Sites Report.
- 1.1.4 Another feature to be aware of is that some of the boundaries to the considered sites have changed, either simply to reflect a greater level of detail received over time/improved accuracy in mapping, or through a change in the assessment conclusion.
- 1.1.5 This Supplementary Report to the Spatial Context and Sites Report (the 'Supplementary Sites Report') has been prepared both to:
- address comments made on the sites proposed to be allocated in the Draft MWLP 2018; and
  - assess the new site proposed at Arrow Green.

### 1.2 Format of the Report

- 1.2.1 This Supplementary Sites Report addresses the relevant matters in the following order:
- **Section 2** presents the additional site analysis undertaken in response to consultation representations; and
  - **Section 3** considers the new site proposed at Land at Arrow Green.



## 2. Additional Site Analysis

### 2.1 Introduction

- 2.1.1 Several representations were received making comment on the sites proposed to be allocated in the Draft MWLP 2018. All of these have been considered, not least through double checking all of the details relevant to each site.
- 2.1.2 Historic England's representation was of a more strategic nature and incorporated a number of comments regarding the level of detail contained within the Spatial Context and Sites Report. Following a meeting with Historic England, it was agreed that additional analysis would be undertaken for each of the sites proposed to be allocated.
- 2.1.3 Whilst Historic England's representation is made in regard to heritage assets only, the additional analysis has been undertaken across a broader range of environmental topics, using the headings of:
- Ecology;
  - Geology;
  - Heritage;
  - Landscape; and
  - Water.
- 2.1.4 In addition, a new piece of analysis has been undertaken, to consider the potential for impact on dark skies in Herefordshire.

### 2.2 Approach

- 2.2.1 The starting point for the additional analysis was Historic England's Advice Note 3, titled 'The Historic Environment and Site Allocations in Local Plans' (October 2015), principally the site selection methodology presented therein. This was used as the framework for the analysis.
- 2.2.2 Several of the previously used sources of information were revisited and this was supplemented with new sources of information. This additional research has enabled a fuller description of the constraints pertaining to each of the sites to be presented.
- 2.2.3 Using an understanding of the likely development at each of the sites proposed to be allocated, an assessment has been made of the potential impacts of that development in relation to the identified topics. This additional research has meant that each of the sites has been subject to further analysis, to check that it is appropriate to be allocated. In addition, the work has informed consideration of reasonable and appropriate mitigation measures, considered both to avoid harm but also to maximise enhancements.
- 2.2.4 The data sets that have been used to undertake this additional analysis are set out below, the use of parentheses indicate the source of that data:
- **Ecology and Geology:**
    - GIS data on Sites of Special Scientific Interest (SSSI) (open source data) and SSSI Impact Risk Zones (MAGIC website, Defra);

- GIS data on Natura 2000 sites (open source data);
- Data on biodiversity Priority Habitats and Species (MAGIC website, Defra);
- Data on veteran trees on the Historic Environment Record (Herefordshire Council);
- Data on veteran trees from the Ancient Tree Inventory (The Woodland Trust);
- GIS data on Local Wildlife Sites (LWS) (Herefordshire Council);
- GIS data on ancient woodland (open source data);
- Current Development in the River Lugg Catchment Area Position Statement (Herefordshire Council, October 2019, 'Herefordshire Council Position Statement'); and
- Advice on achieving nutrient neutrality for new development in the Solent Region for local planning authorities (Natural England, June 2019, 'NE Solent Region Advice').
- **Heritage:**
  - The Historic Environment Record (Herefordshire Council, the 'HER');
  - GIS data on Listed Buildings (open source data);
  - GIS data on Conservation Areas (open source data);
  - GIS data on Registered Parks and Gardens (open source data);
  - GIS data on Scheduled Ancient Monuments (open source data);
  - Data on heritage assets (MAGIC website, Defra);
  - Herefordshire County Archaeology and Minerals Resource Assessment (Herefordshire Council, April 2014);
  - The Lower Lugg Archaeology and Aggregates Project (Herefordshire Council, 2006/7, 'Lower Lugg AAP'); and
  - Crafta Webb, Bredwardine, Herefordshire, An Archaeological Investigation, Herefordshire Archaeology Report No. 277 (Herefordshire Council, 2006/07, 'Crafta Webb Report').
- **Landscape:**
  - Landscape character data (Herefordshire Council); and
  - Historic Landscape Characterisation data (Herefordshire Council).
- **Water:**
  - GIS data on major rivers (open source data);
  - GIS data on groundwater source protection zones (open source data);
  - Flood map for planning (on-line at Gov.UK);
  - Herefordshire Strategic Flood Risk Assessment, Level 1, and associated appendices (WSP, April 2019, 'Herefordshire SFRA 2019'); and
  - Herefordshire Minerals and Waste Strategic Flood Risk Assessment, Level 2, and associated appendices (WSP, August 2020, 'MWSFRA 2020').



- 2.2.5 In addition, and on the advise of and Ecology officer within Herefordshire Council, reference has been made to document titled 'The ecological effects of air pollution from road transport: an updated review', as prepared for Natural England (reference NECR199). Whilst NECR199 provides useful information, it is not readily transferable to the specific site allocations considered in this report. It would be appropriately referenced within the P'Draft MWLP for use in preparing planning applications.
- 2.2.6 All the comments made in the representations submitted in response to the Draft MWLP 2018 have been checked and incorporated where appropriate. Further discussions regarding particular sites and topics have also been undertaken with appropriate officers within Herefordshire Council, including the Archaeology Adviser and Principal Building Conservation Officer.
- 2.2.7 Reference has also been made to on-line mapping, aerial and 3D aerial images (all Ordnance Survey) to supplement the understanding of site layout and context gained previously from the site visits.

## 2.3 Dark Skies

- 2.3.1 In addition, a separate piece of work was undertaken to understand the impact of minerals and waste development on the night sky. The source for this work was GIS data provided by Campaign to Protect Rural England ('CPRE'). The CPRE's publicly available interactive tool is available on their website at <https://www.nightblight.cpre.org.uk/how-to-use-the-interactive-maps>. Similar to other rural counties, Herefordshire generally benefits from dark skies. A summary of CPRE position on light pollution is also provided on their website <https://www.nightblight.cpre.org.uk/cpre-s-view>.
- 2.3.2 The CPRE data is based on satellite imagery from the Suomi NPP weather satellite run by the National Oceanographic and Atmospheric Administration in America. The satellite captures visible and infrared imagery and passes over the UK at 1:30am, enabling light sources to be identified. The data used in this analysis was captured during September 2015 and the final CPRE dataset was created from a mosaic of cloud free images from that month.
- 2.3.3 The imagery identifies the amount of light shining up into the sky and is measured by the satellite in nanowatts (nw). The resulting imagery is divided into nine categories of brightness ranging from the 'Brightest' (>32 nw/cm<sup>2</sup>/sr) to 'Darkest' (<0.25 nw/cm<sup>2</sup>/sr).
- 2.3.4 The analysis by CRPE for the whole of England identifies Herefordshire as the third darkest county (after Northumberland and Cumbria) with 60% of the county lying in the darkest category and 88% of the county when combined with the next darkest category ([https://www.nightblight.cpre.org.uk/images/resources/Night\\_Blight\\_cpre.pdf](https://www.nightblight.cpre.org.uk/images/resources/Night_Blight_cpre.pdf)).
- 2.3.5 To help protect this expanse of 'dark skies', a more detailed analysis of the locations of the allocated sites was undertaken to identify any sites where consideration of light pollution should be prioritised. Hendeca took the site boundaries and applied a 500m buffer around each. The CRPRE 'Night Lights' dataset was then overlaid to give the minimum, maximum and mean values for 'night light levels'. This has been mapped across Herefordshire and is shown in Figure 2.1.

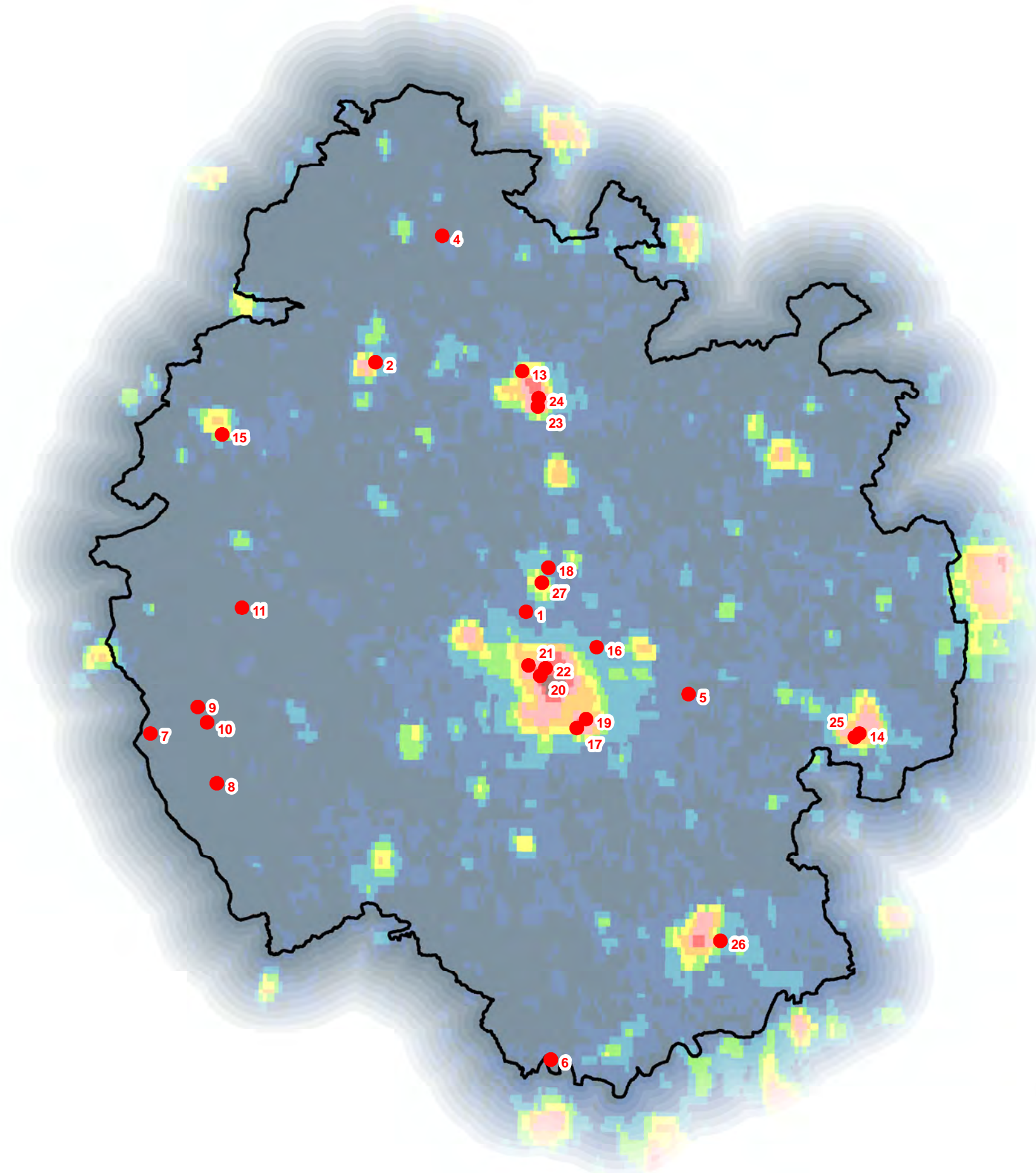
- 2.3.6 The 'Night Lights' dataset is provided at a resolution of 400m, i.e. the smallest area that can be analysed is based on a 400mx400m grid. Buffering by 500m allows for a margin of error in the locational accuracy of the night lights information and allows for neighbouring areas to be taken into consideration to allow for 'light bleed' impacts (i.e. the impacts of lights on the boundary of the site lighting up a larger area than just the light post location itself).
- 2.3.7 The analysis of minimum, maximum and mean values for 'night light levels' for each site is shown in Table 2.1. In this table, the site number is that used in Figure 2.1, and the sites are presented in order of the maximum night light level.
- 2.3.8 This work indicates four sites as being in an area of 'Darkest' sky (where the maximum brightness is less than 0.25 nw/cm<sup>2</sup>/sr). All are clustered in an area to the west of the county:
- Llandraw Delve;
  - Pennsylvani Delves;
  - Westonhill Wood Delves; and
  - Sunnybank Delve.
- 2.3.9 There are five sites located in the next range of maximum brightness (0.25 to 0.5 nw/cm<sup>2</sup>/sr):
- Black Hill Delve;
  - Callow Delve;
  - Perton Quarry;
  - Leinthall Quarry; and
  - Upper Lyde Quarry.
- 2.3.10 All of the sites located within an area of 'Darkest' sky and two of those in the next classification (0.25 to 0.5 nw/cm<sup>2</sup>/sr) are sandstone delves. These sites are generally worked by hand, or using light machinery, and with a minimal workforce. No substantial external lighting was observed at any of the delves. It is considered that extended working at these sites would have little effect on the night time light.
- 2.3.11 Perton and Leinthall Quarries are large, well-established, limestone quarries. Upper Lyde Quarry commenced extraction in 2019 for sand and gravel. All have planning permission for mineral extraction and proposed extension areas. All are likely to require some level of external lighting to ensure health and safety measures are implemented. Good lighting design should be capable of reducing the effect on the night sky to an acceptable level.

**Table 2.1 CPRE Darkest Skies analysis, Herefordshire**

Sites are by order of maximum night light level, lowest to highest

Map number	Site Name and reference	Dark Skies level (nanowatts /cm <sup>2</sup> / sr)		
		Min	Max	Mean
8	Llandraw Delve (M16)	0.06	0.18	0.13
9	Pennysylvani Delves (M17)	0.12	0.18	0.16
11	Westonhill Wood Delves (M20)	0.03	0.20	0.11
10	Sunnybank Delve (M18)	0.05	0.22	0.12
7	Black Hill Delve (M13)	0.09	0.25	0.17
6	Callow Delve (M12)	0.20	0.29	0.25
5	Perton Quarry (M10 and W48)	0.20	0.36	0.26
4	Leinthall Quarry (M07 and W46)	0.09	0.43	0.24
1	Upper Lyde Quarry (M03 and W43)	0.33	0.49	0.39
16	Former Lugg Bridge Quarry (W13)	0.50	0.97	0.75
15	Kington HWRC (W10)	0.49	3.44	1.56
18	Wellington Quarry (M05 and W45)	0.18	5.29	0.91
27	Moreton Business Park (W66)	0.36	5.29	1.78
26	Model Farm (W65)	0.67	5.31	1.80
13	Leominster HWS and HWRC (W05)	1.00	6.01	3.07
2	Shobdon Quarry (M04 and W44)	0.34	9.68	3.06
14	Ledbury HWRC (W07)	5.55	12.25	9.95
25	Land between Little Marcle Road and Ross Road (W64)	1.44	12.25	7.90
21	Three Elms Trading Estate (W60)	4.64	15.91	7.14
17	Former City Spares Site (W19)	3.73	16.15	7.81
19	Rotherwas Industrial Estate (Hereford Enterprise Zone) (W58)	0.98	16.15	6.62
23	Leominster Enterprise Park (W62)	1.19	20.02	13.51
24	Southern Avenue (W63)	2.95	20.02	14.36
22	Holmer Road (W61)	11.94	41.98	20.67
20	Westfields Trading Estate (W59)	4.15	53.29	19.75

Figure 2.1  
CPRE Darkest Skies  
analysis, Herefordshire



● Allocated Sites

**Night Lights**

(NanoWatts / cm<sup>2</sup> /sr)

>32 (high)

16 - 32

8 - 16

4 - 8

2 - 4

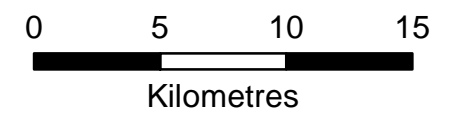
1 - 2

0.5 - 1

0.25 - 0.5

< 0.25 (low)

Night Lights information provided by CPRE based on their report "England's Light Pollution and Dark Skies"



SCALE  
1:300,000 @ A3

DATE  
29/11/2019

## 2.4 Outcome

2.4.1 Step 5 of Historic England's Advice Note 3 is to determine whether the proposed site allocation is appropriate in light of the tests of soundness, described in that document as:

- Positively prepared in terms of meeting objectively assessed development and infrastructure needs where it is reasonable to do so, and consistent with achieving sustainable development;
- Justified in terms of any impacts on heritage assets, when considered against reasonable alternative sites and based on proportionate evidence;
- Effective in terms of deliverability, so that enhancement is maximised and harm is minimised;
- Consistent with national policy in the National Planning Policy Framework, including the need to conserve heritage assets in a manner appropriate to their significance.

*'Decisions should be clearly stated and evidenced within the Local Plan, particularly where site allocations are put forward where some degree of harm cannot be avoided, and be consistent with legislative requirements.'*

2.4.2 Whilst the National Planning Policy Framework has been updated since publication of Advice Note 3, the tests as set out are consistent with the current national policy.

2.4.3 Having considered each of the sites within this assessment framework, it is concluded that they all remain suitable for allocation in their proposed form, apart from one site (M05g, Land east of Wellington Quarry).

2.4.4 In addition, an error was spotted in the mapping for Upper Lyde Quarry in the Draft MWLP. The site referenced M03c was included within the allocations, despite the conclusion (of the Spatial Context and Sites Report 2018) that it was least preferred. Paragraph 3.2.8 of the Spatial Context and Sites Report 2018 reports that the land 'appears to drop away also in a westward direction'. Further research, including careful scrutiny of OS mapping shows that the land does not drop away, instead continuing to rise. However, this western field does still appear to be distinct from the others considered at Upper Lyde, and the potential impact on landscape is considered such that site M03c should not be allocated. The site lies within the preferred area of search and adjacent to an allocated site; a developer may be able to demonstrate that a suitable scheme can be implemented at this location.

2.4.5 The summary of this conclusion is presented below, by reference to the tests of soundness set out above.

- Positively prepared - Both the minerals and waste need assessments have been reviewed and updated throughout preparation of the Herefordshire MWLP. They demonstrate an objectively assessed level of development and infrastructure need within Herefordshire.
- Justified – The additional analysis has considered environmental impacts beyond heritage assets. None of the topics considered result in a likely impact of such magnitude that a site allocation would be inappropriate; it is reasonable to conclude that avoidance and mitigation will satisfactorily address all those constraints identified. The analysis demonstrates that, based on a proportionate evidence base, each of the site choices are justified and that all should be included in order to provide reasonable alternatives within the MWLP.

- Effective in terms of deliverability – All sites are subject to some limitation and those proposed to be allocated in the MWLP are no exception; however, all the sites are considered to be deliverable, even recognising some may be subject to constraints. They have all either been promoted or potentially made available by the landowner, or previously developed, and so are demonstrated to be deliverable in practicable terms too. The approach of policy requirements, incorporating the key development criteria, has been used previously and is demonstrated to be effective. The key development criteria have all been updated, so that those promoting development will be aware of the principal expectations for each site. The key development criteria set out both the constraints for which harm should be avoided and the opportunities for enhancement.
- Consistent with national policy in the National Planning Policy Framework – The selected sites are consistent with the objectives of national policy. In addition, policy of the MWLP, including the key development criteria, has been prepared cognisant of the current requirements of the National Planning Policy Framework, and to be consistent with it, unless there is a relevant local circumstance.

2.4.6 Annex A presents each of the sites proposed to be allocated and the additional analysis undertaken.

### **Key Development Criteria**

2.4.7 Each of the key development criteria relevant to each site has been updated. This review has incorporated some of the additional detail gained from this supplementary site assessment. However, this review has also removed some of the more generic key development criteria, topics that should expect to be addressed anyway, for example a requirement to demonstrate the effect on the local road network in the vicinity of the site (unless the access arrangements with the public highway are unusual).

## 3. M23: Land at Arrow Green

### 3.1 Introduction

- 3.1.1 The representations made to the Draft MWLP included submission of a potential new sand and gravel site, at Arrow Green, between Eardisland and Leominster (which lies to the east).
- 3.1.2 The site was taken through the same assessment process as those reported in the Spatial Context and Sites Report and is reported here.

### 3.2 Site Details

- 3.2.1 A series of fields lying to the south of Arrow Mill. The River Arrow runs through the site to the north, whilst the Moor Brook runs through the site to the south.

**Table M23: Land at Arrow Green**

Criteria		Notes
Viability		Submitted details suggest at least 550,000 tonnes of sand and gravel.
Availability		Proposed in representation made to Draft MWLP.
Deliverability	Infrastructure constraint	Access can be gained directed from the A4110, but sight lines are constrained. Site is within 5km of an airfield (Shobdon). Electricity/telephone wires cross the site.
	Human constraint	Housing at Arrow Green lies along the A4110.
	Environmental constraint	Within 5km of the River Lugg SSSI and Moseley Common SSSI. Within 10km of the River Wye. The River Arrow runs through the site. Ancient woodland, and priority habitats deciduous woodland, traditional orchards and woodpasture and parkland, within 1km. Arrow Mill (Grade II*) and Arrow Mill House (Grade II) located on the northern side of the site. Two SAM located within 1km to the west (Eardisland). Other listed buildings located within Eardisland and surrounding the site. Northern half of the site is within flood zones 2 and 3.
Date visited		23.07.2019
Site visit notes		Grass and cereal fields, local roads for access, prominent setting for Arrow Mill.

**Photograph M23\_1: View of southern fields of the proposed site  
(looking north towards Arrow Green)**



**Photograph M23\_2: View from A4110 looking toward fields south of Arrow Mill. Moor Brook indicated by tree line to the left of photograph, River Arrow by the marshy land to the right.**





## 3.3 Assessment

- 3.3.1 Unusually, a site evaluation study (dated July 2002) has been provided with the site proposal, which provides a reasonable amount of detail concerning the mineral reserve at this location. Whilst preliminary, the study suggests a minimum of 550,000 tonnes reserve, but potentially more than 665,000 tonnes. The study concludes that the mineral is *'likely to be of commercial value for use as concreting aggregate and in a range of highway works applications.'*
- 3.3.2 The site is strategically well located, situated in the north of the county, to the west of Leominster. It is directly accessible from the A4110, which connects to the A44 to the south. Access to the wider road network is consequently good. However, the A4110 is quite windy in the vicinity of the site, with relatively poor visibility.
- 3.3.3 The site is located within flood zones 2 and 3, but sand and gravel workings are recognised to be water compatible and can be restored to provide flood alleviation.
- 3.3.4 The greatest constraint for this site is its location directly south of Arrow Mill, a grade II\* listed building. Arrow Mill is described by the Herefordshire Building Conservation Team as *'an exceptional example of a well preserved C16 and C17 water mill with well preserved machinery. The mill leat and tranquil rural setting are key aspects of the setting of the building which contribute strongly to its significance.'* (Email, Matthew Knight, 24.07.2019) The Building Conservation Team has requested that the site is not allocated on heritage grounds.
- 3.3.5 The Historic England entry for Arrow Mill, describes the following criteria as the reason for designation:
- Historic: The timber-framed mill building dating from the C16, C17 and C18 has clear quality and has been little altered since it grew to its present shape in the late-C18 or early-C19.
  - Intactness: the machinery in the mill, including the gearing for the mill wheels, clover mill and bolter, are all in good, original condition.
  - Rarity: The clover mill and bolter are significant rarities, as are the rammed earth floor and the hop kiln, attached to the north of the building.
  - Legibility: The functioning of the mill and the different dates of its machinery can be read with ease.
- 3.3.6 The GIS based, site criteria RAG sheet is provided on the following page.

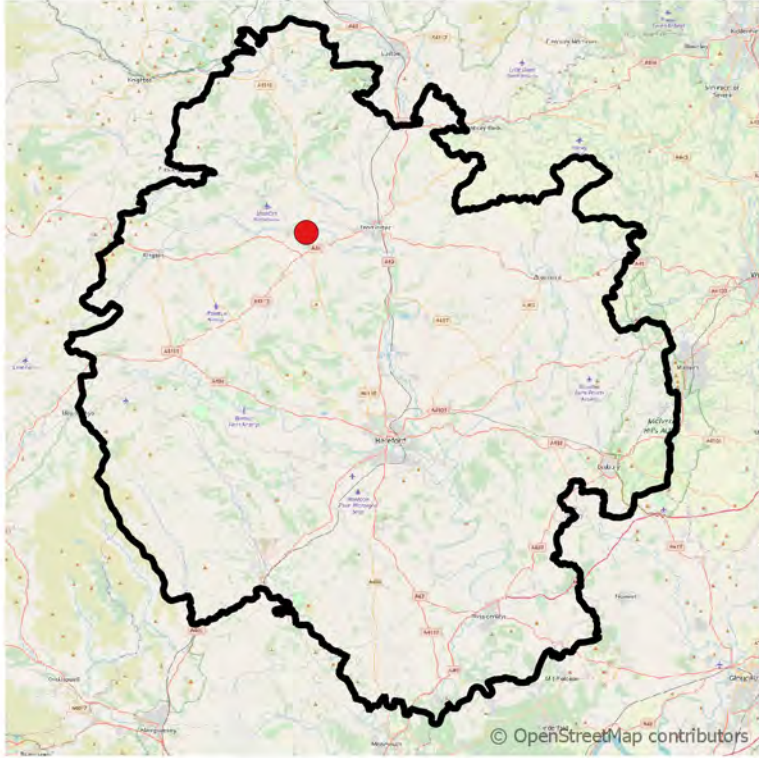
## 3.4 Conclusion

- 3.4.1 The site is considered not appropriate to allocate on account of the potential impact on the identified heritage asset, including its setting.

# Herefordshire County Council Waste and Minerals Site Assessments

## Site: M23 - Land at Arrow Green

### Sand and gravel – Proposed



**Site Area:** 34.12 ha  
**Postcode:** HR6 9AT  
**Easting:** 343409  
**Northing:** 258561  
**Site Visit Date:**

The site comprises agricultural fields and was proposed for sand and gravel extraction in response to the draft MWLP.

### Site Criteria

**Site Size:**  
**Natura2000:**  
**UK Ecological Sites:**  
**Local Ecological Sites:**  
**Area of Outstanding Natural Beauty and National Parks:**  
**Agricultural Land Classification:**  
**Air Quality Management Areas:**  
**Road Access:**

	<b>Sensitive Buildings:</b>	
	<b>Cultural and Historical Sites:</b>	
	<b>Airports and Airfields:</b>	
	<b>MOD Low Fly Zones:</b>	
	<b>Major River:</b>	
	<b>Flood Zones:</b>	
	<b>Source Protection Zones:</b>	
	<b>Walking Trail:</b>	



**Important Notice**

This report has been prepared by hendeca ltd exclusively for the benefit of Herefordshire Council and no other parties may act or rely on it. hendeca ltd excludes liability to all third parties.

Kirsten Berry and Hilary Livesey **authors**

**hendeca ltd**

9601610 **company number**

4 Witan Way, Witney, Oxfordshire, OX28 6FF **registered address**

© hendeca ltd 2020 **all rights reserved**