Herefordshire Council

Corporate Support Centre
Alistair Neill – Chief Executive Officer

To: All members of the Council

our ref: Council - 15 December 2020
contact: Matthew Evans, Democratic Services
telephone: 01432 383690
email: matthew.evans@herefordshire.gov.uk

7 December 2020

Dear Councillor,

You are hereby summoned to attend the meeting of the Herefordshire Council to be held on **Tuesday 15 December 2020** at the Virtual meeting at **2.00 pm** at which the business set out in the attached agenda is proposed to be transacted.

Yours sincerely

C Ward

Claire Ward

Solicitor to the council

Herefordshire Council

AGENDA

Council

Date:	**Tuesday 15 December 2020**
Time:	**2.00 pm**
Place:	**Virtual meeting**
Notes:	Watch this meeting live by accessing the link below: https://youtu.be/0XiBoqmVBuY For any further information please contact: **Matthew Evans, Democratic Services** Tel: 01432 383690 Email: matthew.evans@herefordshire.gov.uk

If you would like help to understand this document, or would like it in another format or language, please call Matthew Evans, Democratic Services on 01432 383690 or e-mail matthew.evans@herefordshire.gov.uk in advance of the meeting.

Agenda for the Meeting of the Council

Membership

Chairman	**Councillor Sebastian Bowen**
Vice-Chairman	**Councillor Kema Guthrie**

Councillor Graham Andrews	Councillor Paul Andrews
Councillor Polly Andrews	Councillor Jenny Bartlett
Councillor Chris Bartrum	Councillor Christy Bolderson
Councillor Dave Boulter	Councillor Tracy Bowes
Councillor Ellie Chowns	Councillor Pauline Crockett
Councillor Gemma Davies	Councillor Barry Durkin
Councillor Toni Fagan	Councillor Elizabeth Foxton
Councillor Carole Gandy	Councillor John Hardwick
Councillor John Harrington	Councillor Liz Harvey
Councillor Jennie Hewitt	Councillor Kath Hey
Councillor David Hitchiner	Councillor Phillip Howells
Councillor Helen I'Anson	Councillor Terry James
Councillor Peter Jinman	Councillor Tony Johnson
Councillor Graham Jones	Councillor Mike Jones
Councillor Jim Kenyon	Councillor Jonathan Lester
Councillor Trish Marsh	Councillor Bob Matthews
Councillor Mark Millmore	Councillor Jeremy Milln
Councillor Felicity Norman	Councillor Roger Phillips
Councillor Tim Price	Councillor Paul Rone
Councillor Alan Seldon	Councillor Nigel Shaw
Councillor Louis Stark	Councillor John Stone
Councillor David Summers	Councillor Elissa Swinglehurst
Councillor Paul Symonds	Councillor Kevin Tillett
Councillor Diana Toynbee	Councillor Ange Tyler
Councillor Yolande Watson	Councillor William Wilding

Agenda

Pages

1. APOLOGIES FOR ABSENCE

To receive apologies for absence.

2. DECLARATIONS OF INTEREST

To receive declarations of interest in respect of Schedule 1, Schedule 2 or Other Interests from members of the Council in respect of items on the agenda.

3. QUESTIONS FROM MEMBERS OF THE PUBLIC

To receive questions from members of the public.
Deadline for receipt of questions is 5:00pm on Wednesday 9 December 2020. At extraordinary meetings of the Council questions must relate to reports on the agenda.
Accepted questions and answers will be published as a supplement prior to the meeting. Submit questions to councillorservices@herefordshire.gov.uk,

4. QUESTIONS FROM MEMBERS OF THE COUNCIL

To receive any written questions from members of the Council.
Deadline for receipt of questions is 5:00pm on Wednesday 9 December 2020. At extraordinary meetings of the Council questions must relate to reports on the agenda.
Accepted questions and answers will be published as a supplement prior to the meeting. Submit questions to councillorservices@herefordshire.gov.uk,

5. MINERALS AND WASTE LOCAL PLAN (MWLP) 9 - 456

To consider the Herefordshire Minerals and Waste Local Plan (MWLP) development plan document (DPD) for pre-submission publication.

The Seven Principles of Public Life

(Nolan Principles)

1. Selflessness

Holders of public office should act solely in terms of the public interest.

2. Integrity

Holders of public office must avoid placing themselves under any obligation to people or organisations that might try inappropriately to influence them in their work. They should not act or take decisions in order to gain financial or other material benefits for themselves, their family, or their friends. They must declare and resolve any interests and relationships.

3. Objectivity

Holders of public office must act and take decisions impartially, fairly and on merit, using the best evidence and without discrimination or bias.

4. Accountability

Holders of public office are accountable to the public for their decisions and actions and must submit themselves to the scrutiny necessary to ensure this.

5. Openness

Holders of public office should act and take decisions in an open and transparent manner. Information should not be withheld from the public unless there are clear and lawful reasons for so doing.

6. Honesty

Holders of public office should be truthful.

7. Leadership

Holders of public office should exhibit these principles in their own behaviour. They should actively promote and robustly support the principles and be willing to challenge poor behaviour wherever it occurs.

The Public's Rights to Information and Attendance at Meetings

YOU HAVE A RIGHT TO: -

- Attend all Council, Cabinet, Committee and Sub-Committee meetings unless the business to be transacted would disclose 'confidential' or 'exempt' information. For online meetings you will be able to view the meeting live via the Council's YouTube site; https://www.youtube.com/HerefordshireCouncil
- Inspect agenda and public reports at least five clear days before the date of the meeting.
- Inspect minutes of the Council and all Committees and Sub-Committees and written statements of decisions taken by the Cabinet or individual Cabinet Members for up to six years following a meeting.
- Inspect background papers used in the preparation of public reports for a period of up to four years from the date of the meeting. (A list of the background papers to a report is given at the end of each report). A background paper is a document on which the officer has relied in writing the report and which otherwise is not available to the public.
- Access to a public register stating the names, addresses and wards of all Councillors with details of the membership of Cabinet and of all Committees and Sub-Committees.
- Have a reasonable number of copies of agenda and reports (relating to items to be considered in public) made available to the public attending meetings of the Council, Cabinet, Committees and Sub-Committees.
- Have access to a list specifying those powers on which the Council have delegated decision making to their officers identifying the officers concerned by title.
- Copy any of the documents mentioned above to which you have a right of access, subject to a reasonable charge (20p per sheet subject to a maximum of £5.00 per agenda plus a nominal fee of £1.50 for postage).
- Access to this summary of your rights as members of the public to attend meetings of the Council, Cabinet, Committees and Sub-Committees and to inspect and copy documents.

Herefordshire Council

Meeting:	**Council**
Meeting date:	**Tuesday 15 December 2020**
Title of report:	**Minerals and Waste Local Plan (MWLP)**
Report by:	**Cabinet member infrastructure and transport**

Classification

Open

Decision type

Budget and policy framework

Wards affected

All wards.

Individual aggregate minerals extraction sites are proposed in the parishes of:

- Aymestrey (Mortimer ward)
- Stoke Edith (Backbury ward)
- Wellington (Queenswood ward)
- Pipe and Lyde (Queenswood ward)
- Shobdon (Arrow ward)

Purpose

- To consider the Herefordshire Minerals and Waste Local Plan (MWLP) development plan document (DPD) for pre-submission publication, in accordance with regulation 19 of the Town and Country Planning (Local Development) (England) Regulations 2012 (as amended);

- To report the recommendations of General Scrutiny Committee on 28 September 2020, as considered at the meeting of Cabinet on 1 December 2020, in relation to the MWLP; and

- For the Council to consider the recommendation that, following the completion of the pre-submission publication period and consideration of duly made representations, the MWLP be submitted to the Secretary of State for independent testing, in accordance with section 20 (1) and 20 (3) of the Planning and Compulsory Purchase Act 2004 and regulation 22 of the

Town and Country Planning (Local Development) (England) Regulations 2012 (as amended).

Recommendation(s)

That:

i. the draft Minerals and Waste Local Plan development plan document (see appendix A) be approved for pre-submission consultation;

ii. authority be delegated to the Programme Director Housing and Growth, following consultation with the Cabinet Member Infrastructure and Transport, to make any technical amendments required to the draft Minerals and Waste Local Plan, and supporting documents, resulting from the completion of ongoing technical work, before pre-submission consultation begins;

iii. authority be delegated to the Programme Director Housing and Growth, following consultation with the Cabinet Member Infrastructure and Transport, to make any minor textual or graphical amendments, prior to the submission to the Secretary of State; and

iv. following completion of the pre-submission publication of the Minerals and Waste Local Plan and its supporting documents, the documents be submitted to the Secretary of State for Examination in Public.

Alternative options

1. Not to progress the MWLP would leave the council in a position where the extant Unitary Development Plan policies are out of date. This would be contrary to the recommendation of the Core Strategy inspector, who stated that a separate MWLP should be prepared in accordance with the local development scheme. When adopted, this will form part of the Herefordshire Local Plan.

2. Not to delegate authority to make necessary and minor amendments is not recommended because it would be impracticable to await a further meeting of Full Council to address such matters.

Key considerations

3. The MWLP is an element of the Herefordshire Local Plan. Initially the Core Strategy included minerals and waste policies, however, these were removed at examination and the inspector recommended they be revised, updated and set out in a separate minerals and waste local plan. The MWLP aligns with the principles and strategic direction established in the Core Strategy, but provides a policy framework relevant to minerals and waste development.

4. Minerals development includes activities such as mining and quarrying. Waste development includes activities such as waste recycling and the treatment and disposal of waste.

5. The MWLP will provide guidance to developers, local communities and other interested parties on where and when minerals and waste development may be expected over the plan period (up to 2041), as well as how it will be managed to both reduce adverse impacts and maximise benefits.

6. Once adopted, the MWLP will form part of the statutory development plan for the area and will be used as such for the purpose of determining planning applications for minerals and waste matters. Its preparation has involved ensuring compliance with statutory procedural requirements, including: Duty to Cooperate, Sustainability Appraisals and Habitat Regulations Assessments undertaken at key stages during the preparation of the Plan.

7. The MWLP and the majority of its evidence base is being produced for Herefordshire Council by consultancy Hendeca, with the Sustainability Appraisals and Habitats Regulations Assessments undertaken by consultants Land Use Consultants (LUC). Other parts of the evidence base have been produced by British Geological Survey (BGS) and the Council's retained consultants BBLP/WSP.

8. The MWLP's preparation process is summarised below:

    - 2016 first call for sites
    - 2017 second call for sites
    - 2017 issues and options public consultation
    - 2019 draft plan public consultation
    - *2021/2 publication draft consultation, submission and examination in public*
    - *2021/2 adoption*

9. During the MWLP's key stages of production, members of Herefordshire Council were involved and their views sought, this included the establishment of a scrutiny panel. In addition to the formal governance procedures which were adhered to, the following are of note:
    - 2017 members' seminar and first minerals and waste panel meeting
    - 2018 two minerals and waste panel meetings
    - 2019 members' presentation and Q&A session
    - 2020 General Scrutiny Committee

10. Following consultation on the draft MWLP in early 2019, the representations received from all parties (including; members of the public, local parishes, members of the council, statutory and other organisations) were reviewed and additional work was undertaken as required. Supplementary tasks included further analysis of those sites proposed to be allocated, assessment of a new site that was promoted through the representations, considering historic landfill sites within Herefordshire and updating the minerals and waste needs assessments.

11. In addition, the publication draft MWLP has been prepared to reflect changes in the National Planning Policy Framework and other relevant national policy documents, including the national waste strategy titled 'Our waste, our resources: a strategy for England' and will incorporate recommendations from emerging documents: Sustainability Appraisal and Habitats Regulations Assessment.

12. Those representations received to the draft MWLP that are considered to be key matters (those that could affect the policy approach or evidence base of the plan) are:

13. **a) Review of the Core Strategy**

Some respondents said that reliance on the Core Strategy was not appropriate, either because they felt that the evidence to that development plan document, or the consequent policy, was out of date.

14. Evidence for the MWLP has been either undertaken specifically in the preparation of the document (e.g. minerals and waste needs assessments), or has been reviewed as appropriate to it (e.g. considering potential environmental effects from the proposed sites to be allocated). Consequently the evidence base is considered to be appropriate and robust.

15. An update of the Core Strategy has commenced. However, the recent consultation white paper on Planning for the Future, and any subsequent new approach to the plan making system, will need to be considered, along with how such changes may need to be reflected in the MWLP. The plan making teams responsible for both the Core Strategy and the preparation of the MWLP are in regular dialogue to ensure that, together, these documents will continue to provide a comprehensive policy framework.

16. **b) Policy M7: Unconventional hydrocarbons**
Opposition to fracking was raised in representations to the draft MWLP and through the Full Council resolution on 16 Dec 2016 to seek to block any hydrocarbon extraction processes in or under the Areas of Outstanding Natural Beauty in Herefordshire.

17. There is just one area of coalbed methane in Herefordshire. At the time of preparing the MWLP, the relevant license for its exploration had not been taken up, although an opportunity for this to be reconsidered may arise in the future.

18. At the time of preparing the draft MWLP in 2018, the National Planning Policy Framework advised that mineral planning authorities should; "…recognise the benefits of on-shore oil and gas development, including unconventional hydrocarbons, for the security of energy supplies and supporting the transition to a low-carbon economy; and put in place policies to facilitate their exploration and extraction." Consequently, even whilst recognising the opposition to fracking, it was concluded that the draft MWLP should include a policy regarding this type of mineral development.

19. In 2019 a range of representations were made to the unconventional hydrocarbon policy M7 in the draft MWLP, including: some remaining objection to the principle of having the policy; the CPRE recognising the inevitability of having the policy and referring to its own guidance; the Environment Agency referring to its own guidance and regulatory role; the Coal Authority welcoming the policy; and industry representatives considering the policy to be inappropriate, poorly worded and too restrictive.

20. The exploration and extraction of unconventional hydrocarbons remains a topic subject to legal challenge and change. From July to October 2018, the Government undertook early stage consultation on the inclusion of shale gas production projects to be included in the Nationally Significant Infrastructure Projects (NSIP) regime. Although, at the time of preparing the publication draft MWLP, no decision had been reported. Just prior to the start of that consultation, a Government report titled 'Planning guidance on fracking' was published, paragraph 59 of which states:
"There is a contradiction between the spirit of the Localism Act 2011 and the 2018 Written Ministerial Statement on fracking planning policy which could unreasonably restrict Local Plans. Mineral Planning Authorities are best placed to understand their local area and weigh up what requirements should be in place for fracking developments. We note that Local Plans are already subject to scrutiny at national level from the Planning Inspectorate. Given that the English planning system is plan led, Mineral Planning Authorities should be

free to adapt their Local Plans as they see fit as long as they do not arbitrarily restrict fracking developments. It is essential that Mineral Planning Authorities have the right to put conditions in the Local Plans which can be justified having proposer regard to local circumstances."

21. The Oil and Gas Authority was consulted in September 2019 but no response was received.

22. In November 2019, the Government issued a moratorium on fracking, with immediate effect. At the time of preparing the publication draft MWLP, the ban had not been made permanent. The oil and gas industry has committed to providing the scientific evidence required to have the moratorium lifted.

23. It is therefore concluded that policy M7 should be removed from the MWLP. However, as explained within the supporting text to the policy, both conventional and unconventional hydrocarbons are covered in policy M1, to retain flexibility should either resource become workable and of interest in the future. As mineral resources, they would also be protected by policy M2.

24. Further, whilst policy M7 has been deleted, the supplementary text that preceded it has been retained, but reviewed and updated, incorporating reference to the guidance provided on the department for Business, Energy and Industrial Strategy website, 'Guidance on fracking: developing shale gas in the UK' last updated in March 2019.

25. **c) Policy W3: Agricultural waste**
It is unusual to include a policy relevant to agricultural waste within a development plan document; however, it is relevant here as Herefordshire is a unitary authority that has a strong agricultural sector.

26. In addition, it is recognised that the draft MWLP 2018 incorrectly identified a *'relatively small role'* played by agriculture in terms of impacts on the River Wye SAC. In fact, the River Wye SAC Nutrient Management Plan evidence base identified diffuse phosphate pollution from agriculture to be one of the main pressures (alongside sewage treatment works discharges), particularly in the River Lugg catchment.

27. The judgment made in 'the Dutch Case' [*Cooperatie Mobilisation* (joined cases C-293/17 and C294/17)] strengthens the need for all available tools to be used to reduce phosphate levels in the River Wye SAC.

28. Consequently, whilst there was some objection to policy W3 made in the representations to the draft MWLP 2018, it is retained within the publication draft MWLP 2020, albeit with some amendments to both the supporting text and the policy itself, primarily to clarify the policy purpose.

29. **(d) Policy W6: Preferred locations for construction, demolition and excavation waste management facilities**
There was limited comment made to policy W6, however, the representation submitted on behalf of Ataghan Limited Stoke Edith Estate merited further consideration. The representation considers that Perton Quarry could be suitable for waste recycling or deposit and should not be discounted on account of the existing permission.

30. Perton Quarry is not considered suitable to be promoted within the MWLP as a waste treatment or disposal location, not least on account of the local highway network. However,

as recognised in the representation, the site could be proposed for inert waste treatment under policy W6, as an active mineral working.

31. It is the intention of policy W6 that active mineral sites may be used for inert waste recycling. However, it will be for the submitted application to demonstrate that such a proposal would be acceptable development, this is different to the site specifically being promoted within the MWLP.

32. Further, this representation indicated that policy W6 should be amended, in order to clarify the order of preference in terms of locations for inert waste recycling. The preferred location is at Former Lugg Bridge Quarry, with active mineral workings providing a fall-back position if appropriate.

33. **(e) Agent of Change, safeguarding and the use of buffer zones**
The National Planning Policy Framework, paragraph 182, states:
Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facilities could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed."

34. Representations from, *inter alia*, the Minerals Products Association, request that the agent of change principle is written into policies of the MWLP, in conjunction with stated buffer zones. Representations also consider that reference to buffer zones within policy represent best practice, with the Mineral Products Association suggesting that buffer zones should be applied both around the safeguarded area, and then again to indicate a further zone within which the agent of change principle would continue to apply.

35. The concept of protecting the existing development has been present in minerals (as safeguarding) and waste for some time, However, the July 2018 published version of the National Planning Policy Framework was the first time the concept was applied to all other developments.

36. The approach developed for safeguarding, and the decision not to pursue buffer zones, is set out from paragraph 2.2.30 of the Spatial Context and Sites Report. There has been no new evidence suggested in response to the draft MWLP 2018 to demonstrate that this should change. The MPA refers to guidance produced by the British Geological Survey 'Mineral safeguarding in England: good practice advice'. This has been reviewed during the preparation of the draft and publication draft MWLP stages.

37. The concepts of safeguarding (both minerals and waste assets) is well established and the 'agent of change' principle is clearly set out in the National Planning Policy Framework. In simple terms, it should not be necessary to repeat these within the MWLP. Further, the decision not to include buffer zones within the MWLP is considered to be sound.

38. However, it is clear that these are issues that do concern the minerals industry and so policy M2 has been amended to incorporate the agent of change text presented in the National Planning Policy Framework. This is considered appropriate text to address the potential for non-minerals development to adversely affect minerals resource, infrastructure and workings without relying on a fixed distance buffer zone.

39. It has also been incorporated into policy W1, to ensure adequate protection for existing waste infrastructure.

40. In addition, policy M2 has been amended to include explicit reference to associated infrastructure.

41. **(f) Presentation and use of data in the site assessment**
The Spatial Context and Sites Report was one of the documents accompanying the draft MWLP through consultation. Representations were received in response to the sites proposed to be allocated (as set out in Annex A to the draft MWLP 2018).

42. Whilst limited objection was made in relation to the sites proposed to be allocated, and none was received in relation to those that were discounted through the sites assessment, substantial comment was received in relation to the site assessment work that had been undertaken, including: detailed comment on specific sites, e.g. to identify that a feature had not been considered in enough detail; and overarching comment in relation to the level of detail and analysis provided within the site assessment. Historic England sought detail on nearby heritage assets and how impacts from development at each of the proposed sites could be mitigated effectively. A meeting was subsequently held with Historic England to discuss each of their points raised.

43. A new site was proposed for mineral extraction at Arrow Green. The site was then subjected to the same analysis as other sites previously considered in the Spatial Context and Sites Report. It was concluded that it was not appropriate to allocate.

44. As a result of the representations received and the meeting with Historic England, it was decided that additional work should be undertaken to supplement the site assessment work. This focussed on the sites proposed to be allocated and the additional information was used to evidence their suitability and to demonstrate that their constraints could be overcome. This included a review of the potential impact of the sites on the night sky.

45. As a result of the additional work, three main changes were made to the MWLP:

- Site M05g, a new area of working located to the east of Wellington Quarry, has been reduced in size to protect the setting of the Church of St. Mary, in Marden.
- All of the key development criteria have been reviewed and updated, to incorporate both detail from the Supplementary Sites Report, but also consultation representations where appropriate; and
- Policy/supporting text has been reviewed and updated, e.g. clarifying the expectations in regard to phased working and maximising geological assets.

46. **(g) Environment Agency**
In addition to comments on the sites analysis, the Environment Agency also commented on:
- restoration plans;
- infrastructure resilience;
- terminology;
- landfill mining;
- agents of change;
- presumption against stockpiling; and
- other – increased reference to Environment Agency resources, including the Catchment Data Explorer, conventional and unconventional hydrocarbons; and resource audit, waste to Doncaster.

47. Restoration achieved through backfilling with waste has the potential to have a detrimental effect. Such deposits are subject to planning and any proposal will be considered in detail on submission of an application and include consultation with the Environment Agency. The MWLP only promotes the use of inert wastes for site reclamation, this is primarily as use of this waste stream will reduce the likelihood of detrimental effects occurring. The MWLP also recognises the regulatory regime delivered through environmental permits and encourages developers to follow a twin-track approach.

48. The Environment Agency requests that consideration is given to contingency planning for the most at risk waste streams, to ensure operations are not significantly disrupted and business continuity is maintained. Contingency planning, *per se*, is not within the remit of the MWLP. However, the plan seeks to improved resilience through promoting development and encouraging more facilities to be built at appropriate locations across the waste hierarchy. Waste needs assessments have been carried out to identify the range of facilities required, taking account of local circumstances. The MWLP provides multiple location options for facility types higher up the waste hierarchy, with decreasing options available for facility types lower down, and none available for non-inert waste disposal.

49. The MWLP is primarily a land use document directing new development, rather than attempting to bring about cultural (personal) change. Through policy such as SS8, it places greater responsibility on all to engage in more sustainable waste/resource management.

50. In preparing the MWLP, the government's 25-Year Environment Plan and Resources and Waste Strategy have been reviewed. The language of the MWLP has been checked to ensure it is clear, but there remains reference to all of the terms of: waste management, waste hierarchy; and circular economy. Such terminology is considered to be acceptable and necessary and is defined in the glossary to the plan.

51. The Environment Agency's suggestion of a policy on landfill mining has been considered in some detail through a European and national literature review and a local landfill legacy review. These demonstrate that there is potential for some important resources to reside in old landfill sites, and that technical capability to extract these resources, safely, is developing. However, it is also clear that there remains substantial barriers to landfill mining, and there is little evidence to suggest that this will become a substantial market in the foreseeable future, or at least within the MWLP period.

52. Research of historic landfill sites within Herefordshire indicates only one location at which further research would be appropriate; and this concluded that the site was not appropriate and that there was no interest in it for mining. There is little evidence that there is any interest for landfill mining to occur in Herefordshire.

53. The research undertaken has been at high level, however, it is considered to be both proportionate and credible. On the basis of this research, there is little evidence that such development would be appropriate to promote or even that it would be deliverable. It is therefore not considered to be necessary or appropriate to have a policy for landfill mining in the MWLP.

54. The Environment Agency identified incidents of large scale waste stockpiling, *"mainly of baled wastes in Staffordshire and at other locations around the country."* Further, that *"Herefordshire benefits from extensive areas of open land that could be used for storage."* Hendeca's research found reported incidents of unauthorised storage of wastes in the West Midlands, with the closest being in Kidderminster, in Worcestershire.

55. Within Herefordshire, neither fly-tipping nor unauthorised storage of waste are considered to be a material problem. The number of fly-tipping incidents is considered to be low when compared to larger cities. There is no knowledge of any large scale waste storage within the county that is not otherwise associated with some other permitted activity, or at a site with the appropriate environmental permit.

56. The MWLP should be a positive, actively promoting the delivery of desired development at preferred locations. It cannot cater for all eventualities and should not have a policy that is written in the negative. Further, fly-tipping and the storage of waste without permission are not lawful in planning terms and are otherwise illegal activities. There is a robust regulatory framework already in place that would be appropriately supported by policy of both the core strategy and the MWLP, should enforcement be expedient. A presumption against stockpiling as suggested by the Environment Agency is not considered to be necessary or appropriate.

57. The publication draft MWLP has been amended to supplement reference to the Environment Agency's on-line resources.

58. Waste transported to Doncaster for incineration. The evidence base for the MWLP considers waste arisings, movement and implications for policy development. The MWLP sets out a range of new opportunities for waste management facility development to provide greater opportunities in the county. A new waste needs assessment has been completed, incorporating the latest data from 2018.

59. **(h) Historic England**
In addition to comments on the site assessment evidence base, other comments were made:

- the MWLP does not demonstrate a positive approach to the historic environment as required by the National Planning Policy Framework, paragraph 185;
- reliance on the Core Strategy was not sufficient to ensure the historic environment can be sustained in line with National Planning Policy Framework requirements; and
- additional guidance documents prepared by Historic England should be referenced within the MWLP

60. The requirements of the National Planning Policy Framework were addressed in the draft MWLP and are continued and reinforced in the publication draft MWLP.

61. The overarching strategy in the Core Strategy is the starting point for the MWLP. Being supplemented by the MWLP for mineral and waste development, there is, inherently, a positive strategy presented for the conservation and enjoyment of the historic environment. Not least, a MWLP has been prepared to enable the provision of sandstone and other minerals that are required to maintain built heritage assets within Herefordshire and beyond.

62. The desire of the Core Strategy to sustain and enhance the significance of heritage assets is repeated in the vision and objectives of the publication draft MWLP and delivered through the identified policies, including the early restoration of sites. The MWLP also considers movement and transportation requirements associated with minerals and waste sites, including that access arrangements and pipe/conveyor routes should avoid damage to heritage assets.

63. The Core Strategy makes clear the desirability of new development in making a positive contribution to local character and distinctiveness and addresses the contribution made by the historic environment to the character of a place. These priorities are continued through the MWLP, principally through the potential for restoration schemes to be delivered at the landscape scale and incorporating priorities for heritage assets. In addition, the key development criteria require proportionate assessment of impacts on heritage asserts from proposed development. This assessment should also include identifying opportunities to enhance significance and make a positive contribution to local character and distinctiveness.

64. It is considered that the MWLP, read alongside the Core Strategy, provides a positive strategy for the historic environment and that this approach, is sufficient to ensure that the historic environment can be sustained in line with the National Planning Policy Framework requirements. Further, it is considered that this approach will enable both the historic environment and heritage assets within Herefordshire to be improved.

65. The publication draft MWLP has been amended to supplement reference to Historic England's guidance.

66. **(i) Phosphates in the River Wye SAC**
The preparation of any local plan is undertaken with an objective of having no likely significant effect on a designated site. In addition, local concern regarding phosphate levels in the River Lugg has been understood since the start of preparing the MWLP. The starting point for preparation of the MWLP has been to seek to avoid the likelihood of having any adverse effect, but also seek to deliver policy that would help to improve the condition of the designated site. This outcome has been sought through a number of different routes including:

- the site analysis has recognised and considered the potential for impact on designated sites;
- the key development criteria have been developed as relevant;
- policy has been drafted seeking to achieve improved reclamation of sites, incorporating green infrastructure priorities that reflect local conditions;
- policy has been drafted to address the management of agricultural wastes; and
- incorporating recommendations from the HRA Screening Report.

67. The preparation of the publication draft MWLP has focussed on how it, as a land use policy document, can contribute to achieving betterment and/or neutrality on terms of phosphates in the River Wye SAC.

68. Since it is not a land use policy document promoting either housing or tourism, these sectors are not necessary to consider further. Minerals and waste projects, including waste infrastructure, can reasonably be described as commercial developments. Such developments experience change over time and can also involve a change in agricultural practices, for example, where a former agricultural field is developed for mineral extraction or waste infrastructure. So, whilst the MWLP is not a land use policy document to promote agricultural development, it is intended to have a role in influencing the management of wastes from agricultural units within the county.

69. The policies of the MWLP have been drawn up to cover the following matters:
    - *Waste water management*
    Information from Dwr Cymru/Welsh Water identifies specific locations in the River Wye SAC at which phosphate removal will be undertaken. If this requires development above ground, planning permission is likely to be required.

Consequently, it is considered appropriate that these waste water treatment works are identified in the publication draft MWLP.

Severn Trent Water infrastructure does not release water into the River Wye SAC and therefore no further policy framework is considered necessary.

Dwr Cymru/Welsh Water requested that further advice be included in the MWLP to address protection for its assets, which has been incorporated into the publication draft MWLP.

Consequently policy W4 has been updated to include an expectation that waste water treatment will achieve reductions in phosphate releases and to encourage phosphate recovery for beneficial uses. The supporting text has been updated to reflect the location specific intention for waste water infrastructure operated by Dwr Cymru/Welsh Water.

- *Minerals and waste projects and agricultural waste*
  As a commercial activity that does not incorporate overnight accommodation, minerals working projects would not normally be considered as a source of phosphate. However, it is recognised that they could result in a change in agricultural land throughout the extraction process; stripping away topsoil and subsoil; extracting the mineral and restoration. These risks can be avoided by the use of conditions requiring proposals to demonstrate how nutrient neutrality, or betterment, would be achieved. For example, testing soils prior to their stripping and setting out a plan to manage phosphate releases; restricting development proposals within any one area; and restricting restoration proposals that would become tourist attractions.

  The key development criteria attached the sand and gravel development areas at Upper Lyde, Shobdon and Wellington already seek to avoid a proliferation of operational sites; only one area should we worked at any one time, limiting the amount of associated infrastructure.

  The publication draft MWLP has been updated to incorporate these requirements.

- *Waste development (excluding waste water facilities)*
  As a commercial activity that does not incorporate overnight accommodation, solid waste projects would not normally be considered as a source of phosphate. Further, no new sites are proposed that would result in a change to agricultural land or practices.

  Some research indicates that some waste management processes may result in the emission of phosphates. These include municipal solid wastes and clinical and hazardous wastes going though thermal processes and disposal to landfill. The MWLP does not promote such management of these wastes within the county and no suitable locations have been identified.

  The MWLP does not promote the use of thermal processes to recover energy from residual wastes. However, there is a recognised benefit in recovering the phosphates from energy recovery facilities for beneficial purposes. Evidence points to a potential 70% phosphorous recovery rate from municipal solid waste incineration fly ash.

Although the thermal treatment of waste is not itself a likely phosphate source, recognising the importance of this issue within Herefordshire, the publication draft MWLP has been updated to include encouragement for the recovery of phosphorous from the resultant fly ash, to be put to beneficial purposes.

70. **(j) Agricultural waste**
Such waste is widely recognised as a key diffuse source of phosphates and is a primary contributor to phosphates in the River Wye SAC. For this reason, the MWLP includes a policy to address agricultural wastes. This should give Herefordshire Council (as the local planning authority) more control over the land use aspects of the sector, which include waste disposal, leading to an improved environmental outcome.

71. Within the publication draft MWLP, the supporting text which accompanies policy W3 has been supplemented with references to relevant case law and to the council's position statement on phosphates in the River Wye SAC and new development.

72. Policy W3 is considered to be an innovative and effective measure, adding to the range of tools available to regulatory bodies to reduce phosphate releases from agriculture, a significant sector within Herefordshire. This will add to and support the raft of other legislation which already regulates the agricultural sector.

73. **(k) Incorporating the recovery of phosphorous in policy**
Phosphorous is an essential, but non-renewable mineral, the raw resources of which are likely to become unavailable within the foreseeable future. The recovery of phosphorous is therefore an important activity that should be encouraged.

74. Waste water treatment companies operating within Herefordshire are already testing appropriate methods of recovering phosphates.

75. An objective of the MWLP is to deliver a circular economy. There is a need to reduce phosphate emissions into the River Wye SAC, which means they will need to be captured prior to their release. The MWLP promotes the use of energy recovery for residual wastes, which has the potential to recover phosphate from the fly ash. Anaerobic digestion processes, that can be used at waste water treatment facilities and promoted on farm and are promoted in the MWLP, can also provide a source for phosphate recovery. However, it is noted that anaerobic digestion plants may also be a pollution risk and this will be considered in the determination of proposals for such development.

76. Drawing all of this together, leads to the inclusion of a policy intention to encourage the development of infrastructure to enable the recovery of phosphorous.

77. **(l) Minerals Forecasting**
Representations to the minerals evidence base included some level of concern in regard to mineral forecasting, principally from CPRE, Here for Hereford and Wye Ruin It. They considered that the demand forecasts were too high and that consequent levels of extraction were too high and failed to ensure the long-term conservation of minerals resource. Also, the approach of comparing the infrastructure set out in the Core Strategy with that in the Unitary Development Plan was considered to be '*spurious*'. The Core Strategy was considered to be out of date and the housing trajectory forecasts were considered unlikely to represent the central element of the Core Strategy to grow the County's economy at a faster rate than elsewhere.

78. The Core Strategy is an adopted development plan and is therefore considered to be an appropriate resource to consider within the range of forecast indicators that are used. The minerals need assessment has been updated with the most recent information available.

79. The Experian forecast is also considered to be an appropriate reference. It was developed on Herefordshire specific data and, whilst it is a couple of years old, recognising the uncertainties that lie ahead as Brexit is implemented, it is considered to remain relevant.

80. Forecasting is not an exact science, and minerals data is not comprehensive. A range of forecasts have been considered.

81. Staffordshire County Council sought more detail on the assessment of sand and gravel provision and also considered that a 10-year sales average should provide the basis for provision, identifying that, as Herefordshire currently relies on a level of imports, a level of provision greater that the current 10-year sales average could be justified.

82. An annual rate of working is not forecast, as this is considered to be too precise a level of detail that can reasonably be calculated on the basis of the available data. In any event, the rate of extraction will primarily be driven by market demand, which is beyond the remit of the MWLP.

83. The minerals industry felt that policies M3 and M4 should be altered to permit greater mineral extraction within Herefordshire over the plan period. The Minerals Products Association also considered that the winning and working of sandstone should be less restrictive, and not focussed on addressed local demand.

84. The policy wording has not been amended as suggested as the proposed text is considered to provide too much encouragement for minerals working. Instead the policies have been proposed to provide a balance between providing for the County's forecast levels of demand and an ability to contribute to the Managed Aggregates Supply System (MASS), and not promoting excessive mineral working, such that reserves are not worked efficiently. The policy has been amended to make clear the ability to review the demand forecast through the annual and five-year reviews of the plan.

85. The assessment in the mineral needs assessment 2019 has been extended to 2041, to reflect the intended end date of the MWLP. This provides a plan period of more than 15 years and should enable appropriate levels of landbank to still be available at the end of the plan period, and leading into the preparation of any revised minerals local plan.

86. *Sand and Gravel*
In order to deliver the positive approach sought in the vision and objectives of the MWLP, to be self-sufficient and to make a reasonable contribution to MASS, it is appropriate to consider planning for the greatest forecast demand, recognising that this may be an overestimate. The approach to site allocation and preferred areas of search are demonstrated to be sufficient to meet the wide range of demand forecast for sand and gravel through the plan period to 2041. However, it would not be a preferred strategy for many quarries to be opened to meet the highest forecast demand, without there being a robust market for it. Policy of the MWLP seeks to phase development such that sand and gravel reserves and sales can be monitored throughout the lifetime of the MWLP, allowing new operation only as required. This will avoid a proliferation of working and should encourage optimal working at each operational quarry.

87. C*rushed rock*

Two methods of forecasting crushed rock demand have been considered and the varying results reflect the uncertainties in mineral data. It is not possible to be definitive about whether the two proposed allocations for extensions at Leinthall and Perton quarries will be sufficient throughout the Plan period. If demand for crushed rock in Herefordshire is at the lower end of the forecasts, then it would appear to be so. There is potential that a forecast demand of nearly 21 million tonnes is excessive. Discussions with the operators during sites visits indicated that the crushed rock in the County is not of a particularly high quality. For example, it cannot be used for road surfacing, although it is use in a range of other construction projects.

88. The approach to site allocation and areas of search are demonstrated to be generally sufficient to meet the wide range of demand forecast for crushed rock through the Plan period to 2041. However, if the higher demand does arise over the plan period, there is potential that Herefordshire would not be able to make a material contribution to MASS for crushed rock.

89. As with sand and gravel, it would not be a preferred strategy for many quarries to be opened to meet the highest forecast demand, without there being a robust market for it. Policy seeks to phase development such that crushed rock reserves and sales can be monitored throughout the lifetime of the MWLP, allowing new operations only as required. This approach will avoid a proliferation of workings and should encourage optimal working at each operational quarry.

90. *Building stone*
All active sandstone delves appeared to be suitable in principle to be able to gain extensions of time for minerals working and three appeared to be appropriate for future extensions in size of the working area.

91. Forecasts show limited demand, which is similar to past levels. The proposed sites are considered appropriate to satisfy this. In addition, the policy allows other workings where relevant criteria are met.

92. *Clay, coal and unconventional hydrocarbons*
It is reasonably assumed that there will be no demand for these minerals and consequently no site is proposed to be allocated in the MWLP.

93. **(m) Waste**
There were no representations made in direct response to the Waste Needs Assessment or to the level of need stated in the draft MWLP policy.

94. Representations were received seeking to:
- extend the principles of the resource audit to refurbishment schemes and not just to new build development;
- include composting schemes; and
- more fully integrate the circular economy.

95. All of the above points have been accepted and the relevant text has been amended within the publication draft MWLP.

96. The Strategic Flood Risk Assessment Level 2 report was received on 20.08.20 and has been considered by consultants Hendeca. This last piece of evidence for the Plan has not altered, to any significant extent, the policies and proposals of the publication draft MWLP. A Habitats Regulations Assessment and Sustainability Appraisal are currently being undertaken (by consultants LUC) and subsequently their recommendations will be

incorporated into the publication draft MWLP prior to it being presented to Full Council and, subsequently, undergoing its last round of public consultation before examination.

97. LUC produced the draft emerging Sustainability Appraisal and Habitats Regulations Assessment reports on the publication draft MWLP on 12.11.20 and have recommended some minor textual changes to the Plan. In addition, Natural England have provided some further comments and their recommendations will also be incorporated into the publication draft MWLP and/or its associated documents, as appropriate. None of the points raised will result in changes to the overall thrust of the Plan or its policies, but will help to clarify its wording and ensure that all details have been addressed appropriately. A paper listing the matters raised and the responses to them has been prepared and appended to this report (Appendix L).

98. A number of points were raised at the meeting of Cabinet on 1 December 2020, and the resultant alterations to the Publication Draft MWLP have been listed at Appendix M. Consequently, the text of the Plan itself has also been updated and is attached as Appendix A.

Community impact

99. The MWLP seeks to ensure that sites and locations are identified for mineral and waste development according to the forecasted demand until 2041. This is as relevant to the whole population of Herefordshire and is as pertinent to those residing in the rural parishes as it is to those in Hereford and the market towns.

100. This report provides Council with the opportunity to respond to the content of publication draft MWLP and recommend its approval and progression to the formal publication, submission and examination stages. Any outstanding comments which are not incorporated into the MWLP can be addressed at the subsequent examination in public.

101. Members of Council can help to ensure that the protection of the environment and climate change are sufficiently addressed in the sustainable development policies and proposals of the publication draft MWLP.

Environmental Impact

102. The MWLP has had due regard to the Council's environmental policy commitments.

Many of them underpin its policies and proposals:

- *Natural resources are used efficiently*. The National Planning Policy Framework also identifies the need to ensure that mineral resources should be used sustainably. The MWLP, in assessing future need, only identifies sites for future minerals extraction which are necessary over the plan period and encourages the use of secondary and recycled materials in preference to the extraction of primary materials. It also safeguards mineral resources and infrastructure for future uses.

- *Minimise waste*. The MWLP seeks to deliver the circular economy and promotes the concepts of waste hierarchy. The MWLP's sustainable waste strategy will deliver a reduction in the amount of waste re-used, recycled or used to recover energy and a decrease in the amount of waste disposed to landfill.
  Waste management facilities are also an element of the circular economy, so long as the materials and/or energy recovered are put to beneficial uses.

- *Reduce greenhouse gas emissions*. The built form of waste management facilities may more obviously align with the expectations of this policy commitment, but minerals working can also make a significant impact. Minerals are to extracted efficiently and ensure that a high quality of reclamation and after use can be achieved.

  The winning and working of minerals, and some waste processing operations, is resource intensive. Reduced energy usage can be achieved through good site design to reduce transport movements, for example. Buildings and plant can be designed to reduce resource requirements and consequent carbon emissions, for example, through the use of ultra-low emission vehicles and renewable energy supply (including solar panels, open-loop ground source or surface waste source hearing and cooling systems.

  The MWLP will expect increased resource efficiency measures in plant, buildings and operation in order to achieve climate change priorities.

- *Raise awareness of and mitigate against and adapt to climate change impacts.* The strategy of the MWLP is centred on sustainability, from its vision and objectives through to its specific policies and proposals. In addition to the text of the bullet point above, an example of how it addresses climate change is; the reclamation of sites, which provides opportunities, in assisting ecological networks to be more resilient, enabling the movement of wildlife as it adapts to a changing climate. The after-use of a site can also deliver objectives to address climate change, for example, creating new habitat that also provides flood storage to alleviate risks elsewhere.

- *Prevent and reduce pollution*. The waste strategy set out in the MWLP seeks to deliver sustainable management of waste in the County. Its waste policies will prevent and reduce pollution from a variety of waste streams and a specific wastewater management is also included, in order to assist in the minimisation of phosphate levels in the River Wye SAC.

- *Conserve the natural and historic environment of Herefordshire*. Good design requires full consideration of the surrounding environment, its constraints and the opportunities for enhancement, including change for the better. The MWLP sets out a comprehensive approach, addressing exploration, construction, operation, buildings and machinery and people and place across the lifetime of the site and through its aftercare. This will enable sustainable development to be realised.

  All minerals and waste development will be expected to incorporate robust measures to ensure that the proposed development does not cause unacceptable adverse impacts on either the environment or local communities, many of which can be overcome by implementing standard measures, which are set out in the Plan. Protection of the landscape, townscape, biodiversity, geodiversity, historic environment and heritage assets (whether above or below ground) are all addressed through the MWLP's policies.

- *Promote links between environmental sustainability and economic growth and well-being*. Minerals and waste management infrastructure is essential to support a modern economy. Minerals provide many of the raw materials necessary for construction, energy and industry and they are therefore essential in helping to sustain economic growth. Therefore the MWLP plans for their supply, whilst at the

same time requiring that the impacts of extracting them are kept within acceptable limits. Dealing with waste is a major challenge for society and needs to be addressed alongside other initiatives to improve the sustainability of our environment and economy.

The MWLP provides for a network of waste management facilities and appropriate infrastructure to maximise waste as a resource and to avoid significant adverse impacts on the environment and communities.

103. Herefordshire Council provides and purchases a wide range of services for the people of Herefordshire. Together with partner organisations in the private, public and voluntary sectors we share a strong commitment to improving our environmental sustainability, achieving carbon neutrality and to protect and enhance Herefordshire's outstanding natural environment.

Equality duty

104. Under section 149 of the Equality Act 2010, the 'general duty' on public authorities is set out as follows:

A public authority must, in the exercise of its functions, have due regard to the need to -

(a) eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under this Act;

(b) advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it;

(c) foster good relations between persons who share a relevant protected characteristic and persons who do not share it.

105. The Equality Act 2010 established a positive obligation on local authorities to promote equality and to reduce discrimination in relation to any of the nine 'protected characteristics' (age; disability; gender reassignment; pregnancy and maternity; marriage and civil partnership; race; religion or belief; sex; and sexual orientation). In particular, the council must have 'due regard' to the public sector equality duty when taking any decisions on service changes.

106. Where a decision is likely to result in detrimental impact on any group with a protected characteristic it must be justified objectively. This means that attempts to mitigate the harm need to be explored. If the harm cannot be avoided, the decision maker must balance this detrimental impact against the strength of legitimate public need to pursue the service change.

107. It is not considered that the MWLP, or its content, has in impact on the Council's Equality Duty. All stages of public consultation on the plan have been made accessible to all and were made in accordance with the regulatory requirements of the Town and Country Planning (Local Development) (England) Regulations 2012 and a Consultation Statement will be produced to assist the inspector at the forthcoming examination in public as to whether the MWLP complies with the requirements for public participation and Government guidance.

108. Public involvement was carried out following the approach set out in Herefordshire's Statement of Community Involvement, adopted in 2017. Methods included: emails, letters,

Facebook, Twitter, Council website, cabinet members' newsletter, hard copies of MWLP made available at info points and/or libraries across the County, a presentation to stakeholders and exhibitions open to the public. Responses could be made via online surveys, via email or letter.

109. It is considered that the approach to public engagement was appropriate and that those with protected characteristics were able to fully engage with the process.

Resource implications

110. The production of the MWLP has been funded through the local plan budget and reserves.

111. There will be a continuing need to fund the production of the Sustainability Appraisal (SA), the Habitats Regulation Assessment (HRA) reports by consultants LUC, the continued work on the Plan's development by Hendeca (specialist minerals and waste planning consultants) and the examination in public (expected in 2021). This additional funding will also be sourced from the local plan reserves.

112. Costs are estimated to be:
    - SA/HRA £30,000
    - Hendeca £40,000
    - Examination £30,000

Legal implications

113. The Council is required to produce a MWLP (a DPD) as part of the Herefordshire Local Plan. This form part of the Council's policy framework.

114. Sections 15 of the Planning and Compulsory Purchase Act 2004 (as amended by the Localism Act 2011) places a duty on local planning authorities to prepare and maintain a local development scheme; the documents of which are development plan documents. Section 16 requires that the local planning authority prepare and maintain a scheme to be known as their Minerals and Waste Development Scheme which will specify documents such as proposals and policies to guide minerals and waste related planning decisions to be produced for the area, including the MWLP. The MWLP is required to take account of national government policy and planning practice guidance when being formulated, including the NPPF and Guidance on Local Plans.

115. Under Part 3 Section 3of the constitution, Cabinet are required to formulate or prepare the documents consisting of the budget and policy framework and shall make recommendations to Council; under Part 3 Section 1 of the Constitution Council has the authority to make decisions on DPDs, such as the MWLP, pursuant to Section 15 of the Planning and Compulsory Purchase Act 2004 (as amended). Under Part 4 Section 3 of the Constitution, Council is responsible for the adoption of those documents within the budget and policy framework rules.

116. Section 20 of the Planning and Compulsory Purchase Act 2004 (as amended) requires the MWLP to be submitted to the Secretary of State for independent examination, once the council is satisfied it has complied with procedural requirements on preparation, publication and consultation (section 19 of the Planning and Compulsory Purchase Act 2004 and regulations 18-20) as laid out in the Town and Country Planning (Local

Development) (England) Regulations 2012 (as amended). This is a Regulation 19 decision.

117. There are no legal problems in doing what is proposed.

Risk management

Risk / opportunity	Mitigation
• Risk (procedural and financial): the MWLP is found to be unsound at examination	• The risks of the MWLP being found unsound are low, as the appropriate mitigation measures have been employed to ensure that the plan has been drawn up using specialist mineral and waste planning expertise. Consultants have assisted in collation of the evidence base (BGS, Hendeca and BBLP/WSP) which underpins the MWLP, developed the plan's policies and proposals (Hendeca), produced the sustainability appraisal and habitats regulations assessments (LUC) and will continue to be engaged in the next stage of the plan's production (Hendeca); the examination in public. This risk will be managed at service level.
• Risk (procedural and reputational): not to proceed to consultation on the publication draft MWLP	• This would leave the council without an up to date minerals and waste planning policy framework and would effectively create a policy vacuum. This would be contrary to the requirements set out by the assistant planning inspector during the core strategy examination, who stated that a MWLP was to be produced.
• Risk (procedural and financial): the introduction of regulatory changes to the planning system before the MWLP reaches examination in public, which may result in the need to follow a new plan production process.	• If the publication draft MWLP is reported to full council in December, as anticipated, and the recommendation approved to proceed to the next stage of consultation (regulation 19), then the plan can be submitted to the secretary of state in the first quarter of 2021. It is therefore likely that the MWLP will fall into the transitional arrangements which will be set out by government for development plans which have reached this late stage in their production. This risk will be managed at service level.

Risk / opportunity	Mitigation
• Risk (procedural): the targets for levels of aggregate production and waste management requirements set out in the MWLP may become increasingly out of date, both during the Plan production process and after the Plan is adopted.	• Resources have been identified to expedite the preparation of the MWLP and to ensure a robust approach has been adopted. Once adopted, the Plan will undergo a 5-yearly review to ensure that it is kept up to date.

The above risks should be entered in the Growth Risk Register.

Consultees

118. Herefordshire Council undertook consultations in 2017 and 2019 to inform the publication draft MWLP, pursuant to the Town and Country Planning (Local Development) (England) Regulations 2012 (regulation 18).

    - The first consultation was undertaken on the MWLP Issues and Options during late summer 2017, over a 6-week period.
    - The second consultation was undertaken on the draft MWLP early in 2019, over a 6-week period.

119. 92 people/organisations made representations overall.

120. A Consultation Statement will be made available at the consultation on the publication draft MWLP (regulation 19) which will set out details of these consultations. It will also show: which bodies and persons were invited to make representation under regulation 18, how those bodies and persons were invited to make such representation; a summary of the main issues raised and now those issues have been addressed in the MWLP.

121. All public involvement in the MWLP's preparation process was carried out following the approach set out in the Council's Statement of Community Involvement (adopted in 2017).

122. The Council has an extensive consultation database, containing over 3,000 contact names. The list includes individual residents, developers, businesses based across the county, parish councils, community and voluntary groups, infrastructure providers, neighbouring authorities, government agencies and elected members.

123. The Council used a range of methods to engage with all potentially interested parties, in order to ensure they had the opportunity to make representations. Stakeholders and local community members were informed by email or letter about ways to get involved in the consultations. Methods of responding, both on and offline were given, in order to each the broadest audience possible.

124. The following approaches were undertaken:

- direct mail or email to contacts on the Council's database
- information made available at libraries and information centres across Herefordshire
- Cabinet Members' newsletter
- Herefordshire Council website
- Herefordshire Council social media
- presentations and exhibitions

125. Notification was sent to: Parish Councils, specified consultees, all those who had registered an interest in Herefordshire planning, stakeholders, industry contacts, statutory bodies (such as Highways England) and utility companies, neighbouring local planning authorities, agents and land owners. The correspondence included details of where to find further information and how to make representations either online or in writing.

126. All relevant documentation was made available to download on a dedicated Council webpage and in hard copy format at libraries and information centres across the County.

127. 36 responses were submitted to the issues and options consultation in 2017 and 56 responses were submitted to the draft MWLP in 2019. Many individual points were raised to the Plan's contents. The Consultation Statement will set out all points raised and the council's responses to them and how the results of these consultations have informed the MWLP's preparation.

128. In addition to the regulatory consultations, the Issues and Options and draft plan stages of preparation were fully discussed with adjoining planning authorities as part of the statutory Duty to Cooperate. As a result Memoranda of Understanding have been signed between Herefordshire, Gloucestershire, Worcestershire, Shropshire and Powys minerals and waste planning authorities and a Statement of Common Ground is also being produced setting out areas of agreement on cross-boundary matters.

129. Local members were also kept informed of the MWLP's preparation and a minerals and, in addition to mandatory governance processes prior to the two stages of statutory consultation on the Issues and Options report and the draft MWLP, a Waste Standing Panel was formed, which met three times during 2017 and 2018. The views raised at the meetings of the panel were fed into the draft MWLP's preparation.

130. On 28 September 2020 the publication draft MWLP was considered by General Scrutiny Committee. In addition to some suggestions for minor alterations to the text, which were agreed by officers, there were four main recommendations raised for consideration by Cabinet. These are set out below, together with a suggested officer response:

    - **A plain English and practical guidance/executive summary document be produced to support the report.** Agreed. It would be useful to provide a non-technical summary of the MWLP, in order to reach as wide an audience as possible.

    - **A more explicit definition, with links to the examples of acceptable sustainable development - within the context of this report - be included.** Sustainable development has been defined in the glossary of the MWLP. In sections of the text which directly mention sustainable development, references to the glossary will be added to aid technical understanding of this phrase.

    - **Whilst it is recognised that the insertion of a stronger line on preventing fracking/unconventional hydrocarbon extraction in Herefordshire may make**

the MWLP 'unsound', due to national policy guidelines - the committee wishes to voice its view and see a clearer statement from Government that fracking/extraction of unconventional hydrocarbons is unacceptable in Herefordshire. No changes to the MWLP are required in response to this recommendation, however, officers will work with the Cabinet Member Infrastructure and Transport to lobby Government for a stronger statement on fracking to be issued.

- **The current draft MWLP is endorsed to go forward to public consultation.** Agreed.

131. Consultation was undertaken with the Council's political groups between October 13 - 26 2020. The following point was raised, with the suggested officer response:

   - **Cllr B Matthews (Group Leader for Tue Independents): the group is pleased that progress is being made on the MWLP because it is so important that it is approved as soon as possible.** Noted.

132. No other responses were received. The above comment will be reported to Cabinet.

Appendices

Appendix A: Publication draft Minerals and Waste Local Plan 2020

Appendix B: Supplementary Sites Report 2019

Appendix C: Minerals Needs Assessment 2019

Appendix D: Waste Needs Assessment 2019

Appendix E: Spatial Context and Sites Report 2018

Appendix F: MWLP Appendix A Allocated Sites and Key Development Criteria

Appendix G: MWLP Figure 3

Appendix H: MWLP Figure 4

Appendix I: MWLP Figure 6

Appendix J: MWLP Figure 7

Appendix K: Publication Draft MWLP Overview

Appendix L: Table of changes to publication draft MWLP after General Scrutiny Committee on 28.09.20

Appendix M: Table of changes to publication draft MWLP after Cabinet on 01.12.20

Background papers

- Draft Minerals and Waste Local Plan 2018 https://www.herefordshire.gov.uk/download/downloads/id/16729/draft_minerals_and_waste_local_plan_january_2019.pdf

- Annex A to Draft Minerals and Waste Local Plan 2018
https://www.herefordshire.gov.uk/download/downloads/id/16730/draft_minerals_and_waste_local_plan_january_2018_annex_a.pdf

- National Planning Policy Framework 2019
https://www.gov.uk/government/publications/national-planning-policy-framework--2

- National Waste Strategy 2018
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf

- Herefordshire Core Strategy 2015
https://www.herefordshire.gov.uk/downloads/download/123/adopted_core_strategy

- Guidance on fracking: developing shale gas in the UK 2019
https://www.gov.uk/government/publications/about-shale-gas-and-hydraulic-fracturing-fracking/developing-shale-oil-and-gas-in-the-uk

- MWLP Spatial Context and Sites Report 2018
https://www.herefordshire.gov.uk/download/downloads/id/16838/spatial_context_and_sites_report_2018.pdf

- Mineral safeguarding in England: good practice advice (BGS) 2007
bgs.ac.uk/downloads/home.html

- A Green Future: Our 25 Year Plan to Improve the Environment 2018
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf

- Statement of Community Involvement 2017
https://www.herefordshire.gov.uk/download/downloads/id/1566/statement_of_community_involvement_january_2017.pdf

- Planning for the Future white paper 2020
https://www.gov.uk/government/consultations/planning-for-the-future

Glossary of Abbreviations

MWLP: Minerals and Waste Local Plan

MASS: managed aggregate supply system. The underpinning concept behind the managed aggregate supply system is that mineral planning authorities which have adequate resources of aggregates make an appropriate contribution to national as well as local supply, while making due allowance for the need to reduce environmental damage to an acceptable level.

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Herefordshire Minerals and Waste Local Plan

Publication Draft

April 2020 Updated August, September, November and December 2020

HENDECA LTD

1. The Publication Draft Minerals and Waste Local Plan for Herefordshire

1.1 About this document

1.1.1 This publication draft of the Herefordshire Minerals and Waste Local Plan (Publication Draft MWLP) sets out the council's preferred strategy for meeting the county's minerals and waste needs until 2041. It is the draft that Herefordshire Council proposes to submit to the Secretary of State for examination and is intended to be adopted.

1.1.2 This Publication Draft MWLP has been prepared following a comprehensive review of the evidence base and extensive consultation. Following a further statutory 6-week period in which representations can be made on legal compliance with relevant legislation and matters of soundness, it will be submitted, along with any proposed changes and other submission documents, for examination by an independent planning inspector.

1.1.3 Representations submitted at this stage must be made on grounds of legal compliance or soundness and be supported with evidence to demonstrate why these tests have not been met. Any representations received will be considered by the inspector as part of the examination. To be legally compliant, the MWLP has to be prepared in accordance with the Duty to Cooperate and legal and procedural requirements including the 2011 Localism Act and Town and Country Planning (Local Planning) (England) Regulations 2012 (as amended).

1.1.4 The National Planning Policy Framework (the 'Framework') presents the following tests of soundness for a Local Plan:

- Positively prepared – the plan should be based on a strategy which seeks to meet objectively assessed development and infrastructure requirements, including unmet requirements from neighbouring authorities where it is reasonable to do so and consistent with achieving sustainable development;
- Justified – the plan should be the most appropriate strategy, when considered against the reasonable alternatives, based on proportionate evidence;
- Effective – the plan should be deliverable over its period and based on effective joint working on cross-boundary strategic priorities; and
- Consistent with national policy – the plan should enable the delivery of sustainable development in accordance with the policies in the Framework.

1.2 Consultation Details

1.2.1 This Publication Draft MWLP and supporting documents, as well as full details of how to make representations on the MWLP, are available on the website: www.herefordshire.gov.uk.

1.2.3 As appropriate at the time to ensure COVID19 guidance is fulfilled, paper copies of the documents will be available to view at the Herefordshire Customer Service Centre, Blueschool House, Blueschool Street, Hereford, HR1 2LX and at the following libraries:

- Hereford Library, Broad Street, Hereford, HR4 9AU;
- Leominster Library, 8 Buttercross, Leominster, HR6 8BN;
- Kington Library, 64 Bridge Street, Kington, HR5 3DJ; and
- Leintwardine Library, Leintwardine Village Hall, High Street, Leintwardine, SY7 0LB.

1.2.4 Please check the council's website for details of library opening hours and document availabilty.

1.2.5 We recommend that you use the response form provided, as this will enable us to record your representations correctly. All representations should contain a paragraph and/or policy or site reference as relevant and appropriate.

1.2.6 You can submit your completed response form either:

- by email to: ldf@herefordshire.gov.uk;

  or

- by post to: Forward Planning – Publication Draft MWLP, Herefordshire Council, Plough Lane, Hereford, HR4 0LE.

1.2.7 The closing date for representations is 1700 hours on DATE 2021 SUGGEST IT IS A SUNDAY?.

1.2.8 Please note that we are unable to accept representations received after this deadline.

1.2.9 If you would like to speak to someone about this Publication Draft MWLP, please contact either:

- Kevin Singleton, Strategic Planning Manager, using email: kevin.singleton@herefordshire.gov.uk;

  or

- Victoria Eaton, Senior Planning Officer, using email: vicky.eaton@herefordshire.gov.uk.

2. Introduction and Background

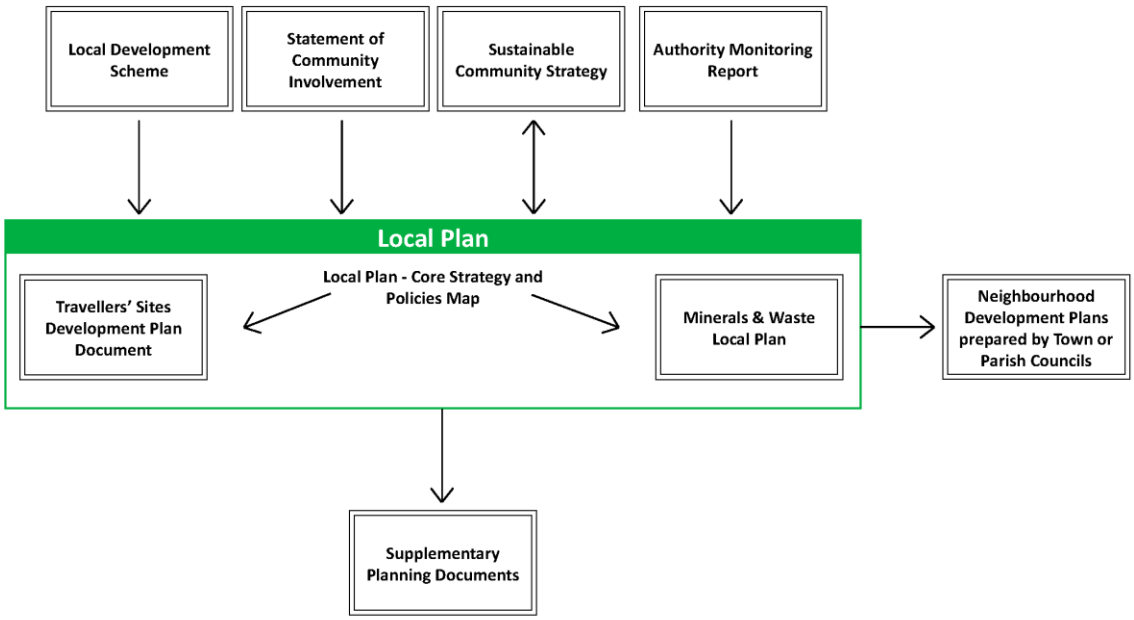
2.1 The Herefordshire Local Plan

2.1.1 The council has prepared a Local Plan, to comprise of a number of documents including the Core Strategy, to guide development and change in the county up to 2031. A list of all the Local Plan documents and the timetable for their preparation are set out in the Local Development Scheme.

2.1.2 This first document in the production of the Local Plan, and adopted in October 2015, is the Core Strategy[1]. This development plan document shapes future development and sets the overall strategic planning framework for the county.

2.1.3 When adopted, the Minerals and Waste Local Plan will be another element of the Herefordshire Local Plan as shown in Figure 1.

Figure 1 Structure of the Herefordshire Local Plan



2.1.4 As set out in the Core Strategy (paragraph 1.10), this MWLP establishes targets and planning policies relating to minerals and waste activities and associated development in Herefordshire. The plan period has been extended to 2041 to provide for the timeframe sought in the National Planning Policy Framework[2] and to sit alongside the updated Core Strategy.

2.1.5 The MWLP has been produced taking account of the National Planning Policy Framework[3], Planning Practice Guidance[4], up-to-date evidence base studies and ensuring close co-operation with neighbouring local authorities on cross-boundary issues. Regard has also been given to other plans and strategies produced by the council (particularly the Core Strategy, including its review and update) and other organisations.

[1] https://www.herefordshire.gov.uk/info/200185/local_plan/137/adopted_core_strategy
[2] Page 9, paragraph 22, National Planning Policy Framework, February 2019.
[3] https://www.gov.uk/government/publications/national-planning-policy-framework--2
[4] https://www.gov.uk/government/collections/planning-practice-guidance

2.1.6 The MWLP has been subject to independent assessment:

- Sustainability Appraisal, which is assessing the social, economic and environmental impacts of the MWLP throughout the development of the document;
- Habitats Regulations Assessment, which has assessed any impacts on protected European sites; and
- Strategic Flood Risk Assessment (SFRA), to assess flood risk in the plan area, and the risks to and from surrounding areas as a result of minerals and waste development.

2.2 Timeframe, scope and purpose of the MWLP

2.2.1 The MWLP will cover the period up to 31 December 2041 and applies across the administrative area of Herefordshire. More detail regarding the plan area and the consequent spatial strategy is set out in section 4.

2.2.2 The main purpose of the MWLP is to provide guidance to developers, local communities and other interested parties on where and when minerals and waste development may be expected over the plan period, as well as how it will be managed to reduce adverse impacts and maximise benefits. Minerals development includes activities such as mining, quarrying and gas extraction. Waste development includes activities such as waste recycling and the treatment and disposal of waste.

2.2.3 The MWLP forms part of the statutory development plan and the council will use it, along with the Core Strategy, as the starting point for decisions on planning applications for development relating to these activities. Where the MWLP contains relevant policies, decisions will be made in accordance with those policies, unless there are other material considerations related to planning, which indicate otherwise.

2.2.4 The MWLP must be read as a whole. Whilst the specific policies in the MWLP are particularly significant in setting out the key principles on which decisions will be based, the supporting text explains in more detail how the individual policies will be interpreted and applied. It will therefore be used by the council, in conjunction with the policies, to guide its approach to decision-making.

2.3 Why does Herefordshire need to plan for minerals and waste?

Minerals

2.3.1 Minerals and waste management infrastructure are essential to support a modern economy.

2.3.2 Minerals are important as they provide many of the raw materials necessary for construction, energy and industry. They are therefore essential in helping to sustain economic growth. For these reasons, Government attaches importance to planning for their supply, whilst at the same time requiring that the impacts of extracting them are kept within acceptable limits. An important consideration in planning for minerals is that they can only be worked where they occur in sufficient quantity and quality, and this fundamental geological constraint will always be a key influence on minerals planning.

2.3.3 Minerals gained from across the UK are required throughout the construction, manufacturing, chemicals and energy industries; for example: sand and gravel are used to build houses; silica sand is used to make glass; and hydrocarbons are used to make energy. However, within

Herefordshire minerals are primarily used in the construction industry, for example local building stone is used to repair historic buildings.

2.3.4 The geology of Herefordshire incorporates the: dramatic contortions of the ancient Malvern Hills (the oldest in England); internationally renowned fossil records of Silurian limestones; and glacial remains and river gravels revealing ice age history and astonishing changes of drainage patterns among the tributaries of the River Wye. Mineral extraction can provide good opportunities for geological and archaeological research and net benefits following reclamation.

Waste

2.3.5 Dealing with waste is a major challenge for society and needs to be addressed alongside other initiatives to improve the sustainability of our environment and economy. Many items discarded as waste have the potential to be re-used, recycled or used as a resource.

2.3.6 Managing waste in these ways has benefits in reducing the amount of natural resources that are consumed. For example, re-using or recycling materials generated during demolition activity can reduce the need for extraction of new minerals. At the same time, it can reduce the need for landfilling of waste. Treating waste as a resource can also lead to new opportunities for the economy, with the outputs of modern waste management processes acting as inputs to businesses that can use them. The circular economy encapsulates this approach, seeking to keep materials at their highest value for the longest period of time.

2.3.7 A network of waste management facilities is required to ensure that the appropriate infrastructure is in place to maximise its potential use as a resource and to avoid significant adverse impacts on the environment and communities. For example, there is a network of household waste recycling centres across Herefordshire, which enables householders to deposit items no longer required at a location where they can be recycled or disposed of safely.

Policy

2.3.8 Whilst any minerals or waste development proposal would be subject to the Core Strategy, that development plan document does not specifically address these sectors. The MWLP provides the strategic direction and development management policies necessary to enable sustainable minerals and waste development.

2.3.9 Minerals and waste policy is currently contained in the Unitary Development Plan, adopted in 2007. Much of the Unitary Development Plan has been replaced by the Core Strategy, with just the minerals and waste policies being saved. These policies will be replaced by the MWLP; it is important to update the minerals and waste policies to ensure a modern policy framework is in place.

2.4 Evidence Base

British Geological Survey[5]

2.4.1 British Geological Survey is the standard provider of objective and authoritative geoscientific data, information and knowledge to help society to:

- use its natural resources responsibly;
- manage environmental change; and
- be resilient to environmental hazards.

2.4.2 British Geological Survey was commissioned to prepare comprehensive mapping of the geology and mineral reserves across Herefordshire. This information became available in early 2017 and has been used in the sites analysis.

2.4.3 The British Geological Society also prepares data on sand and gravel and aggregate production and consumption, with the latest available dataset based on 2014. This data has been used to inform the Minerals Need Assessment; whilst it is recognised to have its limitations as a dataset, it is the most credible data available. The information has also been reviewed against more strategic minerals relevant reporting, including 'Collation of the results of the 2014 Aggregate Minerals Survey for England and Wales' (March 2016)[6].

Coal Authority[7]

2.4.4 The Coal Authority is an executive non-departmental public body, sponsored by the Department for Business, Energy & Industrial Strategy. It manages the effects of past coal mining, including subsidence damage claims that are not the responsibility of licensed coal mine operators. It also deals with mine water pollution and other mining legacy issues.

2.4.5 The Coal Authority prepares a series of maps that have been referred to in preparing the MWLP.

Call for Sites

2.4.6 In 2016 and 2017, Herefordshire Council made a 'call for sites', asking minerals and waste site operators and landowners to put forward site proposals to consider for future minerals or waste development and to outline future aspirations for existing sites.

2.4.7 These have been considered in the Spatial Context and Sites Report.

2.4.8 Respondents were invited to comment on the sites proposed to be allocated and to put forward any additional suggestions. One new site was put forward and has been considered in the Supplementary Sites Report.

Minerals and Waste Need Assessments

2.4.9 The need assessments seek both to identify current supply of minerals and waste management capacity and to forecast demand. They provide the essential evidence to determine what future requirements for both mineral supply and waste management capacity can reasonably be expected to be, such that this can be planned for in the MWLP.

[5] http://www.bgs.ac.uk

[6] https://www.gov.uk/government/publications/aggregate-minerals-survey-for-england-and-wales-2014

[7] https://www.gov.uk/government/organisations/the-coal-authority

2.4.10 Separate minerals and waste need assessments were prepared in February 2017 and accompanied the Issues and Options consultation. Each assessment was then updated, to reflect comments made in the consultation responses and to incorporate new data that had become available. The updated need assessments were finalised in November 2018 and accompanied the consultation on the Draft MWLP.

2.4.11 Both minerals and waste need assessments were undertaken again in late 2019 using the latest available information. These are reported in the: Minerals Need Assessment 2019 ('MNA 2019'); and Waste Need Assessment 2019 ('WNA 2019').

Local Aggregate Assessment

2.4.12 Mineral planning authorities are required to prepare a Local Aggregates Assessment (LAA) on an annual basis. They should be based on a rolling average of 10 years sales data and other relevant local information and include an assessment of all supply options for aggregates minerals.

2.4.13 In preparing the 2018 LAA, the relevant data and historical entries were comprehensively reviewed, such that it provided a robust baseline for the mineral need assessment and for monitoring the MWLP.

2.4.14 The LAA was updated again in late 2019.

Minerals Safeguarding Studies

2.4.15 The National Planning Policy Framework requires planning authorities to define Minerals Safeguarding Area(s), to protect resources from sterilisation by other forms of development. The analysis of the British Geological Survey data is presented in the Spatial Context and Sites Report. This data, and responses to consultation, have informed the approach to mineral safeguarding within the MWLP.

Sustainability Appraisal, Habitats Regulation Assessment and Strategic Flood Risk Assessment

2.4.16 Sustainability Appraisal is a requirement for all development plan documents. Sustainability is about ensuring the long-term maintenance of well-being and the environment for our present and future communities. The process assesses the impact of the MWLP on the environment, people and the economy. It incorporates the requirements of the European Directive on Strategic Environmental Assessment.

2.4.17 Following consultation with key local, regional and national organisations such as the Environment Agency, Natural England and Historic England, sustainability criteria were agreed covering issues such as: air quality; water quality and quantity; landscape; health and economic performance.

2.4.18 Habitats Regulations Assessment (HRA) has been used to assess the emerging MWLP to assess whether there would be likely significant effects on sites of international importance for wildlife (European sites). Where a land use plan is likely to have a significant effect on such sites, an appropriate assessment must be carried out of the implications in respect of their conservation objectives.

2.4.19 Strategic Flood Risk Assessment (SFRA) for Herefordshire has been carried out at Levels 1 and 2, focussing on key development areas. This informed the emerging MWLP prior to a SFRA being completed on the plan. In early 2020, a Level 2 SFRA was undertaken of the MWLP, which has informed preparation of this Publication Draft MWLP.

2.5 Flexibility

2.5.1 The Publication Draft MWLP has been prepared to enable appropriate development to occur within the context of change likely to occur both nationally and within Herefordshire. This might be driven by amendments to national policy and updates to the evidence base, or by external impacts such as new waste management practices and mineral demand. More specifically, situations which may arise are: new minerals or waste management resources failing to come forward as planned; infrastructure not being provided at the same time as development; or market changes adversely affecting the viability of development.

2.5.2 The evidence base will be kept up to date and specific studies e.g. the LAA will be reviewed annually. All of the policies are written to refer to national policy and the evidence base rather than repeat them. This allows the policies to be effective even where there are minor changes to higher level policies or the evidence base.

2.6 Consultation

2.6.1 One of the main principles of development plan preparation is that local communities are involved from the outset. This approach is set out in national policy and in Herefordshire's Statement of Community Involvement 2017, which forms part of the Herefordshire Local Plan. To ensure early engagement on the preparation of the Draft MWLP and the opportunity to comment and help shape it, Issues and Options consultation was undertaken from 14 August to 6 October 2017.

2.6.2 Consultation on the Draft MWLP and its accompanying evidence base document occurred over the period 21 January to 4 March 2019, including a consultation event held on 5 February 2019. The responses received were carefully reviewed and have, were appropriate, informed the content of the Publication Draft MWLP.

2.6.3 This Publication Draft MWLP is the final stage of consultation being undertaken prior to the document being submitted for examination.

3. Context

3.1 Spatial portrait of the plan area

Overview

3.1.1 A detailed portrait of the plan area can be found within evidence supporting the Publication Draft MWLP and the Core Strategy, all of which can be viewed at www.herefordshire.gov.uk.

3.1.2 The plan area for the MWLP comprises the administrative area of Herefordshire Council; a large, predominately rural, landlocked county situated in the south western corner of the West Midlands region and on the eastern border of Wales.

Figure 2 The Plan Area

Would be better to insert the original graphic

Minerals

3.1.3 Known mineral resources in Herefordshire are relatively limited in range, primarily consisting of aggregates for use in construction but also a small amount of building stone. Aggregates comprise: sand and gravel; crushed rock (limestone); and secondary or recycled materials gained from quarry and waste operations.

3.1.4 Key areas for minerals in Herefordshire are:

- Sand and gravel:
  - river terrace deposits are mainly found in the river valleys of the Wye, Lugg and Arrow; and
  - glacial deposits are present in the north and west of Herefordshire.
- Crushed rock:
  - silurian limestone is found on the western side of the Malvern Hills and Ledbury, the Woolhope dome and in the north-west of the county in the Presteigne/Aymestrey areas;
  - carboniferous limestone is present to the south-west of Ross-on-Wye on the northern flanks of the Forest of Dean; and
  - igneous and metamorphic rock occurs in the Malvern Hills.
- Sandstone occurs extensively throughout much of Herefordshire and several operational quarries exist in the north, west and south of the county. The output is of particular importance for heritage restoration and in creating authentic character for new-build properties.

3.1.5 Coal is no longer extracted in Herefordshire, but was formerly worked in two locations:

- the southern tip of the Wyre Forest Coalfield, which extended into the north of the county, near the boundary with Worcestershire and Shropshire; and
- a small outlier site of the Forest of Dean Coalfield, which extended into southern Herefordshire.

3.1.6 In 1999, the British Geological Survey reported[8] that the hydrocarbon prospectivity of the county was low. Wells drilled to test the oil and gas potential of sandstones in the Worcestershire Basin and rocks in the Woolhope Inlier failed to discover hydrocarbons.

3.1.7 In December 2015, a small block of land in the south of the county was offered for onshore hydrocarbon exploration, appraisal and extraction in relation to coalbed methane. This offer was declined by the energy company to which it was offered and has not been made available again.

3.1.8 It is considered highly unlikely that there will be any activities relating to the exploration or extraction of hydrocarbons within Herefordshire in the short term. In the medium to long term, it is possible that this situation may change but, recognising current policy on minimising carbon emissions this is considered to be unlikely.

[8] Mineral Resource Information for Development Plans: Phase One Herefordshire and Worcestershire: Resources and Constraints, British Geological Survey and the Department of the Environment Transport and the Regions, 1999

3.1.9 There are currently eleven consented mineral workings in Herefordshire that could be worked during the plan period:

- Sand and gravel:
  - Shobdon Quarry (inactive at the time of preparing the MWLP)
  - Upper Lyde Quarry
  - Wellington Quarry
- Limestone/Crushed rock:
  - Leinthall Quarry
  - Perton Quarry
- Sandstone:
  - Callow Delve
  - Black Hill Delve
  - Llandraw Delve
  - Pennsylvani Delves
  - Sunnybank Delve
  - Westonhill Wood Delves

3.1.10 There are also a number of quarries that are mothballed, closed or abandoned. All the sites are shown on Figure 3.

3.1.11 Data (from 2014) that has been made available from the British Geological Survey, though not verified by the organisation, indicates that Herefordshire provides 40% to 50% of its own sand and gravel demand, but only 20% to 30% of its crushed rock demand. This may be due to the particular quality of the limestone, which representatives on site describe as quite soft and not suitable for road building. According to the British Geological Survey data, the most significant import of sand and gravel is from Staffordshire (30% to 40%) and of crushed rock is from Powys (40% to 50%).

3.1.12 In addition, Herefordshire hosts some key elements of ancillary infrastructure, notably the Moreton-on-Lugg railhead used to transport mineral from Wellington Quarry to the south east of England, predominantly London. However, the mineral travelling by rail freight is mainly crushed rock from quarries located in Wales. Otherwise, minerals travel by road as there is no other transport mode available within Herefordshire. Concrete batching plant, concrete block making plant and coating plant operate on working quarries and industrial estates around Herefordshire.

3.1.13 Secondary and recycled materials have an important role to play in the overall supply of aggregates. Secondary aggregates are minerals that are produced as a by-product of other mining or quarrying activities or as a by-product of an industrial process. Recycled aggregates arise from several sources, notably from the demolition of buildings or from civil engineering works such as asphalt planings from road resurfacing and railway track ballast. Recycling aggregates usually involves the removal of unwanted or inappropriate material such as fines, wood, plastic and metal, and some form of treatment (crushing, washing and/or screening) to reach industry standards for its re-use.

3.1.14 There are no known viable resources within Herefordshire for silica sand, clay or any other mineral. These are not considered further.

INSERT: Figure 3 Minerals in Herefordshire and Permitted Quarries/Delves

[refer to PDF]

Note to Herefordshire Council … hendeca can help make all these pdf mapping available digitally via the HC website if that would be useful

Waste

3.1.15 Waste is generated from a wide range of domestic, commercial and industrial activities. The main waste types are:

- Local Authority Collected Waste (LACW) which includes household waste and other wastes collected by local authorities;
- Commercial and industrial (C&I) waste; this includes waste from businesses and manufacturing companies;
- Construction, demolition and excavation (CD&E) waste; these wastes can be produced through a wide range of building projects, from home renovations to major redevelopments;
- Hazardous waste; waste is generally considered hazardous if it is harmful to humans or the environment, particularly through being toxic, corrosive or an irritant - examples of hazardous waste include asbestos, chemicals such as brake fluid or print toner;
- Agricultural waste includes both natural, such as animal manure, animal bedding and crop waste, and non-natural, such as plastic wrapping or bottles;
- Low level (non-nuclear industry) radioactive waste, such as is used in research laboratories; and
- Wastewater; is used water from any combination of domestic, industrial, commercial or agricultural activities such as surface runoff or stormwater, and any sewer inflow or sewer infiltration - in Herefordshire this waste stream is managed by Dwr Cymru/Welsh Water and Severn Trent Water.

3.1.16 The amount and type of waste produced, and the ways in which it is managed, partly reflects the environmental, social and economic characteristics of the area. Concentrated populations and commercial/industrial activities, as are found in Hereford and the five market towns are the largest producers of waste, and this is generally reflected in the pattern of waste management facilities within Herefordshire. The more interesting pattern in Herefordshire is the number of anaerobic digestion and biological treatment facilities dispersed around the county, reflecting its strong agricultural sector.

3.1.17 The waste need assessments identify that most of the waste (80% and more) managed in facilities operating in Herefordshire was generated in the county. These facilities also receive waste from other authorities, principally those in Wales, the West Midlands and Gloucestershire.

3.1.18 However, whilst there is a range of waste management facilities (including transfer, re-use and recycling) consented in Herefordshire that address a variety of wastes, there are no residual waste management facilities, such as energy from waste plant or landfill sites.

3.1.19 Herefordshire Council has historically worked with Worcestershire County Council to manage effectively the authorities' LACW. This collaboration has resulted in the production of a Joint Municipal Waste Management Strategy and joint procurement of strategic waste management capacity (EnviroSort and EnviRecover). Whilst these facilities are not located in Herefordshire, this arrangement means that long-term capacity is available to manage Herefordshire's LACW.

3.1.20 Wastes are exported from Herefordshire, predominantly for materials recovery, energy recovery and disposal to landfill, with the most significant exports made to the Vale of Glamorgan and Cardiff. This pattern of movement indicates a need for more residual waste management capacity in Herefordshire.

3.1.21 The waste facilities consented in Herefordshire in 2019 are all shown on Figure 4.

INSERT: Figure 4 Permitted Waste Facilities in Herefordshire

[refer to PDF]

Minerals and waste development

3.1.22 There are important links between minerals and waste development. The efficient use of materials such as recycled aggregate, as alternatives to primary minerals, can help to conserve natural resources. Quarries may have potential for the disposal of waste as part of the reclamation process, and in some cases, the disposal of inert waste by landfill or landraise can help to improve the quality of derelict or degraded land. These links are reflected in the content of the MWLP.

3.1.23 Both minerals and waste development has the potential to give rise to adverse impacts, for example effects on the landscape, through the impact of vehicle movements, or the generation of dust or other forms of pollution.

3.1.24 Just as importantly, minerals and waste developments can also deliver benefits. For example, through the careful design, operation and reclamation of mineral sites it can be possible to enhance wildlife habitats, improve the provision of floodwater storage capacity or deliver other environmental benefits to help support local businesses and the economy. Some waste developments are able to produce power or heat for use by local consumers. Through delivery of the circular economy, materials can be retained at their highest value for as long as possible; minimising the use of raw resources and reducing environmental impacts.

3.1.25 A key role for the MWLP is to develop planning policies that promote appropriate development that meets the recognised market needs, whilst ensuring that detrimental impacts are minimized and opportunities for betterment are optimized.

3.2 Working with other authorities

Local Authority Collected Waste

3.2.1 Herefordshire and Worcestershire's Joint Municipal Waste Management Strategy: Managing Waste for a Brighter Future[9] (the Waste Strategy) was first published in 2004. It was prepared and adopted by the eight local authorities across Herefordshire and Worcestershire.

3.2.2 A detailed review and republication of the Waste Strategy was completed in 2011. This set a suite of principles, policies and targets for the management of municipal waste across both counties. As part of this work, and in line with Government guidance, the authorities committed to review the Strategy at least every 5 years.

3.2.3 An Addendum to the Waste Strategy was prepared in September 2017, to provide a summary of the 2016 review of the Waste Strategy. In particular it includes:

- information on significant changes/ developments in Government waste management policy since 2011, including potential future changes to European policy;
- updates on waste management data including waste growth predictions; and
- commentary on performance against key principles, policies and targets within the Strategy.

[9] https://www.herefordshire.gov.uk/downloads/file/1428/herefordshire_and_worcestershire_joint_waste_strategy

3.2.4 The review process and the production of the Addendum has been undertaken by the Strategic Waste Management Board, which represents the eight authorities across Herefordshire and Worcestershire.

3.2.5 The Addendum confirms that the authorities continue to invest in the existing processing and collection capabilities, with the example of EnviroSort, the material reclamation facility having been refurbished to include the provision of a glass breaker and improved fire protection system. However, the Addendum also makes clear the challenges that lie ahead in delivering the Strategy, recognising financial constraints and budget cuts.

3.2.6 No new infrastructure is identified and the facilities in place currently should be available for the plan period and beyond.

Duty to co-operate

3.2.7 Herefordshire is a landlocked county that does not exist in isolation from its neighbours; both minerals and waste are materials driven by market demand that consequently readily cross administrative boundaries. The MWLP takes account of these movements and the wider challenges, issues and opportunities presented by them.

3.2.8 Cross-boundary working is already in place through the joint waste management approach with Worcestershire County Council and discussions with other neighbouring authorities has taken place during the preparation of the MWLP. This has been undertaken through on-going liaison with neighbouring authorities, discussions at the regional level, and through the review of proposals within adjoining local plans and other development plan documents.

3.2.9 Herefordshire is an active member of both the Technical Advisory Body (considering waste matters) and the Aggregates Working Party (considering minerals) comprising authorities of the former West Midlands Region and other interested parties, including representatives from the Environment Agency and industries.

3.2.10 Herefordshire has sought to provide a positive policy framework to bring forward deliverable development to meet its own needs and to provide for those identified through these meetings.

3.3 Policy Context

European

3.3.1 At the time of writing (March 2020) the UK is in a transition period of negotiation with the EU, expected to last until the end of 2020. During this transition period, exiting legislation remains in place and applicable across the UK .

3.3.2 The details of any final deal(s) made with the EU are not currently known. In relation to the wide ranging environmental legislation relevant to the MWLP, it is not unreasonable to expect that existing legislation will remain in place and this is the approach adopted in preparing the MWLP.

3.3.3 Consequently, existing EU legislation is referenced throughout the MWLP.

National policy

3.3.4 The National Planning Policy Framework (the 'NPPF', February 2019) contains the Government's overarching policies on minerals planning. The NPPF identifies a need to ensure that a continuous supply of minerals is available to support the economy and states that great weight should be given to the economic benefits of minerals extraction, whilst also making clear that minerals should be used sustainably. It identifies a range of minerals that are of '*local and national importance*' for which planning authorities should have policies. Minerals of 'local and national importance' that lie within Herefordshire are: aggregates; coal; gas; and building stone.

3.3.5 The NPPF sets out specific policies in relation to the supply of a number of types of minerals. Relevant to the MWLP, it requires the maintenance of landbanks of at least 7 years for sand and gravel, and at least 10 years for crushed rock and states that planning authorities should consider how to meet demand for minerals required for the repair of heritage assets.

3.3.6 In aiming to reduce the need to extract primary minerals and find uses for waste materials, the NPPF requires planning authorities to take account of the contribution that substitute or secondary and recycled materials and minerals waste would make to the supply of materials, before considering extraction of primary materials. It also places an emphasis upon safeguarding mineral resources for future use and safeguarding minerals infrastructure.

3.3.7 The NPPF seeks to conserve important landscape and heritage assets by requiring that landbanks for non-energy minerals are provided outside National Parks, Areas of Outstanding Natural Beauty, Scheduled Monuments and World Heritage Sites. In National Parks and Areas of Outstanding Natural Beauty, many minerals and waste developments would be classed as 'major development' and should not be granted consent except in exceptional circumstances, as defined by a series of considerations known as the 'major development test'.

3.3.8 The MWLP can enable a steady and sustainable supply of construction minerals to be delivered through a positive policy approach, identifying sites for quarry working and preferred areas of search.

3.3.9 The NPFF was published (in February 2019) advising mineral planning authorities to recognise the benefits of on-shore oil and gas development, including for unconventional hydrocarbons (at paragraph 209a). Ministerial Written Statement[10] made on 23 May 2019 confirms that '*paragraph 209(a) of the National Planning Policy Framework has been quashed*.' In November 2019, the Government issued a moratorium on the hydraulic fracturing of hydrocarbons.

3.3.10 A further important consideration, relevant to planning for both waste and minerals, is the Climate Change Act 2008[11] and an associated requirement at a national level to reduce greenhouse gas emissions by 80% below 1990 levels by 2050.

3.3.11 In 2019, this legislative framework was extended by the UK wide target to bring all greenhouse gas emissions to net zero by 2050. Net zero means any emissions would be

[10] Reference: HCWS1586

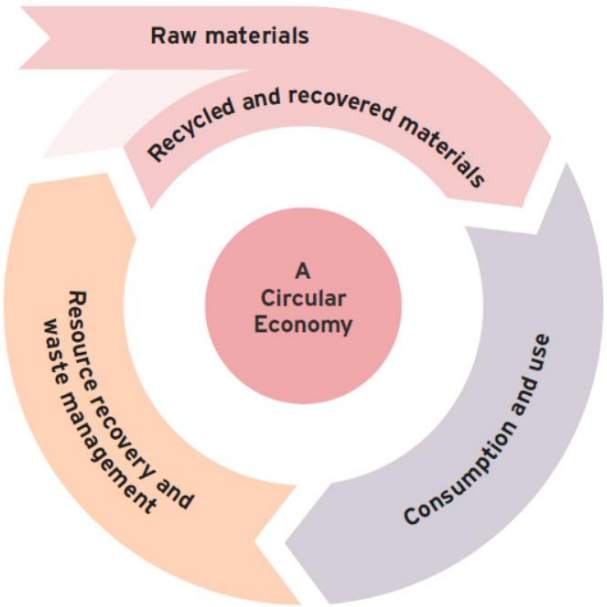
[11] https://www.legislation.gov.uk/ukpga/2008/27/contents

balanced by schemes to offset an equivalent amount of greenhouse gases from the atmosphere, such as planting trees or using technology like carbon capture and storage.[12]

3.3.12 The Government's 25 Year Environment Plan[13] (2018) presents policy relevant to both minerals and waste development as it sets out the priority actions intended to '*help the natural world regain and retain good health*.'

3.3.13 The NPPF does not contain specific policies on planning for waste management, although its policies generally remain relevant. National waste planning policy is informed by European waste policy such as the Directive 2018/851 of the European Parliament and of the Council[14] (the 'rWFD', which came into force on 4 July 2018, and amends Directive 2008/98/EC on waste). The rWFD introduces the legislation relevant to delivery of the circular economy and clarifies the concepts of waste hierarchy, self-sufficiency and nearest appropriate installation. In December 2018, Defra published 'Our Waste, Our Resources: A Strategy for England'[15] (the 'Resources and Waste Strategy'). This was the first significant waste policy intervention by the Government in over a decade; delivery of the circular economy is a core focus of the document. Figure 5 is taken from the RWS.

Figure 5 The circular economy, Resources and Waste Strategy



3.3.14 National Planning Policy for Waste[16] ('NPPW') was published in October 2014 and should be read alongside the Waste Management Plan for England.

[12] https://www.gov.uk/government/news/uk-becomes-first-major-economy-to-pass-net-zero-emissions-law
[13] A Green Future: Our 25 Year Plan to Improve the Environment, 2018, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf
[14] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2018.150.01.0109.01.ENG
[15] https://www.gov.uk/government/publications/resources-and-waste-strategy-for-england
[16] https://www.gov.uk/government/publications/national-planning-policy-for-waste

3.3.15 NPPW states that planning strategies should help to drive waste up the waste hierarchy, deliver sustainable development and resource efficiency, provide appropriate infrastructure and enable businesses and communities to take more responsibility for their own waste without harming human health or the environment. The waste hierarchy places priority on the prevention of waste, followed by re-use, then recycling, then other recovery (which can include recovering energy from waste) and finally disposal as a last resort.

3.3.16 Enabling the management of waste at higher levels of the waste hierarchy will require actions by a wide range of businesses, other organisations and the public, as well as Herefordshire Council.

3.3.17 The MWLP can play a role in moving waste up the hierarchy by encouraging and supporting proposals which facilitate reuse, recycling and recovery and discourage incineration without energy recovery and landfill. However, landfill can play an important role in the reclamation of mineral workings and therefore, in some circumstances, can be justified.

3.3.18 Currently, waste management is evolving to deliver the concept of the circular economy. A circular economy is about valuing our products differently and creating a more robust economy in the process. By assessing how we design, make, sell, re-use and recycle products we can determine how to get the maximum value from them, both in use and at the end of their life.[17]

3.3.19 The concept of the circular economy is considered to incorporate the key priorities of the waste hierarchy and develop these to provide a positive environment within which new, innovative resource use and waste management solutions can be developed. Much of the circular economy priorities will be achieved outwith the MWLP, for example through improved product design. However, the MWLP can contribute through encouraging development of complementary sectors alongside each other and enabling new facilities to support the retention of waste at its highest value. The MWLP has been developed to help the circular economy thrive in Herefordshire, with policy focussed on keeping resources at their highest value for as long as possible.

3.3.20 Self-sufficiency is an important principle, but cannot always be delivered. For example, the minerals evidence base suggests that the county simply does not have all the types of minerals required to support all the development that is likely to occur over the plan period. This limitation can be counterbalanced by optimising those factors that can be influenced. For example, through encouraging innovative solutions to maximise recycled products to replace virgin materials.

3.3.21 The management of waste is also not constrained by local authority boundaries. As explained above, Herefordshire Council has a joint contract with Worcestershire County Council. Evidence suggests that there are both imports and exports of waste across the West Midlands region, as well as imports of waste from authorities in Wales. Whilst some of these movements may be part of well-established patterns of waste management, other movements may take place in a more ad hoc way, depending on shorter term commercial and market considerations. There is nothing in legislation or policy that says accepting waste from

[17] WRAP, formerly a government agency is now a charity that works with governments, businesses and communities to deliver practical solutions to improve resource efficiency. http://www.wrap.org.uk/content/how-wrap-supports-circular-economy

another authority or region is a bad thing and, indeed, in many cases it may be the best economic and environmental solution.

3.3.22 The approach followed by authorities across the West Midlands is to seek to achieve 'equivalent self-sufficiency', which means that the capacity provided in any authority would be adequate to treat waste that arises in that authority, but allows for the inevitable cross-boundary movements that occur.

3.3.23 Similarly, the authorities in the West Midlands seek to deliver the Managed Aggregate Supply System (MASS), the underpinning concept of which is that mineral planning authorities that have adequate resources of aggregates make an appropriate contribution to national as well as local supply, while making due allowance for the need to reduce environmental damage to an acceptable level.

Local policies and strategies

3.3.24 The Core Strategy and Joint Municipal Waste Management Strategy are important context documents for the MWLP; these have been outlined above.

3.3.25 In March 2019 Herefordshire Council unanimously declared recognition of the climate emergency. In September 2019 the council formally committed to becoming a net zero carbon council by 2030 and working with strategic partners, residents and local organisations to help the county as a whole achieve carbon neutrality by 2030. Herefordshire Council's third Carbon Management Plan is titled 'Pathway to Carbon Neutral Carbon Management Plan 2020/21-2025/26'. It sets out the council's targets and achievements towards being carbon neutral by 2030. In addition, the council has since early 2019 been working in partnership with a group of stakeholders from environment, business and community sectors on an action plan to help Herefordshire achieve carbon neutrality by 2030.

3.3.26 The aim of Invest Herefordshire, Herefordshire's Economic Vision[18] is to realise the full economic potential of the county through a coordinated plan. The Strategic Economic Plan[19] (the 'SEP', 2019), published by the Marches Local Enterprise Partnership, seeks to grow the local economy from £8.78 billion 2016 to 23.8 billion by 2038; equivalent to an average annual growth of 2.3% per annum in GVA. The MWLP will help to deliver these key economic priorities, supporting the growth of Herefordshire, and attracting investment to Herefordshire.

3.3.27 There are two Areas of Outstanding Natural Beauty (AONB) in Herefordshire: the Malvern Hills; and the Wye Valley. The Malvern Hills AONB Management Plan 2014-2019[20] recognises that the striking scenery in the AONB is ultimately dependent on the rocks that lie beneath the ground surface and has a consequent aim to preserve, promote and wisely use the geodiversity of the AONB. The Wye Valley AONB Management Plan 2015-2020[21] recognises the variety of geological outcrops and rich wildlife habitats, not least as reflected in the presence of separate Special Areas of Conservation. Conserving and, where necessary,

[18] https://www.herefordshire.gov.uk/info/200145/business/754/invest_herefordshire/1

[19] https://www.marcheslep.org.uk/download/economic_plans/strategic-economic-plan-update-2019/The-Marches-LEP-Strategic-Economic-Plan-2019.pdf [30.11.2019@16:19]

[20] http://www.malvernhillsaonb.org.uk/managing-the-aonb/management-plan/

[21] http://www.wyevalleyaonb.org.uk/index.php/about-us/management-and-guidance/management-plan-2015-2020/

enhancing the natural beauty of this unique landscape is a primary theme. These will be revised throughout the lifetime of the MWLP.

3.3.28 The Green Infrastructure Strategy[22] (2010) was prepared as part of the evidence base for the Core Strategy. It provides a baseline of green infrastructure assets within Herefordshire and establishes a vision for their future, including producing guidelines for developer and identifying projects to achieve improvements across the county. The MWLP will help to deliver some of these objectives, principally through site reclamation.

3.3.29 The Renewable Energy Study[23] (2010) presents baseline data and identifies future renewable and low carbon energy resources. It recognises biomass (incorporating waste wood, municipal waste and agricultural waste) as a potential generation source for heat and electricity and identifies the strategic urban extensions as potentially appropriate locations for combined heat and power facilities and/or district heating networks. The MWLP will help to drive waste recovery facilities to these locations such that a beneficial contribution can be made to delivering renewable/low carbon energy to Herefordshire. Taking waste out of landfill is one the most effective ways that the MWLP will contribute to reducing Herefordshire's carbon emissions.

3.3.30 The Local Transport Plan 2016-2031[24] was redrafted to reflect the Core Strategy and sets out the council's strategy for supporting economic growth, improving health and wellbeing and reducing the environmental impacts of transport. These principles have been incorporated into the MWLP.

3.3.31 Dwr Cymru/Welsh Water's Water Resources Management Plan[25] (2019) provides an overview of water resources across its delivery area, including Herefordshire, presents its approach to management the supply and demand balance and identifies deficit zones. The aim of achieving Good Ecological Status as required by the European Water Framework Directive is a key element of the company's environmental sustainability commitments..

3.3.32 In May 2014, the Environment Agency and Natural England published the River Wye SAC Nutrient Management Plan, Evidence base and options appraisal[26] (the River Wye SAC NMP). This identified that phosphate loss to watercourses is a particular issue in rural catchments with a high degree of agricultural activity, such as in the upper River Wye and River Lugg sub-catchments. This document will undergo review and updates through the lifetime of the MWLP.

3.3.33 The Rivers Wye, Lugg, Teme and Clun are identified as Sites of Special Scientific Interest and that the River Wye, including part of the River Lugg, part of the River Clun and Downton Gorge on the River Teme are also designated as Special Areas of Conservation.

3.3.34 The water quality of Herefordshire's main rivers and their tributaries is of strategic importance. High levels of phosphates have been identified as a particular problem, with concentration levels exceeding targets along part of the rivers.

[22] https://www.herefordshire.gov.uk/greeninfrastructure
[23] https://www.herefordshire.gov.uk/downloads/file/1689/renewable_energy_study
[24] https://www.herefordshire.gov.uk/downloads/file/2912/local_transport_plan_2016-2031_strategy
[25] https://www.dwrcymru.com/en/My-Water/Water-Resources/Final-Water-Resources-Management-Plan-2019.aspx
[26] https://www.gov.uk/government/publications/nutrient-management-plan-river-wye

3.3.35 In November 2018, judgement was handed down from the Court of Justice of the European Union in the case of *Cooperatie Mobilisation* (Joined Cases C-293/17 and C-294/17, the 'Dutch Case'). The Dutch Case concluded that where a site is failing in its water quality objectives, and is therefore classed as being in an unfavourable condition, there is limited scope for the approval of additional damaging effects and that the future benefit of mitigation measures cannot be relied upon at Appropriate Assessment, where those benefits are uncertain at the time of the assessment.

3.3.36 In response to this judgement, and discussion with Natural England, the council concluded that the measures set out in the River Wye SAC NMP could no longer be relied upon and issued three new documents relevant to development that could affect the River Wye SAC. At the time of writing the MWLP, the most recent versions of these documents were published in March 2020 and titled:

- Position Statement – Development in the River Lugg Catchment Area;
- Guidance Note and Checklist for applicants/agents relating to HRA and planning applications; and
- Frequently Asked Questions Relating to the Development in the River Lugg Catchment.

3.3.37 The MWLP incorporates the requirements of these documents in policy designed to help deliver nutrient neutrality or betterment within the River Wye SAC.

Future change in policy

3.3.38 It is recognised that any or all of the policies outlined above will change over the course of the MWLP plan period. To seek to avoid the MWLP going out of alignment with these other policies and strategies, focus has been on the matters of strategic importance, rather than detail.

3.3.39 This section is provided for context only and reference should always be made to the most recently published document.

3.4 Issues and Challenges

3.4.1 The issues and challenges considered to be of most significance are summarised below. These are addressed in more detail in the relevant sections of the MWLP.

Minerals

- Ensuring a continuity of minerals supply to meet the social and economic needs of the county to 2031, taking account of cross-boundary supply challenges.
- Maximising the use of alternative sources of supply of minerals such as secondary and recycled aggregate to reduce the demand for aggregate supply from primary land won minerals.
- Maintaining the required landbanks for sand and gravel and crushed rock, but as far as practicable providing for these outside of the AONB.
- Continuing to provide a supply of building stone for the repair and maintenance of Herefordshire's traditional buildings and for new built development.

- Addressing the potential positive and negative impacts of exploiting unconventional hydrocarbon resources such as shale gas as well as planning for conventional forms of energy minerals.
- Safeguarding important minerals resources and infrastructure from sterilisation by other uses in order to meet local and regional needs by current and future generations.
- Ensuring there are sufficient safeguards in place to minimise the impacts of minerals extraction on communities, the environment and other important assets.
- Providing for a range of enhancements, including ecological services and biodiversity, particularly through reclamation of workings.
- Developing an appropriate locational strategy for minerals supply, reflecting where practicable the likely levels of economic and housing growth and future requirements for minerals.

Waste

- Enabling a circular economy to develop within Herefordshire and considering opportunities to co-locate waste management facilities with complementary uses.
- Promoting the management of waste further up the waste hierarchy i.e. reducing the amount going to landfill and encouraging the re-use, recycling, composting and recovery of waste, as well as supporting an overall reduction in the generation of waste.
- Developing an appropriate locational strategy for new waste management facilities, reflecting where practicable the likely levels of economic and housing growth and future requirements.
- Supporting the delivery of the additional waste management capacity expected to be required, taking account of cross-boundary movements where relevant.
- Incorporating flexibility to reflect uncertainties resulting from waste data limitations and evolving technologies and practice.
- Ensuring there are sufficient safeguards in place to minimise the local impacts of waste management on communities, the environment and other important assets.

General

- Establishing policies that are appropriate across the diverse characteristics of the plan area.
- Developing an appropriate approach to the protection and enhancement of the plan area's important landscapes, and natural and heritage assets, including the two Areas of Outstanding Natural Beauty, numerous Conservation Areas, Sites of Special Scientific Interest, Special Areas of Conservation, Ramsar Sites, Special Protection Areas, Sites of Importance for Nature Conservation, nature reserves and listed buildings and ground and surface water supply and quality; as well as the wide range of non-designated assets which are important for their own intrinsic value.
- Ensuring minerals and waste development contributes to and supports economic growth both within the plan area and nationally, including the employment opportunities that they provide.
- Seeking to reduce carbon emissions, particularly in relation to the transportation of minerals and waste, promoting re-use and recycling of materials and recovery of energy

from waste; and providing opportunities to assist in adapting to the effects of climate change, such as reducing flood risk and enhancing habitat connectivity.

- Considering accessibility to major transportation networks and sustainable transport infrastructure, recognising the constraints on opportunities for the movement of minerals or waste.
- Recognising the potential for mutually beneficial links between minerals and waste activities, such as utilising specific waste streams in the sustainable reclamation of mineral workings.
- Ensuring an element of flexibility and adaptive management is built into the MWLP.

4. Vision, Objectives and Spatial Strategy

4.1 Vision

4.1.1 Having a vision and objectives gives direction to the policies of a plan, identifying the priorities to be achieved through policy, and focussing attention on how this should be achieved.

4.1.2 The vision and objectives of the MWLP will not stand alone; they are complementary to those set out in the Core Strategy, providing a minerals and waste focus. Both minerals and waste are considered to be important assets within Herefordshire; being resources that should be used sustainably and to their full potential.

4.1.3 The Core Strategy vision is focussed on achieving sustainable development that is based upon success across society, economy and the environment; it also seeks to achieve self-reliance and resilience. These are all principles that are readily transferable to minerals and waste.

4.1.4 Key policy principles for minerals and waste include the following matters:

- Efficient use of minerals:
  - ensuring mineral resource is not prejudiced by other development; and
  - ensuring mineral is extracted and used efficiently, primarily achieved through the method of working and restoration.
- Effective minimisation and use of wastes:
  - delivering a circular economy - in which we keep resources for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life.
  - achieving the Waste Hierarchy - giving priority to preventing waste in the first place; when waste is created, giving priority to preparing it for re-use, then recycling, then recovery, and last of all disposal (e.g. landfill); and
- Enabling self-sufficiency:
  - through the provision of infrastructure and development to deliver the resources required, enabling sustainable communities to be developed and avoiding placing unnecessary demands on other authorities; and
  - minerals and waste move freely in the market according to the needs and characteristics of the sectors, Herefordshire will therefore seek to deliver 'equivalent self-sufficiency' by providing opportunities for mineral working and waste management for dealing with the forecast demands within the plan period and contributing to meeting some of the challenges faced by neighbouring authorities.
- Enabling resilience:
  - minerals development can enable resilience through: flood and water management opportunities; site betterment; and new opportunities for green infrastructure, public open space and recreation.

- waste development can enable resilience through: improved infrastructure provision; delivery of the circular economy; renewable energy generation; improved air quality and climate change measures; improved food and agricultural waste management measures that provide the opportunity to sequester carbon.

4.1.5 The Vision for the MWLP should be ambitious and aspirational, it is the point to be achieved several years from now; it would be a stretch, but ultimately deliverable. Starting with the Core Strategy Vision and making it relevant to minerals and waste, the Vision for the MWLP is:

Vision

Over the period to 2041, Herefordshire will deliver sustainable provision of minerals supply and waste management, balancing development needs whilst supporting the county's communities, protecting and enhancing environmental, heritage and cultural assets and strengthening the local economy.

Sustainable provision within Herefordshire will be achieved through: efficient use and effective protection of mineral resources; efficient waste management infrastructure including delivery of the circular economy; taking a strategic approach to achieving high quality reclamation that provides site betterment; and optimising self-sufficiency and resilience.

4.2 Strategic Objectives

4.2.1 The Core Strategy has 13 strategic objectives. These have been the starting point for the objectives of the MWLP, which have been developed through reference to national policy, local priorities and responses from consultation.

4.2.2 Table 1 presents the objectives developed for the MWLP.

Table 1 MWLP objectives

Objectives		Policies	
		Core Strategy	MWLP
Social Progress			
1	To enable minerals and waste development to make an appropriate contribution to improve the health, well-being and quality of life of residents, through best practice operations, open space provision, educational and cultural information, green infrastructure and delivery of strategic, landscape scale site reclamation.	OS1, OS2, OS3, SD1	SP2, SP4
2	To prioritise the long-term conservation of primary minerals through enabling provision of sustainable alternatives, effective use of mineral reserves, and promoting efficient use of minerals in new development.	SD1	SP1
3	To safeguard appropriate mineral and waste resources within Herefordshire and the associated transport infrastructure for the future.	SD1	M1, M2, W1

Objectives		Policies	
		Core Strategy	MWLP
4	To enable the management of waste in accordance with the waste hierarchy and to deliver a circular economy within Herefordshire.	SD1, SD2, SD3, SD4,	SP1, W1, W2, W3, W5, W6, W7
Economic Prosperity			
5	To optimise the contribution that mineral working and waste management makes to Herefordshire's economy as land-based industries, balanced with effective protection of people, places and businesses from adverse impacts.	E1, SD1, SD3, SD2, SD3, SD4, LD1, LD2, LD3, LD4, ID1	ALL
6	To plan for the steady and sustainable supply of minerals present within Herefordshire, to contribute to the county's economic growth, development and local distinctiveness and to make a reasonable contribution to the MASS.	E1, SD1	M1, M2, M3, M4, M5,
7	To deliver new waste management infrastructure to enable Herefordshire to achieve equivalent self-sufficiency and to contribute to the county's economic growth, innovation development and energy demands.	E1, SD1, SD2	W1, W2, W3, W4, W5, W6, W7
8	To reduce the need to travel and lessen the harmful impacts from traffic growth, promoting the use of alternatives to road transport and ensuring that new development is served by suitable transport networks.	SS1, SS2, SS4, MT1	SP3
Environmental Quality			
9	To identify suitable locations for minerals and waste development.	SS1, SS4, SS5	M3, M4, M5, W3, W4, W5, W6
10	To achieve sustainable communities and protect the environment by delivering well-designed and well-operated minerals and waste development that use land efficiently, reinforce local distinctiveness, and are supported by the necessary infrastructure, including green infrastructure.	SD1, SD3, SD4, LD1, LD2, LD3, ID1	ALL
11	To address the causes and impacts of climate change relating to minerals and waste development activity, including using opportunities arising from minerals and waste operations and reclamation activity to mitigate and adapt to climate change and to leave a positive legacy.	SS7, SD1, SD2, SD3, SD4, LD3	SP1, SP3, SP4, M1, M6, W1, W3, W7
12	To conserve, promote, utilise and enjoy our natural, built, heritage and cultural assets for the fullest benefits to the whole community, by: safeguarding the county's current stock of valued heritage and significant environmental assets from loss and damage, and seeking enhancement; reversing negative trends; ensuring good quality landscape design and condition; delivering site betterment; and appropriately managing future assets.	SS6, SS7, LD1, LD2, LD3, LD4	SP2, SP3, SP4 and the key development criteria

4.3 Spatial Strategy

4.3.1 The overarching spatial strategy of the Core Strategy is relevant to the MWLP and forms the backbone to its spatial strategy. Consequently, waste development will be focussed at Hereford and the market towns, Bromyard, Kington, Ledbury, Leominster and Ross-on-Wye. However, it is recognised that some waste management development will likely be more dispersed; principally this is to deliver a locally identified demand such as agricultural or construction and demolition waste management. In line with the spatial strategy, such development will not be promoted in policy but may be acceptable on a specific site basis.

4.3.2 Minerals extraction can only take place where the mineral occurs; consequently, this urban focus cannot generally be followed for minerals development. The review of the underlying geology and natural and built environment of Herefordshire has identified both key areas of search for minerals development and those areas that should be constrained from future development. Not surprisingly, these areas generally follow the approach to development set out in both the NPPF and the Core Strategy, such as giving great weight to conserving landscape and scenic beauty in Areas of Outstanding Natural Beauty.

4.3.3 Sand and gravel working is to be focussed within the large expanse of reserve that wraps around the northern and eastern sides of Hereford and at Shobdon, to the north-west of Hereford. These reserves are well located to supply aggregate for the growth proposed in Hereford and having two areas brings resilience to supply.

4.3.4 Focusing future sand and gravel workings within these areas provides the industry with access to a large area of reserve, but means that a proliferation of minerals development across the county can be avoided. Optimal extraction can be promoted at these areas before new reserves are opened.

4.3.5 Limestone working will be preferred within the reserves located to the north of the county and to the east of Hereford. The two areas provide resilience to supply and provide more local supply potential to the main settlements of Herefordshire.

4.3.6 No preferred areas of search are identified for sandstone, clay, coal or gas. Sandstone is worked as low-key development in small delves; the potential for harm is limited. There is little evidence to suggest that clay, coal or gas will be exploited over the plan period.

4.3.7 The Key Diagram is at Figure 6 presenting the spatial strategy for minerals and waste development in Herefordshire**.**

INSERT Figure 6 Key Diagram

[refer to PDF]

5. Strategic Policy and General Principles

5.1 Principles

5.1.1 It is a basic tenet of planning law that any adopted development plan must be read as a whole; development proposals will be considered in relation to all relevant policies. In addition, proposals for minerals or waste development must be assessed not just in relation to the MWLP, but also against all parts of the development plan.

5.1.2 Under the Planning and Compulsory Purchase Act 2004 the development plan for proposals in Herefordshire comprises:

- the Core Strategy;
- the MWLP; and
- other documents that comprise the Herefordshire Local Plan as relevant to the development proposed.

5.1.3 Some Core Strategy policies are directly relevant to minerals and waste development. They are necessarily written at a strategic level of detail and their interpretation for minerals and waste development can be enhanced through further explanation, which is provided in this section of the MWLP.

5.1.4 This section of the MWLP also presents policy of a strategic nature specifically prepared for minerals and waste development.

5.1.5 Mineral working and waste management may also require an Environmental Permit, gained from the Environment Agency, the application for which will also include consideration of potential impacts from the operations of such development. In determining planning applications, the council will focus on whether the development itself is an acceptable use of the land, and the impact of the use, rather than the control of processes or emissions themselves, where these are subject to approval under pollution control regimes.

5.1.6 Any new dewatering activity will require an abstraction licence, which is gained from the Environment Agency.

5.1.7 It is generally beneficial to submit the Environmental Permit and/or abstraction licences application(s) at the same time as the planning application, so that all the relevant details can be understood by the determining authorities, consultees and local communities. This approach is strongly encouraged by Herefordshire Council .

5.2 Sustainable Development – Core Strategy policy SS1

5.2.1 Minerals and waste developments can make a positive contribution to each of the three objectives of sustainable development:

- social – for example through job creation, the supply of virgin and secondary materials required for building houses, and providing outdoor public access;
- economic – for example through inward investment, underpinning communities with essential infrastructure, and supporting growth and innovation, such as delivery of the circular economy; and

- environmental – for example through avoided landfill, the provision of renewable/low carbon energy or a new priority habitat.

5.2.2 It can also cause harm:

- social – for example through disrupting access to the countryside or creating a poor quality built environment;
- economic – for example affecting tourism and agriculture (two of Herefordshire's key industries) through development in the wrong place; and
- environmental – for example through adverse landscape or cultural impacts or disturbance to habitats.

5.2.3 Many minerals and waste developments will be subject to the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as may be amended) but not all. As identified in the Core Strategy, a sufficient level of information should be submitted with each planning application to enable the council to determine the effect.

5.2.4 Planning applications should also consider the potential for cumulative impacts to occur. It may be that impacts from an individual proposal would be acceptable, but that the effects of one or more existing or planned developments in the same vicinity could, cumulatively, have impacts that would not be acceptable, even after mitigation. Opportunities to maximise positive impacts should be identified and implemented.

5.2.5 Whilst they can bring local benefit, minerals and waste development can be a source of concern to local communities (people, places or business). The potential for both beneficial and adverse impacts will vary according to the nature, size, location and duration of the development, and can change over its lifetime. Taking local circumstances into account, to consider the potential for effect on people, businesses and the natural environment, will enable minerals and waste developments to respond to the different opportunities for achieving sustainable development.

5.2.6 Early consultation will enable good design throughout the life of the site to be enhanced, especially for larger scale proposals. It is expected that developers will consult[27] with local communities and other stakeholders on proposals for mineral and waste development before the planning application is submitted. Positive consideration shall be given to development proposals that demonstrably take account of a local community's response.

5.3 Movement and transportation

Core Strategy policies SS4 and MT1

5.3.1 A large percentage of the vehicle movements associated with minerals and waste development are heavy goods vehicles, which are likely to be significant in volume. It may not always be possible to gain access directly to the strategic highway network from a site, but the proposed route should avoid local roads and settlements wherever feasible.

5.3.2 Any required improvements, alterations or agreed routes may be secured through the use of planning obligations, as set out in Core Strategy policy ID1.

[27] The Statement of Community Involvement provides details of basic expectations.

5.3.3 Larger scale development, including new or extended mineral workings and strategic waste management facilities, will operate over a relatively long period of time, such that significant transport effects might be felt for many years. Such development proposals should demonstrate how green infrastructure would be incorporated in the working schemes. The following examples could be appropriate:

1. site access arrangements, or routes of conveyors or pipelines being:
    a. designed/laid out to avoid damage to sensitive habitats or heritage assets;
    b. designed/laid out to provide cycle links or footpaths upon reclamation of the site;
    c. landscaped and/or enhanced to promote biodiversity; and
    d. drained using SuDs methods;
2. providing nature reserves and/or floristically rich roadside verges and sidings;
3. implementing flood compensation measures or balancing ponds within an ecological framework.

5.3.4 Appropriate planting enables carbon sequestration, air pollutant absorption, aesthetic improvement and increased biodiversity and wildlife habitat. Wetland areas, used to store and slow down storm water and run-off, can also absorb carbon dioxide and reduce the pollutant load in road runoff. Such elements can provide a contribution to offsetting carbon emissions caused by minerals and waste related traffic, and such measures should be included as appropriate in development proposals. These elements may be acceptably located off-site.

5.3.5 Considering the whole life of the site at the application stage will enable a sustainable transport strategy to be put in place at the earliest opportunity. This approach can influence the overall design of the site, for example identifying appropriate locations for footpaths or parking areas for the proposed after-use that can be incorporated as the site is developed.

5.4 Environmental Quality and Local Distinctiveness – Core Strategy policies SS6; LD1; LD2; LD3; and LD4

5.4.1 One of Herefordshire's elements of local distinctiveness is the extent of dark sky across the county. Analysis undertaken by the CRPE identifies Herefordshire as the third darkest county with 60% of the county lying in the darkest category and 88% of the county when combined with the next darkest category.[28] This matter should be considered in preparing development proposals, including a commitment that lighting will be kept to the minimum necessary to ensure safe working on site.

5.4.2 Good design requires full consideration of the surrounding environment, its constraints and the opportunities for enhancement, including change for the better. A comprehensive approach, addressing exploration, construction, operation, buildings and machinery and people and place, across the lifetime of the site and through its aftercare, will enable sustainable development to be realised.

5.4.3 A comprehensive approach will make good use of a wide range of reference documents, many of which are signposted within this MWLP. One that will be relevant across a number of

[28] https://www.nightblight.cpre.org.uk/images/resources/Night_Blight_cpre.pdf

development proposals is 'The ecological effects of air pollution from road transport: an updated review', as prepared for Natural England (reference NECR199).

5.4.4 The consideration of cumulative or in-combination effects can be a legal requirement, for example as in Environmental Impact and Habitats Regulations Assessments. Even where this level of assessment is not required, the council expects planning applications to include a proportionate consideration of cumulative impacts. Appropriate measures to optimise benefits and to avoid or mitigate harm should be made clear within the planning application.

5.4.5 All applications will be expected to incorporate robust measures to ensure that the proposed development does not cause an unacceptable adverse impact on either the environment or local communities, many of which can be overcome by implementing standard measures, such as:

- limiting working hours;
- locating plant, machinery and haulage routes away from sensitive receptors;
- advanced tree planting;
- sensitive lighting design;
- phasing so the development moves away from sensitive receptors;
- acoustic screening measures;
- enclosing plant and machinery;
- plant being fitted with silencers and white noise alarms;
- sheeting of lorries;
- cleaning of lorry wheels before they exit the site;
- good maintenance of bunds and stockpiles;
- avoiding or minimising the use of blasting explosives; and
- careful design of external lighting to confine its influence to the point of use.

Landscape and townscape – Core Strategy policy LD1

5.4.6 Due to their potential size, and location, minerals and waste sites have the potential to make landscape scale change; a term commonly used to refer to action that covers a large spatial scale, usually addressing a range of ecosystem processes, conservation objectives and land uses.

5.4.7 Landscape scale conservation is characterised by the pursuit of multiple benefits across a defined area (e.g. water quality, biodiversity and access). The best examples also make links to wider economic and social priorities, where enhancing nature can provide benefits to the local economy and quality of life. There are strong links between the landscape scale approach and an 'ecosystems approach', which encourages an integrated approach to land management, considering the costs and benefits of land use decisions, and pursuing those that minimise risks and maximise opportunities for people, for nature and for the economy.[29]

[29] From, The Natural Choice, Natural Environment White Paper, 2011

5.4.8 This might include measures such as:

- protecting, enhancing or creating views;
- interpretation boards at publicly accessible areas to enable greater understanding of the landscape, local/historic landscape character and influence of the underlying geology;
- designing waterbodies to be of a type, shape and scale that fits with the local landscape character and optimises biodiversity gains;
- protecting or re-instating local/historic landscape features such as hedgerows or woodland; and
- ensuring any planting is appropriate to the landscape character, using locally present species to optimise biodiversity gains.

5.4.9 Developers should refer to the Landscape Character Assessment Supplementary Planning Guidance (2004)[30].

Biodiversity and geodiversity – Core Strategy policy LD2

5.4.10 A management strategy associated with a minerals or waste development should include an Ecological Mitigation Plan appropriate to the development proposed. The Ecological Mitigation Plan should specify working methods, timings and buffers within the development site to protect vulnerable features, including European sites. The size and shape of the buffer will be defined on a site-by-site basis dependent on the attributes of the feature. Conversely, where greater benefit would be realised, for example through improved connectivity between habitats, it may be appropriate to work close to identified features.

5.4.11 The Core Strategy recognises that its soils are an essential element of the geodiversity of Herefordshire. The soils and geodiversity of Herefordshire underpin the agriculture and tourism industries. Recognising that the winning and working of mineral in particular is likely to take place on greenfield sites, it is appropriate to consider soil quality in more detail.

5.4.12 Forest Research[31] an organisation established for forestry related research advises that '*soil quality' encompasses the physical, chemical and biological properties of soil.*' Together, each of these properties determines the ability of the soil to perform a range of beneficial functions:

'Nutrient cycling – soil provides a habitat for the soil invertebrate and microbial communities required to break down organic materials and release the nutrients necessary to sustain growth. If the full range of invertebrates and microbes necessary to carry out these processes cannot function, plants and higher organisms will be unable to thrive within the ecosystem.

Water balance – soil acts as a store for water. A healthy soil will retain the water necessary to support the ecosystem, allowing infiltration of excess water to groundwater and preventing surface run-off and waterlogging.

30 https://www.herefordshire.gov.uk/download/downloads/id/2069/landscape_character_assessment_for_herefordshire.pdf

31 https://www.forestresearch.gov.uk/

Physical structure – soil will provide the physical medium to support vegetation, allowing adequate root development and the medium in which to hold water.

Pollution mitigation – soil acts as a buffer to pollution entering the system. The organic matter and clay constituents of soil allow pollutants to be immobilised within the system, reducing the risk of them being transferred to water bodies, vegetation and soil fauna. '

5.4.13 The Agricultural Land Classification provides a method for assessing the quality of farmland to enable sustainable choices to be made about its future use within the planning system. The system classifies land into five grades with the 'best and most versatile land' defined as grades 1, 2 and 3a. Development proposals should prioritise the use of areas of poorer quality land, especially where development of agricultural land is demonstrated to be necessary.

5.4.14 Planning applications should consider the following matters in demonstrating that mineral development on the best and most versatile agricultural land is necessary:

- whether there is an available alternative;
- whether the need for development outweighs the adverse impact upon agricultural land quality;
- whether proposals will affect the long term agricultural potential of the land or soils;
- whether alternative land of lower agricultural value has considerations which outweigh the adverse impact upon agricultural land quality.

5.4.15 Protection of the original soils removed prior to mineral extraction should always be a priority. The stripping and storage of soils for reuse and restoration can lead to degradation, although best practice in soil management can minimise the impacts of this damage. Planning applications should demonstrate how best practice measures for soil handling and storage will be achieved on site, throughout the life of the development. Reference may be made to guidance published by Defra, including: 'Construction Code of Practice for the Sustainable Use of Soils on Construction Sites'; and the series 'Good Practice Guide for Handling Soils'.

5.4.16 Reclamation schemes should incorporate remediation activities and after-use proposals that optimise the storage and use of best and most versatile soils. It is not necessary for high quality land to be restored to agricultural use, but restoration and land use following mineral development should safeguard a site's long-term agricultural potential. Alternatively, it may be more beneficial for an area previously identified as best and most versatile agricultural land to be restored to another purpose, if this enables improved reclamation elsewhere on site. Reference should be made to 'Guidance for the Successful Reclamation of Mineral and Waste Sites', Defra (2004).

5.4.17 The minerals and waste industries present significant opportunities to provide a net gain in biodiversity and to improve the coherence and resilience of habitats and ecological networks, enabling wildlife to respond to a range of environmental pressures. Agriculture and biodiversity enhancement need not be incompatible land uses. A balance should be achieved between current and future agricultural need, site-specific biodiversity value and/or potential, and other considerations, including flood alleviation. Well-designed agricultural restoration can still deliver significant benefits for biodiversity in the form of hedgerows, lakes and ponds, habitat features and small woodlands

5.4.18 Site reclamation will be expected to contribute, at a landscape scale, to achieving nationally identified habitats of principal importance, taking account of the attributes of the site and of nearby areas, supporting coherent and resilient networks of habitats that link the site with relevant ecological features in the wider landscape. Water features in agricultural reclamation can contribute to agricultural irrigation, biodiversity, flood alleviation and storage, and landscape enhancement in a multi-functional way, and should all be considered.

5.4.19 Minerals and waste development proposals will be expected to avoid unacceptable impacts on geodiversity value. Planning applications should demonstrate how the proposed development will deliver objectives of UK and Herefordshire Geodiversity Action Plans, such that geodiversity features are successfully identified, investigated and incorporated with green infrastructure into reclamation and after-use, through measures such as:

- providing safe public access to geological features, whilst avoiding damage to them;
- involving geologists, geodiversity groups and museums in advising on, recording and sampling geodiversity at all stages from pre-application through to reclamation and aftercare;
- incorporating geodiversity considerations into site management plans to protect and maintain exposures and to support access at appropriate intervals for research and recording purposes, e.g. limited excavation of organic rich deposits that become exposed at the base of river gravels;
- providing information to support understanding, interpretation and enjoyment of the features;
- creating links beyond the site boundary into the wider landscape.

5.4.20 Mineral sites offer opportunities to enhance scientific and cultural understanding of geodiversity by revealing, recording or retaining features of geological conservation interest. Sand and gravel deposits cannot be preserved except by leaving parts of the site untouched, but features of interest, such as changes in lithology, discovery of conspicuous vertebrate remains or organic-rich fossil beds can be recognised and exploited as extraction progresses. Planned investigations of lithology might include collecting samples for dating purposes and material for education/interpretative purposes.

5.4.21 The sand and gravel sites at Shobdon and Upper Lyde are Local Geological Sites designated for their glacial and glacial-fluvial features respectively, whilst sub-alluvial gravels have been extracted at Wellington that may hold clues to the changing drainage patters in Herefordshire in glacial times. The Silurian rocks obtained from Perton and Leinthall Quarries are rich sources of fossils.

5.4.22 There is potential for mineral extraction across Herefordshire, even in undesignated sites, to reveal important features. Consequently, a detailed approach to mitigate impact on geodiversity will be required for all development proposals.

Green infrastructure – Core Strategy policy LD3

5.4.23 As recognised in the Core Strategy, green infrastructure is a practical way to consider sustainable development. The preferred areas of search for minerals development and the spatial strategy for waste development reflect the priority areas of the green infrastructure

concept map (Green Infrastructure Strategy, Figure 4-3[32]). This overlap means that minerals and waste development have a good reference and potential to deliver integrated benefits on site and at a landscape scale.

5.4.24 Incorporating green infrastructure objectives will enable proposals to make a positive contribution to Herefordshire's local character and distinctiveness, recognising the wider social, cultural and environmental benefits that multi-disciplined, integrated development can bring.

5.4.25 The delivery of green infrastructure can underpin the realisation of net gain from minerals and waste operations. This can be achieved at any time during the life of the site and should not be restricted to reclamation or after-use. The council will expect all opportunities for green infrastructure to be optimised and delivered throughout the life of the development proposed.

Historic environment and heritage assets – Core Strategy policy LD4

5.4.26 Minerals and waste development proposals should take account of the significance of heritage assets (whether above or below ground, designated or non-designated, and their setting) and include a clear strategy for enhancing the historic environment character. Wet working of mineral sites may not be a viable option where there are potential archaeological assets, as this can significantly restrict the delivery of appropriate mitigation measures.

5.4.27 Site reclamation and after-use may enable improved access to historic sites, enhance the setting of historic features (such as water meadows) reinstate historic features such as hedgerows, or provide on-site interpretation of the site and its history in association with publicly accessible areas.

5.4.28 The Herefordshire County Archaeology and Minerals Resource Assessment[33] (2014) confirms that the county has a wealth of archaeological assets. It is to be expected that more will be revealed with extended mineral working. There are well established procedures for the investigation and evaluation of archaeological assets that have been practiced to good effect within Herefordshire. In accordance with Core Strategy policy LD4 and requirements of the National Planning Policy Framework, these will continue to be implemented.

5.4.29 Historic England has published a number of documents useful to understand the significance of heritage assets and practical advice on how to incorporate the historic environment into sustainable mineral working. One such document is titled 'Mineral Extraction and Archaeology: A Practice Guide'.

[32] https://www.herefordshire.gov.uk/download/downloads/id/2063/herefordshire_green_infrastructure_strategy.pdf

[33] The report is available from the Archaeological Data Service, along with other documents reporting on the archaeology of Herefordshire. https://archaeologydataservice.ac.uk/library/browse/organisationDetails.xhtml?organisationId=400

5.5 Addressing Climate Change

Core Strategy policy SS7

5.5.1 The built form of waste management facilities may more obviously align with the expectations of policy SS7, but minerals working can also make a significant impact.

5.5.2 Not least, minerals should be extracted efficiently. Development should propose to extract as much of the mineral as possible, whilst avoiding unacceptable harm and ensuring that a high quality of reclamation and afteruse can be achieved.

5.5.3 The winning and working of minerals, and some waste processing operations, is resource intensive. Reduced energy and water usage can be achieved through different ways, including good site design to reduce transport movements and circulating water within operations to reduce overall demand.

5.5.4 Buildings and plant can be designed to reduce resource requirements and consequent carbon emissions, for example through the use of ultra-low emission vehicles (including non-fossil fuels and electric vehicles) and renewable energy supply (including solar panels, open-loop ground source or surface water source heating and cooling systems). The council will expect increased resource efficiency measures in plant, buildings and operations in order to achieve climate change priorities.

5.5.5 Reclamation of sites also provides opportunities, for example in assisting ecological networks to be more resilient, enabling the movement of wildlife as it adapts to a changing climate. The after-use of a site can also deliver objectives to address climate change, for example creating a new habitat that also provides flood storage to alleviate risks elsewhere.

Resource Management, MWLP policy SP1

5.5.6 Spatial planning goes beyond traditional land use planning to bring together and integrate policies for the development and use of land with other policies and programmes which influence the nature of places and how they function. This will include policies that can impact on land use by influencing the demands on, or needs for, development, but which are not capable of being delivered solely or mainly through the granting or refusal of planning permission and which may be implemented by other means.

5.5.7 The Core Strategy proposes substantial new development that should be delivered sustainably. Minerals and waste are key resources, their use and management affecting how sustainably the new development will be delivered. Sustainable design principles make efficient use of resource through location, design, positioning, specification and sourcing of materials, as well as improving the quality of development and enhancing their environmental performance.

5.5.8 These principles, and policy SP1, is not limited to new build projects. It applies to all development including substantial refurbishment projects.

Waste prevention

5.5.9 Waste prevention has clear links to spatial planning policy. Examples of waste prevention include designing and buying goods without packaging, using/purchasing only the materials/services required and subsequently disposing of less waste. Longer life products reduce the need for replacements, which create waste in their own production. If

communities are successful in reducing the amount of waste produced, then the need for additional waste management facilities can be reduced.

5.5.10 Maintaining engagement with local authorities, businesses and community groups enables each sector of the community to act together, raising levels of awareness and understanding of waste issues. These initiatives can help inform investment and consumer decisions, helping to deliver the circular economy.

5.5.11 The MWLP can contribute positively through the promotion of waste prevention and reuse in new, waste and non-waste related, development, and in this way enable achievement of the circular economy in Herefordshire.

5.5.12 A circular economy is one where materials are retained in use at their highest value for as long as possible and are then re-used or recycled, leaving a minimum of residual waste. Herefordshire seeks to achieve a circular economy as this will save resources, increase the resource efficiency of the county's businesses, and help to reduce carbon emissions. The successful implementation of circular economy principles will help to reduce the volume of waste that Herefordshire produces. Waste management facilities are also an element of the circular economy, so long as the materials and/or energy recovered are put to beneficial uses.

5.5.13 Reuse has been practised throughout society for a long time and diverts materials from entering a waste stream. In recent years, the domestic reuse market has moved from the second-hand furniture/house clearance shops and returnable bottles, to charity shops and initiatives set up as small businesses. Car boot and jumble sales are probably the most common and well known form of reusing unwanted goods. Household Waste Recycling Centres and web-based exchange sites also provide opportunities for reuse. Exchange schemes could be developed on a multi-sector basis to encourage and increase reuse.

Resource audit

5.5.14 New development requires significant volumes of construction materials, and the facilities provided on site can affect how it performs through its operational lifetime. The planning system has a role to play encouraging the use of secondary or recycled construction materials and preventing waste generated in construction and redevelopment projects.

5.5.15 Any application for major development, as defined in the Town and Country Planning (Development Management Procedure) (England) Order 2015 (as may be amended) will be required to be accompanied by a Resource Audit.

5.5.16 Resource Audits will identify (quantifying where possible): the approach to materials used in construction; the quantity of construction aggregates to be used and clarity of whether these are raw, secondary or recycled; how waste will be minimised; what waste will be generated from the development and how this will be managed to promote the recovery of materials and/or energy from it. Finally, the Resource Audit will set out end of life considerations for the materials used in the development, including the ease of recovery of demolition materials to demonstrate how these might be put to beneficial use after the development is no longer required.

5.5.17 Such documents are expected to have an increasing role demonstrating how new development is delivered and managed in a sustainable manner, explicitly setting out: how the use of raw materials will be minimised; how waste created can be reused, with priority given to the reuse of materials on site; how the development will contribute to achieving local

and national carbon reduction targets; and how the long term management of the development will contribute to delivering the circular economy. Smaller applications, accompanied by Design and Access Statements, should include commentary on waste prevention and management measures. All submitted applications should make reference to the national and local zero-carbon plans in place at the time in order to inform best practice measures that can be incorporated into the proposed development.

5.5.18 All development should be designed to increase the potential for recycling waste. The details would be negotiated as relevant to each development proposal, but examples include new residential development required to provide space for facilities for segregating and recycling waste, or to contribute (financially or through the provision of land) towards a household waste recycling centre or composting facility. Industrial, commercial and retail development may be required to provide more substantial waste segregation and collection facilities as part of the built development.

Policy SP1: Resource Management

The use of minerals and waste resources will be directed to contribute positively to addressing climate change through:

1. **Herefordshire Council encouraging waste prevention by:**
    a. **promoting a more circular economy that improves resource efficiency and innovation to keep products and materials at their highest value for as long as possible;**
    b. **maintaining engagement with businesses, community groups, and the general public to raise levels of awareness and understanding of waste issues;**
    c. **working in partnership with other public bodies to ensure that waste prevention and the circular economy is addressed in all contracts for works and services; and**
    d. **leading by example in its activities.**
2. **requiring submission of a Resource Audit that identifies the quantum required and approach to sourcing construction materials, the amount and type of waste that is expected to be produced by the development and end of life considerations for the development materials. The Resource Audit will set out how waste will be minimised and how it will be managed, both during the construction phase and once it is in use, in order to meet the strategic objective of driving waste management up the waste hierarchy. Information appropriate to the planning application shall be provided on the following matters:**
    a. **the amount and type of construction aggregates required and their likely source;**
    b. **the steps to be taken to minimise the use of raw materials (including hazardous materials) in the construction phase, through sustainable design and the use of recycled or reprocessed materials;**
    c. **the steps to be taken to reduce, reuse and recycle waste (including hazardous wastes) that is produced through the construction phase;**
    d. **the type and volume of waste that the development will generate (both through the construction and operational phases);**

e. **on-site waste recycling facilities to be provided (both through the construction and operational phases);**

f. **the steps to be taken to ensure the maximum diversion of waste from landfill (through recycling, composting and recovery) once the development is operational;**

g. **end of life considerations for the materials used in the development; and**

h. **embodied carbon and lifecycle carbon costs for the materials used in the development.**

5.6 Access to open space and recreation from minerals and waste development

Core Strategy policies OS1 to OS3

5.6.1 As recognised in the Core Strategy, open spaces and areas of outdoor recreation are enjoyed across Herefordshire and are an important element to people's quality of life. Mineral workings, waste sites and restored sites have an important contribution to make to the protection and enhancement of outdoor public access and recreation resources within Herefordshire.

5.6.2 Particularly for mineral sites, due to their location, they also have the potential to affect public rights of way. Consequently, policy SP2 is relevant to minerals and waste development, in addition to Core Strategy policies OS1 to OS3.

Access to open space, MWLP policy SP2

5.6.3 Policy SP2 applies to all public rights of way and open spaces, whether definitive or permissive. Recreation assets will be expected to be natural or semi-natural, with a minimum of buildings and infrastructure; they might include community ownership areas (for example orchard or nature reserve) or mountain bike trails. Any potential for a greater level of built development is likely to require separate planning permission. The focus of policy SP2 is on providing outdoor facilities from mineral workings and waste sites that benefit both wildlife and local communities.

5.6.4 Public access and recreation need not be restricted to the restoration phase and, mindful of the need for safety, should be made available at the earliest opportunity. Incorporating green infrastructure, proposals might include:

- simply making open spaces available to the public, which might be seeded and managed for wildlife and pollinator species;
- providing access to archaeological, geodiversity, or heritage assets, either across the site or as features along a route;
- improving the route, surface or accessibility of rights of way or adding links to existing rights of way networks;
- making outdoor areas accessible and engaging for people with disabilities;
- providing information about the area and its significance; or
- through providing new recreational assets that respect the surrounding environment.

5.6.5 Conversely, public access may not be appropriate, or may need to be restricted in some areas, for example due to safety hazards or to protect a particular habitat. These areas, and the reasons why public access is not appropriate, or needs to be restricted, should be made clear within the planning application.

5.6.6 The need to access mineral reserve, or deposit restoration material, and to implement appropriate safety measures may result in footpaths being temporarily or permanently diverted or, in exceptional circumstances, closed. Temporary diversions should follow the shortest route that delivers a suitable replacement and only be in place for the shortest duration required, which may not be the lifetime of the consent.

5.6.7 Footpaths are rooted in an historical and landscape context. A permanent diversion may sever important cultural links, but also brings the opportunity to improve a route that has been adversely affected, for example by flooding or a changed view. Permanent diversions should be well designed, reflecting the local cultural, historic and landscape context, to result in an enhancement to the rights of way network within Herefordshire. Enhancement can be achieved through improvements to the view from, surface of and/or route of the right of way, including making provision for disabled people.

5.6.8 Any closure of the right of way network, or existing open space, should be avoided. Where it is necessary, the council will expect compensatory provision to be made proportionate to the scale of the closure. This can include the provision of new or improved access or recreation facilities located off site. The council is clear that development should have the smallest impact as practicable and enhancement will be sought at every reasonable opportunity.

Policy SP2 Access to open space and recreation from minerals and waste development

1. **Planning permission will be granted for mineral development proposals that optimise opportunities to improve public access to open spaces, integrating historic context and green infrastructure as appropriate.**
2. **Development that affects a right of way or existing open space will only be supported where it is demonstrated that:**
   a. **any temporary diversion is designed to be for as short a distance and duration as practicable;**
   b. **any permanent diversion is designed to achieve an enhanced route over that which was previously available; and**
   c. **any closure occurs only in exceptional circumstances and compensatory provision is made.**

5.7 Sustainable design and energy efficiency – Core Strategy policy SD1

5.7.1 Policy SD1 applies to minerals and waste development. This section of the MWLP supplements the Core Strategy by considering topics that are more specialised in relation to minerals and waste development.

Aviation safety

5.7.2 Modern waste management operations and the process of mineral extraction itself are unlikely to attract bird populations. On site infrastructure, such as settlement lagoons or open water bodies and reclamation to a nature reserve all have the potential to attract birds. Bird strike can cause significant damage to civil aviation and military aircraft. Most bird strikes occur at low altitudes affecting either low flying aircraft or aircraft taking-off or approaching an airfield.

5.7.3 Proposals for site working, restoration and after-use will be required to consider aviation safety in demonstrating the appropriateness of water management and site reclamation schemes.

5.7.4 The Mineral Products Association document titled 'Mineral Sites and Bird Strike Hazard and Risk: Practice Guide for Mineral Development and Restoration within Aerodrome Safeguarding Areas', revised version published in May 2015, should be referenced.

Dust

5.7.5 Dust can arise from: mineral winning and working processes; the passage of vehicles over unpaved ground and dirt and debris tracked onto the public highway; handling dusty materials; mineral, soils and overburden movement; stockpiles and dusty surfaces.

5.7.6 If not properly controlled at source, dust can cause nuisance to people and businesses, and harm through deposition on property and farmland. Dust can also cause adverse ecological impacts to sensitive sites.

5.7.7 A dust assessment will be required where fugitive dust emissions are likely to cause a nuisance or significant adverse ecological impact; atmospheric dispersion modelling may be required to determine whether there is a risk of health effects due to dust emissions. A separate dust assessment is not required where dust is addressed within an air quality assessment and/or health impact assessment as appropriate.

5.7.8 Reference should be made to appropriate advice, including that produced by the Institute of Air Quality Management: Guidance on the Assessment of Minerals Dust Impacts for Planning, May 2016; Guidance on the assessment of dust from demolition and constructions; Guidance on the Assessment of the Impacts of Construction on Air Quality and the Determination of their Significance, December 2011; and Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites.

Land instability

5.7.9 Proposals should demonstrate the measures to be used to ensure that quarry sides and slopes are stable and will not result in landslip, either within the site or on adjoining land, both during and after the lifetime of the development. Waste stockpiles and mineral waste tips should be constructed and accessed so that they are unlikely to give rise to danger through instability; using suitable vegetation can assist with stability and bring environmental benefit.

5.7.10 Unsafe ground conditions can be caused by water movement including changes in groundwater levels through de-watering, and increases in flow velocity at times of flood, which can cause scouring of pit sides, breaches of flood protection measures or erode banks of restored lakes. Good water management will integrate safety and environmental objectives.

5.7.11 Where there is any likelihood of instability, a stability report should be provided setting out measures appropriate to ensure the continued stability and integrity of infrastructure adjoining or close to the development site. Ensuring stability may require leaving unworked areas or margins within or around the site.

5.7.12 Overburden, mineral waste materials, and any other material or waste to be used in restoration, should be placed within the site to ensure that differential settlement does not occur, which could lead to instability in the future.

5.7.13 Coal has historically been worked in Herefordshire, in the far south of the county with the reserve largely contained within the Forest of Dean. It is the responsibility of the Coal Authority to map and monitor previous areas of extraction. Maps are available[34] on-line that show: surface coal resource areas; coal mining legacy areas; and coal mining risk areas. The area around Hope Mansell is identified as a high risk area and the Coal Authority should be consulted on certain types of development.

Noise

5.7.14 Minerals workings and waste management facilities can be noisy locations. The potential for adverse impacts can be substantially avoided through good site design and working practices, such as using local topography to contain sound within the site, keeping vehicles in good working condition and covering moving equipment.

5.7.15 The council will expect all planning applications to identify the potential sources of noise and to demonstrate how they will be managed effectively. Noise should be assessed using relevant British Standards (referencing the most recent publication) advise contained in national planning policy guidance and the Noise Policy Statement for England.

Odour

5.7.16 Particularly when handling biodegradable materials, waste management facilities can be a source of odour; though with good building design and operational practice it is readily capable of being controlled.

5.7.17 Mineral sites are unlikely to be a source of odour. However, there is potential for odour from water bodies on site, such as settlement and silt lagoons or restoration features, which are poorly designed or managed such that they become stagnant and odorous.

5.7.18 The council will expect all planning applications to identify any potential odour sources and to demonstrate how they will be managed effectively. The Environment Agency has issued guidance on odour that contains indicative benchmark levels for use in the assessment of potential impacts from industrial facilities subject to the Environmental Permitting (England and Wales) Regulations (2010). Further useful information may be gained from the Institute of Air Quality Management publication, Guidance on the Assessment of Odour for Planning, May 2014.

Utilities

5.7.19 Planning applications should identify all existing and proposed utility services that cross, abut, or are adjacent to the proposed development site. The submitted details should demonstrate how such infrastructure would be protected, to ensure it remains operational and safe.

[34] https://www.gov.uk/government/publications/coalfield-plans-herefordshire-county-and-district-council-area

5.7.20 LinesearchbeforeUdig[35] is a free to use online search service that any individual can use to check their works against utility assets including underground and overhead pipelines and cables in the electricity, gas, high pressure fuel/oil, heating, water and fibre optic networks.

5.7.21 Developers are encouraged to consult with the relevant utilities company prior to submitting a planning application. Where a proposed minerals or waste development site is crossed by or contains any utilities infrastructure, landowners/operators are likely to need to ensure that the asset is protected by way of an easement width, protection zone or diversion. Any required works are likely to be required to be undertaken at the expense of the landowner/operator.

5.7.22 At the time of writing the MWLP the relevant infrastructure providers are: Dwr Cymru/Welsh Water; Severn Trent Water; and Cadent Gas.

Vibration

5.7.23 Vibration associated with mineral operations is principally caused by lorry movements, particularly over uneven surfaces, or by blasting. Blasting can cause both ground vibration and air overpressure, which can be disturbing to the local community and harmful to wildlife habitats.

5.7.24 Where vibration, including air overpressure, is likely to occur, an assessment should be undertaken to demonstrate the extent of the impact and how it will be managed to an acceptable level. Vibration should be assessed using relevant British Standards (referencing the most recent publication) and advice contained in national planning policy guidance.

Visual intrusion

5.7.25 Separately to the potential for landscape and/or visual impact, larger scale minerals and waste development can cause visual intrusion, an amenity concern, or be distracting to drivers, posing a road safety hazard.

5.7.26 The council will expect proposals to incorporate best practice measures to minimise the effects of visual intrusion; care should be taken to ensure that screening measures are appropriate and are not, in themselves, a source of visual intrusion.

5.8 Renewable and low carbon energy generation – Core Strategy policy SD2

5.8.1 Waste management operations, including anaerobic digestion and incineration with energy recovery, are recognised as providing a supply of renewable/low carbon energy. The benefits can be optimised by providing heat as well as electricity. MWLP policy W7 makes clear the expectation that these opportunities should be pursued.

5.9 Sustainable water management and water resources – Core Strategy policy SD3

5.9.1 Quarrying is an activity that can physically remove aquifers and the usable groundwater resources contained within aquifers, which may lead to impacts on the water environment through altered groundwater flows. Waste processing facilities will require water supply and land reclamation can affect future water quantity and quality, including flow.

[35] https://www.linesearchbeforeudig.co.uk/

5.9.2 Proposals for minerals extraction and waste management should ensure protection of water resources, particularly when river abstraction and/or groundwater sources may be affected. The Environment Agency has defined Source Protection Zones for groundwater sources such as wells, boreholes and springs used for public drinking water supply. These zones show the risk of contamination from any activities that might cause pollution in the area; in short, the closer the activity, the greater the risk. Environment Agency mapping shows the three main zones (inner, outer and total catchment) and a fourth zone of special interest, which is occasionally applied.

5.9.3 Dewatering activities are likely to require an abstraction licence from the Environment Agency[36]; a water audit can be used to consider sustainable water management options before, during and post construction.

5.9.4 The potential for impact on water quantity, quality and flow should be assessed through hydrological and hydro-geological assessments to establish the base line position and ensure operations are appropriately designed, monitored and managed. The council will seek to avoid:

- significant change to groundwater or surface water levels, for example, the process of 'dewatering' (when water is pumped out of a pit to allow dry working below the water table) must be carefully monitored, to ensure no adverse impacts on surrounding water availability; and
- pollution of ground and surface water by chemicals and other contaminants, for example a considerable amount of water can be used when processing wastes or aggregates; drainage during site operations and any discharge to local watercourses, must be controlled to comply with standards set by the Environment Agency.

5.9.5 More information can be found in the Environment Agency's document titled 'Hydrogeological impact appraisal for dewatering abstractions, Science Report – SC040020/SR1'[37] that should be referenced in preparing any relevant planning application. There is also summary guidance available, providing a methodology on how to assess the hydrogeological impact of groundwater abstractions in connection with dewatering operations at quarries, mines and engineering works. It is titled 'Assessing the impact of dewatering on water resources. Science Summary SC040020/SS' with summary product code of Summary Product Code: SCHO0407BMAF-E-P. [38]

5.9.6 The Environment Agency also hosts the 'Catchment Data Explorer', supports and builds upon the data in the river basin management plans. The Catchment Data Explorer should be used to help developers understand the water environment in the vicinity of proposal sites. It is available at https://environment.data.gov.uk/catchment-planning/.

[36] www.gov.uk/guidance/water-management-apply-for-a-water-abstraction-or-impoundment-licence

[37] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/291080/scho0407bmae-e-e.pdf

[38] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/290526/scho0407bmaf-e-e.pdf

5.10 Transportation within sites – MWLP policy SP3

5.10.1 Minerals often need to be moved around within quarries, from the point at which they are extracted (the working face) to the processing plant, stockpiles, or areas where they will be treated or used to make product for sale. Other materials can be brought to site and may be deposited in one place for storage prior to their use.

5.10.2 A similar range of movements is also seen at landfill sites. This is particularly relevant in Herefordshire, where landfill is likely to be limited to inert wastes being used to restore former quarries.

5.10.3 All internal transport modes and routes need good design to reduce landscape, environmental and amenity impacts. The use of natural attributes, such as following an existing hedgerow, or wooded or lower lying area within the site, should be optimised, whilst sensitive or visually exposed land, or important landscape or historic features, should be avoided. Noise, dust and vibration can all have an adverse impact on both the environment and local communities. Flood risk on site should be considered to ensure there is a safe route from the working faces to the site exit or refuge point.

5.10.4 There are various options available to operators for the efficient movement of minerals and materials within sites, with resultant reductions in fuel use, carbon emissions, noise, dust and vibration effects. Electric vehicles, conveyors and pipelines offer environmental and amenity benefits over the use of fossil-fuelled vehicles as they are generally more energy efficient, generate reduced levels of emissions or fumes and tend to be quieter.

5.10.5 Considering the site in the context of green infrastructure principles can enable an appropriate solution to be found and help to deliver sustainable development; examples include:

1. internal transport routes designed and laid out to provide cycle links or footpaths upon reclamation of the site (and earlier where practicable);
2. early landscaping of internal transport routes, to enable planting to mature pending reclamation of the site;
3. transport routes designed to protect existing wildlife movement and to enhance wildlife corridors; and
4. transport routes designed to reflect historic movement or landscape patterns.

5.10.6 Each site will have different spatial influences on transport design, requirements for the material to be moved, and receptors. An assessment should be undertaken to demonstrate that all relevant factors have been considered, with the level of detail within that assessment proportionate to the scale of development proposed. Development proposals should consider which transport mode (i.e. vehicular, conveyor, or pipeline) and route is most appropriate, finding the balance between practicability, energy and carbon efficiency, reduced impacts, integrated design and safety.

Policy SP3 Transport within sites

Planning permission will be granted for minerals or waste development where it is demonstrated that the arrangements for the transport of mineral, waste or other materials within the site minimises the potential for adverse impacts, including greenhouse gas emissions, and optimises the opportunities for green infrastructure. The use of conveyors and/or pipelines is required where they would be appropriate to the circumstances of the site and the nature of the material to be moved. Electric powered vehicles would be considered an appropriate alternative.

5.11 Reclamation of sites – MWLP policy SP4

5.11.1 Mineral and waste developments can make a particular contribution to the environmental quality and local distinctiveness of Herefordshire through site reclamation and restoration.

5.11.2 The NPPF states that land worked for minerals should be reclaimed at the earliest opportunity, taking account of aviation safety, and that high-quality restoration and aftercare of mineral sites should take place. It also states that bonds and other financial guarantees to underpin planning conditions should only be sought in exceptional circumstances. These principles also apply to the reclamation of waste sites.

5.11.3 The nature of minerals development, which often involves permanent or long-term physical change to land, sometimes on a substantial scale, means that it is important that consideration is given to how sites are reclaimed and used once workings have finished. In contrast, many waste management facilities, particularly modern developments not involving landfill, are buildings located in urban areas that do not give rise to such considerations. However, the development of former mineral sites or greenfield sites for waste use, which may include landfill or temporary plant and buildings, can lead to the need for site reclamation. Whilst the main focus of this section is on minerals development, the policy it contains is also intended to be applied to relevant forms of waste development.

5.11.4 As waste is managed more sustainably, the traditional link between mineral working and reclamation back to original ground levels through landfill has been largely broken. There is no non-hazardous landfill in Herefordshire and this is likely to continue as new arrangements for managing residual waste arising in the plan area are implemented. Increasingly, inert material is also being diverted away from landfill, as it is subject to more re-use and recycling. However, the quality of construction and demolition waste recovery is such that improved materials, which can meet quality protocols for soils, can now be used to reclaim former mineral workings and other sites to a higher standard overall.

5.11.5 All new mineral workings are only likely to receive planning permission where they provide for the restoration and aftercare of the site to a beneficial use, in a phased manner. The Town and Country Planning Act (as amended) gives the council, as the mineral planning authority, the ability to apply a restoration condition requiring such steps to be taken as may be necessary to bring the land to the required standard for use for agriculture, forestry or amenity. However, reclamation provides the opportunity for delivering a range of benefits to the environment and/or amenity and the council will welcome well-considered schemes that

will deliver green infrastructure priorities on a landscape scale. A number of examples have been provided throughout the MWLP.

5.11.6 Reclamation schemes should take into account the location and context of the site, including the implications of other significant consented or proposed development in the area and the range of environmental and other assets and infrastructure that may be affected, including any important interactions between those assets and infrastructure. Reclamation schemes should take account of the proximity and purpose of airfields and be designed accordingly. They should be developed following discussion with local communities and other relevant stakeholders and, where practicable, the proposals should reflect the outcome of those discussions.

5.11.7 It is recognised that there may be conflict between the priorities for restoration. For example the reclamation scheme for a site located in an area subject to flooding may focus on flood alleviation, ignoring that the site is also located within an historic landscape, or as part of the wider setting for an historic asset so that restoration to its former use may be more appropriate. Any proposed reclamation scheme should be accompanied by demonstration that the optimal design has been presented, and that all relevant factors have been duly considered.

5.11.8 Phased working and reclamation of the site will enable impacts to be reduced and benefits to be delivered sooner. Consequently, phasing is consequently expected to form a part of any mineral working programme and is seen as one element of site reclamation. Phased working and reclamation should take care to avoid sterilisation of any viable mineral resource.

5.11.9 The council will require planning applications to present evidence of a practicable, long-term reclamation strategy that will reduce adverse effects, optimise benefits and which may extend beyond the boundary of the former operational site. As a starting point, developers should refer to the particular issues identified in the key development criteria (Appendix A) established for the allocated sites and the Green Infrastructure Strategy already in place. Reclamation schemes should be comprehensive, addressing all relevant details, for example: the removal of all plant and infrastructure; the retention of appropriate surface water features; the proposed reinstatement of soils; planting proposals; and the provision of information to enhance the experience of those enjoying the restored site.

5.11.10 In all cases a high standard of reclamation will be expected, that integrates historic context and green infrastructure and leaves a positive legacy. Defra's Guidance for Successful Reclamation of Mineral and Waste Sites[39] is a useful reference document for designing reclamation schemes. Long-term management beyond the statutory five-year aftercare period will be required where appropriate, for example to establish a new habitat or to bring community benefit. Commitment for such provision will be gained through a planning obligation, as set out in Core Strategy policy ID1.

[39] Guidance for Successful Reclamation of Mineral and Waste Sites, Defra, 2004. http://webarchive.nationalarchives.gov.uk/20090318074725/http://www.defra.gov.uk/farm/environment/land-use/reclamation/guidance-full.pdf

Policy SP4: Site Reclamation

Development that requires reclamation will only be supported where it is demonstrated that the proposal incorporates measures for safe working and satisfactory reclamation, including its delivery, at the earliest opportunity, and phasing where appropriate, to a beneficial after-use of the required standard. Satisfactory reclamation schemes shall accompany such applications and include the following:

a. **proposals that take account of the geography of the site, its surroundings, and any development and development plan policies relevant to the area;**
b. **proposals that deliver landscape scale benefits and/or integrated historic context and green infrastructure appropriate to its location;**
c. **evidence to show that the scheme incorporates best practice advice, is practical to deliver and achievable;**
d. **demonstration that the proposal responds to the existing (or likely future) characteristics of the site, its context and surrounding area;**
e. **a Reclamation Plan, setting out the management requirements and process of returning the land to the agreed after-use and standard which includes both the restoration and the aftercare periods; and**
f. **provision for a 5-year period of aftercare, as a minimum.**

Where appropriate, a planning obligation will be sought in order to secure the after-use, long-term management and maintenance of the site.

6. Minerals

6.1 Minerals Strategy

6.1.1 At the time of plan preparation, Herefordshire hosted: two active sand and gravel quarries; two active crushed rock quarries; and six active building stone delves. Two areas had previously been worked for coal and there was one Petroleum Exploration and Development Licence Block (So51a) covering a small part of the south of the county.

6.1.2 Similar to the waste hierarchy, a minerals hierarchy presents the favoured approach to mineral supply. The most sustainable option is to reduce the amount of mineral used, followed by use of secondary and recycled minerals, with the extraction of primary mineral likely to have the greatest impact. The MWLP seeks to influence all development so that minerals provision can move up the hierarchy.

6.1.3 Secondary aggregates are minerals that are produced as a by-product of other mining or quarrying activities or as a by-product of an industrial process. There is little or no secondary aggregate production within Herefordshire. The limestone is predominantly crushed for use as a primary aggregate and building stone offcuts from the sandstone delves areused in their restoration.

6.1.4 Recycled aggregates arise from several sources, notably from the demolition of buildings or from civil engineering works, such as asphalt planings from road resurfacing and railway track ballast. Recycling aggregates usually involves the removal of unwanted or inappropriate material such as fines, wood, plastic and metal, and some form of treatment (crushing, washing and/or screening) to reach industry standards for its re-use. There is production of recycled aggregate, with expansion potential, and this is further promoted in waste policy.

6.1.5 Despite seeking to reduce demand, the extraction of primary minerals for construction is likely to continue to be required throughout the plan period, and policy M1 makes commitment to identifying those areas where such development should be directed. It is widely recognised that neither conventional nor unconventional hydrocarbon extraction is likely to occur over the plan period. Coal working in Herefordshire has ceased and shows little sign of recommencing. There is just one area of unconventional hydrocarbon resource in Herefordshire, located in the south of the county around Whitchurch, Welsh Newton, Goodrich, Kerne Bridge, Hope Mansell and Marstow. The area was identified for a Petroleum Exploration and Development Licence (PEDL) block SO51a by the Oil and Gas Authority and offered to the industry in 2015 as part of the 14th Onshore Licence Round. The PEDL was not taken up by the industry and has not been issued.

6.1.6 Block SO51a is classified as coalbed methane, although the PEDL is for any hydrocarbon and is not limited to this classification. Coalbed methane is produced during the process of coal formation. The gas is either adsorbed into the coal or dispersed into pore spaces around the coal seam. By drilling a network of wells, the gas can be extracted from coal seams that have not been mined. The gas is typically extracted via the well through natural pressure release, or

through the pumping of water from the seam in order to reduce pressure. More information is available from at the GOV.UK website.[40]

6.1.7 The extraction of fossil fuels does not fit easily with the climate change aspirations of European or national policy or the Core Strategy. Nevertheless, both conventional and unconventional hydrocarbons are included in policy M1, to retain flexibility should either resource become workable and of interest in the future. The council will expect any development proposal for the extraction of either coal or unconventional hydrocarbons to present a compelling case to demonstrate the environmental, economic and social benefits of the project.

6.1.8 Because mineral resources may be substantial, it is possible for more than one quarry to operate within a single reserve area, either through extensions or new quarries opening up in the vicinity of an existing site. This is generally seen to be advantageous, as it enables the resource to be worked efficiently and for infrastructure (conveyors, processing plant etc.) to be shared. Consequently, the policy priority will be to achieve efficient use of land, extracting the most mineral with the least adverse impact and avoiding a proliferation of built development.

6.1.9 The sterilisation of minerals occurs when other non-minerals developments take place on, or close to, mineral deposits and render them incapable of being worked. The council will seek to ensure that, where practicable, known mineral resources are not sterilised or encroached upon by other forms of development. Figure 7 sets out the mineral reserve and key elements of infrastructure safeguarded by policy M1. Policy M2 provides further detail.

6.1.10 The legislative requirements of the Planning and Compensation Act 1991 and the Environment Act 1995 enable the review of old mineral permissions, commonly referred to as 'ROMP'. The ROMP provides an opportunity for the mineral planning authority to ensure mineral sites continue to work under modern conditions that reflect sustainability aspirations and offer appropriate environmental protection. Subject to certain legal provisions, the ROMP determination process is conducted in a similar way to the processing of a planning application. Consequently, the development plan, including the MWLP, and other material considerations will apply in determining ROMP.

Policy M1 : Minerals Strategy

The sustainable winning and working of mineral resources in Herefordshire will be delivered through:

a. identifying sources of alternatives to primary mineral resources, and encouraging the development of facilities to process alternative materials either at the point of production or other suitable locations;

b. ensuring new-build and refurbishment developments contribute to the efficient use of resources, increasing the proportion of recycled materials used as an alternative to primary mineral where appropriate;

c. allocating preferred areas and sites that are considered appropriate in principle for construction minerals development;

[40] www.gov.uk/government/publications/about-shale-gas-and-hydraulic-fracturing-fracking/developing-shale-oil-and-gas-in-the-uk

d. restricting the extraction of hydrocarbons to within either the Surface Coal Resource areas or PEDL block SO51a (as appropriate to the mineral) and requiring compelling reasons to demonstrate that the use of any hydrocarbon is necessary, acceptable and provides national, local or community benefits which clearly outweigh the likely impacts, including protected areas and local communities and the greenhouse gas emissions associated with both the extraction and use of hydrocarbons ;

e. the efficient use of land, including shared use of associated infrastructure where minerals are worked in close proximity; and

f. identifying mineral resources and infrastructure within Herefordshire and safeguarding them from the encroachment of incompatible uses and sterilisation by built development.

Safeguarding

6.1.11 Because minerals are a finite natural resource, and can only be worked where they are found, it is important to make best use of them to secure their long-term conservation. The National Planning Policy Framework requires Minerals Safeguarding Areas to be defined in order that known locations of specific minerals resources of local and national importance are not needlessly sterilised by non-mineral development, whilst not creating a presumption that the resources so defined will be worked.

6.1.12 Figure 7 presents the Minerals Safeguarding Areas for Herefordshire, incorporating: areas of reserve indicated by the British Geological Survey data; surface coal resource areas from the Coal Authority; currently consented quarries and their associated infrastructure; the operating rail head at Moreton-on-Lugg; and the disused railhead at Moreton Business Park.

6.1.13 Non-minerals development could potentially sterilise the minerals resource where it takes place over shallow deposits or where the nature of the non-minerals use is classed as a sensitive receptor when in close proximity to extraction activities. In such instances, extraction of the mineral prior to the proposed development will be encouraged, where this would not significantly adversely affect the timing and viability of the non-minerals development. Any such prior extraction proposals must themselves comply with national and development plan policy. Applicants for non-mineral development that fall within the minerals safeguarding areas will be required to submit an assessment of the effect of the proposed development on the mineral resource beneath or adjacent to the site of the development. This is often termed a mineral resource assessment. The assessment will provide the appropriate level of information to demonstrate to the council that the relevant mineral interests have been adequately considered and that known mineral resources will be appropriately protected from being sterilised or unduly restricted by other forms of development occurring on or close to the resource.

6.1.14 The National Planning Policy Framework extends the concept of minerals safeguarding to make clear that the applicant of a new development, the 'agent of change', should ensure that the intended project does not unreasonably restrict an existing business. Depending on the nature of the proposed development, such an outcome may be felt at different distances from the mineral resource or associated infrastructure. Recognising the importance of mineral resources and associate infrastructure, this principle has been incorporated into policy M2.

6.1.15 Policy M2 applies to all minerals resources, regardless of whether they have gained the necessary planning permission to be worked. Identification of these areas does not imply that any application for the working of minerals within them will be granted planning permission. Policy M2 also applies to the infrastructure associated with the mineral resource, including rail heads.

Policy M2: Safeguarding of Minerals Resources and Associated Infrastructure from Sterilisation or Significant Adverse Effect

1. **Within the minerals safeguarding areas, non-minerals development will only be supported in the following circumstances:**
   a. **the development would not sterilise or prejudice the future extraction of the mineral resource because it can be demonstrated that the resource: is not of economic value; occurs at depth and can be extracted in an alternative way; does not exist or has been sufficiently depleted by previous extraction; or**
   b. **the mineral can be extracted satisfactorily prior to non–minerals development without materially affecting the timing and viability of the non-minerals development; or**
   c. **the non-minerals development is of a temporary nature that can be completed and the site returned to a condition that does not prevent mineral extraction or operation of the associated infrastructure within the timescale that the mineral is likely to be needed; or**
   d. **the need for the non-mineral development is strategic and can be demonstrated to outweigh the need for the mineral resource and associated infrastructure.**
2. **Where the operation of an existing mineral working could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant shall be required to provide suitable mitigation before the new development is completed.**

INSERT: Figure 7 Minerals Safeguarded Areas and Rail Heads

[refer to PDF]

6.2 Aggregates

6.2.1 Aggregate minerals are primarily used in construction, including concrete manufacture, road building and landscaping. The primary aggregate minerals extracted in Herefordshire are sand and gravel and crushed rock (limestone).

Sand and gravel

6.2.2 The MNA 2019 forecasts a range of future sand and gravel demand, indicating that the landbank at 2041 could be less than 7 years, particularly if a level of self-sufficiency is to be achieved. Data released by the British Geological Survey for year 2014, indicates that Herefordshire was 40% to 50% self-sufficient in sand and gravel provision. This data is not verified, but provides the most comprehensive indication of mineral movements currently available.

6.2.3 It would be advantageous for Herefordshire to increase its level of self-sufficiency (not least to reduce the environmental burdens from transport) and to make a reasonable contribution to the Managed Aggregate Supply System.

6.2.4 In addition, at the time of preparing the MWLP, the two operational quarries Wellington and Upper Lyde are subject to planning conditions requiring that the winning and working of minerals must cease by 31 December 2026 and 30 September 2029 respectively. Therefore, regardless of which forecast most closely represents the real outcome for sand and gravel over the lifetime of the Draft MWLP, there will be a need for additional reserves of sand and gravel to be consented to meet demand from 2027 onwards.

6.2.5 To ensure that an adequate supply (i.e. to maintain a landbank of at least 7 years) is available at the end of 2041 additional resource may be needed, depending on the actual scale of demand that arises. Recognising the level of uncertainty in forecasts, it can be reasonably expected that the demand forecast for sand and gravel may change over the plan eriod. Therefore, it is not considered appropriate to specify the precise level of further provision that may be needed in order to maintain a minimum 7-year landbank at 31 December 2041. This is a matter that is effectively and appropriately addressed by monitoring the MWLP, through annual reviews of the Local Aggregates Assessment and the five-year MWLP reviews, at which time the level of additional provision can be considered, with additional site allocations brought forward if necessary.

6.2.6 Recognising the advantages of working an area efficiently, specific sites for future sand and gravel extraction are allocated adjacent or near to existing sites with planning permission to be worked. Sand and gravel reserves at Upper Lyde , Shobdon and Wellington are allocated in the MWLP. The MWLP evidence base indicates that these allocations would provide a minimum of nearly 3 million tonnes of sand and gravel resource.

6.2.7 In addition, policy M3 identifies preferred areas for sand and gravel working; new operations in these areas of search would add to the robustness of sand and gravel supply within Herefordshire. Sand and gravel working is to be focussed within the large expanse of reserve that wraps around the northern and eastern sides of Hereford and at Shobdon, to the north-west of Hereford.

6.2.8 Only where the preferred locations cannot be demonstrated to fulfil a reasonable level of demand, will proposals for sand and gravel extraction outside of these areas be permitted.

Policy M3/2 is deliberately worded to refer only to extraction. In order to reduce the potential for adverse impacts, it is intended that mineral would be transported off-site for processing,

6.2.9 As made clear in Strategic Policy and General Principles; any adopted development plan must be read as a whole and development proposals will be considered against all relevant policies. The development plan for minerals includes the Core Strategy and its policies, not least those concerned with protection (and enhancement) of the environment. In addition to this policy framework, the allocated sites are accompanied by key development criteria that present particular issues to be comprehensively addressed in association with any development proposal. There is no key development criteria for the preferred areas of search; they are too extensive. However, this does not mean that development proposals within these areas will not be subject to the same level of scrutiny. Not least the Habitats Regulations Assessment undertaken of this plan recommends that any development proposal located within Area C should be accompanied by project level Habitats Regulation Assessment and targeted ecological surveys.

6.2.10 The order of preference set out at policy M3/2 is for the Specific Sites to be preferred over the Preferred Areas; there is no order of preference within the locations identified under each of those categories.

Policy M3: Winning and working of sand and gravel

1. **Total provision for sand and gravel over the plan period to 31 December 2041 will be 5 million tonnes. Additional provision shall be made through the five-year reviews, if necessary, to maintain a landbank of at least seven years for sand and gravel at 31 December 2041, based on an annual rate of provision to be determined through the review.**
2. **In order of preference, sand and gravel extraction shall be supported at the following locations:**
   a. **Specific Sites (presented in alphabetical order) subject to the key development criteria set out at Appendix A:**
      - **Shobdon Quarry;**
      - **Upper Lyde Quarry;**
      - **Wellington Quarry.**
   b. **Preferred Areas of Search:**
      - **Area B of the Key Diagram;**
      - **Area C of the Key Diagram.**
3. **Only where it is demonstrated to be necessary to maintain an adequate landbank or there is a shortfall in production capacity available at the Specific Sites or Preferred Areas of Search, will sand and gravel extraction will be supported in any other area of reserve.**

Crushed rock (limestone)

6.2.11 The MNA 2019 makes two forecasts of future crushed rock demand, indicating that the landbank at 2041 could be less than 10 years, particularly if a level of self-sufficiency is to be achieved. Data released by the British Geological Survey for year 2014, indicates that Herefordshire was 20% to 30% self-sufficient in crushed rock provision. This data is not verified, but provides the most comprehensive indication of mineral movements currently available.

6.2.12 It would be advantageous for Herefordshire to increase its level of self-sufficiency (not least to reduce the environmental burdens from transport) and to make a reasonable contribution to the Managed Aggregate Supply System.

6.2.13 In addition, at the time of preparing the MWLP, there were two active crushed rock quarries in Herefordshire, with the planning conditions for Leinthall Quarry requiring that the winning and working of minerals at that site must cease by 31 August 2027. There may remain a need for additional reserves of crushed rock to be consented to meet demand from 2027 onwards.

6.2.14 To ensure that an adequate supply (i.e. to maintain a landbank of at least 10 years) is available at the end of 2041, additional resources may be needed, depending on the actual scale of demand that arises. Recognising the level of uncertainty in forecasts it can be reasonably expected that the demand forecast for crushed rock may change over the plan period. Therefore, it is not considered appropriate to specify the precise level of further provision that may be needed in order to maintain a minimum 10 year landbank at 31 December 2041. This is a matter that is effectively and appropriately addressed by monitoring the MWLP, through annual reviews of the Local Aggregates Assessment and the five-year reviews of the MWLP, at which time the level of additional provision can be considered, with additional site allocations brought forward if necessary.

6.2.15 Recognising the advantages of working an area efficiently, specific sites for future crushed rock extraction are allocated adjacent or near to existing sites with planning permission to be worked. Crushed rock reserves at Leinthall and Perton are allocated in the MWLP. The MWLP evidence base indicates that these allocations would provide around 9 million tonnes of crushed rock.

6.2.16 In addition, policy M4 identifies preferred areas for limestone working, new operations in these areas of search would add to the robustness of crushed rock supply within Herefordshire. Limestone working will be preferred within the reserves located to the north of the county and to the east of Hereford.

6.2.17 Only where the preferred locations cannot be demonstrated to fulfil a reasonable level of demand will proposals for limestone extraction outside of these areas be permitted. Policy M4/2 is deliberately worded to refer only to extraction. In order to reduce the potential for adverse impacts, it is intended that mineral would be transported off-site for processing,

6.2.18 As made clear in Strategic Policy and General Principles, any adopted development plan must be read as a whole and development proposals will be considered against all relevant policies. The development plan for minerals includes the Core Strategy and its policies, not least those concerned with protection (and enhancement) of the environment. In addition to this policy framework, the allocated sites are accompanied by key development criteria that present particular issues to be comprehensively addressed in association with any development proposal.

6.2.19 The order of preference set out at policy M4/2 is for the Specific Sites to be preferred over the Preferred Areas; there is no order of preference within the locations identified under each of those categories.

Policy M4: Winning and working of crushed rock (limestone)

1. **Total provision for crushed rock over the plan period to 31 December 2041 will be 9 million tonnes. Additional provision shall be made through the five-year reviews if necessary to maintain a landbank of at least ten years for crushed rock at 31 December 2041, based on an annual rate of provision to be determined through the review.**
2. **In order of preference, crushed rock extraction shall be supported at the following locations:**
   a. **Specific Sites (presented in alphabetical order) subject to the key development criteria set out at Appendix A:**
      - **Leinthall Quarry;**
      - **Perton Quarry.**
   b. **Preferred Area of Search:**
      - **Area A of the Key Diagram;**
      - **Area D of the Key Diagram.**
3. **Only where it is demonstrated to be necessary in order to maintain an adequate landbank or there is a shortfall in production capacity available at the Specific Sites or Preferred Areas of Search, will limestone extraction be supported in any other area of reserve.**

6.3 Building Stone

6.3.1 Building stone includes material used for roofing, walling, flagstones or ornamental purposes. The primary building stone extracted in Herefordshire is sandstone.

6.3.2 The supply of building stone is important for the upkeep of traditional buildings and historic assets and for ensuring new development reflects the character of its surroundings. It is therefore important in maintaining and enhancing the overall quality of the environment in the plan area.

6.3.3 Within Herefordshire, sandstone is worked in small quarries called delves, generally by hand, with just one or a few workers on site. They are backfilled with the soils, overburden and mineral wastes such that their impact should be minimised. This approach should be continued, ensuring a sustainable supply of local building stone remains available throughout the plan period.

6.3.4 The available evidence suggests that 2,000 tonnes per year has been a consistent level of demand over the past few years. Some of the operators visited indicated that the current area of working was coming to a close and the delve would either be restored, or they would seek an extension. All of the delves are subject to conditions limiting their working period, some of which cease within the plan period. There are six building stone delves currently consented

and active, all of which would be suitable in principle to gain an extension of time to enable extraction to be completed. Three of these sites would also be suitable, in principle, for a lateral extension or deepening of workings.

6.3.5 New sites might be appropriate where the building stone is important to ensure the preservation of local distinctiveness, the workings are small-scale (reflecting the historic pattern of sandstone extraction) and the proposal is limited to the production of non-aggregate materials (principally building stone, dimension stone and roof tiles). Any overburden (the soil and rock layers overlying the sandstone) and spoil (the offcuts and residues remaining from working the building stone) shall be retained on site and used for its reclamation.

6.3.6 As made clear in Strategic Policy and General Principles; any adopted development plan must be read as a whole and development proposals will be considered against all relevant policies. The development plan for minerals includes the Core Strategy and its policies, not least those concerned with protection (and enhancement) of the environment. In addition to this policy framework, the allocated sites are accompanied by key development criteria that present particular issues to be comprehensively addressed in association with any development proposal.

Policy M5: Winning and working of sandstone

1. **In order to maintain an adequate supply of sandstone to preserve local distinctiveness within Herefordshire, proposals will be supported for:**
   a. **the extension of time for completion of extraction at consented sandstone extraction sites;**
   b. **the lateral extension and/or deepening of workings at the following consented sandstone extraction sites, subject to the key development criteria set out at Appendix A:**
      - **Black Hill Delve;**
      - **Llandraw Delve;**
      - **Westonhill Wood Delves;**
   c. **the opening of new sites for sandstone extraction at appropriate locations, including micro-scale extraction on or adjacent to existing historic buildings or structures and new build developments, where the extracted materials will only be used in connection with the identified project.**
2. **The working of sandstone at the above locations will be supported where:**
   a. **the need for the material for the preservation of local distinctiveness, particularly features of local historic or architectural interest, listed and vernacular buildings or archaeological sites, outweighs any material harm extraction might cause to matters of acknowledged importance;**
   b. **the proposed workings are small scale; and**
   c. **the proposal is limited to the production of non-aggregate materials, with any overburden and spoils retained on–site and used for its reclamation.**

6.4 Borrow Pits

6.4.1 In the course of large-scale civil engineering construction projects, there is often a need to develop off-site extraction for a variety of reasons. Following extraction, such excavations, known as borrow pits, are infilled with unusable materials from the construction project. It is often only possible to consider the suitability of areas for use as borrow pits once the nature, scale and timing of a project is known. Such uncertainties may extend into the construction phase itself; road building for instance often encounters unexpected problems.

6.4.2 Applications for borrow pits within Herefordshire are not expected to be numerous, but they are expected to result in a high quality of development. It is essential that borrow pits are controlled and subject to the same environmental considerations as other mineral workings. If permission is granted, such sites will be conditioned to ensure that their reclamation is achieved as part of the main construction project, and that their aftercare and after-use are properly controlled.

Policy M6: Borrow Pits

Proposals for the development of borrow pits will be supported where:

a. granting planning permission would create significant environmental benefits that outweigh any material planning objections;

b. the borrow pit lies on or adjacent to the proposed construction project and the extracted materials will only be used in connection with the specific construction project with which they are associated;

c. the site can be restored to a state capable of beneficial after-use without the use of imported material, other than that generated on the associated construction project; and

d. the life of the borrow pit is commensurate with the duration of the associated construction project.

7. Waste

7.1 Waste Strategy

7.1.1 Sustainable waste management in Herefordshire would deliver: a reduction in the amount of waste generated; an increase in the amount of waste re-used, recycled or used to recover energy; and a decrease in the amount of waste disposed to landfill.

7.1.2 At the time of plan preparation, Herefordshire hosted a robust waste transfer, re-use and recycling network, but had very little residual waste treatment or disposal capacity, particularly for C&I and CD&E wastes. LACW is, primarily, managed through the jointly contracted residual waste management facilities located in Worcestershire, which will operate for the foreseeable future.

7.1.3 Other residual wastes were generally exported for recovery at facilities located beyond Herefordshire. This movement is a clear demonstration of the market forces at work within the waste sector, and is not necessarily a disadvantageous outcome. The most significant disadvantage is felt in Herefordshire, which would lose out on the potential for inward investment, jobs, secondary materials and renewable/low carbon sources of energy if new waste management infrastructure is not developed.

7.1.4 The plan area is very rural and relatively remote. Excluding CD&E wastes, the amount of residual wastes remaining to be managed are calculated to be in the region of 200,000 tonnes. This tonnage is relatively low, is generated from a number of different sources and is consequently not particularly attractive to waste management companies that operate nationally.

7.1.5 In preparing this MWLP, the local waste management industry was found to be dynamic. The evidence base found new sites being opened and previous waste management service businesses being restructured. Within the Core Strategy, Herefordshire has adopted a number of strategic employment sites, which include the specific growth areas of the Rotherwas Enterprise Zone and Leominster Enterprise Park. These locations have good potential to deliver the circular economy, where engineering, creative industry, manufacturing, waste and research sectors can combine resources to enable materials (including wastes) to be kept at their highest value for as long as possible. In its simplest form, this might be the development of an incineration facility accepting residual waste from local businesses and which returns electricity and, ideally, heat, but also phosphorus for beneficial use. This energy supply would be decentralised, secure and low carbon, enabling national and local priorities on climate change to be realised. Recovering phosphorus would provide a supply of this essential mineral, whilst avoiding both its loss to the natural environment and extraction of the raw material.

7.1.6 An objective of the MWLP is to deliver a circular economy. Within Herefordshire there is a need to reduce phosphate emissions into the River Wye SAC, which means they will need to be captured prior to their release. Waste water treatment works improvements are being pursued by both Dwr Cymru/Welsh Water and Severn Trent Water; the latter of which has developed a pilot plant in Warwickshire, to evaluate energy neutral waste water treatment and the potential for materials recovery. The MWLP promotes the use of energy recovery for residual wastes, which gives the potential to recover phosphate from the fly ash. Anaerobic

digestion processes, that can be used at waste water treatment facilities and promoted on farm and are promoted in the MWLP, can also provide a source for phosphorus recovery.

7.1.7 There did not appear to be any currently viable locations for non-hazardous waste disposal facilities, and again, the tonnages calculated for disposal were low; the industry has made no submissions for new non-hazardous disposal facilities in Herefordshire. Submissions have been made for inert waste disposal to be used in the restoration of mineral workings and this is generally considered to be an acceptable approach.

7.1.8 Consequently, the policy priority is provide a positive framework within which to deliver additional waste management capacity, addressing all levels of the waste hierarchy, except non-hazardous disposal, but making development opportunities for residual waste treatment facilities particularly attractive.

7.1.9 Effective diversion of waste from landfill means that proposed facility is able to demonstrate real benefit in the form of treatment proposed. Historically, some treatment options have, for example, simply changed the moisture content of waste but without resulting in a material that can be put to beneficial use. This type of facility does not effectively move waste up the hierarchy or deliver the circular economy, as the resultant material is still disposed to landfill.

7.1.10 National Planning Policy for Waste[41], paragraph 8 makes clear that non-waste development should not prejudice the implementation of the waste hierarchy or the efficient operation of waste management facilities. Similarly, the National Planning Policy Framework makes clear that the applicant of a new development, the 'agent of change', should ensure that the intended project does not unreasonably restrict an existing business. Depending on the nature of the proposed development, such an outcome may be felt at different distances from the waste management facility. Recognising the importance of waste infrastructure, this principle has been incorporated into policy W1.

7.1.11 It is recognised that there are some waste management facilities already operating within Herefordshire that would not satisfy policy of the MWLP; it is intended that these facilities are not protected by policy W1.

Policy W1: Waste Strategy

Sustainable waste management in Herefordshire will be delivered through:

1. **supporting development that enables delivery of the circular economy;**
2. **supporting the infrastructure necessary to recover phosphorus for beneficial purposes;**
3. **supporting waste treatment development that effectively diverts waste from landfill;**
4. **making provision for sufficient annual waste treatment capacity to enable equivalent self-sufficiency across all waste streams with development focussed within Hereford and the market towns of Bromyard, Kington, Ledbury, Leominster; and Ross on Wye;**
5. **making provision for sufficient inert waste disposal capacity; and**

[41] National Planning Policy for Waste, DCLG, October 2014. https://www.gov.uk/government/publications/national-planning-policy-for-waste

6. **ensuring that the continued operation of existing waste management facilities in locations that are consistent with the spatial strategy is safeguarded, including against the encroachment of incompatible uses. Where the operation of an existing waste management facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant shall be required to provide suitable mitigation before the new development is completed.**

7.2 Waste Management Requirements

Solid Wastes

7.2.1 The three most prevalent solid wastes received at consented facilities in Herefordshire are: municipal at around 45% (principally waste from households); construction and demolition wastes, at around 30%; and agriculture and processing wastes, at around 20%. This is quite different to the picture seen nationally, where construction and demolition wastes generally make up about 50% of total arisings, with C&I waste at around 25%, municipal waste at around 20% and other wastes making up the remainder.

7.2.2 The WNA 2019 calculated that additional waste management capacity will be required to manage these wastes throughout the plan period. This principally recognises that additional treatment capacity should be provided for the treatment of residual wastes and to balance out the lack of non-hazardous disposal opportunities within Herefordshire to enable equivalent self-sufficiency.

7.2.3 A flexible approach to the provision of waste management infrastructure is set out within the MWLP. This is deliberate, recognising both the lack of certainty that exists around forecasting future wastes and infrastructure demand, and that the provision of waste management infrastructure is market led and unlikely to result in the provision of too much capacity. Table 2 presents the maximum forecast capacity demand for each waste stream. This number is referenced in policy W4 (generally rounded up) to provide a framework for delivery over the plan period; for all management routes except disposal, this is a one-off requirement. A waste treatment facility providing 25,000tpa of capacity will be able to do this year on year, under standard operating procedures. However, a landfill void will be filled up every time a deposit is made, consequently an annual, or cumulative, tonnage is required.

Table 2 Forecast additional waste management infrastructure demand

<table>
<tr><th rowspan="2">Waste</th><th rowspan="2">Management route</th><th colspan="4">YEAR</th><th rowspan="2">Estimated Demand</th></tr>
<tr><th>2025</th><th>2030</th><th>2035</th><th>2041</th></tr>
<tr><td rowspan="3">LACW</td><td>Biological</td><td>None</td><td colspan="3">10,000</td><td>10,000</td></tr>
<tr><td>Recycling</td><td>None</td><td colspan="3">22,500 to 30,000</td><td>30,000</td></tr>
<tr><td>Residual Treatment</td><td colspan="5">No additional capacity requirement identified</td></tr>
<tr><td rowspan="3">C&I</td><td>Biological</td><td colspan="4" rowspan="2">50,000</td><td rowspan="2">50,000</td></tr>
<tr><td>Recycling</td></tr>
<tr><td>Residual Treatment</td><td>63,000 to 94,500</td><td>61,200 to 86,800</td><td>58,400 to 78,400</td><td>64,700 to 81,500</td><td>87,000</td></tr>
</table>

Waste	Management route	YEAR				Estimated Demand
		2025	2030	2035	2041	
Non-natural Agricultural	Residual Treatment	6,000 to 8,000				**8,000**
Hazardous	Residual Treatment	8,000 to 12,000				**12,000**
CD&E	Recovery (90% recovery)	194,400 to 207,000	208,800 to 223,200	221,400 to 236,700	238,500 to 255,600	**255,600**
	Disposal (90% recovery)	21,600 to 23,000	23,200 to 24,800	24,600 to 26,300	26,500 to 28,400	**28,400 each year**
	Disposal (70% recovery)	64,800 to 69,000	69,600 to 74,400	73,800 to 78,900	79,500 to 85,200	**82,500 each year**

7.2.4 Objective 4 of this MWLP seeks to move waste up the management hierarchy and deliver a circular economy. Within Herefordshire this means seeking to achieve future, aspirational waste management targets for municipal waste:

- preparation for re-use and recycling (including composting/anaerobic digestion) target of 55% by 2025;
- preparation for re-use and recycling (including composting/anaerobic digestion) target of 60% by 2030;
- preparation for re-use and recycling (including composting/anaerobic digestion) target of 65% by 2035;
- gradual limitation on landfilling , to 10% by 2035; and
- requirement for the separate collection of bio-waste for recycling.

7.2.5 For CD&E wastes it has been assumed that a recovery rate of 90% will be achieved, which exceeds current policy expectations and would deliver management that aligns to the best practice currently found across England. Whilst higher rates of recovery are to be welcomed, it is also important to make provision for a reasonable level of disposal capacity, recognising that some wastes may not be recoverable and former mineral workings can be beneficially reclaimed.

7.2.6 Whilst these recycling rates are important context indicators, they are deliberately not written into policy. Apart from LACW, which already benefits from a well-established network of management facilities ensuring its diversion from landfill, the management route of wastes cannot be readily or reliably monitored.

7.2.7 National policy supports the location of waste activities within areas of new development, which may have a role to play in providing the required local waste management infrastructure. New development (including refurbishment) should provide for integrated waste management infrastructure where appropriate. In particular, in the early stages of planning major development, any scope for integrating waste treatment and heat generation should be exploited where practicable.

7.2.8 Hazardous and low level radioactive waste facilities are specialist facilities recognised as being facilities of regional and national importance. There is no identified strategic need for

new hazardous or low level radioactive waste management capacity within the plan area; however, policies W2 and W5 provide the relevant framework to enable Herefordshire to meet equivalent self-sufficiency.

7.2.9 Developed in the right locations, modern waste management facilities can bring many benefits: sustainable infrastructure; renewable/low carbon energy supply; secondary materials; inward investment; and jobs. Consequently, the tonnages presented in policy W2 are intended as a guide, to enable monitoring over time. They are not presented as a limit on new waste management development that is well designed, appropriately situated and demonstrated to deliver a sustainable outcome.

Policy W2: Solid waste management requirements

Development for the following waste management priorities will be permitted:

1. **biological treatment of household waste of at least 10,000 tonnes;**
2. **recycling capacity of municipal, commercial and industrial and non-natural agricultural wastes of at least 50,000 tonnes;**
3. **recovery of materials and energy from municipal, commercial and industrial, non-natural agricultural and hazardous wastes of at least 110,000 tonnes;**
4. **recovery of materials from construction and demolition waste of at least 250,000; and**
5. **disposal of inert wastes providing a cumulative void of 30,000 tonnes per year.**

Agricultural Waste

7.2.10 Herefordshire is a large, predominantly rural county; the agriculture and food/drink processing sectors are recognised to have a material influence on waste arisings. Whilst natural agricultural waste is not usually appropriate as a matter for a waste local plan, due to the local distinctiveness of Herefordshire, policy W3 has been prepared to address both natural and non-natural agricultural wastes. Policy W3 does not support the development of anaerobic digestion facilities fed on crops grown for that purpose (commonly referred to as energy crops and often using maize/corn).

7.2.11 Natural wastes appropriate for anaerobic digestion (or other biological technologies) will be organic and likely to comprise: manures; poultry litter; spoilt crops; dirty water; and used bedding. Non-natural wastes are likely to comprise plastics, fencing materials, cleaning products and medicines that are likely to require treatment and/or disposal off-farm.

7.2.12 The water quality of Herefordshire's main rivers and their tributaries is a matter of strategic importance. Not least the River Wye and its tributaries are designated a Special Area for Conservation (SAC), recognised as being of international importance for their unique character and wildlife, requiring the highest level of protection, management, enhancement and, where appropriate, restoration.

7.2.13 At the time of preparing the MWLP, the River Lugg, a tributary of the River Wye and included within the River Wye SAC, is failing its conservation targets of phosphate levels as a result of water pollution from both: point sources, particularly sewage outlets; and diffuse sources, principally run-off from agricultural land. The key pollutants are phosphates, but also ammonia.

7.2.14 In November 2018, judgement was handed down from the Court of Justice of the European Union in the case of Cooperatie Mobilisation (Joined Cases C-293/17 and C-294/17, the 'Dutch Case'). The Dutch Case concluded that where a site is failing in its water quality objectives, and is therefore classed as being in an unfavourable condition, there is limited scope for the approval of additional damaging effects and that the future benefit of mitigation measures cannot be relied upon at Appropriate Assessment, where those benefits are uncertain at the time of the assessment.

7.2.15 Herefordshire Council subsequently prepared a Position Statement titled 'Current Development in the River Lugg catchment Area' dated 15 October 2019 (the 'Herefordshire Council Position Statement'. The Herefordshire Council Position Statement advises (on page 2) that:

7.2.16 '*There remains potential for a positive Appropriate Assessment to enable development to proceed, on Natural England's advice, where it can be demonstrated that any impacts would be neutral (where avoidance / mitigation measures included in the plan or project, counterbalance any nutrient (phosphate) increase from the plan or project), or would lead to 'betterment.*'

7.2.17 The River Wye SAC Nutrient Management Plan makes clear that the farming community plays a crucial role in the River Wye SAC catchment. Published in 2014, the evidence base and options appraisal was developed to reduce phosphate levels in the River Wye catchment, including the River Lugg, to below the target level by 2027, in line with the Water Framework Directive. It incorporated a number of measures that should be implemented to promote the culture of environmental best practice.

7.2.18 'Top 5' recommendations for agriculture directly address waste management practices, including:

- storing solid manure heaps on an impermeable base;
- collecting effluent and dirty waters securely;
- not spreading farmyard manure to fields at high-risk times;
- incorporating manure into the soil; and
- using dry cleaning techniques to remove solid waste from yards prior to cleaning.

7.2.19 Farming rules for water – getting full value from fertilisers and soil[42] is a policy paper produced by Defra, prepared to deliver a new approach to regulating the agriculture sector, including new rules[43] that are outcome focussed and risk based establishing a consistent baseline of good practice across the agricultural industry in England.

7.2.20 The rules fulfil obligations on diffuse pollution under the Water Framework Directive and came into force on 2 April 2018; they mean it is now mandatory for all farmers in England to maintain good practice to protect water quality and prevent water pollution incidents. The rules:

- promote good practice in managing fertilisers and manures;
- encourage land managers to take reasonable precautions to prevent diffuse pollution from runoff or soil erosion;
- require land managers to plan each application of manure or fertilisers, based on soil tests, to meet but not exceed crop and soil needs.

7.2.21 It is also important to recognise that the agricultural sector has a significant role to play as custodians of the land and that wider benefits can be achieved from applying best practice in managing agricultural wastes, critically in terms of reducing carbon emissions. The Committee on Climate Change's 2019 Report[44] identifies that greenhouse gas emissions from agriculture represented about 10% of all UK emissions from 2016 to 2017 (page 26). '*Emissions from managing agricultural soils, largely resulting from nitrogen fertiliser use, accounted for 25% of the sector's emissions, with the remainder from waste management and on-farm energy use.*' The digestive processes of ruminants (cows and sheep) and the management of livestock waste and manures accounting for almost all the methane emitted in agriculture. Medium-term milestones include increasing the take-up of low carbon farming practices, which include greater on-farm energy efficiency, and improved nutrient, waste and manure management .

7.2.22 Consequently, policy W3 promotes the use of anaerobic digestion to manage natural agricultural wastes. Anaerobic digestion systems capture the methane from natural agricultural wastes, which can then be used as a source of energy or fuel, and produce a digestate that is, more beneficial to soil than raw manure when put on the land at the appropriate time.

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42 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/695598/farming-rules-for-water-policy-paper-v2.pdf

43 https://www.gov.uk/guidance/rules-for-farmers-and-land-managers-to-prevent-water-pollution

44 https://www.theccc.org.uk/publication/reducing-uk-emissions-2019-progress-report-to-parliament/

7.2.23 Agricultural units are dispersed across much of Herefordshire, consequently there is no spatial strategy proposed. It is expected that any waste treatment facilities proposed will primarily operate in association with the agricultural unit on which they are located. However, imports of natural or non-natural wastes from off-farm may be appropriate; each application will be considered against relevant policy of the development plan.

7.2.24 The waste management practices available to the agricultural sector are wide-ranging and varied, and can be expected to change over the plan period, for example Defra is due to publish the Farm Emissions Reduction Plan in 2020, which will also provide a framework of actions. Consequently, policy W3 is not prescriptive. There is a good support network available to farmers and landowners to gain advice in preparing their planning applications. This includes **FarmHere**fordshire,[45] established in 2015, to support the agricultural industry by promoting best practice, facilitating innovative approaches and ensuring that the county's farmers and growers have access to practical and user-friendly advice.

7.2.25 Implementing best practice for water protection and waste management should reduce the amount of nutrients and pollutants released to waterbodies and help to protect the environment. Whilst policy W3 is not prescriptive about how natural and non-natural wastes will be appropriately managed, Herefordshire Council will expect a level of demonstration proportionate to the development proposed and the agricultural holding at which it is located.

7.2.26 Policy W3 requires a waste management method statement to be submitted with all applications for livestock unit(s) on agricultural holdings. The statement will include clear details on the following matters as relevant for either the proposed development or the whole agricultural holding, dependent on the scale of development: the type and quantity of livestock; the type and quantity of by-products likely to arise; methods for dealing with inputs and outputs; pollution controls; transportation requirements; and any other reasonable matters as requested by Herefordshire Council. The waste management method statement may incorporate or cross refer to discrete Manure Management Plans, Transport Assessments and/or the operational details prepared to satisfy the farming rules for water or environmental permitting requirements.

7.2.27 It is important that the agricultural sector makes a real contribution to achieving at least nutrient neutrality, if not betterment, in the River Wye SAC. Through the existing legislative framework, monitoring undertaken by the Environment Agency and support provided through FarmHerefordshire, there are many opportunities for new approaches to be implemented within agricultural units to achieve this outcome. To accompany all development proposals, applicants will be required to demonstrate the approach to farming within that agricultural unit that contributes to achieving at least nutrient neutrality. The approach may take more than one form and might comprise either physical works and/or changes to the farming method within that unit.

7.2.28 Environmental impact assessment (EIA) is a statutory tool for assessing the environmental impacts of development projects and identifying measures that can be taken to reduce these impacts. The process of EIA in the context of town and country planning in England is governed by the Town and Country Planning (Environmental Impact Assessment) Regulations

[45] https://www.cla.org.uk/your-area/midlands/regional-news/farm-herefordshire-launched

2017 (which may be amended). These Regulations specify which development requires EIA (referred to as 'EIA development') and should be referenced in applying this policy.

7.2.29 It is recognised that there are other organisations involved in the permitting and regulation of agricultural practices, it is not solely the responsibility of Herefordshire Council. Policy W3 has been prepared to provide a land use policy framework for the management of agricultural waste that will contribute to enabling objectives of the Water Framework Directive to be met. The aim of policy W3 is materially to reduce phosphate release in the River Wye SAC from agricultural sources.

Policy W3: Agricultural waste management

1. Planning permission for livestock units on agricultural holdings will be supported where it is demonstrated through a waste management method statement that:

a. for non-EIA development, both natural and non-natural wastes generated by the proposed development will be appropriately managed both on and off-site; or

b. for EIA development, both natural and non-natural wastes generated by the whole agricultural unit will be appropriately managed both on and off-site.

2. Anaerobic digestion will be supported where its use is to manage only natural wastes generated primarily on the agricultural unit within which it is located.

3. All development proposals will be required to demonstrate delivery of a net reduction in nutrient discharges contributing to nutrient neutrality, or betterment, within the River Wye SAC.

Wastewater

7.2.30 Dwr Cymru/Welsh Water and Severn Trent Water provide wastewater treatment services within Herefordshire, with both companies operating wastewater treatment works. These facilities and the associated pipelines need to be upgraded and extended periodically in order to meet improved standards, cope with increased flows from new developments in their catchment area and to replace out of date equipment.

7.2.31 Both companies have recently adopted their business case for investment in sewage treatment and water supply facilities for the period from 2020 to 2025. As utility companies, their asset management plans are only ever prepared on a five-year rolling cycle. Consequently, their future development needs over the plan period are not capable of being fully understood and **policy W4** can only set out guiding principles for new wastewater development, making clear the preference for existing works to be upgraded and expanded as appropriate.

7.2.32 The River Wye SAC NMP identifies that sewage treatment works discharges are a main contributor to the baseline source apportionment; more so in the upper River Wye sub-catchment compared with the River Lugg sub-catchment. More stringent discharge levels at the sewage treatment works across Herefordshire are likely to be required to achieve conservation targets.

7.2.33 In its AMP7, Dwr Cymru/Welsh Water proposes to undertake phosphorous removal at 11 of its waste water treatment works ('WwTW') that discharge into the rivers Wye or Lugg. The five waste water treatment works that are located within Herefordshire are:

- Hereford Eign WwTW;
- Hereford Rotherwas WwTW;
- Leominster WwTW;
- Kingstone and Madley WwTW;
- Weobley WwTW.

7.2.34 Further to these facilities, Dwr Cymru/Welsh Water also proposes to undertake phosphorous removal at the Pontrilas WwTW. Whilst this facility is in Herefordshire, it does not release waters into the River Wye SAC.

7.2.35 As with all development proposals, any proposal for wastewater management would also be subject to the other relevant development management policies. The principles of wastewater treatment requirements for new development are contained at Core Strategy policy SD4.

Policy W4: Wastewater management

Planning permission will be granted to the statutory water and sewerage undertaker to extend, upgrade, or make provision for new infrastructure necessary to ensure the statutory undertaker can continue to undertake its duty to supply potable water and treat foul flows. Works undertaken should contribute to achieving nutrient neutrality, or betterment, within the River Wye SAC. Wherever practical and economical, biogas should be recovered for use as an energy source and phosphorus should be recovered for beneficial uses.

7.3 Spatial distribution of waste management sites

Solid Wastes

7.3.1 Most modern waste management facilities are enclosed within buildings and can be beneficially located on industrial or brownfield land within or near urban areas. In order to provide for the additional capacity identified above, sufficient land must be identified in suitable places. The preferred approach to the spatial distribution of new waste management facilities is in accordance with the Core Strategy, focussing the majority of development in Hereford and the market towns of Bromyard, Kington, Ledbury, Leominster and Ross on Wye.

7.3.2 Herefordshire has a number of well-established industrial estates and extensive strategic employment areas distributed within the market towns that lie within the spatial strategy. Developing at these locations will provide opportunities for symbiotic relationships between waste management, engineering, manufacturing and research industries and help to deliver the circular economy at a materials level. Promoting energy from waste facilities in these locations will enable a renewable/low carbon supply of electricity and potentially heat/cooling to be distributed to neighbouring uses, also contributing to the circular economy and achieving objectives of renewable energy supply.

7.3.3 Planning applications for waste management activities should provide an appropriate level of detail to inform a reasonable degree of certainty on the planning application and to ensure the principle of the development and use of the land is acceptable with cross reference to permitting constraints. Where development is also subject to approval under pollution control regimes, Herefordshire Council will continue to work closely with the Environment Agency to manage potential operational impacts where detailed assessment may be required.

7.3.4 Whilst it would not be appropriate to set an absolute threshold, as the development of land is site specific, the following guidelines are intended to apply:

- Small-scale facility is one of around or less than 50,000 tonnes per annum throughput and would be focussed on delivering a more local service, for example a household waste recycling centre, open windrow composting, or construction and demolition waste recycling facility.
- Large-scale facility is one providing more than 50,000 tonnes per annum throughput and would be focussed on providing a more strategic service, for example a materials recycling facility or energy recovery facility (either biological or incineration) accepting waste from across Herefordshire and potentially beyond.

7.3.5 The principles set out at policy W5 would be applicable to any waste stream, providing opportunities for new hazardous and low-level radioactive waste treatment facilities to be developed in Herefordshire, should there be a market demand. There is no order of preference within the locations identified at policy W5.

Policy W5: Preferred locations for solid waste treatment facilities

Sustainable waste treatment will be delivered through a combination of small and large-scale facilities focussed at the following locations:

1. **small-scale facilities located at any industrial estate or strategic employment area;**
2. **large-scale facilities located at any strategic employment area; and**
3. **at the following locations (presented in alphabetical order) subject to the key development criteria set out at Appendix A:**
   - **Former City Spares Site;**
   - **Kington Household Waste Recovery Centre;**
   - **Ledbury Household Waste Recovery Centre; and**
   - **Leominster HWS & HWRC.**

Construction, Demolition and Excavation Waste

7.3.6 There is an identified need for new waste management (recovery and disposal) capacity for CD&E wastes.

7.3.7 The CD&E waste recovery facility operating at Former Lugg Bridge Quarry has the potential for a substantial increase capacity; this is the preferred location for additional CD&E waste

recovery capacity. CD&E waste recovery facilities are often appropriately located on industrial estates and strategic employment areas, where they may be close to substantial demolition and refurbishment projects. In addition, they can be located at minerals workings, where the same processing equipment can be shared.

7.3.8 Its relatively remote position geographically, its natural geology and geography of water resources significantly restrict opportunities for non-hazardous landfill in Herefordshire because of the potential for adverse impacts on groundwater. EU law and national guidance from the Environment Agency restrict or prevent landfill and land raising sites where there is a significant risk that water quality could be adversely affected. Consequently, there have been no sites identified for non-hazardous waste disposal facilities.

7.3.9 There remains an identified need for inert waste disposal and sites have been proposed for this purpose. The inert wastes remaining after CD&E waste recycling, and the recovered materials, can be put to good use in the reclamation of former mineral workings. There is no order of preference within the locations identified for the disposal of inert wastes.

7.3.10 The deposit of CD&E waste materials is likely to require an Environmental Permit, the application for which should be twin-tracked with the planning application. Only clean, uncontaminated, inert materials should be deposited and a hydrological impact assessment is likely to be required, to consider the impact on groundwater quality and quantity.

7.3.11 Reference should also be made to Directive 2006/21/EC of the European Parliament and the Council on the management of waste from extractive industries (as may be amended) commonly known as the Mining Waste Directive. Guidance on the application of the Mining Waste Directive is available from the Environment Agency.[46]

Policy W6: Preferred locations for construction, demolition and excavation waste management facilities

1. In order of preference, sustainable recovery of construction, demolition and excavation wastes will be delivered at the following locations:

- **a. Former Lugg Bridge Quarry, subject to the key development criteria set out at Appendix A;**
- **b. strategic employment areas and industrial estates, subject to the key development criteria set out at Appendix A;**
- **c. active mineral workings, recognising that the lifetime of the waste treatment facility may be limited to the lifetime of the quarry;**

2. The sustainable disposal of inert wastes will be delivered at the following locations (presented in alphabetical order) subject to the key development criteria set out at Appendix A:

- **Shobdon Quarry (including the consented area);**
- **Upper Lyde Quarry (including the consented area);**
- **Wellington Quarry (including the consented area).**

[46] https://www.gov.uk/government/publications/environmental-permitting-guidance-the-mining-waste-directive

7.4 Waste Management Operations

7.4.1 The Draft MWLP is not technology specific, recognising that waste treatment facilities are wide ranging and incorporate:

- composting facilities;
- recycling facilities;
- mechanical processes that will recover materials; and
- biological or incineration processes that will recover materials and/or energy, either as a gas, heat and/or electricity.

7.4.2 A waste treatment facility not designed to recover energy would be expected to produce a valued material, for example recovered recyclables such as glass and metal or secondary recovered fuel that would be used to generate heat or electricity elsewhere.

7.4.3 Energy recovery is placed beneath materials recovery in the waste hierarchy. However, it has a beneficial role to play and this is recognised in national policy, in terms of both sustainable waste management and provision of a decentralised, renewable and/or low carbon energy source. Furthermore, beneficial materials can also be recovered, including digestate from anaerobic digestion facilities and glass, metal and secondary aggregate after combustion. Proposals incorporating combined heat and power (CHP) or electricity generation will help national policy objectives and should be encouraged as such in the draft MWLP.

7.4.4 In order to assist both the developer and the council to determine that a proposed facility is for energy recovery and not for waste disposal, policy W7 seeks information on the level of energy recovery expected to be achieved and the market(s) for that energy (e.g. identifying an electricity connection or heat/power recipient).

7.4.5 The disposal of inert wastes can be put to good use in the reclamation and restoration of land, particularly former minerals workings. This is to be encouraged at appropriate locations, so long as a satisfactory form of reclamation is proposed, with suitable after-use and comprehensive restoration scheme.

7.4.6 Planning permission will not be granted for inert waste disposal unless satisfactory proposals have been made for the reclamation and after-use of the site, and means of securing these in the long-term.

7.4.7 Planning applications for waste management activities should provide an appropriate level of detail to inform a reasonable degree of certainty on the planning application and to ensure the principle of the development and use of the land is acceptable with cross reference to permitting constraints.

Policy W7: Waste management operations

1. **Facilities for the reuse, recycling or recovery of materials shall be supported where it is demonstrated that the proposed development will enable delivery of the waste hierarchy and/or make a positive contribution to achieving the circular economy in Herefordshire.**
2. **Facilities for the recovery of energy shall only be supported where it is demonstrated:**
   a. **that the proposed development will enable delivery of the waste hierarchy and/or make a positive contribution to achieving the circular economy in Herefordshire; and**
   b. **that phosphorus in the fly ash will be separately recovered and put to beneficial use;**
   c. **that both the resultant heat and power will be utilised where viable.**
3. **Proposals for new landfill or landraising facilities or extensions to existing facilities shall be supported where it is demonstrated that the proposed development will enable delivery of the waste hierarchy and the proposal incorporates measures for safe working and satisfactory reclamation, particularly in accordance with policy SP4.**
4. **Planning permission may be granted if these expectations are demonstrated to be unachievable but that a material level of benefit is otherwise gained and no unacceptable adverse impact results from the proposed development.**

8. Delivery, Implementation and Monitoring

8.1 Delivery

8.1.1 As is made clear in the Core Strategy, infrastructure includes waste management and sewerage facilities. Even as elements of the infrastructure necessary to delivery sustainable development within Herefordshire, such development proposals are also subject to Core Strategy Policy ID1.

8.1.2 Mineral workings may also impact upon existing services and facilities in the area local to the site being worked and can also be subject to Core Strategy Policy ID1. Delivering sustainable mineral and waste disposal development requires a comprehensive approach, looking from the start of operations, through the life of the quarry/landfill, and beyond restoration, ensuring a positive legacy remains into the future.

8.1.3 Where it is necessary, relevant to planning, directly related to the proposed development, fairly and reasonably related in scale and kind to the proposed development, and reasonable in all other aspects, a planning obligation will be required in order to secure any or all of the following:

a. infrastructure provision;

b. measures to mitigate the effects of development and provide monitoring;

c. long term management following the statutory 5 year aftercare period;

d. public access;

e. community benefits.

8.1.4 The planning obligation may either commit the developer to delivering the agreed provision directly or to make a suitable financial contribution to its delivery.

8.1.5 The council expects the developer to provide for all infrastructure works necessary to make the development proposal acceptable. Development should be phased appropriately to take account of critical infrastructure delivery and seek positively to contribute towards local infrastructure improvements, including the provision of green infrastructure, public access and community benefits.

8.1.6 Where necessary, routeing agreements and/or travel plans may be sought to control and alleviate the effects of traffic movements. For example, in order to avoid environmentally sensitive places or local conditions of congestion on the highway network.

8.1.7 Developers will be expected to provide for the recording, preserving and future management of important archaeological, heritage, geological, ecological and water features as appropriate to the development proposal. Monitoring may be required, for example of: water quality, quantity or flow; air quality; or site stability. The developer will be expected to provide for this monitoring and for any remedial action reasonably required.

8.1.8 The developer's accountability does not end with restoration and statutory aftercare. Reclamation schemes may require longer than five years to become fully established and recognised as functional. Planning obligations will be sought in order to secure the after-use, long-term management and maintenance of the site and any associated land.

8.1.9 Public access to the outdoors is important for quality of life and well-being; reclaimed minerals and waste sites can make a valuable contribution to this resource. Conversely, it may be necessary to restrict public access across some areas, for example due to safety hazards or to protect a particular habitat. Planning obligations will be sought in order to secure the long- term availability and maintenance of public access to appropriate areas within mineral workings and restored sites, this might include the ability to secure compensatory provision in the event that public rights of way or open spaces are subject to closure.

8.1.10 To help redress the burden placed on local communities throughout the life of mineral workings and landfill sites, such development will be expected to plan positively for the provision and use of shared space, community facilities and other local services to enhance the sustainability of communities and residential environments.

8.1.11 Wherever possible, development should add value by considering the opportunities or benefits that can be provided, for example through design, to help meet local community aspirations or contribute to addressing local infrastructure constraints identified within the Core Strategy or other development plan documents of the Herefordshire Local Plan.

8.1.12 Planning obligations may be sought to secure the provision, and where appropriate maintenance, of community benefits. Such contributions are not limited to the restoration phase and should be made at the earliest opportunity.

8.2 Implementation

8.2.1 Delivery of the objectives of the Minerals and Waste Local Plan will be highly reliant on the minerals and waste sectors.

8.2.2 Consequently, policy has been prepared with the intention of making Herefordshire an attractive place for these businesses to develop, whilst also providing clarity about where development is expected to be located and the standards to be achieved, so as to protect the interests of existing communities across the county.

8.3 Monitoring

8.3.1 The MWLP will sit beneath the Core Strategy and together these local plan documents present the development plan for minerals and waste development. Table 3 presents the key Core Strategy policies that are relevant to each Draft MWLP policy in terms of implementation and identifies how each Draft MWLP policy would be monitored over the plan period.

8.3.2 Throughout the lifetime of the MWLP, it will be necessary to monitor and review the policies to determine the extent to which each is being implemented, and the degree to which implementation is achieving objectives. Where any targets are not on track, the Annual Monitoring Report (AMR) should also include an assessment of the reasons why.

8.3.3 The AMR will gather relevant information and identify whether policy targets are being achieved or not. It will highlight any concerns about policy performance. If policies are shown to be failing to perform, Herefordshire Council will consider if it is appropriate to review the appropriate policy. The justification for this will be made clear in the AMR.

8.3.4 In the pre-submission plan, the monitoring framework also includes indicators to monitor the likely significant impacts of the MWLP, taken from the sustainability appraisal. One of the aims of monitoring as specified by the Strategic Environmental Assessment Directive is to

identify unforeseen adverse effects in order to be able to take appropriate remedial action. To enable this to be done, the indicators from the sustainability appraisal also include monitoring potential sustainability impacts which are not expected to occur as foreseen by the appraisal.

8.3.5 It should be remembered that not all the information will be readily available annually. For example, the Environment Agency is responsible for collecting information on C&I, C&D and hazardous waste and recording this it within the Waste Data Interrogator, with an annual update being made available.[47] However, this only reports on the quantities and types of waste that operators of regulated waste management facilities deal with ; it does not identify all wastes generated and cannot easily be used to identify levels of recycling or recovery.

8.3.6 The monitoring framework is restricted to the planning permissions granted because it is up to the minerals and waste industries to open or construct and operate the development for which planning permission has been gained. Similarly, the monitoring cannot readily take account of waste management facilities that may cease to operate during the plan period.

8.3.7 Clearly, the MWLP must be able to respond to changing needs and circumstances. This will include assessing the potential impacts of new or updated national and local policy and guidance. This will be addressed in the AMR.

8.3.8 There are three key policy areas addressed in the Draft MWLP, identifiable at this stage, which could lead to a need for review. These are:

- To ensure that adequate landbanks of sand and gravel and/or crushed rock are maintained in the latter part of the Draft MWLP period. This will be influenced by the actual level of demand for these minerals that arises during the earlier years of the Draft MWLP and whether suitable proposals are brought forward on sites or areas identified in the Draft MWLP. This matter will be kept under review, including through the preparation of an annual Local Aggregates Assessment, with review of the relevant policies and any further requirement for site allocations or areas carried out as necessary.
- To ensure that equivalent self-sufficiency is achieved in terms of waste management capacity, delivering a circular economy in Herefordshire and ensuring that waste management makes its contribution to achieving sustainable communities. This matter will be kept under review through monitoring of the Draft MWLP, including consideration of the type and tonnage of new waste management development.
- To respond to new issues arising out of any further exploration activity for shale gas within Herefordshire.

8.3.9 It is intended that, in addition to annual monitoring, an intermediate and more comprehensive review of the Draft MWLP is undertaken at least every five years. Not only will this enable compliance with Regulation 10A of The Town and Country Planning (Local Planning) (England) Regulations 2012 (as amended), this approach will also deliver early identification of any need for action prior to the end of the plan period, and enable a good evidence base to be prepared such that any new policies can be adopted in a timely manner.

8.3.10 These elements are drawn together for each policy in Table 3.

[47] https://www.gov.uk/guidance/how-to-access-waste-management-data-for-england

Table 3 Delivery, Implementation and Monitoring

Draft MWLP Policy	Key Core Strategy Policy	MWLP policy will be delivered by	Indicators to monitor effectiveness
Strategic			
SP1: Resource Management	SS1; SS7	Herefordshire Council continuing engagement with other public bodies, local businesses, community groups and the general public to raise awareness of the financial and environmental benefits of sustainable waste management. Development management process and sustainable resource use by developers.	Record of activities undertaken by Herefordshire Council, including indication of effect (qualitative or quantitative). Record of audits received and innovative solutions presented.
SP2: Access to open space and recreation from minerals and waste development	OS1; OS2; OS3	Development management process and sustainable solutions proposed by developers.	Record of new public access to outdoor spaces and impact on open spaces, historic context and rights of way.
SP3: Transport within sites	SS4 MT1	Development management process and sustainable solutions proposed by developers.	Record of on-site transport methods and associated green infrastructure.
SP4: Reclamation	SD1; SD2; SD3; SD4	Development management process and sustainable solutions proposed by developers.	Record of reclamation achieved and associated green infrastructure, including those relevant to historic context.
Minerals			
M1: Mineral Strategy	SS1; SS4; SS6; SS7 RA6; MT1; E1; ID1 LD1; LD2; LD3; LD4	Development management process making appropriate decisions considering the development plan and all other material considerations.	Record of alternative materials used to primary minerals.

	SD1; SD2; SD3; SD4		Consented reserve of new mineral workings and record of their location.
M2: Safeguarding of mineral resources from sterilisation	SD1	Development management process making appropriate decisions, considering the development plan and all other material considerations.	Record of development undertaken within the Minerals Safeguarding Areas.
M3: The winning and working of sand and gravel	SS1; SS4; SS6; SS7 OS1; MT1; E1; ID1 LD1; LD2; LD3; LD4 SD1; SD3; SD4	Submission of planning applications and the development management process making appropriate decisions, considering the development plan and all other material considerations.	Consented reserve of new mineral workings and record of their location. Record of consented reserve worked annually and destination of mineral.
M4: The winning and working of crushed rock (limestone)	SS1; SS4; SS6; SS7 OS1; MT1; E1; ID1 LD1; LD2; LD3; LD4 SD1; SD3; SD4	Submission of planning applications and the development management process making appropriate decisions, considering the development plan and all other material considerations.	Consented reserve of new mineral workings and record of their location. Record of consented reserve worked annually and destination of mineral.
M5: The winning and working of building stone (sandstone)	SS1; SS4; SS6; SS7 OS1; MT1; E1; ID1 LD1; LD2; LD3; LD4 SD1; SD3; SD4	Submission of planning applications and the development management process making appropriate decisions, considering the development plan and all other material considerations.	Consented reserve of new mineral workings and record of their location. Record of consented reserve worked annually and destination of mineral.
M6: Borrow Pits	SS1; SS4; SS6; SS7 OS1; MT1; E1; ID1 LD1; LD2; LD3; LD4 SD1; SD3; SD4	Submission of planning applications and the development management process making appropriate decisions, considering the development plan and all other material considerations.	Record of consented borrow pits, their location and level of interaction with associated construction project.

Waste			
W1: Waste Strategy	SS1; SS4; SS6; SS7 RA5; RA6 MT1; E1; ID1 LD1; LD2; LD3; LD4 SD1; SD2; SD3; SD4	Development management process making appropriate decisions, considering the development plan and all other material considerations.	Data from Economic Development Team to indicate circular economy type activity. Capacity of new waste management facilities by type.
W2: Solid waste management requirements	SS1; SS4; SS6; SS7 OS1; MT1; E1; ID1 LD1; LD2; LD3; LD4 SD1; SD2; SD3; SD4	Submission of planning applications and the development management process making appropriate decisions, considering the development plan and all other material considerations.	Capacity of new waste management facilities by type as set out in policy. Record of source of waste.
W3: Agricultural waste management	SS1; SS4; SS6; SS7 MT1; ID1 LD1; LD2; LD3; LD4 SD1; SD2; SD3; SD4	Development management process making appropriate decisions, considering the development plan and all other material considerations. Sustainable waste management practices promoted by farmers and land owners.	Record of waste management practice(s) presented and water quality assessments of the River Wye and River Lugg.
W4: Wastewater management	SS1; SS4; SS6; SS7 MT1; E1 ; ID1 LD1; LD2; LD3; LD4 SD1; SD2; SD3; SD4	Development management process making appropriate decisions, considering the development plan and all other material considerations. Sustainable waste management practices promoted by the relevant utility company.	Record of waste management practice(s) presented and water quality assessments of the River Wye and River Lugg.

W5: Preferred locations for solid waste treatment facilities	SS1; SS4; SS5; SS6; SS7 HD1; HD5; HD6; HD7 BY1; KG1; LB1; LO1; LO2; RW1 OS1; MT1; E1; ID1 LD1; LD2; LD3; LD4 SD1; SD2; SD3; SD4	Submission of planning applications and the development management process making appropriate decisions, considering the development plan and all other material considerations.	Capacity of new waste treatment facilities by type, size and location.
W6: Preferred locations for construction, demolition and excavation waste facilities	SS1; SS4; SS5; SS6; SS7 HD1; HD5; HD6; HD7 BY1; KG1; LB1; LO1; LO2; RW1 OS1; MT1; E1; ID1 LD1; LD2; LD3; LD4 SD1; SD2; SD3; SD4	Submission of planning applications and the development management process making appropriate decisions, considering the development plan and all other material considerations.	Capacity of new waste management facilities by type, size and location.
W7: Waste management operational expectations	SS1; SS7 LD1; LD2; LD3; LD4 SD1; SD2; SD3; SD4 ID1	Submission of planning applications and the development management process making appropriate decisions, considering the development plan and all other material considerations.	Data from Economic Development Team to indicate circular economy type activity. Record of materials and/or energy recovered and indication of final destination. Record of reclamation progress and innovative/integrated solutions presented.

9. Glossary

Term	Description
A	
Aggregates	Sand and gravel, crushed rock and other bulk materials used in the construction industry for purposes such as the making of concrete, mortar, asphalt or for roadstone, drainage or bulk filling.
Agricultural waste	Includes a variety of substances such as pesticides containers, oil and silage wrap, as well as slurry which result from activities including horticulture, fruit growing, dairy farming, livestock breeding, seed growing, grazing and nurseries.
Airfield (aerodrome) safeguarding	Aerodromes need to take measures necessary to ensure safety of aircraft while flying in the vicinity of an aerodrome. Planning applications should meet certain criteria relating to height and location of proposed development to the aerodrome. Any proposed development with bird attractant properties, within 13km of an aerodrome needs to be consulted upon.
Anaerobic digestion	The process by which biodegradable material is broken down in the absence of oxygen in an enclosed vessel, yielding carbon dioxide, methane and solids/liquors, which can be used as fertilizer or compost.
Area of Outstanding Natural Beauty (AONB)	A statutory landscape designation, which recognises that a particular landscape is of national importance. The special qualities of the AONB encompass natural beauty, amenity, heritage and landscape assets. The primary purpose of the designation is to conserve and enhance the natural beauty of the landscape. Parts of the Wye Valley and Malvern Hills AONB lie within Herefordshire.
Appropriate assessment	Process for assessing impacts on European sites, habitats or species. It is a decision making tool.
Aquifers	An aquifer is an underground layer of water-bearing permeable rock or unconsolidated materials (gravel, sand, or silt) from which groundwater can be extracted.
Area of search	An area identified as having minerals resources potentially suitable for extraction and where working may be acceptable subject to more detailed assessment at project stage.
B	
Best and most versatile land	Land in grades 1, 2 and 3a of the Agricultural Land Classification.
Biodegradable waste	Includes food waste, garden waste and cardboards, which can decompose without any assistance.
Biodiversity	The variety of plants and animal life on earth, encompassing the diversity of habitats, species and genetic variation. Biodiversity provides our life support system as well as having social and economic value.
Biodiversity Action Plan (BAP)	Local BAP identify national and local targets for species and habitats conservation and actions.

Borrow pit	Site where mineral (often aggregate) is excavated specifically for a construction project nearby.
Building stone	Hard rock types suitable for use directly for construction in the form of walling, roofing, flagstones or for ornamental purposes. In the plan area the principle rock type used as building stone is sandstone.
C	
Circular Economy	An approach to resource management, seeking to keep materials at their highest value for the longest period of time.
Climate change	The term climate change is generally used when referring to changes in our climate, which have been identified since the early parts of the 1900s. The changes that we have seen over recent years, and those which are predicted over the next 80 years, are thought by many to be mainly as a result of human behavior, rather than due to natural changes in the atmosphere.
Coal mining legacy	Disused mines which give rise to land stability issues and other hazards. The Coal Authority map and monitor the mines and highlight public safety hazards and risk associated with them.
Coal mining risk assessment	Needs to be carried out by applicant in Development High Risk Areas and submitted alongside a planning application.
Commercial and industrial waste	Produced by a range of sectors which can be separated into commercial groups (including Retail & Wholesale, Public Services and other services) and industrial groups (including food, drink & tobacco, chemical/non-metallic minerals, power and utilities, metal manufacturing, machinery and equipment and textiles, wood and paper publishing).
Composting	Aerobic processing of biologically degradable organic wastes to produce an end product of compost.
Construction, demolition and excavation waste	Waste which arises from activities such as construction, refurbishment, demolition or excavation. It includes items such as plasterboard, bricks, soils, minerals, glass, metals and tiles.
Conventional hydrocarbons	Oil and gas where the reservoir is in porous rock such as sandstone or limestone and can be extracted using traditional drilling techniques.
Crushed rock	Hard rock (in Herefordshire, limestone) which has been quarried, fragmented and graded for use as aggregate.
D	
Developer contributions	This includes section 106 agreements and the Community Infrastructure Levy (CIL).
E	
Ecosystem services	Can be simply described as the benefits people obtain from ecosystems. These include: provisioning services (food and water); regulating services (flood and disease control); cultural services (such as spiritual and cultural benefits); and supporting services (such as nutrient cycling that maintains conditions for life on Earth).
Energy from waste	The conversion of waste into a useable form of energy, often electricity and/or heat.

Environmental assets	Features in the physical environment that are valued for a variety of cultural and scientific reasons.
Evidence base	The information and data gathered by local authorities to justify the 'soundness' of the policy approach set out in development plan documents, including physical, economic and social aspects of the area.
F	
Floodplain	This is identified as the area of land at risk of flooding, when water flowing into a watercourse channel overtops its banks.
Flood alleviation	Measures put in place to lower or eliminate the risk of flooding in developed areas.
Flood zone	An area identified by the Environment Agency as being at risk of flooding, flood zone 3 having the greatest risk.
G	
Geodiversity	The range of rocks, minerals, fossils, soils and landforms.
Greenfield land	Land that has not been previously developed, often in agricultural use.
Green infrastructure	A planned and delivered network of green spaces and other environmental features designed and managed as a multifunctional resource providing a range of environmental and quality of life benefits for local communities. Green infrastructure includes parks, open spaces, playing fields, woodlands, allotments and private gardens.
Groundwater source protection zones	Protection zones for groundwater supplies such as wells, boreholes and springs including those used for public drinking water supply. Displayed on maps and used to help prevent contamination of the water.
H	
Habitats Regulation Assessment	A Habitats Regulations Assessment is the assessment of the impacts of implementing a plan or policy on a Natura 2000 site. Its purpose is to consider the impacts of a land use plan against conservation objectives of the site and to ascertain whether it would adversely affect the integrity of the site. Where significant negative effects are identified, alternative options should be examined to avoid any potential damaging effects.
Hazardous waste	Waste that may case particular harm to human health or the environment.
Heritage asset	A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. Heritage asset includes designated assets and assets identified by the local planning authority.
Historic environment	All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and landscaped and planted or managed flora.
I	
Incineration with energy recovery	Burning of waste in an incinerator and using the energy produced as heat or as electrical energy.

Infrastructure	A collective term for services such as roads, electricity, sewerage, water, social services, health facilities and recycling and refuse facilities. For minerals development this also includes the plant necessary to work the mineral before it leaves the site.
Infrastructure delivery plan	This sets out details of the infrastructure required to support development in the future.
L	
Landbank	A landbank is a stock of land with planning permissions for the winning and working of minerals, usually expressed in terms of assumptions about annual production rates.
Landfill site	The place where controlled waste is deposited. References to landfill may also refer to land raising and waste disposal.
Landscape	An area, as perceived by people, the character of which is the result of the action and interaction of natural and/or human factors.
Local Aggregates Assessment (LAA)	An annual assessment, prepared by mineral planning authorities, of aggregate minerals supply requirements in a planning area or areas.
Local Authority Collected Waste (LACW)	Household waste plus other similar waste collected and managed by local authorities.
Low level (non-nuclear) radioactive waste (LLR waste)	Waste, not derived from the nuclear industry and having a radioactive content not exceeding four gigabecquerels per tonne (GBq/te) of alpha or 12 GBq/te of beta/gamma activity.
M	
Mechanical biological treatment (MBT)	Involves processing residual waste by a combination of both mechanical and biological treatment methods.
Mechanical recovery facility (MRF)	Actively alters the composition of waste in order to produce an end product that can be utilised.
Mineral safeguarding areas (MSA)	Areas defined by mineral planning authorities to protect potentially economic resources of minerals from other forms of development which may prevent future extraction of the mineral.
Mitigation	Measures taken to reduce adverse impacts; for example, changing the way development is carried out to minimise adverse effects through appropriate methods or timing.
Monitoring	Process where outcomes of policies and proposals are checked on a continuous or periodic basis, in order to assess their effectiveness and impact.
Municipal waste	Comprises mainly household and some other waste for which the waste collection and disposal authorities have responsibility forms an element of LACW, which includes similar C&I waste collected by local authorities.
Municipal Waste Management Strategy	Strategy produced by waste management authorities which outlines targets for dealing with municipal waste within their area.
N	

National Planning Policy Framework	This sets out the Government's planning policies for England and is the framework within which Herefordshire Council has produced the Local Plan – Core Strategy.
O	
Oil and Gas Authority	Oil and gas regulator in the UK.
Open space	All open space of public value, including not just land, but also areas of water (such as rivers, canals, lakes and reservoirs), which offer important opportunities for sport and recreation and can act as a visual amenity.
P	
Petroleum Exploration and Development Licence (PEDL)	PEDLs cover the three main stages of petroleum activity which are: exploration; appraisal; and development. The licence provides exclusivity to the holder to undertake seismic investigations, drill wells and develop discoveries. PEDLs are issued by the Oil and Gas Authority, an Executive Agency of the Department for Business, Enterprise, Industry and Skills.
Preferred area of search	An area identified as having policy support for development, but where it is not practicable to define a specific development boundary.
R	
Ramsar Site	A site designated for conservation under the Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat, also known as the Convention on Wetlands. The Convention is an international treaty for the conservation and sustainable use of wetlands. It is named after the city of Ramsar in Iran, where the Convention was signed in 1971.
Reclamation	Restoring land that was once used for mineral extraction or as a landfill, in order to return it to a condition suitable for some other beneficial use.
Renewable energy	Power derived from a source that is continually replenished, such as wind, wave, solar, hydroelectric and energy from plant material, but not fossil fuels or nuclear energy. The biogenic content of waste is important in terms of considering energy from waste as renewable. Energy from residual waste is therefore a partially renewable energy source, sometimes referred to as a low carbon energy. In a typical household waste bag, somewhere between one half and two thirds will contain biogenic materials.
Residual waste	Waste which cannot be recycled or otherwise dealt with further up the waste hierarchy.
River Wye SAC Nutrient Management Plan	Prepared by Natural England and the Environment Agency the Plan for the River Wye, this will aim to control and reduce phosphates in the SAC to facilitate the delivery of the proposed development.
S	
SAC Special Area of Conservation	A Special Area of Conservation (SAC) is defined in the European Union's Habitats Directive (92/43/EEC), also known as the Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora.
Safeguarding	Protection of specific resource or site from being adversely impacted by alternative or encroaching development.
Self-sufficiency	The European Community (EC) Framework Directive on Waste and the EC Landfill Directive set out a common framework for action on waste. Waste management should

	protect human health and the environment by establishing an integrated network of waste facilities. Member States should promote self-sufficiency by dealing with waste as close as possible to its point of origin and promoting waste avoidance by recycling, reclamation and energy recovery.
Source protection zone	Environment Agency defined zones that include boreholes, springs and wells used for public drinking supply and certain commercial uses and so need protection from pollution.
SPA Special Protection Area	A Special Protection Area (SPA) is a designation under the European Union Directive on the Conservation of Wild Birds. Under the Directive, Member States of the European Union (EU) have a duty to safeguard the habitats of migratory birds and certain particularly threatened birds.
Sustainable development	In broad terms, this means development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
Sustainable drainage systems (SuDS)	Measures introduced in developments that aim to minimise surface water run-off and the level of waste water generated by the development. These can include use of reed beds to filter water and water storage areas.
U	
Unconventional hydrocarbons	Oil or gas that cannot be extracted using traditional drilling techniques and include underground coal gasification, coal bed methane and shale gas.
W	
Waste hierarchy	A guiding theme for waste policy at all levels. Seeks the sustainable management of waste by giving preference to waste management methods towards the top of the hierarchy (such as prevention, re-use and recycling) over methods lower down the hierarchy (such as recovery and disposal).
Waste management facilities	These include facilities for waste treatment and disposal.
Waste recovery	Processing waste to prevent it going to landfill. Recovery processes include incineration with energy recovery, advanced thermal treatment, anaerobic digestion and composting.
Wastewater	Water that is disposed of at domestic properties or through commercial and industrial activities.
Z	
Zero waste economy	Where material resources are re-used, recycled or recovered wherever possible, and only disposed of as the option of very last resort.

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Supplementary Report to the Spatial Context and Sites Report

Herefordshire Minerals and Waste Local Plan

March 2020, updated August 2020

HENDECA LTD

Contents

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^2/sr) to 'Darkest' (<0.25 nw/cm^2/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).

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^2/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^2/sr):

- Black Hill Delve;
- Callow Delve;
- Perton Quarry;
- Leinthall Quarry; and
- Upper Lyde Quarry.

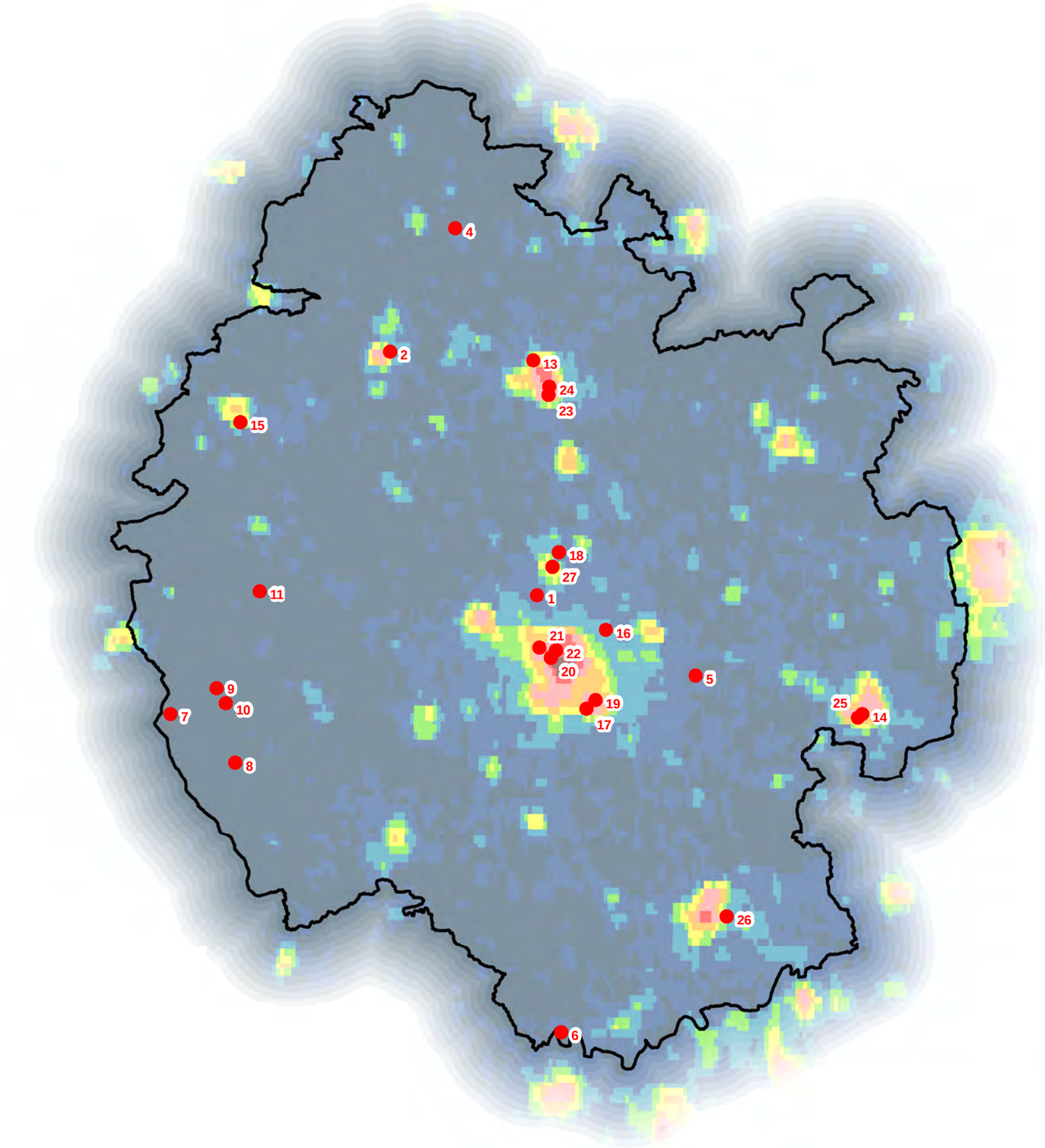
2.3.10 All of the sites located within an area of 'Darkest' sky and two of those in the next classification (0.25 to 0.5 nw/cm^2/sr) are sandstone delves. These sites are generally worked by hand, or using light machinery, and with a minimal workforce. No substantial external lighting was observed at 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^2/ sr)		
		Min	Max	Mean
8	Llandraw Delve (M16)	0.06	0.18	0.13
9	Pennsylvani 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



Earth Observation Group, NOAA National Geophysical Data Center. Data processed by LUC on behalf of CPRE

Herefordshire Minerals and Waste Local Plan

Figure 2.1
CPRE Darkest Skies analysis, Herefordshire

- Allocated Sites

Night Lights

(NanoWatts / cm2 /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"

N

0 5 10 15

Kilometres

SCALE
1:300,000@ A3

DATE
29/11/2019

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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 Site visit notes		23.07.2019 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.

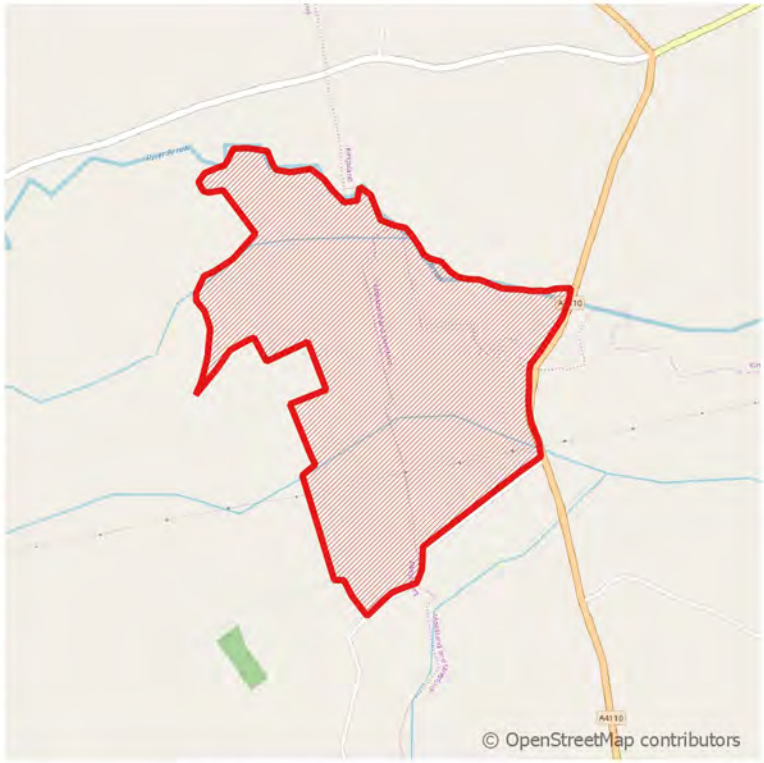
3.3.6 The GIS based, site criteria RAG sheet is provided on the following page.

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.

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:		**Sensitive Buildings:**	
Natura2000:		**Cultural and Historical Sites:**	
UK Ecological Sites:		**Airports and Airfields:**	
Local Ecological Sites:		**MOD Low Fly Zones:**	
Area of Outstanding Natural Beauty and National Parks:		**Major River:**	
Agricultural Land Classification:		**Flood Zones:**	
Air Quality Management Areas:		**Source Protection Zones:**	
Road Access:		**Walking Trail:**	

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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.

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Mineral Need Assessment 2019

Herefordshire Minerals and Waste Local Plan

March 2020
HENDECA LTD

Contents

Annexes

1. Introduction

1.1 Introduction

1.1.1 Herefordshire Council has commenced preparation of the Minerals and Waste Local Plan (the 'MWLP') to guide development related to minerals and waste within Herefordshire up to 2041.

1.1.2 The National Planning Policy Framework (published February 2019, the 'NPPF') advises *'it is essential that there is a sufficient supply of minerals to provide the infrastructure, buildings, energy and goods that the country needs*.' (paragraph 203). This is to be achieved, not least, by making provision for the maintenance of landbanks of: at least 7 years for sand and gravel; and at least 10 years for crushed rock. These minerals are found in Herefordshire and are being actively quarried; they are addressed within this report.

1.1.3 The NPPF also seeks a steady and adequate supply of industrial minerals, including: silica sand; cement primary (chalk and limestone) and secondary (clay and shale) materials; and brick clay. These minerals are not currently understood to be readily available or actively worked within the county; they are not considered further within this report.

1.1.4 The original Minerals Need Assessment was produced in February 2017 (the 'MNA 2017') to provide an assessment of key factors relating to the need for minerals such as the amount and type of mineral within the county and future demands. It was made available for consultation, alongside the Issues and Options Report, undertaken as part of the MWLP development process. The MNA 2017 considered base data up to year 2015.

1.1.5 An updated need assessment was published in November 2018 (the 'MNA Update 2018') which sought to respond to the comments received to the Issues and Options Report consultation and to refresh the data used.

1.1.6 This report (the/this 'MNA 2019' or 'this Assessment') reviews these data sources to consider the amount and type of mineral within the county, and future demands, afresh.

1.1.7 Despite being finalised in March 2020, this report is dated 2019 primarily to reflect more closely the time period that it is reporting and to continue the sequencing with the previous reports.

Updates

1.1.8 Since publication of the MNA Update 2018 key data sources have been updated, with the most recent data (for years 2017 and 2018) being:

- Section 5 of the Herefordshire Authority Monitoring Report 2019 presents the Herefordshire Local Aggregates Assessment 2019 (the 'LAA 2019'). This incorporates survey data relevant for the period January to December 2018 and is a key data source for this report.
- The West Midlands Aggregate Working Party, Annual Monitoring Report 2017 (the 'West Midlands AMR 2017') has also been published since the MNA Update 2018, incorporating data from January to December 2017.

1.1.9 In addition, the MNA 2019 has incorporated revisions of:

- a briefing paper on regional and country economic indicators produced by the House of Commons Library;
- an economic and fiscal outlook at the national level published by the Office for Budget Responsibility (OBR); and
- a forecast of construction output nationally from the Construction Products Association.

1.1.10 Table 2.1 of this Assessment has been refreshed to reflect a slight change in status at one of the sites.

1.1.11 The MNA 2017 provided forecasts of need to 2031. As well as updating the 2031 forecasts, the MNA Update 2018 extended some of the forecasts to 2035.

1.1.12 This Assessment updates the principal data tables and figures, where new data is available, and extends the forecasts to 2041.

1.1.13 This MNA 2019 is a complete analysis, using the most up to date information. It has been prepared to be a discrete report, so the reader does not need to refer back to previous MNA; where there are interesting observations to be made, cross referencing is provided as appropriate.

Structure

1.1.14 This report is structured as follows:

- Section 1 – Introduction and Data Sources;
- Section 2 – Minerals within Herefordshire: refreshed information about existing and former quarries in the county;
- Section 3 – Aggregates, Baseline: an understanding of the current permitted reserves of sand and gravel and crushed rock;
- Section 4 – Aggregates, Future Demand: an assessment of the potential future demand for aggregates, including recycled aggregates;
- Section 5 - Other Minerals: building stone; and hydrocarbons; and
- Section 6 – Conclusions: presenting the key conclusions made from the information available.

1.2 Data Sources

Annual Minerals Survey

1.2.1 Herefordshire Council undertakes an Annual Minerals Survey of operators in the county to obtain data on: permitted reserves of aggregates at the end of the calendar year; sales of minerals during the year; and the destination point of those sales. This data is collated so that figures for individual operators cannot be identified.

1.2.2 The most recent year for which this data exists is 2018.

1.2.3 This report is hereafter referred to as the 'Herefordshire AMS 2018'.

Local Aggregates Assessment

1.2.4 The results of the Annual Minerals Survey are used to compile the Local Aggregate Assessment ('LAA'). Mineral planning authorities ('MPA') are required to prepare a LAA and to update it annually. The LAA is required to:

- forecast the demand for aggregates based on average 10-years sales data and other relevant supply information; and
- analyse supply options through the consideration of current planning permissions and minerals safeguarding areas.

1.2.5 The LAA 2019, the most recently published LAA data for Herefordshire[1] reports on minerals data for 2018.

West Midlands Aggregate Working Party Annual Monitoring Report

1.2.6 The West Midlands Aggregate Working Party ('WM AWP') is a technical group concerned with data collection, collation and monitoring. It also provides advice on future trends in and affecting the area, together with the environmental and other implications of meeting Government aggregate demand forecasts.

1.2.7 The WM AWP draws its members from the MPA in the region[2] together with representatives from the minerals industry through its trade associations (the Mineral Products Association and the British Aggregates Association) plus the Ministry of Housing, Communities and Local Government, the National Federation of Demolition Contractors, and the Environment Agency.

1.2.8 Data from the Annual Minerals Survey undertaken by each relevant MPA is collated by the WM AWP, which produces a regional Annual Monitoring Report.

1.2.9 The most recent is the WM AMR 2017[3]. This provides sales and reserves data for the 2017 calendar year as well as data for earlier years.

Aggregate Minerals Survey

1.2.10 The Department for Communities and Local Government[4] (DCLG) published the Aggregate Minerals Survey[5] every four years, a collation of data from the Annual Minerals Surveys undertaken by each MPA in England and Wales. The most recent available version is for year 2014[6].

1.2.11 The report presents sales of aggregates produced in Herefordshire and the destination for those sales, either within Herefordshire, in the West Midlands or elsewhere. The report also

[1] Herefordshire Local Aggregates Assessment 2019, Herefordshire Council, February 2020

[2] Herefordshire, Worcestershire, Shropshire, Staffordshire, Warwickshire and the West Midlands Conurbations.

[3] West Midlands Aggregate Working Party, Annual Monitoring Report 2017, incorporating data from January – December 2017, Urban Vision Partnership Ltd, December 2018

[4] It is recognised that this Department is now the Ministry for Housing, Communities and Local Government, but the Ministry has not published minerals data to date. Consequently, reference to the Department for Communities and Local Government, or DCLG, is retained within this report.

[5] http://webarchive.nationalarchives.gov.uk/20121030202828/http://www.communities.gov.uk/planningandbuilding/planningbuilding/planningresearch/researchreports/mineralswasteresearch/aggregatemineralssurveys

[6] https://www.gov.uk/government/publications/aggregate-minerals-survey-for-england-and-wales-2014

shows movement of materials, setting out information on the inter-regional flow of aggregates.

1.2.12 The three most recent Aggregate Minerals Surveys are used within this report, i.e. those published for 2005, 2009 and 2014. It is recognised that some of this data is now somewhat old, but it is considered to provide useful and relevant contextual information for policy preparation.

1.2.13 These reports are hereafter referred to as the 'DCLG AMS 2005', 'DCLG AMS 2009', and 'DCLG AMS 2014'.

1.2.14 It is also important to note that the 2014 data has not been verified by the British Geological Survey ('BGS'), and discussion with adjacent MPA has questioned its accuracy. However, it remains the best available data in relation to both minerals movements across administrative boundaries and consumption within an authority.

Annual Raised Enquiry

1.2.15 The Office for National Statistics ('ONS') carries out an Annual Raised Enquiry of the sales of all minerals except coal, for the MHCLG[7] and the Department for Business, Energy and Industrial Strategy. The data is presented in an annual report, Mineral Extraction in Great Britain, the latest available version of which is for 2014[8].

1.2.16 Data is available at county level. However, for Herefordshire figures are only available for building stone. The figures for sand and gravel and for crushed rock within Herefordshire are confidential.

Construction, Demolition and Excavation Waste Survey

1.2.17 In February 2007, DCLG published the Survey of Arisings and Use of Alternatives to Primary Aggregates in England[9]. This report was generated by information gained from operators of crushers and screens and of licensed landfill sites for the year 2005. Its purpose was to generate estimates for the amount of recycled aggregates and soil used and disposed of at licensed landfill facilities and for construction, demolition and excavation waste ('CD&E waste') spread on registered exempt sites.

1.2.18 This was the third in a series of surveys undertaken every two years and provides figures for Herefordshire and Worcestershire combined. However, it is quite an old data source and is used for background context only.

Waste Need Assessment 2017, Update 2018 and Waste Need Assessment 2019

1.2.19 Alongside this assessment of need for minerals, Herefordshire has commissioned preparation of a waste need assessment. This study uses the current method for estimating the amount of CD&E waste available for use as a recycled aggregate and provides data relevant to Herefordshire only.

1.2.20 An update of the Waste Need Assessment dated February 2017 was undertaken and produced in November 2018 to take account of new sources of data on waste and responses

[7] Ministry of Housing, Communities and Local Government

[8] Mineral Extraction in Great Britain 2014, DCLG, March 2016. https://www.gov.uk/government/statistics/mineral-extraction-in-great-britain-2014 [27.02.2020@10:52]

[9] Survey of Arisings and Use of Alternatives to Primary Aggregates in England 2005: Final Report, DCLG, February 2007

made to the Issues and Options Report. The WNA was run afresh in December 2019 to incorporate the latest available data. This report is hereafter referred to as the 'WNA 2019'.

2. Minerals within Herefordshire

2.1 Overview

2.1.1 Herefordshire's bedrock geology is almost entirely sedimentary in origin. It is dominated by the Old Red Sandstone but fringed by older rocks and covered in a mantle of ice age deposits.

2.1.2 The predominant underlying geology of Herefordshire consists of Devonian Old Red Sandstone, comprising mudstones and sandstone. However, there are some older outcrops occurring in the north-west of the county (around Brampton Bryan) consisting of mudstones, sandstones and volcanic rocks. Silurian mudstones and siltstones also occur in this area. Significant outcrops of limestone also occur in the north-west of the county, in the areas around Aymestrey, Leintwardine and towards the Welsh border near Presteigne.

2.1.3 Silurian limestone and mudstones also outcrop in the Woolhope area, surrounded by the younger Old Red Sandstone rocks. Similar aged hard rocks also occur on the western flanks of the Malvern Hills, on the border with Worcestershire.

2.1.4 Throughout Herefordshire, there are superficial sedimentary deposits of glacial tills, sand and gravels.

2.2 Quarrying in Herefordshire

2.2.1 Known mineral resources in Herefordshire are relatively limited in range, primarily consisting of aggregates for use in construction but also a small amount of building stone. Aggregates comprise: sand and gravel; crushed rock; and secondary or recycled materials gained from quarry and waste operations.

2.2.2 The BGS was commissioned to provide further detail on the mineral resource within Herefordshire and its viability for use. This information has been used in preparing minerals policy of the MWLP.

2.2.3 Using the currently available information, the commercially exploitable minerals available for extraction from within Herefordshire include sand, gravel, crushed rock and sandstone.

- Sand and gravel:
  - River terrace deposits are mainly found in the river valleys of the Wye, Lugg and Arrow; and
  - Glacial deposits are present in the north and west of Herefordshire.
- Crushed rock:
  - Silurian limestone is found on the western side of the Malvern Hills and Ledbury, the Woolhope dome and in the north-west of the county in the Presteigne/Aymestrey areas;
  - Carboniferous limestone is present to the south-west of Ross-on-Wye in the northern flanks of the Forest of Dean; and
  - Igneous and metamorphic rock occurs in the Malvern Hills.

- Sandstone occurs extensively throughout much of Herefordshire and several operational quarries exist in the north, west and south of the county. The output is of particular importance for heritage restoration and in creating authentic character for new-build properties.

2.2.4 Secondary and recycled materials have an important role to play in the overall supply of aggregates. Secondary aggregates are minerals that are produced as a by-product of other mining or quarrying activities or as a by-product of an industrial process. Recycled aggregates arise from several sources, notably from the demolition of buildings or from civil engineering works such as asphalt planings from road resurfacing and railway track ballast. Recycling aggregates usually involves the removal of unwanted or inappropriate material such as fines, wood, plastic and metal, and some form of treatment (crushing, washing and/or screening) to reach industry standards for its re-use.

2.2.5 Coal was formerly worked in two locations:

- the southern tip of the Wyre Forest Coalfield, which extended into the north of the county near the boundary with Worcestershire and Shropshire; and
- a small outlier site of the Forest of Dean Coalfield that extends into southern Herefordshire.

2.2.6 In 1999, the BGS[10] reported that the hydrocarbon prospectivity of the county was low. Wells drilled to test the oil and gas potential of sandstones in the Worcestershire Basin and rocks in the Woolhope Inlier had failed to discover hydrocarbons.

2.2.7 Coalbed methane is believed to lie in the south of the county, within a reserve that extends into Gloucestershire. At the time of writing there was no publicly stated intention to work the reserve.

2.2.8 Table 2.1 presents the currently known information about quarries in Herefordshire, these are presented graphically in Figure 2.1.

2.2.9 Moreton on Lugg Quarry (see Table 2.1, MNA 2017) was renamed Upper Lyde Quarry in Table 2.1 of the MNA Update 2018 and has retained that name in this Assessment. Planning conditions for the quarry have now been discharged, and the operator advised Herefordshire Council that sand and gravel extraction commenced on 20 September 2019[11]. Because it is reporting on data from year 2018, the LAA 2019 reports that the site is not yet operational.

2.2.10 The data in Table 2 has been collated for information and should not be relied upon for commercial purposes.

[10] Mineral Resource Information for Development Plans: Phase One Herefordshire and Worcestershire: Resources and Constraints, BGS and the Department of the Environment Transport and the Regions, 1999

[11] Email from Wye Valley Group dated 30 September 2019

Table 2.1 Identified mineral sites, Herefordshire, 2019

	Quarry name	Status	Planning history	Operational requirements
	Sand and gravel			
1	Stretton Sugwas Quarry (Hereford Quarry)	Closed	Approval in June 2004 for extraction of sand and gravel.	
2	Lugg Bridge Quarry	Closed	Approval in 2005 for restoration of redundant sand and gravel quarry. Permission in October 2013 for change of use from sand and gravel and ancillary ready mixed concrete plant to stand alone ready mixed concrete plant.	
3	Upper Lyde Quarry	Operational	Approval in August 2001 for imposition of new conditions and deletion of original conditions attached to an existing planning permission for gravel extraction granted on 1 December 1965.	Written notice of commencement of sand and gravel working at 20 September 2019. All mineral extraction to cease and site to be restored to agricultural land and nature conservation within 10 years of the date of commencement.
4	Shobdon Quarry	Inactive	Review of Old Mineral Permission (ROMP) approved July 2005.	
5	Wellington Quarry	Active	Permission in February 2013 to extend operational area for sand and gravel extraction.	Winning and working to cease by 31 December 2026.
6	St Donat's Quarry	Restored	Approval in January 1997 for extraction of sand and gravel. Permission granted in September 2004 to vary condition 1, required works to commence within 5 years. Consent not implemented and now lapsed.	

	Quarry name	Status	Planning history	Operational requirements
	Limestone			
7	Leinthall Quarry	Active	Permission in November 2009 for continuation of operations.	Reclamation by August 2027.
8	Loxter Ashbed Quarry	Restored	Permission in January 2000 for restoration of part of quarry to woodland. Permission in July 2001 for temporary haul road for quarry.	
9	Nash Scar Quarry	Mothballed	Permission in January 2011 to extend deadline for scheme submission to August 2026.	
10	Perton Quarry	Active	Permission in May 2000 for continued extraction and processing of limestone. Refusal in January 2002 for extension of hours for lorry movements.	All extraction and restoration to cease by February 2042.
	Sandstone			
11	Brakes Farm Delve	Abandoned	Permission given in October 2008 for the winning, working and preparation of Downton Castle stone.	Maximum of 4 vehicle movements in 24 hrs Development, including restoration, will cease no more than 15 years from commencement date. Commencement must begin within 3 years of the permission date.
12	Callow Delve	Active	Permission given in August 2013 for extension of existing approved mineral extraction to excavate area of 0.075 hectares. Officer report describes sand and gravel quarry as ceased.	The maximum volume of aggregate to be exported from the site shall not exceed 15% of the total export of building stone from the site, averaged over a 3-year

	Quarry name	Status	Planning history	Operational requirements
				period. Sufficient building stone for hand working shall be made available during the life of the quarry to supply the reasonable demand for such stone in the local area.
13	Black Hill Delve (formerly Coed Major Delve)	Active	Planning approval given in October 1999 for extension to small sandstone quarry.	
14	High House Delve	Unsuccessful, never exploited	Approval in August 2002 for extraction of sandstone using low tech tools and limited use of farm size machinery.	
15	Hunters Post Delve	Closed, naturally regenerated	Listed by the BGS and Historic England's Heritage's Strategic Stone Study[12] as active in 2014.	
16	Llandraw Delve	Active	Permission in January 2014 for reopening of disused delve.	Maximum of 3 vehicle outbound movements per day and maximum of 12 per week. Cessation of workings by 7 years from permission (January 2014).
17	Pennsylvani Delves	Active	Approval in July 2000 for surface quarrying of flagstones, roofing tiles and building stone.	
18	Sunnybank Delve	Active	Permission in August 2002 for extraction of building stone using chisels, hammer and limited use of farm size machinery.	

[12] http://www.bgs.ac.uk/mineralsuk/buildingStones/StrategicStoneStudy/EH_atlases.html

	Quarry name	Status	Planning history	Operational requirements
19	Tybubach Delve	Abandoned, to be restored	Permission in December 2010 for time extension.	Maximum of 3 vehicle movements in a day and maximum of 12 per week. All development, including restoration, is to take place within 15 years of commencement of activity. Activity is to commence within 5 years of the permission.
20	Westonhill Wood Delves	Active	Permission in March 2014 to extend life of existing quarry and alter site areas for good access to quality stone.	Maximum of 6 outbound vehicles per day and maximum of 25 per week. Development, including restoration, to cease not later than 25 years from date of permission (March 2014).
	Coal			
21	Howle Hill Quarry	Restored	Permission refused in October 2004 for infill with inert material and restoration to agricultural use.	

Figure 2.1
Identified mineral sites, Herefordshire, 2018

ID	Name	Mineral	Status	Postcode	Easting	Northing
1	Stretton Sugwas Quarry (Hereford Quarry)	Sand and gravel	Closed	HR4 7QD	345219	242316
2	Lugg Bridge Quarry	Sand and gravel	Closed	HR1 3LZ	353707	242449
3	Upper Lyde Quarry	Sand and gravel	Active	HR4 8AF	349825	245797
4	Shobdon Quarry	Sand and gravel	Inactive	HR6 9LA	339108	260210
5	Wellington Quarry	Sand and gravel	Active	HR4 8BY	350903	248046
6	St Donat's Quarry	Sand and gravel	Restored	HR4 8NQ	348633	245735
7	Leinthall Quarry	Limestone	Active	HR6 9TR	344269	267761
8	Loxter Ashbed Quarry	Limestone	Restored	HR8 1NU	371316	240720
9	Nash Scar Quarry	Limestone	Mothballed	LD8 2LE	330603	262517
10	Perton Quarry	Limestone	Active	HR1 4ED	358649	239931
11	Brakes Farm Delve	Sandstone	Abandoned	SY8 2LF	344262	275100
12	Callow Delve	Sandstone	Active	NP25 5RL	350923	217065
13	Black Hill Delve (formerly Coed Major Delve)	Sandstone	Active	HR2 0PX	327157	237279
14	High House Delve	Sandstone	Closed	HR2 0ND	330882	230872
15	Hunters Post Delve	Sandstone	Closed	NP25 5RW	349257	217402
16	Llandraw Delve	Sandstone	Active	HR2 0PW	330056	234227
17	Pennsylvani Delves	Sandstone	Active	HR2 0PU	328399	238849
18	Sunnybank Delve	Sandstone	Active	HR2 0LA	329480	238127
19	Tybubach Delve	Sandstone	Closed	HR2 0PJ	330454	232312
20	Westonhill Wood Delves	Sandstone	Active	HR3 6DE	331442	245082
21	Howle Hill Quarry	Coal	Restored	HR9 5SH	360341	220426

3. Aggregates, Baseline

3.1 Introduction

3.1.1 This section of the MNA 2019 deals with aggregates, consisting of sand and gravel, crushed rock, marine aggregates and secondary and recycled aggregates. It aims to identify the current level of supply of aggregates, assessed in terms of sales, and compare this with the existing and likely future demand for aggregates over the lifetime of the MWLP.

3.2 Supply of sand and gravel

3.2.1 There are three sand and gravel quarries permitted within Herefordshire:

- Upper Lyde Quarry;
- Shobdon Quarry; and
- Wellington Quarry.

3.2.2 However, only Wellington Quarry is operational at the time of writing and able to supply data (there is no data for Upper Lyde Quarry).

LAA 2019

3.2.3 Due to the openness of the operator at Wellington Quarry, having agreed that this single source of data can be made public, it is possible to understand a reasonable level of detail about sand and gravel reserves, supply and potential demand within Herefordshire.

3.2.4 The LAA 2019 reports that there were 2,476,000 tonnes of permitted reserves of sand and gravel in the county at 31 December 2018 and 192,000 tonnes sold during that year.

3.2.5 A ten year historic average annual sales figure of 125,000 tonnes, gives a landbank of 19.8 years.

3.2.6 This is discussed further from paragraph 3.2.19.

West Midlands Aggregate Working Party Annual Monitoring Report 2017

3.2.7 The West Midlands AMR 2017 provides information on sand and gravel permitted reserves and sales from 2008 to 2017; this is represented in Table 3.1.

Table 3.1 Sand and gravel sales and permitted reserves, Herefordshire and Worcestershire, 2008 to 2017

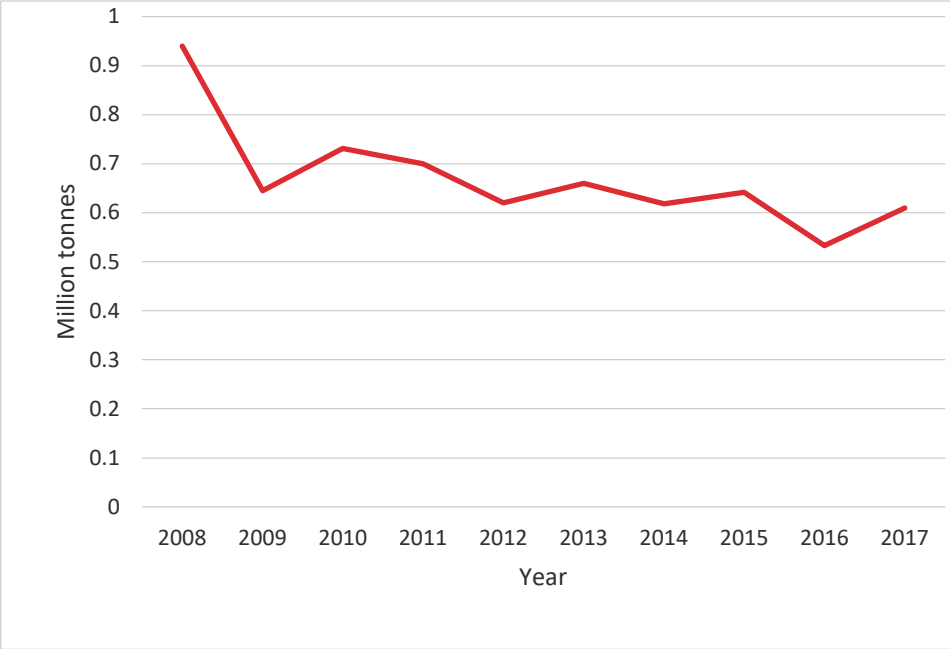
Year	Permitted reserves[13]		Sales[14]	
	Herefordshire	Worcestershire	Herefordshire	Worcestershire
	Million tonnes			
2008	6.148	3.021	0.18	0.76
2009	5.15	3.65	0.13	0.52
2010	2.92	4.49	0.11	0.62
2011	2.87	3.85	0.07	0.63
2012	6.57		0.62	
2013	6.01		0.66	
2014	2.76	2.50	0.10	0.52
2015	2.66	0.54	0.10	0.54
2016	2.75	4.29	0.13	0.40
2017	2.60	3.47	0.15	0.46
Total 10 year sales			1.21	5.73
Average 10 year sales			0.13	0.60

3.2.8 Figure 3.1 graphically presents the combined sand and gravel sales data for Herefordshire and Worcestershire. Using the data as combined provides useful context to historical sand and gravel sales across the two authorities.

[13] Table 2, West Midlands Aggregate Working Party, Annual Monitoring Report 2017, incorporating data from January – December 2017

[14] Table 1, West Midlands Aggregate Working Party, Annual Monitoring Report 2017, incorporating data from January – December 2017

Figure 3.1 Sand and gravel sales and permitted reserves, Herefordshire and Worcestershire, 2008 to 2017



3.2.9 The data shows that sales fell significantly in 2008-09, had a brief recovery in 2010, but have since continued to decline over time, with a slight recovery in 2017. Looking back to 2005, indicates that minerals sales have historically shown some volatility. However, it is likely that the global recession and its consequent financial uncertainties, which have been compounded by the UK's exit from the European Union, has affected sales.

3.2.10 Table 3 of the West Midlands AMR 2017 identifies a 21.67 years landbank for sand and gravel in Herefordshire. Recognising the lack of detail available for minerals data, the difference between this landbank and that identified in the LAA 2019 (just two years, see paragraph 3.2.5) is not considered to be significant. The LAA 2019 uses more up to date information and consequently is relied upon within this Assessment.

Aggregate Minerals Survey

3.2.11 The supply and destination of sand and gravel from Herefordshire is documented in the DCLG AMS 2005, 2009 and 2014. Sales of aggregates from Herefordshire in each year and their principal destinations are set out in Table 3.2.

Table 3.2 Sales and principal destination of land-won sand and gravel from Herefordshire, 2005, 2009 and 2014

Destination	2005	2009	2014
	Tonnes		
Herefordshire	156,000	111,000	69,000
Elsewhere in West Midlands	49,000	5,000	24,000
Elsewhere	11,000	6,000	4,000
Unknown	19,000	0	0

3.2.12 The DCLG AMS 2005, 2009 and 2014 also provide data on the level of import of sand and gravel into the county and consumption within Herefordshire, reproduced in Table 3.3.

Table 3.3 Import and consumption of sand and gravel in Herefordshire, 2005, 2009 and 2014

Year	2005	2009	2014
	Tonnes		
Imports			
Land-won sand and gravel	121,000	63,000	83,000
Marine sand and gravel	12,000	4,000	1,000
Consumption			
Land-won sand and gravel	603,000	174,000	153,000
Marine sand and gravel	12,000	4,000	1,000

3.2.13 Tables 3.2 and 3.3 show a significant drop in sales, import and consumption in 2009 compared to 2005. A significant drop in sales is seen again at 2014, with a limited drop in consumption, but import of land-won mineral has slightly increased.

3.2.14 The initial drop in these factors can be explained by the economic recession which began around 2008 and led to a significant reduction in construction and other economic activity. A change of 20,000 tonnes between the 2009 and 2014 data may be due to data inaccuracies and is not considered material; the level of import and consumption can reasonably be considered to be fairly constant. However, the successive drop in sales is more relevant to plan making and may indicate the need for greater robustness in sand and gravel supply.

3.2.15 The figures also show that about half of Herefordshire's consumption is met by imports of sand and gravel from outside of the county. The need for mineral operators to obtain the correct specification for market products, such as ready-mix concrete, can dictate some of this movement where such materials are not available from local deposits.

3.2.16 Herefordshire has no marine reserves, but a small amount is imported into the county, constituting about 1% of total sand and gravel consumption in 2014. Marine aggregates can have special qualities which meet particular specifications.

3.2.17 Annex A presents the BGS prepared consumption of total sand and gravel (land-won and marine-dredged) for aggregate in 2014 identifying for each sub-region the principal

supplying MPA. This data has not been verified by the BGS but is the only such available data set.

3.2.18 It indicates that Herefordshire was 40% to 50% self-sufficient in sand and gravel provision in 2014, which is also reflected in Tables 3.2 and 3.3 above. Sand and gravel is primarily (over 10%) imported from Staffordshire (30% to 40%) and Worcestershire (10% to 20%). The primary export destination is Worcestershire (10% to 20%).

Historic ten year average sales

3.2.19 The LAA 2019 provides historic annual data on sales of sand and gravel in Herefordshire for most of a ten year period. For two of those years (2012 and 2013) the sales data is only available combined with sales in Worcestershire, thus providing significantly higher figures for those years. For these two years, the LAA 2019 assumes that Herefordshire sales of sand and gravel were 13% of the sales in the two counties combined, to enable a ten year average to be calculated.

3.2.20 Table 3.4 gives the current ten years' worth of sales and annual average sales for that ten year period for Herefordshire.

Table 3.4 Ten year sales of sand and gravel in Herefordshire, 2009 to 2018

Year	Sales (million tonnes)
For information	
2007	0.19
2008	0.177
Ten year average data	
2009	0.125
2010	0.111
2011	0.07
2012	0.081
2013	0.086
2014	0.098
2015	0.102
2016	0.133
2017	0.15
2018	0.192
Ten year average	**0.115**

3.2.21 The NPPF seeks a minimum landbank of seven years for sand and gravel provision. With permitted reserves in Herefordshire standing at 2,476,000 tonnes in 2018, a ten year average annual sales figure of 115,000 tonnes gives a landbank of 21.5 years for sand and gravel under current conditions.

3.3 Supply of crushed rock

3.3.1 The picture for crushed rock permitted reserve and sales is unclear due to commercial sensitivities and because of a sequence of discontinuities in the time series data for sales. This is due to changes in the amalgamation of sales data across several different groupings of counties over the ten-year period.

LAA 2019

3.3.2 There are only two producers of crushed rock in Herefordshire. Data for reserves and sales of crushed rock from quarries within Herefordshire therefore remains confidential.

3.3.3 Consequently, the LAA 2019 provides data on sales and permitted reserves in 2018 for Herefordshire, Staffordshire, Warwickshire and Worcestershire combined. This is shown in Table 3.5.

West Midlands Aggregate Working Party Annual Monitoring Report

3.3.4 The LAA 2019 provides information on crushed rock permitted reserves and sales from 2009 to 2018 (at Table 5), this is represented in Table 3.5 below. The source of the LAA data is the WM AMR 2017 and latest officer information.

Table 3.5 Crushed rock sales and permitted reserves in Herefordshire, Staffordshire, Warwickshire and Worcestershire, 2009 to 2018

Year	Permitted reserves in Herefordshire[15]	Total sales combined[16]
	Million tonnes	
2009	15.00	1.2*
2010	12.20	0.8*
2011	11.00	0.81*
2012	11.79	0.71*
2013	11.54	0.82*
2014	197.92*	0.66*
2015	200.27*	0.61*
2016	202.14*	1.23*
2017	104.21*	1.27*
2018	102.946*	1.383*
Total 10 year sales		9.488*
Average 10 year sales		0.9488*

* Figures are for Herefordshire, Staffordshire, Warwickshire and Worcestershire combined

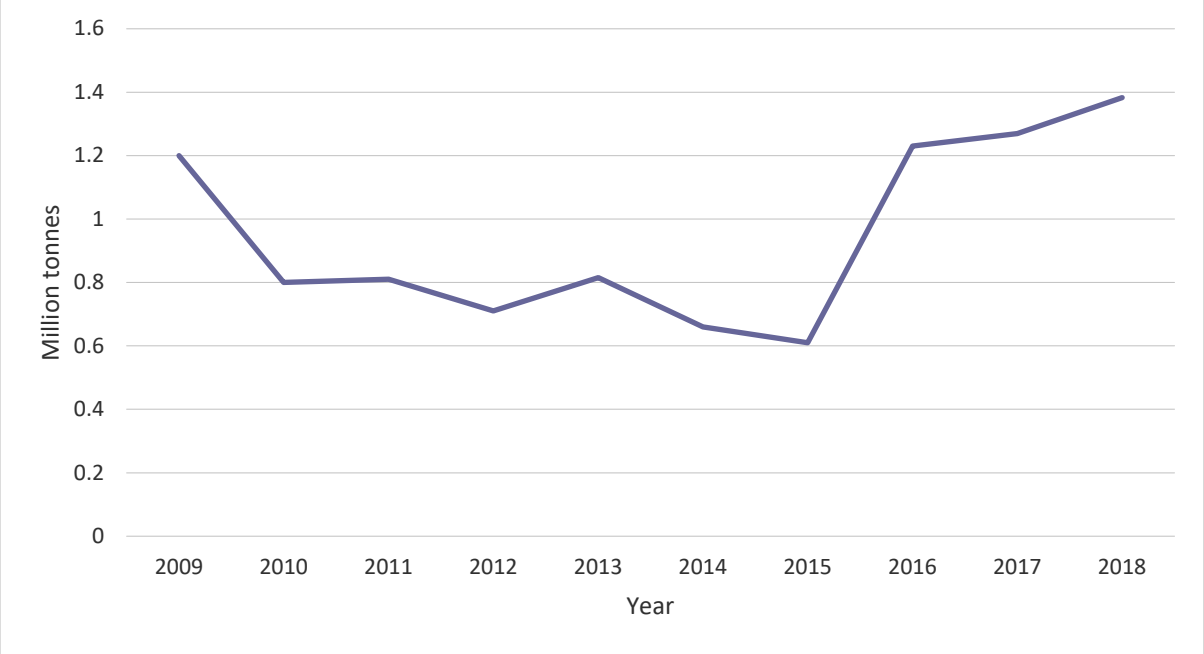
[15] Table 2, West Midlands Aggregate Working Party, Annual Monitoring Report 2017, incorporating data from January – December 2017

[16] Table 1, West Midlands Aggregate Working Party, Annual Monitoring Report 2017, incorporating data from January – December 2017

3.3.5 Figure 3.2 shows the above sales data graphically, indicating a period of significant decline from 2009 to 2010, which can be attributed to the economic recession. Sales continued to decline more gradually, with a slight recovery in 2013 followed by the lowest level of sales over the past 10 years in 2015. In 2016, significant growth was seen, followed by increases in 2017 and 2018.

3.3.6 Whilst Figure 3.2 indicates great volatility over the past ten years, over a 5 year period (between 2010 and 2015) the data indicates that sales of crushed rock remained within a variable of about 200,000 tonnes; this would indicate that sales were reasonably consistent and the market had plateaued somewhat. Recent data indicates a sustained recovery from that period back to pre-recession levels.

Figure 3.2 Crushed rock sales in Herefordshire, Staffordshire, Warwickshire and Worcestershire, 2009 to 2018



3.3.7 The NPPF seeks a minimum landbank of ten years for crushed rock provision. Permitted reserves data is presented separately from the other counties only up to 2013, with the preceding years showing some interesting fluctuations. Some disaggregation of this data is required in order to determine a landbank to use for Herefordshire crushed rock reserves.

3.3.8 One method would be to consider the proportion of crushed rock contributed by Herefordshire in 2013 (the most recent year available) to the combined authorities' total in that year.

- Herefordshire crushed rock, 2013: 11.54 million tonnes
- Staffordshire, Warwickshire and Worcestershire crushed rock, 2013 = 188.61 million tonnes[17]

[17] Table 4, West Midlands Aggregate Working Party, Annual Monitoring Report 2016, incorporating data from January – December 2016

- Total reserve across all counties = 200.15 million tonnes
- Herefordshire proportion = 5.77%

3.3.9 The combined reserve in 2018 is 102.946 million tonnes, 5.77% of which is 5.94 million tonnes, which indicates current crushed rock reserve in Herefordshire.

3.3.10 In order to test this approach, and in the absence of other publicly available data to rely upon, a more arbitrary approach has also been used, which seeks also to balance out some of the vagaries present in the data. This approach simply assumes that, in 2008, there was 14 million tonnes of permitted crushed rock reserve in Herefordshire, and that this has been worked at a consistent rate of one million tonnes per year. One million tonnes of sales per year was chosen as an arbitrary figure, although it is reflective of the 10year average sales of crushed rock across the combined authorities. This is presented in Table 3.6.

Table 3.6 Arbitrary approach to identifying crushed rock reserve, Herefordshire, 2018

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
	Million tonnes										
WM AMR 2017	14.40	15.00	12.20	11.00	11.79	11.54	Not available for Herefordshire only				
Assumed reserve	14.00	13.00	12.00	11.00	10.00	9.00	8.00	7.00	6.00	5.00	4.00

3.3.11 This approach presents some alignment with the data of the West Midlands AMR 2017 and LAA 2019, particularly in the early years, dropping rapidly to leave a permitted reserve of just 4 million tonnes of crushed rock in Herefordshire at 2018.

3.3.12 If sales were really happening at this rate, which takes no account of any external effects (e.g. the 2008 recession) and incorporates sales reflective of those seen across the combined authorities, it would mean that Herefordshire would have only four years of reserve remaining, below the minimum sought in the NPPF.

3.3.13 Staffordshire, Warwickshire and Worcestershire County Councils have all used data on crushed rock for combined groupings of counties in their respective Local Aggregate Assessments. In Staffordshire[18] and Warwickshire[19], figures are presented for Staffordshire, Herefordshire, Warwickshire, and Worcestershire combined; while in Warwickshire, figures are presented for the landbank for Warwickshire based on the former sub-regional apportionment. Staffordshire concludes that, as part of a grouping of combined authorities, there is more than sufficient crushed rock reserve for the plan period. The Worcestershire Analysis of Mineral Resources[20] states that there are no permitted reserves in Worcestershire.

3.3.14 Reference to the proportioned approach indicated a landbank of 5.94 million tonnes whilst the arbitrary approach would indicate a landbank of 4 million tonnes.

3.3.15 This MNA 2019 relies upon the proportioned approach, identifying 5.94 million tonnes of crushed rock reserve within Herefordshire at 2018. This is a more widely recognised and used

[18] Draft Local Aggregate Assessment – 2018 Survey,, Staffordshire County Council, 2019
[19] Warwickshire Draft Local Aggregate Assessment 2017, Warwickshire County Council, October 2017
[20] Analysis of Mineral Resources in Worcestershire, Worcestershire County Council, April 2019

approach and would appear to be realistic when compared against the arbitrary calculations presented in Table 3.6.

3.3.16 Even if sales of 1 million tonnes per year were occurring (which does not appear to be the case looking at the data from the WM AMR 2017) this would mean that the proportioned approach over-estimated Herefordshire's current landbank by c.2 million tonnes. Recognising the lack of detail available for minerals data, the difference between these two conclusions is not considered to be significant.

3.3.17 It is not possible to report annual sales for crushed rock within Herefordshire. The proportioned approach is deliberately not applied to estimate annual sales of crushed rock. Table 3.5 shows that the average ten-year sales across the combined authorities is 948,800 tonnes. 5.77% of this would indicate an average ten-year sales figure of 54,700 tonnes in Herefordshire. If this were applied, it would indicate a landbank of over 100 years of crushed rock within Herefordshire (5.94 million tonnes divided by 54,700 tonnes).

3.3.18 At the site visits, made in November 2017, it appeared that both crushed rock quarries within Herefordshire were substantially worked out and both operators advised that extensions would be required in the foreseeable future. Applying the proportioned approach to sales is not a robust approach to take.

Aggregate Minerals Survey

3.3.19 Sales of crushed rock from Herefordshire are confidential due to the small number of operators in the county. However, the DCLG AMS 2005, 2009 and 2014 do provide data for imports and consumption of crushed rock for Herefordshire. These are reproduced in Table 3.7.

Table 3.7 Imports and consumption of crushed rock in Herefordshire

Year	2005	2009	2014
	Tonnes		
Import of crushed rock	1,522,000	421,000	533,000
Consumption of crushed rock	1,691,000	435,000	700,000

3.3.20 The data shows a significant drop in both imports and consumption in 2009 compared to 2005. This can be accounted for by the economic recession, which began around 2008 and led to a significant reduction in construction activity. Consumption in 2014 significantly increased, indicating some growth, and whilst imports also increased, this was by a lesser factor, indicating that Herefordshire may have decreased its reliance on crushed rock from elsewhere.

3.3.21 Nevertheless, the data indicates that Herefordshire remains a significant net importer of crushed rock. The need for mineral operators to obtain the correct specification for market products, such as ready-mix concrete, can dictate some of this movement, where such materials are not available from local deposits.

3.3.22 Annex B presents the BGS prepared Consumption of crushed rock for aggregate use in 2014, identifying for each sub-region the principal supplying MPA. Again, this has not been verified by the BGS, but is the only such available data set.

3.3.23 It indicates that Herefordshire was 20% to 30% self-sufficient in crushed rock provision in 2014, which is reflected in Table 3.7 above. Crushed rock is overwhelmingly imported from Powys (40% to 50%) but also from Somerset (10% to 20%).

3.3.24 This indicates that crushed rock travels very much further than sand and gravel, indeed the rail head at Wellington Quarry is used to transport crushed rock from Tarmac quarries in Wales to the south east of England, primarily London. Again, the primary export destination is Worcestershire (10% to 20%) which is known to have little crushed rock reserve.

4. Aggregates, Future Demand

4.1 Introduction

4.1.1 Sections 3.2 and 3.3 indicate that within Herefordshire, under current operations and market conditions, there is an appropriate landbank of sand and gravel, but a potential shortfall of crushed rock.

4.1.2 Looking forward, demand for aggregates can be estimated in a number of different ways. The methods most commonly used are:

- Gross Value Added ('GVA') forecasts;
- population projections;
- household or housing projections; and/or
- Core Strategy infrastructure requirements.

4.1.3 Each of these methods are considered for sand and gravel. It should be remembered that aggregate is more than just sand and gravel, but current information does not enable the same level of analysis to be undertaken for crushed rock.

4.1.4 National policy seeks to promote the use of alternatives to primary aggregates by encouraging the use of recycled aggregates as a substitute. The principal source of recycled aggregates is waste arising from construction and demolition activities. In parallel with this MNA 2019, an assessment of the need for waste infrastructure has been undertaken. The WNA 2019 has, inter alia, forecast estimates for the amount of construction and demolition waste arising in Herefordshire annually up to 2041 and these forecasts are reproduced in section 4.4 of this Assessment.

4.2 Growth Forecasts

Gross Value Added forecasts

4.2.1 Overall growth in the economy can be measured through projected growth in Gross Value Added (GVA). Projected change in GVA could be applied to the most recent sand and gravel annual sales data in order to estimate the potential change in demand for sand and gravel on the basis that it is changes in levels of economic wealth that drive demand for construction of buildings and infrastructure.

4.2.2 Herefordshire's GVA in 2017 was £3,878 million[21]. However, there is little data available on projected GVA for Herefordshire over the timeframe of the MWLP.

4.2.3 The Marches Local Enterprise Partnership (the 'LEP'), which covers Shropshire, Herefordshire and Telford & Wrekin, published a Strategic Economic Plan[22] (the 'SEP') in 2019. The vision of the SEP is to grow the economy from £8.78 billion 2016 to 23.8 billion by 2038, which is equivalent to an average annual growth of 2.3% per annum in GVA. However, SEP Evidence

[21] https://understanding.herefordshire.gov.uk/economy-place/topics-relating-to-the-economy/

[22] https://www.marcheslep.org.uk/download/economic_plans/strategic-economic-plan-update-2019/The-Marches-LEP-Strategic-Economic-Plan-2019.pdf

Base[23] (October 2018) reports that the GVA growth between 2014 and 2016 was only 0.9%, which highlights the ambitious nature of the SEP.

4.2.4 A briefing paper[24] on regional and country economic indicators produced by the House of Commons Library shows the GVA of the West Midlands region in 2018 to be £160 billion. It forecasts that this will grow at an annual average of 1.1% over the period 2019-2029. This percentage growth rate could be applied to 2018 aggregate sales to estimate the potential demand for aggregates arising from growth in the economy.

4.2.5 The Office for Budget Responsibility (the 'OBR') publishes an economic and fiscal outlook at the national level, the most recent of which[25] was published in March 2019. This produces a range of forecasts for real Gross Domestic Product ('GDP') growth from 2019 to 2023.

4.2.6 The OBR outlook reports a central forecast and four higher and four lower forecasts, representing probability bands based on past official forecast errors. Risks to the central forecast include: risks to growth from productivity and migratory flows and the risks from shocks; fiscal risks associated with a large financial sector; the sustainability of various tax bases; risk from changes or delays to policies; balance sheet risks; and debt interest risks.

4.2.7 Table 4.1 shows the central GDP growth forecast (50% column) and also a range of eight other growth forecasts for each year, four higher and four lower than the central forecast, to allow for differing degrees of uncertainty in the forecasting.

Table 4.1 Projected annual percentage change in GDP by probability bands

Year	Percentage probability bands								
	10%	20%	30%	40%	50%	60%	70%	80%	90%
2018					1.4				
2019	0.1	0.5	0.7	1.0	1.2	1.5	1.8	2.1	2.6
2020	-0.8	0.0	0.6	1.0	1.4	1.8	2.3	2.7	3.3
2021	-1.0	-0.1	0.6	1.1	1.6	2.0	2.5	2.9	3.5
2022	-1.1	-0.2	0.5	1.1	1.6	2.1	2.5	3.0	3.6
2023	-1.2	-0.2	0.5	1.1	1.6	2.1	2.6	3.1	3.8

4.2.8 There are other forecasts of economic growth available, notably those produced independently by the information services company Experian. Experian has produced national, regional and county-level forecasts which show projected growth in the whole economy and the construction sector to 2037. Unfortunately, data for Herefordshire is combined with Worcestershire and is not available separately. As the Experian data only runs to 2037, the growth from 2036 to 2037 has been used for the years 2038 to 2041 to cover the plan period.

[23] https://www.marcheslep.org.uk/download/economic_plans/strategic-economic-plan-update-2019/The-Marches-SEP-Evidence-Base.pdf

[24] Regional and Country Economic Indicators: Briefing Paper number 06924, House of Commons Library, February 2020, https://researchbriefings.parliament.uk/ResearchBriefing/Summary/SN06924#fullreport

[25] Economic and Fiscal Outlook, Office for Budget Responsibility, March 2019, https://obr.uk/efo/economic-fiscal-outlook-march-2019/

4.2.9 GVA forecasts specific to Herefordshire and Worcestershire were obtained from Experian for the MNA 2017. These were used in the MNA Update 2018 and have been used again for this Assessment. The Experian forecast shows projected national GVA over the same period to be lower than compared to their pre-referendum outlook given post-Brexit uncertainties.

4.2.10 Table 4.2 shows the Experian annual forecast growth for Herefordshire and Worcestershire up to 2037, for the whole economy and for the construction sector separately.

4.2.11 The Experian forecasts to 2023 and 2029 for the West Midlands are higher than those forecast by the House of Commons Library briefing paper to 2029 and the central forecast of the Office for Budget Responsibility for national growth to 2023.

Table 4.2 Experian forecasts of economic growth for Herefordshire and Worcestershire, 2016 to 2037

Year	Whole economy	Construction sector
2016	1.4%	-1.5%
2017	0.8%	-0.4%
2018	1.3%	0.0%
2019	1.5%	1.0%
2020	1.9%	1.7%
2021	2.0%	1.9%
2022	2.2%	2.0%
2023	2.4%	2.0%
2024	2.2%	1.9%
2025	2.0%	2.0%
2026	1.9%	1.8%
2027	1.8%	1.6%
2028	1.7%	1.4%
2029	1.6%	1.2%
2030	1.7%	1.2%
2031	1.7%	1.2%
2032	1.7%	1.2%
2033	1.7%	1.2%
2034	1.6%	1.2%
2035	1.6%	1.2%
2036	1.6%	1.3%
2037	1.6%	1.3%

4.2.12 The latest forecast from the Construction Products Association[26] is that construction output nationally is forecast to grow at 0.5% in 2020 and 0.9% in 2021. These figures are very much lower than the Associations' 2016 forecast (referenced in the MNA 2017) and 2018 forecast (referenced in the MNA Update 2018) and lower than the Experian short-term forecast for the sector in Herefordshire and Worcestershire.

4.2.13 There is a relatively wide range of GVA growth forecasts which may be used to calculate future sand and gravel demand.

4.2.14 The OBR outlook is not considered appropriate for two reasons. First, the forecast is for the UK as a whole and therefore gives no localised definition to growth forecasts. Second, the forecast is to 2023 only and provides no indication of how this could be extrapolated up to 2041.

4.2.15 The Construction Products Association forecast is also not pursued further as it is a forecast for the UK as a whole and there is no indication of how to extrapolate it beyond 2021.

4.2.16 The Marches LEP SEP growth aim is also not pursued, as it is more of a target than a forecast and is not mirrored in recent evidence.

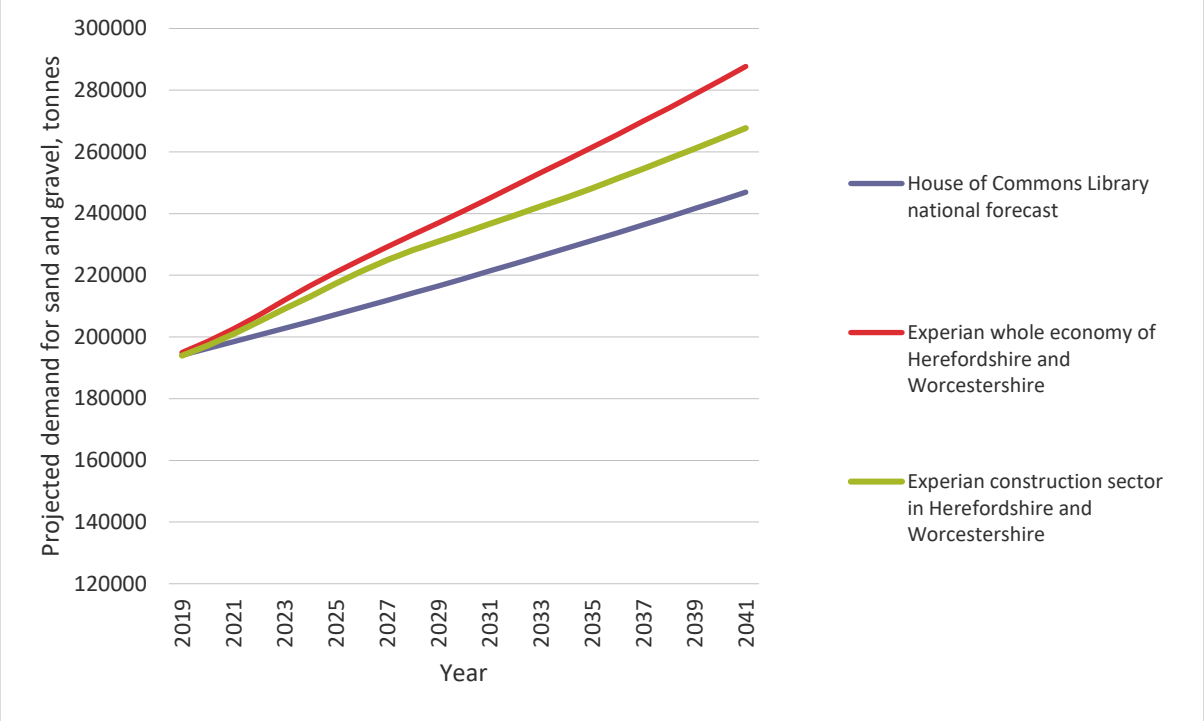
4.2.17 The three forecasts of GVA considered most relevant to derive a range of scenarios for future demand for aggregates are:

- The House of Commons Library briefing paper forecast of 1.3% per annum, extrapolated at the same annual growth rate from 2029 to 2036 to be extended to 2041;
- The Experian forecast for the whole economy of Herefordshire and Worcestershire to 2037, extended to 2041;
- The Experian forecast for the construction sector in Herefordshire and Worcestershire to 2037, extended to 2041.

4.2.18 These growth rates have the benefit of being independent of any one industry, locally focused, but also providing a national comparator. The demand calculated from these GVA forecasts is shown in Figure 4.1.

[26] https://www.constructionproducts.org.uk/news-media-events/news/2018/april/construction-output-forecast-to-flatline-in-2018/

Figure 4.1 Projected demand for sand and gravel in Herefordshire based on selected GVA forecasts



4.2.19 Using this method, it is calculated that, at 2041, demand for sand and gravel would be between 247,000 and 288,000 tonnes per annum, equating to a ten year annual average in 2041 of between 235,000 and 268,000 tonnes.

4.2.20 If demand for sand and gravel should rise in line with forecasts for GVA and no additional reserves are permitted, reserves will have fallen to zero tonnes in 2030 if the Experian whole economy forecast for Herefordshire and Worcestershire is used (the highest GVA forecast). A predicted ten-year average annual sales figure of 268,000 tonnes in 2041 using this forecast gives a landbank of 0 years for sand and gravel. The Experian whole economy forecast indicates a need for 4,944,000 tonnes of sand and gravel to be permitted throughout the plan period, in order to retain a seven-year landbank at 2041.

4.2.21 The figures in the above two paragraphs are based on the assumption that Herefordshire would continue to be reliant on imports of sand and gravel to meet 54% of its needs, a figure taken from the AMS 2014. If Herefordshire were to be self-sufficient in sand and gravel production, then in 2041 demand for sand and gravel would be between 539,000 and 628,000 tonnes and the landbank would have fallen to zero in 2024 (with the Experian whole economy forecast) if no new reserves are permitted.

4.2.22 The Experian whole economy forecast indicates a need for 13,716,000 tonnes of sand and gravel to be permitted throughout the plan period, in order to retain a seven-year landbank at 2041.

4.2.23 It is not possible to generate a forecast for crushed rock using GVA forecasts, because data is not available on current sales to which to apply the GVA multipliers.

Population projections

4.2.24 The (undated) publication Planning 4 Minerals: A Guide on Aggregates, published by the Quarry Products Association, the British Marine Aggregate Producers Association, the BGS and Entec UK Ltd (hereafter referred to as 'Planning 4 Minerals') suggests that demand for aggregates in the UK is equivalent to a little under 4 tonnes per head per annum. Population projections data can therefore be used to assess the possible implications of population changes for future demand for aggregate.

4.2.25 The latest sub-national population projections were published by the ONS in May 2018. However, the most recent consumption data is gained from the DCLG AMS 2005, 2009 and 2014. Applying the consumption data provided in these data sets and mid-year population estimates from the ONS for 2005, 2009 and 2014 gives the per capita consumption of aggregates as 13.1 tonnes, 3.4 tonnes and 4.6 tonnes respectively. This calls into question the reliability of applying such multipliers regardless of geography or levels of economic activity.

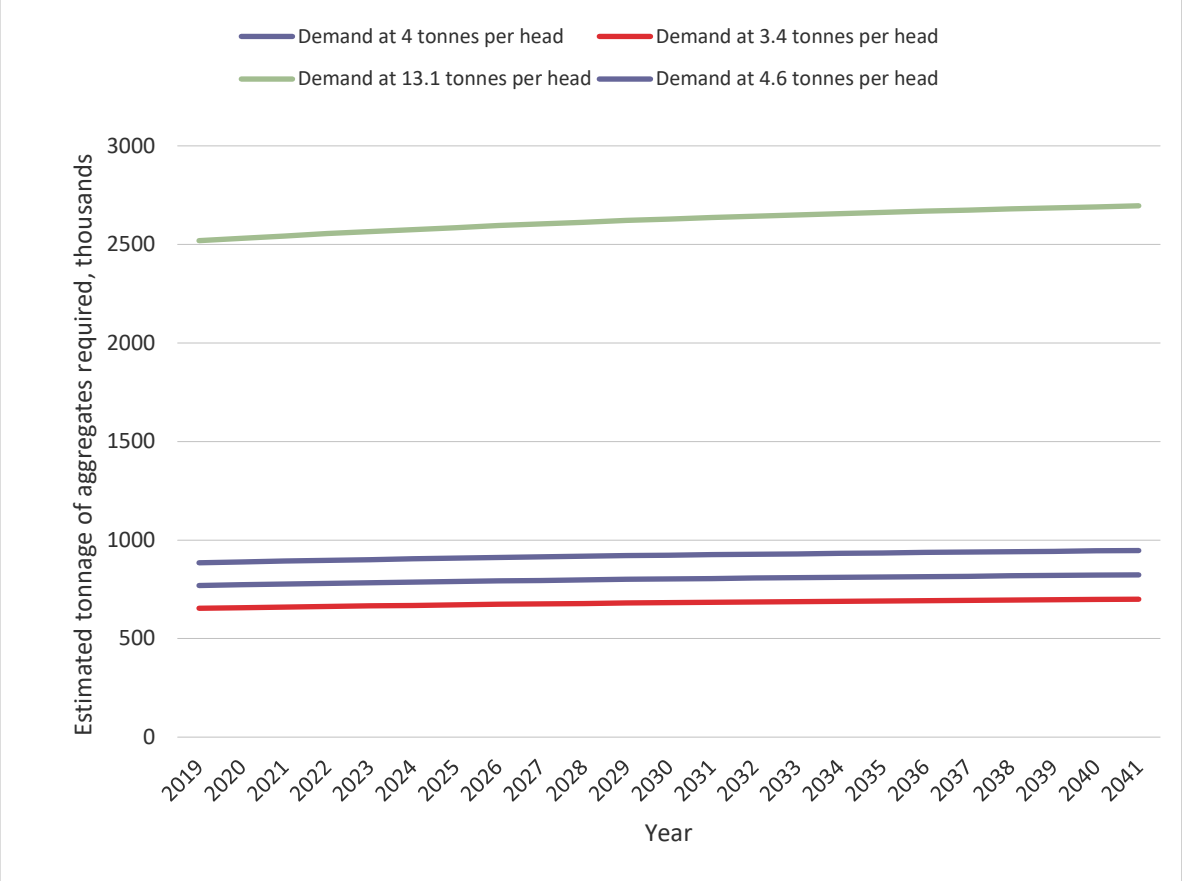
4.2.26 Table 4.3 presents the population projections for Herefordshire by year and the calculated consequent demand for aggregates using each of the rates identified. The assumptions of 4 tonnes, 4.6 tonnes and 3.4 tonnes per head per annum are reasonably consistent; consequently, Table 4.3 includes demand based on 13.1 tonnes per head per annum, as derived from the DCLG AMS 2005. These multipliers have limitations in that the 2009 and 2014 figures take no account of the possibility of an increase in economic vitality in Herefordshire over the period to 2039, while the 2005 figure may overestimate economic vitality in the short to medium term. For each, their long-term accuracy is very unclear.

Table 4.3 Projected population and associated demand

Year	Population (thousands)	Demand at			
		4 tonnes per head	4.6 tonnes per head	3.4 tonnes per head	13.1 tonnes per head
2019	192.3	769.2	884.6	653.8	2519.1
2020	193.2	772.8	888.7	656.9	2530.9
2021	194.1	776.4	892.9	659.9	2542.7
2022	195.0	780.0	897.0	663.0	2554.5
2023	195.8	783.2	900.7	665.7	2565.0
2024	196.6	786.4	904.4	668.4	2575.5
2025	197.3	789.2	907.6	670.8	2584.6
2026	198.1	792.4	911.3	673.5	2595.1
2027	198.8	795.2	914.5	675.9	2604.3
2028	199.4	797.6	917.2	678.0	2612.1
2029	200.1	800.4	920.5	680.3	2621.3
2030	200.6	802.4	922.8	682.0	2627.9
2031	201.2	804.8	925.5	684.1	2635.7
2032	201.7	806.8	927.8	685.8	2642.3
2033	202.2	808.8	930.1	687.5	2648.8
2034	202.7	810.8	932.4	689.2	2655.4
2035	203.2	812.8	934.7	690.9	2661.9
2036	203.7	814.8	937.0	692.6	2668.5
2037	204.1	816.4	938.9	693.9	2673.7
2038	204.6	818.4	941.2	695.6	2680.3
2039	205.0	820.0	943.0	697.0	2685.5
2040	205.4	821.6	944.8	698.4	2690.7
2041	205.8	823.2	946.7	699.7	2696.0

4.2.27 Figure 4.2 presents the four population-based forecasts for aggregate demand. It should be noted that this is total aggregate demand arising from population growth within Herefordshire. This can be met through supply of sand and gravel, crushed rock, and secondary, recycled and marine aggregates, and, continuing a long running trend, this could be from supply outside the county.

Figure 4.2 Estimated tonnages of aggregates required in Herefordshire based on population projections



4.2.28 Using this method, it is calculated that at 2041 an aggregate demand of between 700,000 and 2,696,000 tonnes per annum would be sought, equating to a ten year annual average in 2041 of between 693,000 and 2,670,000 tonnes.

4.2.29 It is considered that the forecast on the basis of 13.1 tonnes of aggregate per head is unrealistically high. The forecast is derived on the basis of pre-recession levels of per capita demand, a time when national GDP growth was as high as 6.7% per annum in the fourth quarter of 2005[27]. Current forecasts indicate that growth over the lifetime of the MWLP is unlikely to return to such high levels and therefore this forecast has been ruled out of further consideration.

4.2.30 Using the forecast on the basis of 4.6 tonnes per head of aggregate, being the highest of the remaining forecasts, the annual aggregate demand in 2041 would be 947,000 tonnes. Assuming 28% of this demand would be met by secondary and recycled aggregates (paragraph 4.5.1) 682,000 tonnes of primary aggregate would be required to meet this level of demand.

4.2.31 Taking the most recent (2014) data for the proportion of demand met by land-won sand and gravel (18%) and by crushed rock (82%) (see Tables 3.3 and 3.7 respectively) 123,000 tonnes

[27] https://www.ons.gov.uk/economy/grossdomesticproductgdp/timeseries/ihyo/ukea

of this would be demand for land-won sand and gravel and 559,000 would be demand for crushed rock.

4.2.32 Tables 3.3 and 3.7 further show that 46% of land-won sand and gravel demand and 24% of crushed rock demand was met by production within Herefordshire, which suggests 56,000 tonnes of sand and gravel and 134,000 tonnes of crushed rock would need to be mined within Herefordshire to meet demand assuming levels of import remain the same as currently. These figures are significantly different from those reported in the MNA 2017 but similar to those reported in the MNA Update 2018.

4.2.33 With permitted reserves for sand and gravel in Herefordshire standing at 2,476,000 tonnes in 2018 and sales in 2018 of 192,000 tonnes, the current landbank is 21.5 years for sand and gravel. This would ensure sufficient supply up to 2039 if demand were to stay at current levels. If demand rose in line with population projections, to 56,000 tonnes per annum as estimated in the above paragraph, and no additional reserves are permitted, reserves will have fallen to 1,214,000 tonnes in 2041 (using the forecast based on 4.6 tonnes per head of aggregate demand). A predicted ten-year average annual sales figure of 56,000 tonnes in 2041 using this forecast gives a landbank of 21.7 years for sand and gravel.

4.2.34 The figures in the above paragraph are based on the assumption that Herefordshire would continue to be reliant on imports of sand and gravel to meet 54% of its needs, a figure taken from the AMS 2014. If Herefordshire were to be self-sufficient in sand and gravel production, then in 2041 demand for sand and gravel would be 123,000 tonnes and the landbank would have fallen to 0 years by 2039 if no new reserves are permitted. The assumption of 4.6 tonnes per head of aggregate demand indicates a need for 1,118,000 tonnes of sand and gravel to be permitted throughout the plan period, in order to retain a seven-year landbank at 2041.

4.2.35 This scenario indicates that new sand and gravel reserve is required to maintain the seven-year landbank at 2041. This is different from the conclusion for the MNA 2017 and MNA 2018.

4.2.36 Although the current level of supply of crushed rock within Herefordshire is unknown, the total forecast demand for 2019-2041 on the basis of 4.6 tonnes of aggregate demand per head is 2,999,000 tonnes. This figure is substantially higher than that reported in the MNA 2017 and MNA 2018. Nevertheless, it is significantly below the 11.54 million tonnes of permitted reserves data for 2013, the most recent year for which figures were available for Herefordshire separately from other counties (see Table 3.5) and 5.94 million tonnes assumed reserve for 2018 (paragraph 3.3.9).

4.2.37 The figures in the above paragraph are based on the assumption that Herefordshire would continue to be reliant on imports of crushed rock to meet 76% of its needs, a figure taken from the AMS 2014. If Herefordshire were to be self-sufficient in crushed rock production, and assuming a 5.94 million tonne reserve in 2018, then total forecast demand for 2019-2041 for crushed rock would be 12,495,000 tonnes and the landbank would have fallen to 0 years in 2030 if no new reserves are permitted.

Household projections

4.2.38 Planning 4 Minerals indicates that 60 tonnes of aggregate are required to build a typical house, with around 400 tonnes in total being required when associated infrastructure is taken into account. Household projections data can therefore be used to assess the possible implications of household changes for future demand for aggregate.

4.2.39 The ONS predicts household projections at local authority level, with the most recent published in September 2018[28]. Table 4.4 shows estimated demand on the basis of 400 tonnes of aggregate required for both housing and associated infrastructure for the increase in households predicted by ONS.

Table 4.4 ONS household projections and associated demand for aggregates, 2017 to 2041

Year	ONS household projections	Aggregates required (thousand tonnes)
2017	81.570	187.2
2018	82.047	190.8
2019	82.538	196.4
2020	82.989	180.4
2021	83.408	167.6
2022	84.010	240.8
2023	84.589	231.6
2024	85.183	237.6
2025	85.742	223.6
2026	86.277	214.0
2027	86.820	217.2
2028	87.359	215.6
2029	87.877	207.2
2030	88.362	194.0
2031	88.852	196.0
2032	89.323	188.4
2033	89.795	188.8
2034	90.232	174.8
2035	90.668	174.4
2036	91.115	178.8
2037	91.531	166.4
2038	91.943	164.8
2039	92.331	155.2
2040	92.679	139.2
2041	93.090	164.4

28 https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/householdprojectionsforengland

4.2.40 However, this approach has limitations, in that it takes no account of variations in household type, either between local authority areas or over time in any one authority, both of which can affect the type of housing required, the associated infrastructure and the consequent level of demand for aggregates. Furthermore, it does not allow for changes in construction practices and materials or improvements in resource efficiency in house construction.

4.2.41 An alternative approach would be to look at the housing trajectory set out in the Herefordshire Local Plan Core Strategy 2011-2031 (the Core Strategy) and compare this to historic housing completion rates, available from MHCLG statistical tables[29,30], and Herefordshire's Annual Monitoring Reports[31]. This comparison could be used to derive a percentage multiplier that can then be applied to the most recent ten year average annual aggregates sales figure in order to project aggregate requirements over the period of the Core Strategy.

4.2.42 However, with the extension of the time period for the MWLP to 2041, the Core Strategy housing trajectory now covers only the first half of the MWLP. The likely housing trajectory after 2030/31 is not currently known. Using the housing trajectory for the current Core Strategy would therefore be of little use for estimating aggregate demand.

4.2.43 Therefore, the ONS household projections have been used in this Assessment to estimate demand for aggregate over the period of the MWLP, replacing the use of the Core Strategy in previous MNA.

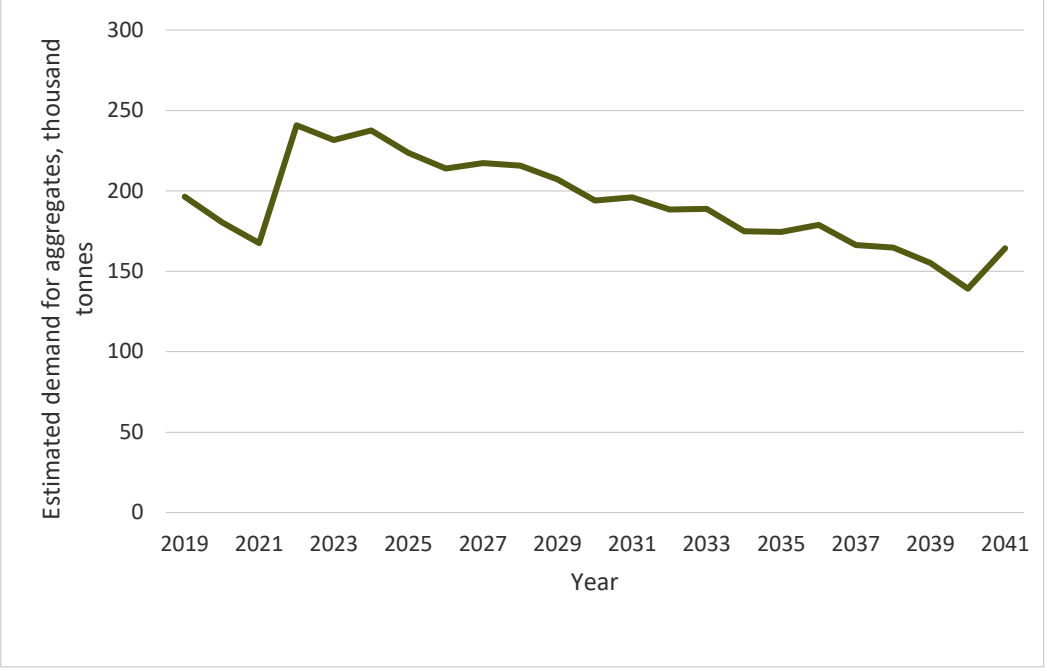
4.2.44 Figure 4.3 shows the projected total aggregate demand in Herefordshire calculated on the basis of the ONS household projections.

[29] https://www.gov.uk/government/statistical-data-sets/live-tables-on-house-building

[30] It is recognised that managing housing statistics has moved from DCLG/MHCLG to the ONS and that the ONS has revised both past and forecast housing numbers. The difference in housing numbers is considered insignificant and unlikely to change the outcome of this Update. Not least as demonstrated in the WNA 2019, the most change is likely to be a decrease of demand. This Assessment continues to rely upon the MHCLG data.

[31] https://www.herefordshire.gov.uk/info/200185/local_plan/142/authority_monitoring_reports

Figure 4.3 Estimated demand for aggregates in Herefordshire based on ONS household projections



4.2.45 Using this method, it is calculated that in 2041 a total aggregate demand of 1,096,000 tonnes per annum would be sought, equating to a ten year annual average in 2041 of 1,130,000 tonnes.

4.2.46 Assuming 28% of this demand would be met by secondary and recycled aggregates (paragraph 4.5.1) 789,000 tonnes of primary aggregate would be required to meet this level of demand. Taking the most recent (2014) data for the proportion of demand met by land-won sand and gravel (18%) and by crushed rock (82%) (see Tables 3.3 and 3.7 respectively) 142,000 tonnes of this would be demand for land-won sand and gravel and 647,000 tonnes would be demand for crushed rock.

4.2.47 Tables 3.3 and 3.7 further show that 46% of land-won sand and gravel demand and 24% of crushed rock demand was met by production within Herefordshire, which suggests 65,000 tonnes of sand and gravel and 155,000 tonnes of crushed rock would need to be mined within Herefordshire to meet demand.

4.2.48 With permitted reserves for sand and gravel in Herefordshire standing at 2,476,000 tonnes in 2018 and sales in 2018 of 192,000 tonnes, the current landbank is 21.5 years for sand and gravel, which would ensure sufficient supply up to 2039 if demand were to stay at current levels. If demand rose in line with the ONS household projections to 65,000 tonnes per annum as estimated in the above paragraph, and no additional reserves are permitted, reserves will have fallen to 720,000 by 2041 sufficient for a 10.7 year landbank at that point of the MWLP.

4.2.49 The figures in the above paragraph are based on the assumption that Herefordshire would continue to be reliant on imports of sand and gravel to meet 54% of its needs, a figure taken from the AMS 2014. If Herefordshire were to be self-sufficient in sand and gravel production,

then in 2041 demand for sand and gravel would be 142,000 tonnes and the landbank would have fallen to zero by 2032 if no new reserves are permitted.

4.2.50 This indicates a need for 2,366,000 tonnes of sand and gravel to be permitted throughout the plan period, in order to retain a seven-year landbank at 2041.

4.2.51 Although the current level of supply of crushed rock within Herefordshire is unknown, the total forecast demand for 2019 to 2041 on the basis of the ONS household projections is 4,173,000 tonnes, significantly below the 11.54 million tonnes of permitted reserves data for 2013, the most recent year for which figures were available for Herefordshire separately from other counties (Table 3.5) and 5.94 million tonnes assumed reserve for 2018 (paragraph 3.3.9).

4.2.52 The figures in the above paragraph are based on the assumption that Herefordshire would continue to be reliant on imports of crushed rock to meet 76% of its needs, a figure taken from the AMS 2014. If Herefordshire were to be self-sufficient in crushed rock production and assuming a 5.94 million tonne reserve in 2018, then total forecast demand for 2019-2041 for crushed rock would be 17,386,000 tonnes and the landbank would have fallen to zero in 2026.

Core Strategy Infrastructure Requirements

4.2.53 The infrastructure requirements arising from policies in the Core Strategy have been examined, with reference to Appendix 5, which lists the necessary infrastructure for strategic sites, as well as to the text of the Core Strategy itself. The main infrastructure proposals which could have a significant demand for aggregates within the period of the MWLP have been identified and these are listed in Table 4.6.

4.2.54 Table 4.6 also shows the main infrastructure proposals that were planned by the earlier Herefordshire Unitary Development Plan[32] for comparative purposes.

4.2.55 No data is available to enable estimates to be made of the likely demand for aggregates arising from the construction of the development. However, Table 4.6 shows that the infrastructure needs arising from the Core Strategy are similar in nature and scale to those arising from the Unitary Development Plan. There is therefore no indication to suppose that there will be a significant change in the demand for aggregates over the life of the Core Strategy when compared to the period since the adoption of the Unitary Development Plan.

4.2.56 It is recognised that the Core Strategy is currently being revised and the future level of infrastructure provision is not known. However, the purpose of this exercise is to consider, proportionally, what the impact might be on future aggregate demand. The outcome is consequently still relevant to this Assessment.

[32] Herefordshire Unitary Development Plan, Herefordshire Council, March 2007

Table 4.6 Planned infrastructure in Herefordshire with a potentially significant aggregate requirement

Unitary Development Plan 1996-2011	Core Strategy 2011-2031
12,200 dwellings over plan period (813 dpa) 800 dpa 2001-2007 600 dpa from 2008 onwards	16,500 dwellings over plan period (825 dpa) 600 dpa 2011-2016 850 dpa 2016-2021 900 dpa 2021-2026 950 dpa 2026-2031
100 ha of Part B employment land	148 ha of employment land
14-16,000m^2 of retail floorspace	
11-15,000m^2 of retail warehouse floorspace	
12-14,000m^2 of office floorspace	
Edgar Street Grid: A new canal basin (residential, commercial, leisure, bars, hotel) A new civic quarter (public offices, library, retail, leisure, visitor amenities) Modernisation and relocation of Hereford United FC Multiplex cinema	New urban village in Eign Gate and Edgar Street regeneration areas including: canal basin leisure and recreation facilities Redevelopment of Hereford United FC New police headquarters Divisional Fire Brigade headquarters
Public transport interchange	Purpose-built transport hub
New road link between Edgar Street and Commercial Road Extension of Canal Road to provide a new route between the station and city centre Downgrade inner ring road New road link A49 to B4399 Extending Roman Road improvements from A480 to A438 Improvements to eastern section of Roman Road New road link across northern half of Edgar Street regeneration area Leominster Enterprise Park access roads Ledbury bypass extension	Western Hereford Relief Road with second river crossing Upgrade to inner ring road Leominster southern link road New road infrastructure for lower Bullingham New roundabout for Rotherwas Access Road Road link in Leominster linking B4361 to A44 New roundabout and road link on periphery of development at Bromyard
Park and ride schemes will be permitted	3 park and ride facilities
Land for enhancing capacity of rail network will be safeguarded	Additional capacity on rail through passing loops or double track on Hereford to Great Malvern section
Cycling and pedestrian links	Cycling and pedestrian links

4.3 Conclusions for sand and gravel

Availability

4.3.1 Section 4.1 sets out a number of forecasts for future sand and gravel demand using a range of forecasts based on GVA growth, on population projections and on the ONS household projections. Table 4.7 summarises the estimates calculated on the basis of a selection of these forecasts.

Table 4.7 Summary of sand and gravel forecast demand at 2041, assuming current level of import

Current level of import Scenario	Demand (tonnes)	Permitted reserve (tonnes)	Landbank	Tonnage required to maintain 7 year landbank
GVA growth (highest forecast)	288,000	0	0 years	4,944,000
Population growth, demand at 4.6 tonnes of aggregate per head	56,000	1,214,000	21.7 years	0
ONS household projections	65,000	720,000	10.7 years	0

4.3.4 Table 4.7 shows that, depending on the forecast method used, there may be sufficient permitted reserves of sand and gravel remaining for the lifetime of the MWLP, or there may be an insufficient landbank remaining at the end of the plan period. By 2041, if the highest GVA growth projection is used, the landbank will have fallen to zero, requiring just under 5 million tonnes of new reserve. Using population growth or household projections as the basis for a forecast, the landbank would still be sufficient in 2041, requiring no new reserves.

4.3.5 The figures in Table 4.7 are calculated based on the assumption that Herefordshire would continue to be reliant on imports of sand and gravel to meet 54% of its needs, a figure taken from the AMS 2014.

4.3.6 If Herefordshire was to be self-sufficient in sand and gravel, Table 4.8 shows that no forecast predicts a sufficient landbank for sand and gravel in 2041 if no new reserves are permitted. Table 4.8 indicates a wide range of between 1.1 and 13.7 million tonnes of new reserve required to enable self-sufficiency at 2041.

Table 4.8 Summary of sand and gravel forecast demand at 2041, assuming self-sufficiency in sand and gravel production

Self-sufficient Scenario	Demand (tonnes)	Permitted reserve (tonnes)	Landbank	Tonnage required to maintain 7 year landbank
GVA growth (highest forecast)	628,000	0	0 years	13,716,000
Population growth, demand at 4.6 tonnes of aggregate per head	123,000	0	0 years	1,118,000
ONS household projections	142,000	0	0 years	2,366,000

4.3.9 It is acknowledged that these outcomes have been calculated through forecasts relying upon a number of assumptions, some of which are based on data for single years and some of which is becoming dated. However, if during the course of the development of the MWLP better data becomes available, this can be used to improve the forecasts produced wherever appropriate.

Flexibility

4.3.10 Wellington Quarry is the only established sand and gravel quarry in Herefordshire (at the time of writing) with permitted reserves constituting over half the total permitted reserves within the county. Current planning conditions require that the winning and working of minerals must cease by 31 December 2026.

4.3.11 Upper Lyde Quarry commenced extraction in September 2019 and is required to be restored within a period of 10 years; September 2029.

4.3.12 Therefore, regardless of which forecast most closely represents the real outcome for sand and gravel over the lifetime of the MWLP there will be a need for additional reserves of sand and gravel to become operational to meet demand from 2027 onwards.

4.4 Conclusions for crushed rock

Availability

4.4.1 There is, generally, a lack of data in relation to crushed rock within Herefordshire.

4.4.2 Two methods have been considered for forecasting the potential future demand. These have produced widely varying forecasts of demand for 2019-2041. Calculations have been made for two different scenarios, on the basis of whether Herefordshire continues to rely on imports of crushed rock to meet 76% of its needs, and on the basis of Herefordshire being self-sufficient in crushed rock production.

Table 4.9 Summary of crushed rock forecast demand at 2041, assuming current level of import and self-sufficiency

Scenario	Demand 2019-2041	
	Assuming imports at current level	Assuming self-sufficiency
Population growth, demand at 4.6 tonnes of aggregate per head	2,999,000	12,495,000
ONS household projections	4,173,000	17,386,000

4.4.4 Table 4.9 shows that demand for crushed rock could exceed even the 11.54 million tonnes of permitted reserves data for 2013, the most recent year for which figures were available for Herefordshire separately from other counties (see Table 3.5).

4.4.5 It is acknowledged that these outcomes have been calculated through forecasts relying upon a number of assumptions, some of which are based on data for single years and some of which is becoming dated. However, if during the course of the development of the MWLP better data becomes available, this can be used to improve the forecasts produced wherever appropriate.

Flexibility

4.4.6 Of the two operational quarries for crushed rock in Herefordshire, Leinthall Quarry is required to cease operations by 2027, and therefore could not, currently, contribute to meeting demand after that date.

4.4.7 Perton Quarry can continue operations until 2042.

4.4.8 Therefore, regardless of which forecast most closely represents the real outcome for crushed rock over the lifetime of the MWLP there will likely be a need for additional reserves of sand and gravel to become operational to meet demand from 2027 onwards.

4.5 Secondary and recycled aggregates

4.5.1 The Mineral Products Association[33] estimates that secondary and recycled aggregates constituted 28% of total aggregate consumption in Great Britain in 2015.

4.5.2 There are currently no industrial processes in Herefordshire which are known to produce secondary aggregates[34]. There may be potential for some provision of secondary aggregates from existing quarrying operations; however there does not appear to be any current proposals for this activity. It is understood, from the site visits, that some hard rock dust from quarries in Wales is used in concrete block manufacture within Herefordshire.

4.5.3 Recycled aggregates are currently being produced within Herefordshire, principally at the CD&E waste recovery facility at Former Lugg Bridge Quarry.

[33] The Mineral Products Industry At A Glance: 2016 Edition, Mineral Products Association, 2016, http://www.mineralproducts.org/documents/Mineral_Products_Industry_At_A_Glance_2016.pdf

[34] Herefordshire Local Aggregates Assessment December 2019, Herefordshire Council, February 2020

4.5.4 The WNA 2019 (section 5.3) has produced forecasts for arisings of CD&E waste in Herefordshire based on the forecast change in GVA for the construction sector in Herefordshire and Worcestershire produced by Experian. The forecasts are:

- Scenario 1a: Growth based on Herefordshire and Worcestershire construction sector GVA growth and a baseline figure of 393,000 tonnes in 2016 (calculated as per capita arisings using an UK per capita multiplier); and
- Scenario 2a: Growth based on Herefordshire and Worcestershire construction sector GVA growth and a baseline figure of 412,000 tonnes in 2016 (calculated as per capita arisings using an England waste per capita multiplier).

4.5.5 The forecasts are broken down into the key elements of the CD&E waste stream (non-hazardous construction and demolition waste, hazardous construction and demolition waste and dredging and excavation spoils) based on relative proportions estimated in 2014 and assuming that these remain constant. In this way, two forecasts for arisings of non-hazardous construction and demolition waste have been made, this being the particular element of the CD&E waste stream likely to be the source of recycled aggregates.

4.5.6 However, not necessarily all of the arisings will be recovered for recycling. The latest figures from Defra[35] show that 92.1% of non-hazardous construction and demolition waste was recovered in England in 2014 and 91.0% for the UK as a whole. Therefore, in considering this data for minerals purposes the arisings forecast by the WNA 2019 have been reduced in accordance with these rates. The adjusted forecasts are set out in Table 4.10 and presented in Figure 4.4.

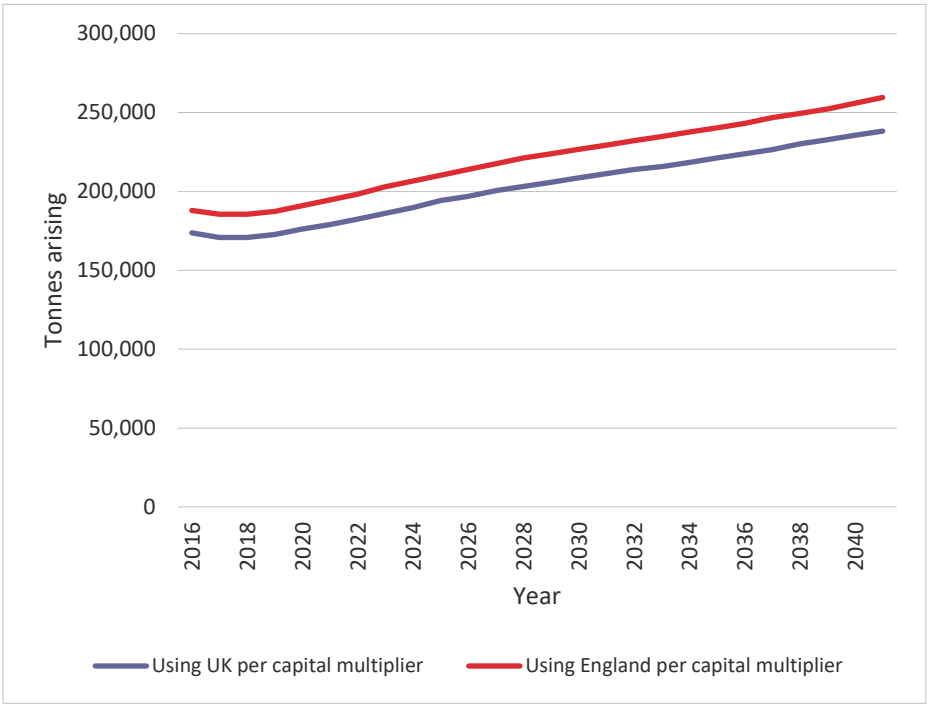
Table 4.10 Forecast arisings of recovered non-hazardous construction and demolition waste, Herefordshire, 2016 to 2041

Year	Using a UK per capita multiplier	Using an England per capita multiplier
2016	173,810	187,884
2017	170,810	185,542
2018	170,810	185,542
2019	172,608	187,370
2020	176,204	191,026
2021	178,901	194,682
2022	182,497	198,338
2023	186,093	202,908
2024	189,689	206,564
2025	194,184	210,220
2026	196,881	213,876
2027	200,477	217,532
2028	203,174	221,188

[35] Statistics on Waste Notice: Non-Hazardous Construction and Demolition Waste UK and England 2010-2016, Defra, March 2019

2029	205,871	223,930
2030	208,568	226,672
2031	211,265	229,414
2032	213,962	232,156
2033	215,760	234,898
2034	218,457	237,640
2035	221,154	240,382
2036	223,851	243,124
2037	226,548	246,780
2038	230,144	249,522
2039	232,841	252,264
2040	235,538	255,920
2041	238,235	259,576

Figure 4.4 Forecast arisings of recycled aggregates, Herefordshire, 2016 20 2041



4.5.7 The forecasts indicate that up to 260,000 tonnes of recycled aggregates could be gained from non-hazardous construction and demolition waste in Herefordshire by 2041. In simple terms, i.e. not considering all the different recycled aggregates produced, this could be provided by the proposed extensions to the operations undertaken at the Former Lugg Bridge site.

5. Other Minerals

5.1 Building Stone

5.1.1 The Annual Raised Enquiry prepared by the ONS provides data for building stone sales from Herefordshire. The most recent data for building stone is reproduced in Table 5.1. Prior to 2011, data on building stone was only provided at the regional level.

Table 5.1 Sales of building stone, Herefordshire, 2011 to 2014

Year	Building stone sales (tonnes)
2014	2,000
2013	2,000
2012	2,000
2011	2,000*

* Figure for Herefordshire and Worcestershire combined

5.1.2 The figures indicate a small and stable market for the sale of building stone from Herefordshire.

5.1.3 There are several active quarries for building stone within Herefordshire. Some of these have planning conditions imposed that require operations to cease within the lifetime of the MWLP. Llandraw Delve is required to cease working by 2021 and Tybubach Delve by 2030 at the latest (this site already appears to have ceased working). Westonhill Wood Delves are required to cease working by 2039, also within the plan period. Therefore, with the closure of some quarries before the end of the plan period, there may be a need to facilitate new permissions, or extended time periods, for the winning and working of building stone.

5.2 Conventional and Unconventional Hydrocarbons

5.2.1 Herefordshire has two areas that have been worked in the past for coal. However, such conventional extraction of hydrocarbons has ceased in Herefordshire and shows little sign of recommencing. In 1999, the BGS reported that the hydrocarbon prospectivity of the area was low.

5.2.2 Recently, new technologies have been developed for extracting hydrocarbons in an unconventional way that may allow the extraction of resources from deposits which were previously considered uneconomic.

5.2.3 The UK has a long history of onshore gas exploration and has developed a robust regulatory system to ensure that any such operations will be carried out to the highest standards of safety and environmental protection. The 14th Onshore Oil and Gas Licensing Round was launched on 28 July 2014 and applications were received from 47 companies covering 295 Ordnance Survey Blocks.

5.2.4 A Petroleum Exploration and Development Licence (PEDL) does not itself give any direct permission for operations to begin but grants the licensee exclusivity over an area of land for

onshore hydrocarbon exploration, appraisal and extraction. The exclusivity applies to both conventional and unconventional operations.

5.2.5 The PEDL are issued for an identified block of land, one of which, referred to as SO51a, included a small part of the south of Herefordshire around Whitchurch, Welsh Newton, Goodrich, Kerne Bridge, Hope Mansell and Marstow.

5.2.6 The PEDL for block SO51a is classified as coalbed methane, although the licence is for any hydrocarbon and is not limited to this classification. It was offered to South West Energy Limited, but the Oil and Gas Authority has confirmed that the licence was not taken up, and therefore no PEDL was awarded in this area. It is possible that the block could be subject to future licensing rounds, although the Oil and Gas Authority has not been able to provide any timeframe for that[36].

5.2.7 It is also of note that the NPPF was amended in May 2019 to remove support for oil and gas development, including unconventional hydrocarbons[37].

5.2.8 Activities related to hydrocarbon exploration or extraction will therefore not take place in Herefordshire, at least in the short term. It is therefore still possible, although perhaps unlikely, that hydrocarbon operations will take place in Herefordshire within the plan period, although this will be influenced by future developments in both policy and technology.

[36] Email exchange with OGA, March 2018

[37] Ministerial Written Statement (reference: HCWS1586) made on 23 May 2019 confirms that '*paragraph 209(a) of the National Planning Policy Framework has been quashed.'*

6. Conclusions

6.1 Overview

6.1.1 The previous sections have collated and analysed the available data on supply of and demand for minerals in Herefordshire. In many instances, data is unavailable and estimates have had to be made using assumptions based on information from other sources or from several years ago. While every attempt has been made to use reliable data, the figures derived can only be an indication of the actual position regarding supply of minerals, except in the cases of sand and gravel and building stone where actual figures are available.

6.1.2 When making projections of future demand, especially over a 15 to 20 year time-frame, estimates are by their nature uncertain and the true outcome is uncertain. A range of forecasts have been made to show the possible variation in outcome

6.1.3 On the basis of the estimates derived for supply and demand, it is possible to draw some conclusions about the balance between supply and demand for minerals. These conclusions have changed considerably from the MNA 2017 and Update 2018, reflecting the incorporation of new and updated information and extended plan period.

6.2 Aggregates

Sand and gravel

6.2.1 Clear data is held on the supply of sand and gravel and permitted reserves remaining.

6.2.2 In most of the scenarios considered, additional sand and gravel reserve is required to maintain a seven-year landbank at 2041.

6.2.3 Regardless of the demand forecast used, permitted quarry operations must cease within the plan period. There is therefore a need for additional reserves of sand and gravel to become operational before the end of the MWLP.

Crushed rock

6.2.4 Poor data is held on the supply of crushed rock and permitted reserves remaining.

6.2.5 Two methods have been provided for forecasting the potential future demand for crushed rock. These have produced widely varying forecasts of demand for 2019 to 2041. However, in both cases the forecast is significantly below the tonnes of permitted reserves data for 2013, the most recent year for which figures were available for Herefordshire separately from other counties. This assumes that Herefordshire continues to rely on imports of crushed rock at current levels.

6.2.6 If Herefordshire were to be self-sufficient in crushed rock production, then demand would outstrip the available permitted reserves extant in 2013.

6.2.7 Of the two operational quarries for crushed rock in Herefordshire, one is required to cease operations by 2027.

6.2.8 There is an indicated need for additional reserve of crushed rock to become operational before the end of the MWLP. However, recognising the poor data available and consequent

wide range of future demand, it is difficult to be precise on the amount of future reserve required.

Recycled aggregates

6.2.9 Herefordshire is a net importer of aggregates, and overwhelmingly so for crushed rock. As discussed above, there is an indicated need to secure more permitted reserves for both sand and gravel and crushed rock reserves. Recycled aggregates could have an increasingly important role to play in reducing the reliance on imports of aggregates.

6.2.10 Forecasts have been made for the potential arisings of recycled aggregates over the plan period. These have been calculated using a baseline of per capita arisings in Herefordshire and assumed to change over the plan period in line with forecasts for the change in GVA for the construction sector in Herefordshire and Worcestershire.

6.2.11 This gives a baseline for arisings of recycled aggregates in 2016 of between 174,000 tonnes and 188,000 tonnes, rising to between 238,000 tonnes and 260,000 tonnes by 2041. While a useful contribution to the supply of aggregates, these figures fall well short of the predicted tonnages required to meet the estimated demand calculated by reference to the ONS household projections.

6.3 Building stone

6.3.1 Clear (albeit not very recent) data is held on the supply of building stone and permitted reserves remaining.

6.3.2 There is a small and stable market for the sale of building stone from Herefordshire. This is important for retaining the local character of buildings and also has a market for quality construction in other parts of the country.

6.3.3 All of the active delves for building stone within Herefordshire are required to cease operations within the lifetime of the MWLP. Therefore, there may be a need for policy to address the winning and working of building stone to enable supply to continue to meet demand.

6.4 Hydrocarbons

6.4.1 There will not be any activities relating to the exploration or extraction of hydrocarbons within Herefordshire in the short term.

6.4.2 In the medium to long term, it is possible that this situation may change but the current position would indicate this is unlikely.

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Waste Need Assessment 2019

Herefordshire Minerals and Waste Local Plan

March 2020
HENDECA LTD

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1. Introduction

1.1 Background and Purpose of this Report

1.1.1 Herefordshire Council is preparing the Minerals and Waste Local Plan (MWLP) to guide development related to minerals and waste within Herefordshire up to 2041.

1.1.2 The original Waste Need Assessment was produced in February 2017 (the 'WNA 2017') to provide an understanding of waste management infrastructure within Herefordshire and to consider potential future demand, so as to prepare comprehensive, compelling and long-lasting policy. The WNA 2017 considered base data up to year 2015. This work was updated by the Waste Need Assessment Update 2018 (the 'WNA Update 2018', March 2018) that considered base data up to year 2017. The WNA Update 2018 also undertook further analysis to understand the movement of wastes into and out of Herefordshire. However, it relied on the WNA 2017 data for other matters, e.g. consideration of exempt activities.

1.1.3 The key data sources used in all the WNA, principally WasteDataFlow (the local authority collected waste data base) and the Environment Agency's Waste Data Interrogator (WDI) are updated each year, with the data for 2018 becoming available in Autumn 2019.

1.1.4 This report (the/this 'WNA 2019' or 'this Assessment') returns to the source data to consider all matters afresh, including those such as exempt activities.

1.1.5 This WNA 2019 is consequently a complete analysis, using the most up to date information. It has been prepared to be a discrete report, so the reader does not need to refer back to previous WNA; where there are interesting comparisons to be made cross referencing is provided as appropriate.

1.1.6 Despite being finalised in March 2020, this report is dated 2019 primarily to reflect more closely the time period that it is reporting and to continue the sequencing with the previous reports.

Plan making context

1.1.7 The National Planning Policy for Waste (published October 2014, the NPPW) identifies that positive planning should play a pivotal role in delivering waste ambitions through:

- delivery of sustainable development and resource efficiency, including provision of modern infrastructure, local employment opportunities and wider climate change benefits, by driving waste management up the waste hierarchy;
- ensuring that waste management is considered alongside other spatial planning concerns, such as housing and transport, recognising the positive contribution that waste management can make to the development of sustainable communities;
- providing a framework in which communities and businesses are engaged with and take more responsibility for their own waste, including by enabling waste to be disposed of or, in the case of mixed municipal waste from households, recovered, in line with the proximity principle;
- helping to secure the re-use, recovery or disposal of waste without endangering human health and without harming the environment; and

- ensuring the design and layout of new residential and commercial development and other infrastructure (such as safe and reliable transport links) complements sustainable waste management, including the provision of appropriate storage and segregation facilities to facilitate high quality collections of waste.

1.1.8 The NPPW requires waste planning authorities to prepare a local plan addressing waste management that: is based on a proportionate evidence base; will identify the level of need of their area; and will identify sites and/or areas for new or enhanced waste management facilities.

1.1.9 A range of wastes are generated and managed within Herefordshire and these are all addressed as relevant within this need assessment.

1.1.10 The Herefordshire MWLP will be applicable across all of Herefordshire and is intended to have a plan period to 2041. Once adopted, it will sit with the Herefordshire Core Strategy and be part of the development plan.

1.2 Structure

1.2.1 This report is structured as follows:

- Section 1 - Introduction;
- Section 2 - Context: the key definitions for waste and the sources of data used;
- Section 3 - Permitted facilities in Herefordshire: the current waste management infrastructure operating within the county;
- Section 4 - Waste Arisings: estimating waste arisings for year 2018 where data is available and drawing comparisons with previous data;
- Section 5 - Waste Forecasts: estimating future waste arisings, up to 2041; and
- Section 6 - Capacity Needs: considering the need for new waste management capacity.

2. Context

2.1 Explanations for Waste Terminology

2.1.1 Waste terminology has changed over time as a result of greater understanding of different waste streams, changes to waste classification systems and the adoption of common European definitions. This section explains some key definitions used within this Assessment.

Municipal waste, local authority collected waste and household waste

2.1.2 In 2011, the UK adopted the European definition of municipal waste, which is 'waste from households, as well as other waste which, because of its nature or composition, is similar to waste from households'. This definition is quite broad and includes those wastes not collected by a local authority (principally commercial and industrial wastes).

2.1.3 To provide consistency with the data recorded pre-2011 and to provide clarity over the different waste streams, the term 'local authority collected waste', abbreviated to 'LACW' is used to refer to all waste collected by a local authority.

2.1.4 Within this report, LACW is further categorised as:

- household waste - waste collected from households within the local authority;
- trade waste - the commercial and industrial waste collected by the local authority (e.g. from local businesses);
- other municipal wastes - for example waste from parks and gardens, or fly tipping; and
- non-municipal fractions - principally construction and demolition waste.

Commercial and industrial waste

2.1.5 Commercial waste is generated from the business sector, including the activities of wholesalers, catering establishments, shops and offices. Industrial waste is generated by factories and industrial facilities.

2.1.6 These wastes have different properties but are often, and within this report, considered together, using the abbreviation 'C&I waste'.

2.1.7 The majority of C&I waste is managed directly through contracts held between the business and the waste management industry, however some is collected by the local authority. This report makes clear the C&I waste generated within Herefordshire and whether it is managed through the waste management industry or as LACW.

Construction, demolition and excavation waste

2.1.8 Construction and demolition wastes are those generated through building projects; whilst excavation waste refers to wastes produced from earth moving activities. The abbreviation used is 'CD&E waste'.

2.1.9 Again, these wastes are generally managed through private contracts held directly with the waste management industry. However, a small amount is captured in LACW, principally through deposits made at household waste recycling centres (HWRC) also known as civic amenity (CA) sites.

Agricultural waste

2.1.10 Agricultural waste is that generated by the agriculture sector, principally farms. Most of this waste is natural and can be managed on-farm, e.g. soiled animal bedding; non-natural wastes (e.g. plastic wrapping) is generally managed through the private sector.

Hazardous waste

2.1.11 Hazardous waste relates to wastes that could cause harm to human health or the environment due to the presence or concentration of dangerous substances.

2.1.12 Hazardous wastes are a component of other waste streams, i.e. hazardous wastes can arise in households, from industrial premises, at construction sites etc.

Radioactive waste

2.1.13 Radioactive waste is not a controlled waste under UK legislation. However, waste planning authorities are required to consider disposal requirements that may arise for this waste stream in preparing their development plans.

Municipal waste

2.1.14 Directive 2018/851 of the European Parliament and of the Council[1] (which came into force on 4 July 2018, the 'rWFD') amends Directive 2008/98/EC on waste. The rWFD gives Member States two years in which to transpose the agreed amendments, which the UK Government has indicated it will implement in full.

2.1.15 Article 1 of the rWFD amends the definitions presented in Directive 2008/98/EC on waste, updating the definition for 'municipal waste' at Article 1(3) to:

'(a) mixed waste and separately collected waste from households, including paper and cardboard, glass, metals, plastics, bio-waste, wood, textiles, packaging, waste electrical and electronic equipment, waste batteries and accumulators, and bulky waste, including mattresses and furniture;

(b) mixed waste and separately collected waste from other sources, where such waste is similar in nature and composition to waste from households;

Municipal waste does not include waste from production, agriculture, forestry, fishing, septic tanks and sewage network and treatment, including sewage sludge, end-of-life vehicles or construction and demolition waste.'

2.1.16 Municipal waste will consequently comprise both LACW and elements of C&I wastes.

Waste management hierarchy

2.1.17 Directive 2008/98/EC on waste established the overarching framework for the management of waste across the EU. It required Member States to '*bring into force the laws, regulations and administrative provisions necessary to comply with this Directive'* within two years of its entry into force, i.e. by December 2010. The Directive brought together existing elements of waste legislation and introduced a new approach to waste management that focused more strongly on the prevention of waste.

[1] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2018.150.01.0109.01.ENG [07.11.2019@10:37]

2.1.18 Article 4(1) Directive 2008/98/EC included the five point waste hierarchy, based on the priority order of:

- prevention (preferred option);
- preparing for re-use;
- recycling;
- other recovery (e.g. energy recovery); and
- disposal (i.e. landfilling or incineration without energy recovery).

2.1.19 The rWFD also makes changes to how waste is managed, including incorporation of measures required to achieve the Circular Economy Package and amendments to Article 4, adding a requirement for Member States to make use of economic instruments and other measures to provide incentives for the application of the waste hierarchy.

2.1.20 Consequently, the requirement on Member States to apply the hierarchy as a priority order '*in waste prevention and management legislation and policy*' remains following EU-wide agreement on the Circular Economy Package (described in more detail below).

Waste technology and future trends

2.1.21 There are several methods available for the treatment of waste, information on which is available from Defra and WRAP[2].

2.1.22 WRAP designs and delivers grant programmes to promote and encourage waste prevention, resource efficiency, renewable energy and the sustainability of products and materials. Information on resource efficiency and waste management initiatives are available on its website.

2.1.23 In June 2011, Defra published a report titled 'Guidance on applying the Waste Hierarchy'[3]. This provides information on dealing with waste in line with the hierarchy. Over the past 10 years or so waste management in the UK has already shifted significantly to recycling and recovering waste rather than dispose of it to landfill; this is likely to continue into the future. Looking forward there is likely to be a focus on those wastes that would have greatest impact on carbon emissions, primarily plastics and biodegradable wastes (e.g. food waste).

2.1.24 In February 2014, Defra updated a document titled 'Energy from waste, A guide to the debate' that was accompanied by waste technology briefs to provide more detail on specific energy from waste technologies. These are all available at the GOV.UK website: https://www.gov.uk/government/publications/energy-from-waste-a-guide-to-the-debate.

2.1.25 Locally, the EnviRecover Facility at Hartlebury in Worcestershire commenced operation in 2017. This enables a further 230,000 tonnes per annum (tpa) to be diverted from landfill.

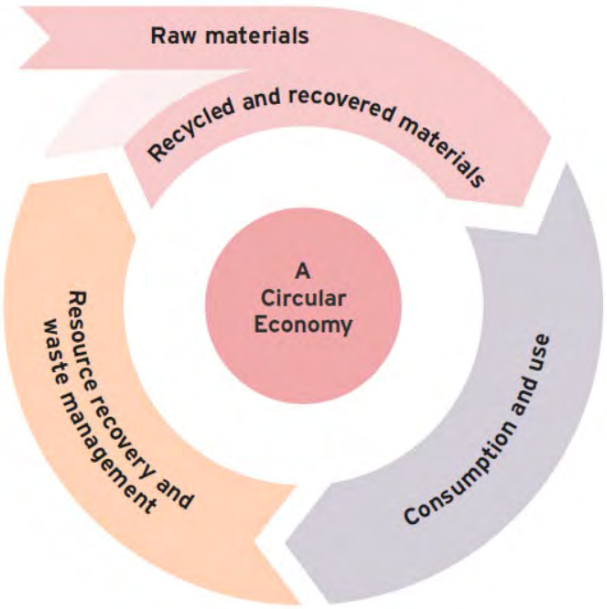
2.1.26 However, there is also a greater focus on the Circular Economy, an alternative approach to a traditional linear economy (make, use, dispose) in which we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life.

[2] Waste and Resources Action Programme. http://www.wrap.org.uk/ [07.11.2019@10:42]
[3] https://www.gov.uk/government/publications/guidance-on-applying-the-waste-hierarchy [07.11.2019@10:45]

2.1.27 In December 2018, Defra published 'Our Waste, Our Resources: A Strategy for England'[4] (the 'Resources and Waste Strategy' or 'RWS') the first significant waste policy intervention by the Government in over a decade, with the Circular Economy as a central strand.

2.1.28 Figure 2.1 is taken from page 8 of the RWS. The MWLP has been developed to help the Circular Economy thrive in Herefordshire.

Figure 2.1 Graphic representation of the Circular Economy



2.2 Data Sources

Arisings Data

2.2.1 In 2018, the year for which the most recent statistics are available, England generated an estimated 213 million tonnes of waste, predominantly managed through transfer, treatment and disposal to landfill[5].

2.2.2 However, there are notable gaps in our knowledge, and we cannot be certain about the total amount of commercial and industrial, construction, demolition and excavation or agricultural wastes because currently data are not captured from all waste management facilities or waste producing sectors.

2.2.3 The only waste stream where the total waste generation is accurately known is Local Authority Collected Waste (LACW). This is as a result of the detailed data set collected through WasteDataFlow.

[4] https://www.gov.uk/government/publications/resources-and-waste-strategy-for-england [07.11.2019@10:48]
[5] https://data.gov.uk/dataset/312ace0a-ff0a-4f6f-a7ea-f757164cc488/waste-data-interrogator-2018 [27.11.2019@11:18]

2.2.4 WasteDataFlow is the web-based system for LACW data reporting by UK local authorities to government, which went live over ten years ago on 30 April 2004. Validated information held on WasteDataFlow can be downloaded by the general public.

2.2.5 For most other waste streams and data on permitted facilities, the Waste Data Interrogator (WDI) run by the Environment Agency is the data source point. Data on hazardous waste are available from the Hazardous Waste Data Interrogator (HWDI) also run by the Environment Agency. Both these data sets require information to be submitted by the waste management facility operator.

2.2.6 In relation to waste streams other than LACW, there are limitations in the data available on waste generation:

- C&I waste. Data gaps result from the lack of reporting associated with exempt activities and it is difficult to allocate waste accurately to the producing sectors. In addition, most recent estimates have been at the national level and the data has not been broken down to the regional or waste planning authority level.
- CD&E waste. Significant quantities of waste are processed at the site of production and/or managed at exempt facilities. This has resulted in this waste stream historically being estimated through surveys, but there has been limited new research available in 2010, when WRAP published 'Construction, demolition and excavation waste arisings, use and disposal for England 2008'. The WRAP report looked at national level arisings rather than waste generated within regions or waste planning authority.
- Agricultural waste. Limited data is captured on natural and non-natural agricultural wastes as wastes generated on farms are often managed under exemptions.

Facility Data

2.2.7 Some caution also needs to be applied in using data relating to waste management capacity. The Environmental Permitting (England and Wales) Regulations 2010 provide the system for **environmental permits ('EP')** for industrial activities and waste operations, including treating, keeping and disposing of waste. Environmental Permits set out conditions under which waste management facilities must operate.

2.2.8 The first principle to establish is that this Assessment only considers those waste management facilities that are operational. In many authority areas, planning permission is gained for new or enhanced waste management facilities that are not implemented for a variety of reasons. This capacity is considered only to have been consented but not operational and is not incorporated into this Waste Need Assessment.

2.2.9 Within this Assessment, it has been assumed that if a facility has an EP, i.e. if it is permitted, it is operational and should be considered as part of the current capacity operating within Herefordshire.

2.2.10 However, there remains a further complication **between permitted and operational capacity**.

2.2.11 When applying for an EP, an operator is required to state the facility's annual capacity. This is considered by the Environment Agency during the application process and a maximum input is stated within the EP. The maximum input is related to the type of EP and the risks associated with the type of facility (e.g. Standard Rules Permit "SR2015 No21: Materials Recycling Facility up to 75kte per annum"); the maximum input is often set within pre-defined

bands. The maximum input set out in the EP is the facility's permitted capacity; however, this may not reflect the actual quantity of waste that the facility could handle in a year.

2.2.12 In many cases, the permitted capacity is higher than the actual throughput a facility can handle. Therefore, care is needed when considering available capacity; an assumption that the permitted capacity is the available capacity may result in capacity being over-estimated.

2.2.13 Certain activities, generally related to recovery and temporary storage of waste, can be exempt from the requirement to hold an environmental permit. Part 1 of Schedule 3 to the Environmental Permitting (England and Wales) Regulations 2016 lists and describes the waste operations which do not require an environmental permit, providing that the establishment or undertaking carrying them out has registered the exemption(s) with the Environment Agency.

2.2.14 **Exempt activities** are those considered to be low risk due to the type and quantity of waste handled. There is no requirement for the operator of exempt activities to report on the type or quantity of waste handled, resulting in an incomplete data set.

2.2.15 At the time of writing this report (November 2019) the Government had undertaken a consultation on proposals to tackle crime and poor performance in the waste sector and introduce a new fixed penalty for waste duty of care offences[6]. This may change how waste management activities are registered to be exempt activities in the future but has not affected the estimation contained in this Assessment.

2.2.16 The WDI contains details of all waste deposited and removed from permitted waste facilities in England; this includes wastes handled through transfer stations. Therefore, care is needed when collating tonnages handled through transfer stations to avoid double counting.

[6] https://consult.defra.gov.uk/waste/crime-and-poor-performance-in-the-waste-sector/supporting_documents/Waste_Crime_Cons_English.pdf [27.11.2019@11:26]

3. Waste Management Facilities in Herefordshire

3.1 Facilities Operating under an Environmental Permit

3.1.1 All operators of permitted waste management facilities must provide the EA with details of the quantities and types of waste handled i.e. waste received onto site, the process it went through on site, and waste sent from site on to other destinations. This data is collated in the WDI, which provides the detail of all permitted facilities by waste planning authority (WPA) area.

3.1.2 Table 3.1 summarises the type and number of waste management facilities permitted in Herefordshire over the years 2013 to 2018, providing some context to the changes in the number of facilities permitted.

3.1.3 Within this WNA, data analysis is sometimes focused on calendar years 2015 to 2018. This provides four years of data to consider, which is considered to be both proportionate and manageable; too much data presented in this report would simply become unwieldy. Further, the earlier years have already been considered in the previous WNA, with this Assessment building on that understanding.

Number and type of permitted facilities and the type of waste accepted

3.1.4 Table 3.1 shows that in 2018 there were 34 permitted facilities operating in Herefordshire, compared to 35 in 2015, 39 in 2016 and 38 in 2017 (line 22).

3.1.5 Whilst most waste management capacity has stayed fairly constant, there are a few changes of note:

- there is now only one hazardous waste transfer facility (line 1); this is not a new facility but a change of permit type from S0807: Household, Commercial & Industrial Waste TS/Treatment/Asbestos in 2016 (line 13). An animal funeral service became operational in 2017, however it is not listed as an active site in the 2018 data;
- a new material recycling facility to handle construction and demolition wastes commenced operation in 2016 (line 5);
- an additional physical treatment facility became operational in 2016 (line 6);
- the number of vehicle dismantlers has fluctuated since 2013, increasing to four in 2014 and five by 2016, following by a reduction back to three in 2017 and 2018 (line 7); and
- the clinical waste transfer facility (line 16) was not operational in 2017 and 2018.

3.1.6 The use of anaerobic digestion to treat on-farm waste grew significantly from 2013 to 2015, with a couple of additional facilities becoming operational over the past three years (line 17).

3.1.7 Table 3.1 still highlights that whilst there is a range of waste management, re-use and recycling capacity permitted in Herefordshire addressing a variety of wastes, there are no residual waste management facilities such as energy from waste plant or landfill sites.

Table 3.1 Number of permitted facilities, Herefordshire, 2013 to 2018

row	Facility type	Site Category	Site Type	2013	2014	2015	2016	2017	2018
1	A9: Haz Waste Transfer Station[a]	Transfer	Hazardous Waste Transfer	n/r	n/r	n/r	1	2	1
2	A11: Household, Commercial & Industrial WTS	Transfer	Non-hazardous waste transfer	3	2	2	3	3	2
3	A11: Household, Commercial & Industrial WTS and A13: Household Waste Amenity Site	Transfer	Non- hazardous waste transfer and civic amenity site	2	2	2	2	2	2
4	A13: Household Waste Amenity Site	Transfer	Civic amenity site	3	3	3	3	3	3
5	A15: Material Recycling Treatment Facility	Treatment	Material recycling facility	1	n/r	n/r	1	1	1
6	A16 : Physical Treatment Facility	Treatment	Physical treatment	1	-	3	4	4	4
7	A19: Metal Recycling Site (Vehicle Dismantler)	Metal Recycling Site	Car breaker	3	4	4	5	3	3
8	A19a: End of Life Vehicle Facility	Metal Recycling Site	Car breaker	1	1	1	1	1	n/r
9	A20: Metal Recycling Site	Metal Recycling Site	Metal recycling	2	2	2	2	2	2
10	A23: Biological Treatment Facility	Treatment	Biological treatment	2	3	4	4	4	4
11	A25: Deposit of waste to land as a recovery operation	On/In Land	Deposit of waste to land (recovery)	1	1	1	1	1	n/r
12	S0803: Household, Commercial & Industrial Waste TS/Treatment	Treatment	Non- hazardous waste transfer / treatment	1	1	1	1	1	n/r
13	S0807: Household, Commercial & Industrial Waste TS/Treatment/Asbestos[1]	Treatment	Hazardous waste transfer / treatment	1	1	1	n/r	n/r	n/r
14	S0813: Non-hazardous & hazardous HWA Site	Transfer	CA Site	n/r	n/r	n/r	1	1	1
15	S0821: Metal recycling site	Metal Recycling Site	Metal recycling	1	1	1	n/r	n/r	n/r
16	S0824: Clinical Waste Transfer Station (A12: Clinical Waste Transfer Station in 2013)	Transfer	Clinical waste transfer	1	1	1	1	n/r	n/r
17	S1210: On-farm AD using farm wastes only	Treatment	Anaerobic digestion	1	5	8	8	9	10

row	Facility type	Site Category	Site Type	2013	2014	2015	2016	2017	2018
18	SR2010 No7: Use of waste in construction <50ktps	Use of Waste	Construction	1	n/r	n/r	n/r	n/r	n/r
19	SR2010 No8: Use of waste in construction <100ktps	Use of Waste	Construction	1	n/r	n/r	n/r	n/r	n/r
20	SR2010 No12: Treatment of waste to produce soil <75ktpa	Treatment	Physical treatment	n/r	1	1	1	n/r	n/r
21	SR2010 No16: On-farm anaerobic digestion <75,000tpa	Treatment	Anaerobic digestion					1	1
22	**Total**			**26**	**28**	**35**	**39**	**38**	**34**

Abbreviations:

n/r: no active sites reported ktps: kilo tonnes per site ktpa: kilo tonnes per annum

a: A9: Haz Waste Transfer Station was previously S0807: Household, Commercial & Industrial WTS/Treatment/asbestos

Annexes:

Annex A of this Assessment provides the detail for year 2018

Annexes B and C of the WNA Update 2018 provide the detail for years 2016 and 2017 respectively

Annexes B to D of the WNA 2017 provide the detail for years 2013 to 2015 respectively

3.1.8 Table 3.2 shows the origin of waste received at permitted facilities in Herefordshire from 2015 to 2018.

Table 3.2 Origin of waste received at permitted facilities, Herefordshire, 2015 to 2018

row	WPA / Local Authority	2015		2016		2017		2018	
		Tonnage	%	Tonnage	%	Tonnage	%	Tonnage	%
1	Herefordshire	314,880	77.3%	356,692	85.7%	388,240	87.5%	417,211	90.1%
2	West Midlands – WPA not codeable	29,199	7.2%	7,208	1.7%	(a)		(a)	
3	Monmouthshire	13,595	3.3%	9,520	2.3%	8,521	1.9%	6,713	1.4%
4	Gloucestershire	9,040	2.2%	7,099	1.7%	8,802	2.0%	3,258	0.7%
5	Worcestershire	8,858	2.2%	8,178	2.0%	4,624	1.0%	3,111	0.7%
6	Powys	6,799	1.7%	7,750	1.9%	10,108	2.3%	11,171	2.4%
7	Caerphilly	5,576	1.4%	3,324	0.8%	(b)		(a)	
8	South West - WPA not codeable	5,166	1.3%	(b)		(b)		(c)	
9	Shropshire	4,074	1.0%	4,993	1.2%	8,761	2.0%	7,544	1.6%
10	Newport	2,620	0.6%	5,377	1.3%	3,609	0.8%	4,783	1.0%
11	Blaenau Gwent	2,350	0.6%	1,463	0.4%	1,944	0.4%	1,468	0.3%
12	Vale of Glamorgan	1,138	0.3%	1,005	0.2%	1,768	0.4%	2,323	0.5%
13	Staffordshire	(a)		1,038	0.2%	(b)		(b)	
14	Hertfordshire	(b)		(b)		2,670	0.6%	(a)	
15	Other (less than 1,000 tonnes)	4,203	1.0%	2,450	0.6%	4,450	1.0%	5,627	1.2%
16	**Total**	**407,498**	**100%**	**416,097**	**100%**	**443,498**	**100%**	**463,209**	**100%**

Note:

[a] Less than 1,000 tonnes and included in 'Other (less than 1,000 tonnes)'

[b] Less than 100 tonnes and included in 'Other (less than 1,000 tonnes)'

[c] None reported

Annexes

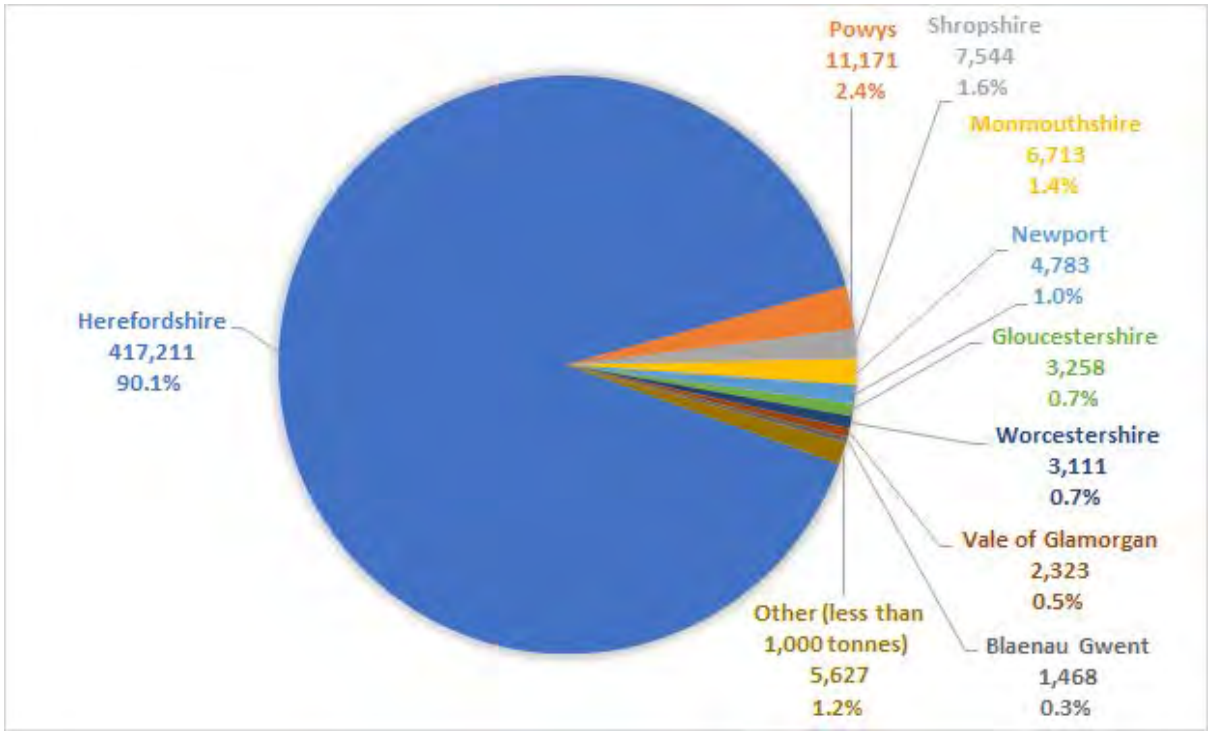
Annex B of this Assessment provides the detail for year 2018

Annexes D and E of the WNA Update 2018 provide the detail for years 2016 and 2017 respectively

Annexes E of the WNA 2017 provides the detail for year 2015

3.1.10 Figure 3.1 presents the data for 2018 (from Table 3.2) graphically

Figure 3.1 Origin of waste received at permitted facilities, Herefordshire, 2018



3.1.11 Table 3.2 shows that between 2015 and 2018, the waste received at permitted facilities in Herefordshire, that had its origin reported as Herefordshire, increased from 77% to 90% (line 1).

3.1.12 Whilst this suggests that Herefordshire is managing more wastes within the county than previous years, it could also be a result of an apparent improvement in reporting, with 'West Midlands - WPA not codeable' being less than 1,000 tonnes in 2017 and 2018 (line 2). If the wastes with their origin identified as 'West Midlands - WPA not codeable' were assumed to arise in Herefordshire, then the waste with its origin in Herefordshire would be 84.5% in 2015 and 87.4% in 2016.

3.1.13 This apparent improvement in reporting also has implications for estimating C&I wastes, as the methodology assumes that a proportion of waste reported as 'West Midlands - WPA not codeable' arises in Herefordshire and attributes this to the C&I waste estimates. If there has been an improvement in the reporting of waste origins by the sites in Herefordshire, then the amount of attributed to 'West Midlands - WPA not codeable' could be an overestimate, which in turn could lead to an overestimate of C&I arisings.

3.1.14 The data also suggests that Herefordshire is reasonably self-sufficient, at least in waste transfer capacity; although as noted above there is no residual waste management capacity.

3.1.15 The remaining wastes originate from adjacent and nearby authorities.

Capacity and waste input at the permitted facilities

3.1.16 Table 3.3 provides a summary of the permitted capacity and actual input by waste management facility category between years 2013 and 2018, showing that the annual permitted capacity of each site is generally materially greater than the actual input to the facility. This may be due to a number of reasons, with the most likely being that the permitted capacity is simply the closest band available or that the facility is just starting operations and so building up to full capacity.

3.1.17 This demonstrates the need to exercise caution in relying on the permitted capacity; some sites may never be able to accept the maximum amount of waste set out in their EP and this would inflate the amount of useful, operational capacity available within Herefordshire.

Table 3.3 Summary of permitted capacity and waste input by waste management facility category, Herefordshire, 2013 to 2018

Category	Facility Type	2013		2014		2015		2016		2017		2018		row
		Capacity	Input	Capacity	Input	Capacity	Input	Capacity	Input	Capacity	Input	Capacity	Input	
		tonnes		tonnes		tonnes		tonnes		tonnes		tonnes		
Transfer	Haz Waste Transfer	n/r	n/r	n/r	n/r	n/r	n/r	75,000	40,824	80,000	41,053	75,000	43,593	1
	Non-Haz WTS	74,997	35,909	49,998	35,024	49,998	40,605	106,239	44,923	106,239	41,491	99,999	47,360	2
	Non-Haz WTS & CA Site	109,550	76,344	109,550	79,202	109,550	80,613	109,550	81,821	109,550	82,592	109,550	80,589	3
	CA Site	34,349	8,338	34,349	8,673	34,349	8,691	109,348	10,075	109,348	10,626	109,348	10,290	4
	Clinical WTS	520	153	75,000	84	75,000	38	75,000	23	n/r	n/r	n/r	n/r	5
Metal Recycling Site	Car Breaker	64,897	1,820	138,397	23,581	138,397	24,691	149,597	26,917	105,997	31,765	103,498	44,877	6
	Metal Recycling	88,768	11,062	88,768	7,336	88,768	7,455	77,568	1,823	77,568	3,274	77,568	3,702	7
Treatment	Non-Haz WTS / Treatment	74,999	172	74,999	115	74,999	22	74,999	19	74,999	1	n/r	n/r	8
	Haz Waste WTS / Treatment	75,000	53,338	75,000	70,389	75,000	52,399	n/r	n/r	n/r	n/r	n/r	n/r	9
	Biological Treatment	283,999	52,326	299,998	73,699	333,998	106,282	333,998	77,713	333,998	59,040	333,998	48,537	10
	AD (farm wastes only)	36,499	807	166,413	6,574	339,413	52,497	339,413	56,370	450,912	58,810	479,512	66,294	11
	Material Recycling Facility	24,999	6,789	n/r	n/r	n/r	n/r	70,000	2,950	70,000	3,657	70,000	5,152	12
	Physical Treatment	5,000	2,949	75,000	22,020	99,999	22,086	174,998	63,531	334,999	101,290	334,999	112,813	13

Category	Facility Type	2013		2014		2015		2016		2017		2018		row
		Capacity	Input	Capacity	Input	Capacity	Input	Capacity	Input	Capacity	Input	Capacity	Input	
		tonnes		tonnes		tonnes		tonnes		tonnes		tonnes		
Recovery in/on land and use in construction	Deposit of waste to land (recovery)	58,000	23,400	58,000	19,005	94,000	12,120	94,000	9,108	94,000	9,898	n/r	n/r	14
	Use of waste in construction	149,998	30,662	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	15
Total		1,081,575	**304,069**	1,245,472	**345,702**	1,513,471	**407,499**	1,789,710	**416,097**	1,947,610	**443,497**	1,793,472	**463,207**	16

Abbreviations:

Capacity: EP capacity | Input: Waste input | n/r: no reported tonnage

AD: Anaerobic Digestion | WTS: Waste Transfer Station | HWS: Household Waste Site

Annexes:

Annex A of this Assessment provides the detail for year 2018

Annexes B and C of the WNA Update 2018 provide the detail for years 2016 and 2017 respectively

Annexes B to D of the WNA 2017 provide the detail for years 2013 to 2015 respectively

3.1.18 Table 3.4 presents both the permitted capacity and the annual input for each operational site over years 2013 to 2018 and provides additional detail to supplement the summary provided in Table 3.3.

3.1.19 For ease of cross reference, each facility in Table 3.4 has been numbered to reflect the numbering used in previous WNA and the Site and Spatial Context Report. Facilities that have not reported for more than two years are not numbered. All of the numbered facilities are mapped at Figure 3.2.

Table 3.4 Permitted capacity and waste input for each operational facility, Herefordshire, 2013 to 2018

row	Operator	Site Name	Site Type	Annual Permitted Capacity[a]	Input					
					2013	2014	2015	2016	2017	2018
					Tonnes					
1	Eastside 2000 Ltd.	Eastside Recycling Facility	Haz Waste Transfer[b]	75,000	53,338	70,389	52,399	40,824	41,035	43,593
	Rachael Slaughter	Animal Funeral Services	Haz Waste Transfer	5,000	n/r	n/r	n/r	n/r	18	n/r
	Lively Joseph Henry	Quickskip Transfer Station	Non-Haz Waste Transfer	24,999	6,000	n/r	n/r	n/r	n/r	n/r
2	Lively Joseph Henry	Quickskip (Hereford) Transfer Station	Non-Haz Waste Transfer	75,000[c]	19,780	27,636	31,244	34,780	31,739	35,114
3	Wye Valley Skips	Wye Valley Skips	Non-Haz Waste Transfer	6,240	n/r	n/r	n/r	296	51	n/r
4	MS & EM Patrick Ltd	Marlbrook Farm	Non-Haz Waste Transfer	24,999	10,129	7,388	9,361	9,847	9,701	12,246
5	Mercia Waste Management Ltd	Leominster HWRC & WTS	Non-Haz Waste Transfer	39,050	9,324	10,335	18,354	19,167	17,804	17,939
			CA Site		6,227	6,400	6,601	6,551	6,522	6,211
6	Mercia Waste Management Ltd	Rotherwas HWRC, WTS & MRF	Non-Haz Waste Transfer	70,500	50,583	49,521	41,869	41,807	44,826	43,972
			CA Site		10,210	12,946	13,789	14,296	13,440	12,467
7	Mercia Waste Management Ltd	Ledbury HWRC	CA Site	4,350	2,276	2,462	2,493	2,585	2,531	2,423
8	Mercia Waste Management Ltd	Ross on Wye HWRC	CA Site	25,000	4,210	4,334	4,347	4,573	4,641	4,451
9	Mercia Waste Management Ltd	Bromyard HWRC	CA Site	4,999	1,852	1,877	1,851	2,067	2,093	1,992
10	Severn Waste Services Ltd	Kington Household Recycling Centre	CA Site	74,999	n/r	n/r	n/r	850	1,361	1,424
	The Mann Organisation Ltd	Mann Organisation Ltd	Material Recycling Facility	24,999	6,789	n/r	n/r	n/r	n/r	n/r

row	Operator	Site Name	Site Type	Annual Permitted Capacity[a]	Input					
					2013	2014	2015	2016	2017	2018
					Tonnes					
11	Hereford Crushing and Demolition Limited	HCD Limited	Material Recycling Facility	70,000	n/r	n/r	n/r	2,950	3,657	5,152
12	Balfour Beatty Living Places Ltd	Land Adjacent to Unit 3	Physical Treatment	5,000	2,949	n/r	3,740	3,345	3,747	3,097
13	Hereford Quarries Limited	Lugg Bridge Quarry	Physical Treatment	250,000[d]	n/r	n/r	5,655	50,956	87,409	100,355
14	Kingspan Insulation Ltd	Kingspan Insulation Ltd	Physical Treatment[e]	5,000[f]	172	115	141	205	144	175
15	Quickskip Hereford Ltd	Quickskip Hereford Limited	Physical Treatment[e]	74,999	n/r	n/r	n/r	6,825	9,990	9,186
16	Quickskip Hereford Ltd	Fir Tree Lane Site	Physical Treatment (Soil Production)	75,000	n/r	22,020	12,550	2,200	n/r	n/r
17	Avalon Metals Ltd	Eastside Recycling Facility	Car Breaker	73,500	n/r	21,369	22,572	24,340	29,950	42,731
18	Jason and Richard Baker	J & R Recovery	Car Breaker	2,499	74	85	70	76	9	n/r
19	Mr D Craddock & Mrs J Evans (Pre 2016 Morris F G)	City Spares MRS Site	Car Breaker	32,400	154	194	266	30	n/r	n/r
20	P & T Moore Ltd	P & T Moore Vehicle Dismantlers	Car Breaker	4,999	1,376	1,708	1,514	1,478	1,658	1,835
21	UK Bus Dismantlers Ltd	Streamhall Garage	Car Breaker	24,999	216	225	269	201	148	311
22	Avalon Metals Ltd (Pre 2015 Smith R)	R Smith Metals	Car Breaker[g]	11,200	3,358	2,742	2,117	792	n/r	n/r
23	Avalon Metals Ltd (Pre 2015 European Metal Recycling Ltd)	Former EMR Hereford	Metal Recycling	75,000	7,514	4,431	5,162	1,607	3,034	3,443
24	Evans R	Cobhall Cottage	Metal Recycling	2,568	190	163	176	216	240	259
25	Mayglothling Waste Ltd	Yaidon Farm	Biological Treatment	49,999	25,626	25,503	24,258	28,590	28,159	23,888
26	Mr N Green & Mrs S Green	Much Fawley Farm	Biological Treatment	15,999	n/r	11,887	12,560	12,432	12,350	11,650
27	STL Energy Ltd	STL Energy Ltd	Biological Treatment	34,000	n/r	n/r	28,826	5,977	4,437	2,724
28	Welsh Water Organic Waste Limited (was Tradebe Gwent Ltd)	Hereford Liquid Waste Treatment Centre (was Eign Waste Treatment Centre)	Biological Treatment	234,000	26,700	36,309	40,638	30,714	14,094	10,275

row	Operator	Site Name	Site Type	Annual Permitted Capacity[a]	Input					
					2013	2014	2015	2016	2017	2018
					Tonnes					
29	Gelpack Excelsior Ltd	Gelpack Excelsior Ltd	Non-Haz Waste Transfer/ Treatment	74,999	n/r	n/r	22	19	1	n/r
30	Sodexo Property Solutions Ltd	County Hospital	Clinical Waste Transfer	75,000	153	84	38	23	n/r	n/r
31	Assured Energy LLP	Two Hoots Farm AD Plant	Anaerobic Digestion	28,314	n/r	1,773	8,985	4,477	806	237
32	Bowley Storage and Marketing Ltd	Bowley Court	Anaerobic Digestion	100,000	n/r	n/r	8,985	3,807	6,023	7,420
33	David and Helen Morgan	Penllan AD	Anaerobic Digestion	36,500	n/r	n/r	200	4,466	4,658	3,714
34	Herefordshire Biogas Ltd	Herefordshire Biogas	Anaerobic Digestion	36,500	n/r	394	13,669	12,155	13,792	12,708
35	M & M Power Limited	The Biogas Facility	Anaerobic Digestion	28,600	n/r	2,210	10,965	11,810	13,290	12,985
36	Mr D, Mrs E & Mr R Pursey	Trevase Farm AD	Anaerobic Digestion	36,500	n/r	368	1,460	1,468	1,462	1,463
37	PT Baker Farms Ltd	Eardisley Park Farm Facility	Anaerobic Digestion	36,499	807	1,829	1,391	1,475	1,996	1,672
38	Shed Field Growers Ltd	The Leen Digester	Anaerobic Digestion	36,500	n/r	n/r	11,363	16,712	15,626	22,597
41	R Edwards & Co (Staunton) Ltd	R Edwards & Co (Staunton) Limited	Anaerobic Digestion	36,500	n/r	n/r	n/r	n/r	200	589
42	Mr P Mann, Mr M Mann & Ms J Mann	Heath Farm	Anaerobic Digestion	74,999	n/r	n/r	n/r	n/r	957	2,101
43	M F G Generation Limited	The Farm Biogas Facility	Anaerobic Digestion	28,600	n/r	n/r	n/r	n/r	n/r	808
	Eastside 2000 Ltd	The Valletts	Use of waste in construction	49,999	6,990	n/r	n/r	n/r	n/r	n/r
	Smiths (Gloucester) Ltd	Land at Netherton Road	Use of waste in construction	99,999	23,672	n/r	n/r	n/r	n/r	n/r
39	The Pipe Corporation Ltd	Land at Lower Vern	Deposit of waste to land (recovery)	58,000	23,400	19,005	12,120	9,108	9,898	n/r

Note:

a: Annual Permitted Capacity in most recent operational year

b: Prior to 2016 was classified as Haz Waste Transfer / Treatment with a S0807: HCI Waste TS + treatment + asbestos, now has an A9: Haz Waste Transfer Station permit

row	Operator	Site Name	Site Type	Annual Permitted Capacity[a]	Input					
					2013	2014	2015	2016	2017	2018
					Tonnes					

c: Permitted capacity increased from 24,999 tonnes to 75,000 tonnes in 2016

d: Permitted capacity increased from 14,999 tonnes to 250,000 tonnes in 2017

e: Prior to 2015 was classified as Non-Hazardous Waste Transfer/Treatment

f: Permitted capacity decreased from 74,999 tonnes to 5,000 tonnes in 2015

g: Prior to 2016 was classified as A20: Metal Recycling Site (mixed MRS's), now has an A19: Metal Recycling Site (Vehicle Dismantler) permit

n/r: no reported tonnage

Annexes:

Annex A of this Assessment provides the detail for year 2018

Annexes B and C of the WNA Update 2018 provide the detail for years 2016 and 2017 respectively

Annexes B to D of the WNA 2017 provide the detail for years 2013 to 2015 respectively

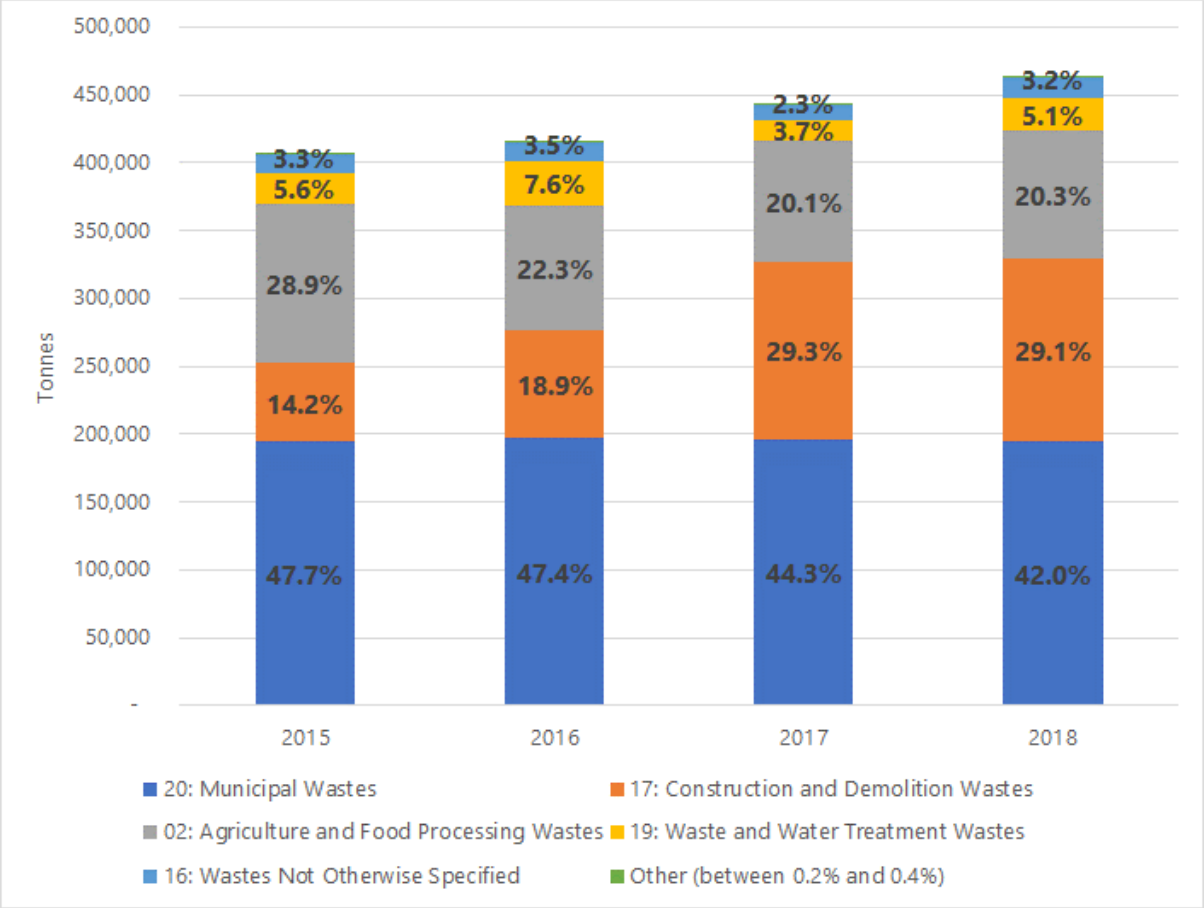
3.1.20 Table 3.5 and Figure 3.2 provide a summary of the types and quantities of waste, by European List of Wastes[7] (LoW) chapter headings (Annex C), accepted at the permitted facilities between 2015 and 2018. Annex D provides the data by permitted facility.

Table 3.5 Types and quantities of waste received at permitted facilities in Herefordshire by LoW Chapter, 2015 to 2018

row	LoW Chapter	2015		2016		2017		2018	
		Tonnes	%	Tonnes	%	Tonnes	%	Tonnes	%
1	01: Mine and Quarry Wastes	n/r	-	n/r	-	n/r	-	2	<0.1%
2	02: Agriculture and Food Processing Wastes	117,879	28.9%	92,814	22.3%	88,966	20.1%	93,953	20.3%
3	03: Furniture, Paper and Cardboard Manufacturing Wastes	222	0.1%	61	<0.1%	n/r	-	n/r	-
4	08: Paint, Adhesive, Sealant and Ink Manufacturing Waste	2	<0.1%	2	<0.1%	<1	0.0%	1	<0.1%
5	10: Thermal Processes Waste	36	<0.1%	82	<0.1%	83	<0.1%	75	<0.1%
6	12: Shaping and Physical Treatment of Metals and Plastics	301	0.1%	322	0.1%	601	0.1%	402	0.1%
7	13: Oil Wastes and Wastes of Liquid Fuels	6	<0.1%	1	<0.1%	5	<0.1%	10	<0.1%
8	15: Packaging, Absorbents, Wiping Cloths etc N.O.S.	786	0.2%	741	0.2%	560	0.1%	578	0.1%
9	16: Wastes Not Otherwise Specified	13,312	3.3%	14,430	3.5%	10,404	2.3%	14,776	3.2%
10	17: Construction and Demolition Wastes	57,708	14.2%	78,657	18.9%	130,101	29.3%	134,968	29.1%
11	18: Human and Animal Health Care Waste	90	<0.1%	57	<0.1%	28	<0.1%	<1	<0.1%
12	19: Waste and Water Treatment Wastes	22,830	5.6%	31,712	7.6%	16,273	3.7%	23,851	5.1%
13	20: Municipal Wastes	194,325	47.7%	197,218	47.4%	196,478	44.3%	194,591	42.0%
14	**Grand Total**	**407,498**		**416,097**		**443,498**		**463,209**	

[7] Commission Decision 2000/532/EC, as amended, most recently by Commission Decision 2014/955/EU), formally known as the European Waste Catalogue (EWC). The LoW is the system used for classifying waste, required by law and used in most waste regulatory and data reporting systems.

Figure 3.2 Types and quantities of waste received at permitted facilities in Herefordshire by LoW Chapter, 2015 to 2018



Review of wastes received at permitted facilities

3.1.21 Table 3.3 shows that between 2013 and 2018, the amount of waste managed at permitted facilities located in Herefordshire increased from just over 300,000 tonnes in 2013 to just over 460,000 tonnes by 2018 (line 16).

3.1.22 There are three principal reasons for the increases:

- a net increase of 35,000 tonnes of waste received at metal recycling sites between 2013 and 2018 (lines 6 and 7);
- an increase in on-farm AD, with a 65,000 tonne increase in the amount managed between 2013 and 2018 (line 11); and
- the development of a physical treatment facility at Lugg Bridge Quarry, which became operational in 2015 and by 2018 was receiving 100,000 tonnes of CD&E wastes for treatment (line 13).

3.1.23 Table 3.5 and Figure 3.2 show that the single largest tonnage is municipal waste (principally wastes from households); representing 42% to 48% of the wastes managed at permitted facilities in Herefordshire between 2015 and 2018. The second largest tonnage, by 2018, is formed by construction and demolition wastes (29% in 2018) followed by agriculture and food processing wastes (20% in 2018). If all the other wastes are added together, they still only

represent about 6% to 11% of all wastes managed at permitted facilities in Herefordshire, depending on the year being considered.

3.1.24 This is different to the picture seen nationally, where construction and demolition wastes generally make up about 50% of total arisings, with C&I waste at around 25%, municipal waste at around 20% and other wastes making up the remainder.

3.1.25 That municipal and agriculture wastes continue to dominate is perhaps not surprising considering the county is very rural. The increase in construction and demolition wastes may be attributed to development growth in the county and/or that CD&E recovery facilities have commenced operations and are drawing these wastes in, whereas they may previously have gone out of Herefordshire.

Figure 3.3
Herefordshire Waste Facilities, 2018

ID	SiteName	SitePC
1	Eastside Recycling Facility	HR2 6NS
2	Quickskip (Hereford) Transfer Station	HR2 6JT
4	Marlbrook Farm	HR6 0PE
5	Leominster Household Waste Site & Transfer Station	HR6 8EA
6	Rotherwas Household Waste Site, Transfer Station & M R F	HR2 6LD
7	Ledbury H W S	HR8 2DP
8	Ross On Wye Household Waste Site	HR9 7AQ
9	Bromyard Household Waste Site	HR7 4QT
10	Kington Household Recycling Centre	HR5 3HB
11	H C D Limited	HR4 8DZ
12	Land Adjacent To Unit 3	HR2 6JT
13	Lugg Bridge Quarry	HR1 3LZ
14	Kingspan Insulation Ltd	HR6 9LA
15	Quickskip Hereford Limited	HR2 6LD
17	Eastside Recycling Facility	HR2 6NS
20	P & T Moore Vehicle Dismantlers	HR6 0LR
21	Streamhall Garage	HR7 4QT
23	Former E M R Facility	HR4 9LW
24	Cobhall Cottage	HR9 9BW
25	Yaidon Farm	HR5 3LH
26	Much Fawley Farm	HR1 4SP
27	S T L Energy Ltd	HR1 4JU
28	Hereford Liquid Waste Treatment Centre	HR1 1TG
31	Two Hoots Farm A D Plant	HR7 4RZ
32	Bowley Court	HR6 0PL
33	Penllan A D	HR2 0SU
34	Herefordshire Biogas	HR6 9LA
35	The Biogas Facility	HR6 9LB
36	Trevase Farm A D	HR2 8ND
37	Eardisley Park Farm Facility	HR3 6NT
38	The Leen Digester	HR6 9HN
41	R Edwards & Co (Staunton) Limited	HR6 9HR
42	Heath Farm	SY7 0QB
43	The Farm Biogas Facility	HR9 6NB

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Legend

Waste Facility Type

- Anaerobic Digestion (Farm Waste)
- Biological Treatment
- CA Site
- Non-Haz Waste Transfer
- Non-Haz Waste Transfer / Treatment
- Physical Treatment
- Car Breaker
- Metal Recycling
- Haz Waste Transfer
- Material Recycling Facility
- Herefordshire County Boundary

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Movement of waste

3.1.27 Figure 3.1 shows that in 2018, 90% of wastes received at permitted facilities operating in Herefordshire originated in the county. Of the waste imported from outside of Herefordshire: c. 6% came from authorities in Wales; 3% is attributable to each of the West Midlands, Worcestershire, Shropshire and Gloucestershire; and smaller amounts from elsewhere. Individually these are not significant tonnages of waste.

3.1.28 The data in Table 3.2 indicates that there has been an increase in the proportion of waste received at permitted facilities which originated in the county i.e. 77% in 2015 compared to 90% by 2018 (line 1). However, the 2015 and 2016 tonnages had notable quantities of waste which were identified as 'West Midlands - WPA not codeable' (line 2). It is reasonable to assume that the waste identified as 'West Midlands - WPA not codeable' actually arose in Herefordshire, given there is no significant change in the waste with its origins in Worcestershire, Shropshire and Gloucestershire in 2018 when there is no 'West Midlands - WPA not codeable' reported. Using this assumption, the amount of waste received at permitted facilities which originated in the county would fall within the range 84% to 90% between 2015 and 2018.

3.1.29 Table 3.6 provides a summary of the waste removed from permitted facilities operating in Herefordshire in 2016 to 2018, identifying both the destination waste planning authority and fate of the waste.

3.1.30 Care is needed when considering these figures. Operators are asked to report 'Fate' from a list limited to six options: incineration; landfill; recovery; transfer; treatment; and unknown. The quality of reporting is reliant upon the operator's knowledge of the destination and its location.

3.1.31 The potential for error is highlighted by the indication that approximately 31,000 tonnes of waste are reported to have been sent to landfill in Herefordshire in 2016, 58,000 tonnes in 2017 and 60,000 tonnes in 2018; there are no operational landfill facilities in Herefordshire. The site known as Land at Lower Vern (Table 3.4, line 39) is permitted for the deposit of waste to land as a recovery operation, however it received less waste than was reported as being disposed to landfill in 2016 and 2017 and was an inactive site in 2018.

3.1.32 Whilst recognising the potential for error in the reporting of the data presented in Table 3.6, it provides useful context for the management of wastes from Herefordshire.

3.1.33 Around half of the waste in Table 3.6 is indicated to remain within Herefordshire. The greatest tonnage exported is sent to Worcestershire. This is not surprising as the Herefordshire and Worcestershire waste disposal authorities have a joint municipal waste management contract and jointly procured capacity which is located in Worcestershire (a materials recovery facility, EnviroSort and a residual waste energy recovery facility, EnviRecover).

3.1.34 In addition to Worcestershire, waste is exported, at a level of more than 10,000 tonnes, to other locations:

- in 2016, to WPA Not Codeable locations, Vale of Glamorgan, and Doncaster; in 2017, only the Vale of Glamorgan;
- in 2017, to Vale of Glamorgan; and
- in 2018, to Vale of Glamorgan, Cardiff, West Midlands Not Codeable and Gloucestershire.

3.1.35 Waste exports of 5,000 to 10,0000 tonnes were sent:

- in 2016, to Bristol and Gloucestershire;
- in 2017, to Cardiff, Bristol, Gloucestershire and Doncaster; and
- in 2018, to Bristol.

3.1.36 The other export amounts are less than 5,000 tonnes each and are not considered material to consider individually.

3.1.37 After 2016, the only exports of more than 10,000 tonnes are made to a fate of: Incinerator; Landfill; or Recovery. In 2016, the export of more than 10,000 tonnes made to a fate of Treatment was sent to destination WPA Not Codeable. It is possible that a reasonable proportion of this waste was treated in Herefordshire, but the fact that it disappears in years 2017 and 2018 reflects the increase in operational tonnage of the physical treatment facility at Lugg Bridge Quarry (Table 3.4, line13).

Table 3.6 Tonnage of waste removed from permitted facilities in Herefordshire by destination fate and waste planning authority, 2016 to 2018

	YEAR 2016							
row	Waste Planning Authority Area	Incinerator	Landfill	Recovery	Transfer	Treatment	Unknown	Total
1	Herefordshire		30,718	72,708	5,107	49,842	2,033	160,409
2	Worcestershire	6,905	42,384	21,452			12	70,753
3	WPA Not Codeable[a]			1,437		29,055		30,492
4	Vale of Glamorgan		1,049	23,383	27			24,459
5	Doncaster	12,862						12,862
6	Bristol		921	8,557		40		9,518
7	Gloucestershire		1,027	6,062			8	7,097
8	Birmingham City			4,222				4,222
9	Liverpool			3,993				3,993
10	Monmouthshire			3,939				3,939
11	Wales Not Codeable[b]			3,295				3,295
12	Newport UA			120	26	3,119		3,264
13	West Midlands Not Codeable[c]			1,370	30		383	1,783
14	Scottish WPA			1,566				1,566
15	Warwickshire			1,513				1,513
16	Other[d] (<1,000 tonnes)	23	-	5,476	318	2	6	5,826
17	**Total**	**19,790**	**76,099**	**159,094**	**5,507**	**82,058**	**2,443**	**344,991**
	Notes: a: It is not possible to identify the destination of the waste b: It is not possible to identify the destination of this waste within Wales c: It is not possible to identify the destination of this waste within the West Midlands d: Culmination of all waste movements of less than 1,000 tonnes e: It is not possible to identify the destination of this waste within Merseyside							

	YEAR 2017							
row	**Waste Planning Authority Area**	**Incinerator**	**Landfill**	**Recovery**	**Transfer**	**Treatment**	**Unknown**	**Total**
18	Herefordshire	4	57,775	86,313	3,366	52,170	329	199,956
19	Worcestershire	38,569	10,570	25,030		102	4	74,274
20	Vale of Glamorgan		49	33,532				33,582
21	Cardiff	6,966		2,965		27		9,958
22	Bristol		890	7,800		185		8,874
23	Gloucestershire		93	5,760		18	96	5,967
24	Doncaster	5,120						5,120
25	West Midlands Not Codeable[c]			3,524	2		661	4,188
26	Merseyside Not Codeable[e]			3,487				3,487
27	Monmouthshire			3,035				3,035
28	Wales Not Codeable[b]			2,190				2,190
29	Newport			141	336	990		1,467
30	Kent			1,081				1,081
31	Other[d] (<1,000 tonnes)	46	67	9,331	37	189	1,139	10,810
32	**Total**	**50,705**	**69,443**	**184,189**	**3,741**	**53,681**	**2,230**	**363,989**

Notes:

a: It is not possible to identify the destination of the waste

b: It is not possible to identify the destination of this waste within Wales

c: It is not possible to identify the destination of this waste within the West Midlands

d: Culmination of all waste movements of less than 1,000 tonnes

e: It is not possible to identify the destination of this waste within Merseyside

	YEAR 2018							
row	**Waste Planning Authority Area**	**Incinerator**	**Landfill**	**Recovery**	**Transfer**	**Treatment**	**Unknown**	**Total**
33	Herefordshire		60,609	75,854	2,531	68,273		207,266
34	Worcestershire	33,477	13,683	25,357		223		72,740
35	Vale of Glamorgan			31,145				31,145
36	Cardiff	13,772		12,628		81		26,481
37	West Midlands Not Codeable[c]			10,784				10,784
38	Gloucestershire		50	9,860	4	662		10,575
39	Bristol			5,488		164		5,652
40	Monmouthshire			2,676				2,676
41	Newport			227	308	2,136		2,670
42	Wales Not Codeable[b]			2,523		99		2,622
43	Manchester	1,437		241				1,679
44	Other[d] (<1,000 tonnes)	559	65	5,756	5	311		6,696
45	**Total**	**49,245**	**74,406**	**182,537**	**2,847**	**71,949**		**380,985**
	Notes: a: It is not possible to identify the destination of the waste b: It is not possible to identify the destination of this waste within Wales c: It is not possible to identify the destination of this waste within the West Midlands d: Culmination of all waste movements of less than 1,000 tonnes e: It is not possible to identify the destination of this waste within Merseyside							

3.1.38 Table 3.7 considers the base data presented in Table 3.6, with adjustments made for key known elements, i.e. that there is no landfill within Herefordshire and that Herefordshire's LACW goes for energy recovery (Incinerator) and materials recovery (Recovery) at jointly procured capacity located within Worcestershire.

3.1.39 These factors have been considered within Table 3.7 such that:

- total wastes exported from Herefordshire is derived by subtracting waste with a destination in Herefordshire from the total waste presented in Table 3.6;
- landfill does not remain within Herefordshire, but is exported, and so the tonnage is retained (added back in) to our understanding of total wastes exported;
- incineration and recovery within Worcestershire is assumed as having a destination of Herefordshire, so the tonnage is subtracted from the total wastes exported. It is recognised that not all of the waste sent to Recovery in Worcestershire is LACW.

Table 3.7 Adjustments to Table 3.6 to clarify wastes exported from Herefordshire, 2016 to 2018

row	2016	Incinerator	Landfill	Recovery	Transfer	Treatment	Unknown	Total
1	**Total Waste** (Table 3.6, line 17)	19,790	76,099	159,094	5,507	82,058	2,443	344,991
2	**Destination Herefordshire** (Table 3.6, line 1)	0	30,718	72,708	5,107	49,842	2,033	160,409
3	**Exported waste** (Calculated: line 1 minus line 2)	19,790	45,381	86,386	400	32,216	410	184,582
4	**Landfill, Herefordshire** (Table 3.6, line 1)		30,718					
5	**Incinerator and Recovery, Worcestershire** (Table 3.6, line 2)	6,905		21,452[a]				
6	**Total exported** (Calculated: line 3 plus line 4, minus line 5)	**12,885**	**76,099**	**64,934**	**400**	**32,216**	**410**	**186,944**
[a] 19,082 tonnes LACW to Worcestershire								
row	**2017**	**Incinerator**	**Landfill**	**Recovery**	**Transfer**	**Treatment**	**Unknown**	**Total**
7	**Total Waste** (Table 3.6, line 32)	50,705	69,443	184,189	3,741	53,681	2,230	363,989
8	**Destination Herefordshire** (Table 3.6, line 18)	4	57,775	86,313	3,366	52,170	329	199,956
9	**Exported waste** (Calculated: line 7 minus line 8)	50,701	11,668	97,876	375	1,511	1,901	164,033
10	**Landfill, Herefordshire** (Table 3.6, line 18)		57,775					
11	**Incinerator and Recovery, Worcestershire** (Table 3.6, line 19)	38,569		25,030[b]				
12	**Total exported** (Calculated: line 9 plus line 10, minus line 11)	**12,132**	**69,443**	**72,846**	**375**	**1,511**	**1,901**	**158,208**
[b] 18,940 tonnes LACW to Worcestershire								
row	**2018**	**Incinerator**	**Landfill**	**Recovery**	**Transfer**	**Treatment**	**Unknown**	**Total**
13	**Total Waste** (Table 3.6, line 45)	49,245	74,406	182,537	2,847	71,949		380,985
14	**Destination Herefordshire** (Table 3.6, line 33)		60,609	75,854	2,531	68,273		207,266
15	**Exported waste** (Calculated: line 13 minus line 14)	49,245	13,797	106,683	316	3,676		173,719
16	**Landfill, Herefordshire** (Table 3.6, line 33)		60,609					
17	**Incinerator and Recovery, Worcestershire** (Table 3.6, line 34)	33,477		25,357[c]				
18	**Total exported** (Calculated: line 15 plus line 16, minus line 17)	**15,768**	**74,406**	**81,326**	**316**	**3,676**	**0**	**175,492**
[c] 18,944 tonnes LACW to Worcestershire								

3.1.40 Looking strictly at the data presented in Table 3.6, the dominant (assumed as more than 10,000 tonnes) fates for wastes exported from Herefordshire would be Incinerator, Landfill and Recovery, with Treatment appearing in 2016 only.

3.1.41 However, this does not consider the local relevance of landfill (there being none in the plan but it being reported within Herefordshire) and LACW management (benefitting from jointly procured incineration and recovery capacity located in Worcestershire). Table 3.7, lines 6, 12 and 18 does this respectively for years 2016, 2017 and 2018. Waste exports of more than 10,000 tonnes remains to be made to Incinerator, although this has activity substantially dropped in recognition of the LACW capacity located in Worcestershire.

3.1.42 However, waste exports significantly in excess of 10,000 tonnes remain to be made to Landfill and Recovery suggesting that these are key elements of waste management infrastructure not available within (or to) Herefordshire. This conclusion is exacerbated by recognising that not all the waste sent for Recovery in Worcestershire is LACW, but other waste streams that do not benefit from the jointly procured capacity.

3.1.43 This analysis corroborates the earlier reflection of the waste management facilities that are operational with Herefordshire; that this infrastructure is missing residual waste capacity.

Key points on permitted capacity

3.1.44 The permitted facilities data for 2016 to 2018 shows transfer (with basic treatment) capacity, biological treatment and recovery capacity, and CD&E waste recovery capacity operating in Hereford. However, there is no residual waste treatment capacity for other waste streams, such as mechanical biological treatment (MBT) refuse derived fuel (RDF) production, incineration (with or without energy recovery) and no disposal capacity (landfill) beyond one land recovery operation.

3.1.45 There remains some reliance on residual waste management and disposal capacity outside the county, including a significant proportion of strategic capacity that has been jointly procured with Worcestershire County Council to manage LACW.

3.1.46 Permitted facilities are mapped, at Figure 3.4 and Figure 3.5:

- Figure 3.4 shows each facility represented by its capacity under the Environmental Permit, in 2018;
- Figure 3.5 shows each facility represented by the tonnage of waste received, in 2018.

ID	SiteName	SitePC
1	Eastside Recycling Facility	HR2 6NS
2	Quickskip (Hereford) Transfer Station	HR2 6JT
4	Marlbrook Farm	HR6 0PE
5	Leominster Household Waste Site & Transfer Station	HR6 8EA
6	Rotherwas Household Waste Site, Transfer Station & M R F	HR2 6LD
7	Ledbury H W S	HR8 2DP
8	Ross On Wye Household Waste Site	HR9 7AQ
9	Bromyard Household Waste Site	HR7 4QT
10	Kington Household Recycling Centre	HR5 3HB
11	H C D Limited	HR4 8DZ
12	Land Adjacent To Unit 3	HR2 6JT
13	Lugg Bridge Quarry	HR1 3LZ
14	Kingspan Insulation Ltd	HR6 9LA
15	Quickskip Hereford Limited	HR2 6LD
17	Eastside Recycling Facility	HR2 6NS
20	P & T Moore Vehicle Dismantlers	HR6 0LR
21	Streamhall Garage	HR7 4QT
23	Former E M R Facility	HR4 9LW
24	Cobhall Cottage	HR9 9BW
25	Yaidon Farm	HR5 3LH
26	Much Fawley Farm	HR1 4SP
27	S T L Energy Ltd	HR1 4JU
28	Hereford Liquid Waste Treatment Centre	HR1 1TG
31	Two Hoots Farm A D Plant	HR7 4RZ
32	Bowley Court	HR6 0PL
33	Penllan A D	HR2 0SU
34	Herefordshire Biogas	HR6 9LA
35	The Biogas Facility	HR6 9LB
36	Trevase Farm A D	HR2 8ND
37	Eardisley Park Farm Facility	HR3 6NT
38	The Leen Digester	HR6 9HN
41	R Edwards & Co (Staunton) Limited	HR6 9HR
42	Heath Farm	SY7 0QB
43	The Farm Biogas Facility	HR9 6NB

Herefordshire Minerals and Waste Local Plan

Figure 3.4
Herefordshire waste facilities by EP capacity, 2018

Legend

Annual Capacity Tonnes

- < 10,000
- 10,001 - 20,000
- 20,001 - 50,000
- 50,001 - 100,000
- 100,001 - 250,000
- Herefordshire County Boundary

N

0 5 10 15

Kilometres

SCALE 1:250,000 @ A3

DATE 03/12/2020

hendeca

ID	SiteName	SitePC
1	Eastside Recycling Facility	HR2 6NS
2	Quickskip (Hereford) Transfer Station	HR2 6JT
4	Marlbrook Farm	HR6 0PE
5	Leominster Household Waste Site & Transfer Station	HR6 8EA
6	Rotherwas Household Waste Site, Transfer Station & M R F	HR2 6LD
7	Ledbury H W S	HR8 2DP
8	Ross On Wye Household Waste Site	HR9 7AQ
9	Bromyard Household Waste Site	HR7 4QT
10	Kington Household Recycling Centre	HR5 3HB
11	H C D Limited	HR4 8DZ
12	Land Adjacent To Unit 3	HR2 6JT
13	Lugg Bridge Quarry	HR1 3LZ
14	Kingspan Insulation Ltd	HR6 9LA
15	Quickskip Hereford Limited	HR2 6LD
17	Eastside Recycling Facility	HR2 6NS
20	P & T Moore Vehicle Dismantlers	HR6 0LR
21	Streamhall Garage	HR7 4QT
23	Former E M R Facility	HR4 9LW
24	Cobhall Cottage	HR9 9BW
25	Yaidon Farm	HR5 3LH
26	Much Fawley Farm	HR1 4SP
27	S T L Energy Ltd	HR1 4JU
28	Hereford Liquid Waste Treatment Centre	HR1 1TG
31	Two Hoots Farm A D Plant	HR7 4RZ
32	Bowley Court	HR6 0PL
33	Penllan A D	HR2 0SU
34	Herefordshire Biogas	HR6 9LA
35	The Biogas Facility	HR6 9LB
36	Trevase Farm A D	HR2 8ND
37	Eardisley Park Farm Facility	HR3 6NT
38	The Leen Digester	HR6 9HN
41	R Edwards & Co (Staunton) Limited	HR6 9HR
42	Heath Farm	SY7 0QB
43	The Farm Biogas Facility	HR9 6NB

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Herefordshire Minerals and Waste Local Plan

Figure 3.5
Herefordshire waste facilities by input tonnes, 2018

Legend

Site Input 2018 (Tonnes)

- < 5,000
- 5,001 - 10,000
- 10,001 - 20,000
- 20,001 - 40,000
- > 40,000
- Herefordshire County Boundary

N

0 5 10 15

Kilometres

SCALE 1:250,000 @ A3

DATE 03/12/2020

hendeca

3.3 Facilities exempt from environmental permitting

3.3.1 Exemptions can be gained for the use, treatment, disposal and storage of waste. In 2010 there was a significant change to the waste exemptions system that brought greater clarity over the types and quantities of waste that can be handled under each exemption.

3.3.2 The revised system requires all exempt operations to be newly registered and limits each exemption to three years from the date of registration, at which point there is a need to re-register the exemption if an operator wants to continue to benefit from the exemption.

3.3.3 Under the old system, there was no requirement to remove an exemption from the register once an operation had ceased, so the new system results in a 'cleaner' data set in that the exemption expires after three years. However, there is no requirement for an exemption that is completed within the three-year registration period to be removed from the register. This is a potential issue for estimating capacity for exemptions related to construction activities, which would not normally accept waste for the full three years.

3.3.4 There is no reporting of waste tonnage inputs to exempt facilities. However, the details provided in the waste exemption registrations can be used to estimate waste arisings and capacity.

3.3.5 Exempt activities are split into four categories:

- Using waste (U codes);
- Treating waste (T codes);
- Disposing of waste (D codes); and
- Storing waste (S codes).

3.3.6 However not all exempt activities are important to this Waste Need Assessment on the basis that:

- they do not contribute to the waste management capacity in the county;
- they do not significantly affect C&I or CD&E waste estimates; or
- the wastes handled through a particular exemption would be captured in other exemptions/permitted facilities once moved on (and so recognising them would result in double counting).

3.3.7 A summary of all exemptions is provided in Annex E, along with comments and assumptions about which exemptions need to be considered in terms of waste arisings and capacity estimates.

3.3.8 An extract from the Environment Agency's Environmental Permit Exemptions Database for Shropshire, Herefordshire, Worcestershire and Gloucestershire (the 'EP Exemptions Database') was obtained from the Environment Agency for the WNA 2017, providing the details of each exemption registered at a site as of September 2016. This data was also use for the WNA Update 2018.

3.3.9 At this time the EP Exemptions Database used inconsistent terminology with regards to the type of exemption. 'Non-farm' and 'non-agricultural waste only' exemptions are assumed to be the same; as are 'on-farm' and 'agricultural waste only' exemptions; and 'both agricultural

and non-agricultural waste' are generally activities on farms where waste is brought onto a farm e.g. CD&E wastes such as rubble to repair farm roads/tracks.

3.3.10 The EP Exemptions Database[8] can now be downloaded from the data.gov website. The currently available data covers active exemptions as of the end of June 2019 and provides the details of each exemption registered at a site. The database includes a field for Environment Agency Areas, the relevant Environment Agency Area being Shropshire, Herefordshire, Worcestershire & Gloucestershire. However, there are a notable number of entries where this field is blank. In addition, the inconsistent terminology with regards to farm and non-farm exemptions has been simplified, with exemptions now identified as 'On a farm' exemptions or 'Not on a farm' exemptions.

3.3.11 Therefore, the data in the EP Exemptions Database needed to be analysed and cleansed to:

- identify exemptions within Herefordshire by using GIS to locate exemptions based in the county by reference to the grid reference given in the database;
- identify the exemptions registered at each site, as multiple exemptions are often registered at a given site; and
- remove duplicate registrations, which can occur for a number of reasons[9]:
  - exemption holders renewing their registration before the existing registration has expired, resulting in identical registrations for the same location between two and a half and three years apart;
  - the same exemption being registered more than once for the same activity/location e.g. two doctors at the same surgery applying for a T28 exemption (Sorting and denaturing of controlled drugs for disposal); or
  - multiple registrations of the same exemption at the same location, resulting in multiple registration for the same location; and
- split the exemptions into 'On a farm' exemptions and 'Not on a farm' exemptions.

Not on a farm exemptions

3.3.12 Within Herefordshire, there are 131 'Not on a farm' exemptions in the EP Exemptions Database as of the end of June 2019, with a total of 343 exemptions registered across these 131 locations (Annex F).

3.3.13 However, when this data set is rationalised there remain 83 locations covering 179 exempt activities that should be considered in arisings estimates and/or capacity estimates. Rationalisation is achieved by the removal of:

- duplicate registrations;
- storage only exemptions;
- treatment exemptions where the outputs are likely to be captured at a permitted facility once moved on (e.g. T28 - Sorting and denaturing of controlled drugs for disposal, T17 - Crushing waste fluorescent tubes); and

[8] https://data.gov.uk/dataset/fe546d38-408d-4275-8e74-55e197c6f11a/exemptions accessed 9th October 2019
[9] To overcome these issues the grid reference was used to identify individual locations with an exemption only counted once at each location.

- activities where the tonnage involved is likely to be insignificant are excluded (e.g. D6 - Disposal by incineration).

3.3.14 Table 3.8 presents a summary of the relevant data.

Table 3.8 Relevant 'Not on a farm' exempt activities, Herefordshire, June 2019

Exemption	Description	Number
D7	Burning waste in the open	38
T1	Cleaning, washing, spraying or coating relevant waste	5
T2	Recovery of textiles	1
T4	Preparatory treatments (baling, sorting, shredding etc)	8
T5	Screening and blending of waste	2
T6	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising	18
T8	Mechanical treatment of end-of-life tyres	1
T9	Recovery of scrap metal	8
T10	Sorting mixed waste	2
T12	Manual treatment of waste	4
T16	Treatment of waste toner cartridges and waste ink cartridges by sorting, dismantling, cleaning or refilling	1
T19	Physical and chemical treatment of waste edible oil and fat to produce biodiesel	1
T23	Aerobic composting and associated prior treatment	6
T25	Anaerobic digestion at premises not used for agriculture and burning of resultant biogas	2
U1	Use of waste in construction	35
U4	Burning of waste as a fuel in a small appliance	13
U8	Use of waste for a specified purpose	13
U9	Use of waste to manufacture finished goods	2
U11	Spreading waste on non-agricultural land to confer benefit	7
U12	Use of mulch	12
Note: Some of these exemptions could be on-farm activities based on the address provided for certain exemptions (Annex F)		

3.3.15 The detail of these exempt activities has been reviewed so as to estimate the waste tonnages that should be used within this WNA (the assumptions used are presented at Annex G). This review shows how the exemptions have been considered and are proposed to be used in the assessment.

3.3.16 There are a number of exemptions that are more appropriately considered as agricultural (on-farm) wastes. These are reported in the non-farm data set as an entry error by the operator.

'On a farm' exemptions

3.3.17 Many everyday activities on farms need to be carried out under an exemption. These include:

- using hardcore/road planings/woodchip to improve tracks;
- using tyres on a silage pit;
- using paper or woodchip as bedding;
- using railway sleepers in farmyard construction;
- clearing drainage ditches;
- treatment of waste in biobeds;
- burning waste in the open;
- storing sewage sludge before spreading; and
- washing out spray containers.

3.3.18 This means that most farms have to register for numerous exemptions. In Herefordshire, 1,470 farms/locations on farms have registered exemptions in June 2019, with multiple exemptions registered at many farms. This is a significant increase from the 635 locations recorded in the EP Exemptions Database at the end of September 2016. Whilst the requirement for farms to register exemptions came into effect in 2013, the Environment Agency only launched the digital service for registering waste exemptions in 2016 and there could have been a delay in farms using the system, which could explain the uplift in numbers.

3.3.19 Table 3.9 lists the top 20 most registered exemptions by farms in Herefordshire. Table 3.9 highlights that the majority of registered exemptions relate to handling wastes generated on-farm, which would be captured within agricultural waste estimates.

Table 3.9 Top 20 On a farm exempt activities, Herefordshire, June 2019

Exemption	Description	Number
D7	Burning waste in the open	1,407
U10	Spreading waste on agricultural land to confer benefit	1,125
D1	Deposit of waste from dredging of inland waters	999
U1	Use of waste in construction	991
T6	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising	887
U8	Use of waste for a specified purpose	823
S2	Storage of waste in a secure place	642
S1	Storage of waste in secure containers	536
U13	Spreading of plant matter to confer benefit	429
T14	Crushing and emptying vehicle waste oil filters	387
U4	Burning of waste as a fuel in a small appliance	334
U12	Use of mulch	310
D4	Deposit of agricultural waste consisting of plant tissue under a Plant Health Notice	278
U14	Incorporation of ash into soil	250
T23	Aerobic composting and associated prior treatment	232
S3	Storage of sludge	217

Exemption	Description	Number
T1	Cleaning, washing, spraying or coating relevant waste	210
D6	Disposal by incineration	160
T9	Recovery of scrap metal	159
T4	Preparatory treatments (baling, sorting, shredding etc)	150

3.3.20 There are a small number of on-farm exemptions that will import C&I and CD&E wastes and consequently are considered further (Annex G). The key exemptions are:

- U10 (Spreading waste on agricultural land to confer benefit) which would mainly relate to materials such as paper pulp and sewage sludge, which are both commonly used to improve the condition of soil.
- U1 (Use of waste in construction) which would mainly relate to the use of hardcore/road planings/woodchip to improve tracks.
- U8 (Use of waste for a specified purpose) which would mainly relate to using tyres to weight down cover sheeting or the use of paper or woodchip as bedding.

Summary of Capacity Operating in Herefordshire

3.3.21 Permitted capacity within the county is limited to facilities that offer transfer with basic treatment or provide biological treatment; there is no residual waste treatment or disposal capacity such as MBT, RDF production, incineration (with or without energy recovery) or landfill. This means there is a reliance on such facilities that are located outside of Herefordshire, including a significant proportion of strategic capacity that has been jointly procured with Worcestershire County Council to manage LACW (section 6.2).

3.3.22 Over the last four years there has been a notable increase in the capacity and waste inputs to permitted facilities. This is predominately driven by:

- an increase in biological treatment and anaerobic digestion facilities, with permitted capacity increasing by approximately 800kt and waste inputs by 115kt;
- the permitting and increased operation of a physical treatment facility at Lugg Bridge Quarry, with a capacity of 250kt and an input of 100kt.

3.3.23 In 2018, there was permitted capacity of 1,793,472 tonnes provided across facilities that actually received 463,209 tonnes.

3.3.24 Whilst there are a significant number (approximately 1,600) of locations with exemptions across Herefordshire:

- the majority are On a farm exemptions which cover many everyday on-farm activities, such as burning waste in the open, spreading waste on agricultural land to confer benefit, deposit of waste from dredging of inland waters etc;
- there are a small number of non-farm exemptions, which provide some treatment capacity for C&I and CD&E wastes; and
- there are over 1000 locations with U1 exemptions (use of waste in construction); these do provide important capacity for CD&E wastes but cannot be considered as guaranteed capacity.

4. Waste Arisings

4.1 Local Authority Collected Waste ('LACW')

4.1.1 In 2014, Defra's Waste Statistics team split LACW into 'waste from households' and 'waste not from households' for statistical purposes, to provide a harmonised UK indicator with a comparable calculation in each of the four UK countries.

4.1.2 Whilst 'waste from households' is the Government's statistical measure it does not truly reflect waste generated by households as it excludes CD&E waste collected at CA sites that will predominately be generated by householders.

4.1.3 Therefore, when considering LACW arisings and forecasts, it can be useful to consider waste generated by households discretely from other LACW such as trade waste and parks waste etc.

LACW arisings in Herefordshire

4.1.4 In 2016, approximately 89,650 tonnes of LACW was produced in Herefordshire, of which 77,350 tonnes was 'waste from households'. This is consistent with LACW growth scenarios 2 and 4a (section 5.2).

4.1.5 By 2017, approximately 88,870 tonnes of LACW was produced in Herefordshire, of which 76,750 tonnes was 'waste from households'. This is a slight reduction in both the LACW and 'waste from households' arisings compared to 2016.

4.1.6 2018 saw a further reduction in the amount of LACW produced in Herefordshire, with approximately 87,050 tonnes produced, of which 74,850 tonnes was 'waste from households'. The reduction was due to a decrease in residual waste (both at the kerbside and Household Waste Recycling Centres (HWRC)) and garden waste, rubble and scrap metal collected at HWRC. These reductions are slightly offset by an increase in the tonnages of residual commercial waste collected.

4.1.7 So, whilst 2016 arisings sit between the LACW growth scenarios 2 and 4a, and scenarios 1 and 4 (section 5.2), 2018 arisings are slightly below the LACW growth scenarios 2 and 4a, which are the lowest forecasts.

4.1.8 Table 4.1 and Figure 4.1 show Herefordshire's LACW arisings broken down into 'waste from households' and 'waste not from households' and the generic waste management method used, during years 2011 to 2018.

4.1.9 LACW has a good dataset available and it is useful to consider previous years to inform assumptions about potential future arisings. Table 4.1 also summarises the number of households and waste generation rates for those years based on data published by the Ministry for Housing, Communities and Local Government (MHCLG, formerly DCLG). This is useful information in considering future arisings.

4.1.10 However, the responsibility for household projections subsequently transferred to the Office for National Statistics (ONS), which published its first projections at the end of September 2018. Therefore, Table 4.1 also includes waste generation rates based on the ONS household projections. The ONS household projections are fractionally lower than the MHCLG projections, which means the resultant waste generation rates are fractionally higher.

Table 4.1 LACW arisings, Herefordshire, 2011 to 2018

Description		2011	2012	2013	2014	2015	2016	2017	2018	row
Waste from households[a]	Recycled / composted / recovery	32,454	32,054	31,210	32,610	33,717	35,325	34,883	34,426	1
	Landfill and Energy from Waste	44,399	44,335	43,563	43,251	42,039	42,033	41,870	40,429	2
	Total waste from households	**76,854**	**76,389**	**74,773**	**75,861**	**75,755**	**77,358**	**76,753**	**74,855**	3
Waste not from households[a]	Recycled / composted / recovery	6,395	5,713	5,732	5,592	6,212	6,464	6,430	6,000	4
	Landfill and Energy from Waste	3,133	3,367	3,452	3,636	3,933	5,808	5,688	6,190	5
	Total waste not from households	**9,528**	**9,079**	**9,184**	**9,228**	**10,145**	**12,273**	**12,118**	**12,190**	6
Total LACW		**87,184**	**86,146**	**84,723**	**85,800**	**86,631**	**89,631**	**88,871**	**87,045**	7
Total waste generated by households[b]		83,337	82,180	80,548	81,470	81,984	83,841	83,164	80,777	8
MHCLG Number of households[c]		78,454	79,215	79,829	80,526	81,244	81,961	82,653	83,388	9
Waste from households per household (tonnes/household)		0.980	0.964	0.937	0.942	0.932	0.944	0.929	0.898	10
LACW per household (tonnes/household)		1.111	1.087	1.061	1.065	1.066	1.094	1.075	1.044	11
Waste generated by households per household (tonnes/household)		1.062	1.037	1.009	1.012	1.009	1.023	1.006	0.969	12
ONS Number of households[d]		78,192	78,865	79,328	79,944	80,463	81,102	81,570	82,047	13
Waste from households per household (tonnes/household)		0.983	0.969	0.943	0.949	0.941	0.954	0.941	0.912	14
LACW per household (tonnes/household)		1.115	1.092	1.068	1.073	1.077	1.105	1.090	1.061	15
Waste generated by households per household (tonnes/household)		1.066	1.042	1.015	1.019	1.019	1.034	1.020	0.985	16

Notes:

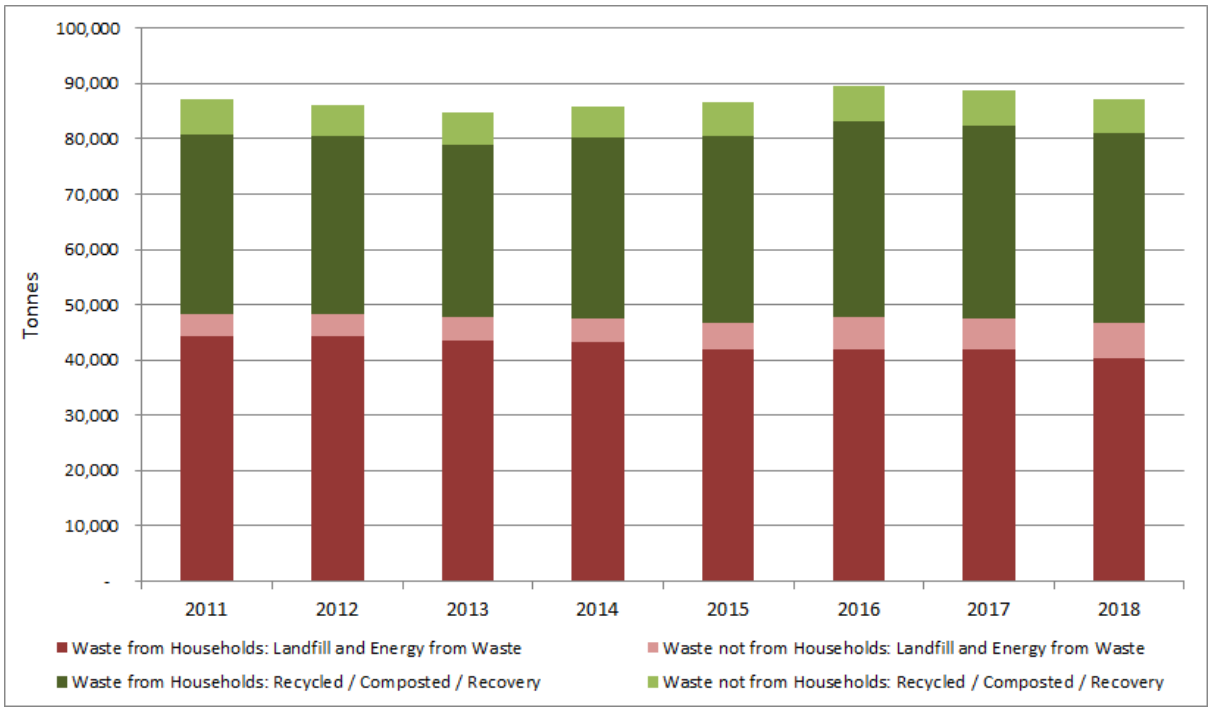
a:Tonnage data source, Herefordshire Council

b: LACW excluding trade waste collected by the local authority and other municipal wastes collected by the local authority (e.g. parks and gardens waste, fly tipping etc.)

c: Ministry for Housing, Communities and Local Government (MHCLG) Household projections (formerly DCLG)

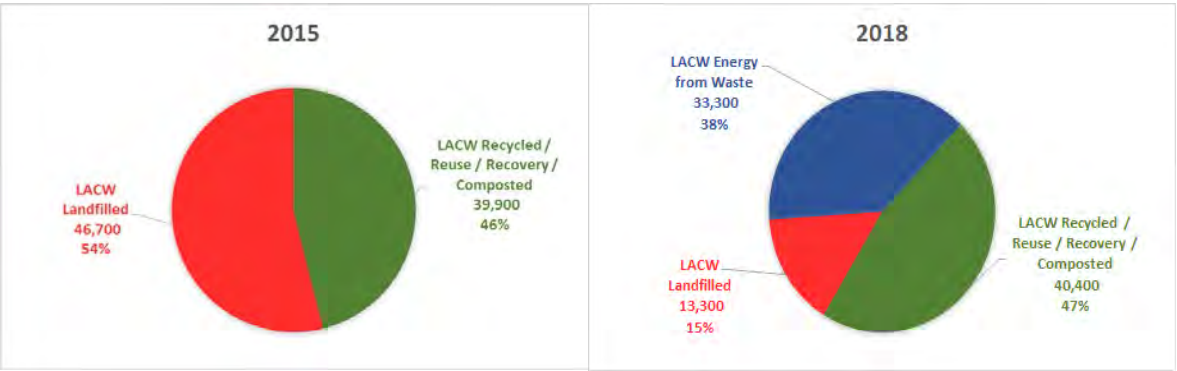
d: ONS Household projections in England: 2016-based, accessed October 2019

Figure 4.1 LACW arisings, Herefordshire, 2011 to 2018



4.1.11 Figure 4.1 is not able to show the shift in the management routes used for Herefordshire's LACW since the EnviRecover Facility started operating in 2017. For information, this is shown in Figure 4.2.

Figure 4.2 LACW management methods, Herefordshire, 2015 and 2018



4.1.12 The trend in the annual LACW arisings in Herefordshire is consistent with the trend in LACW arisings at the England level, with total arisings dropping to a low point in 2013 followed by a gradual increase and a long period of relative stabilisation.

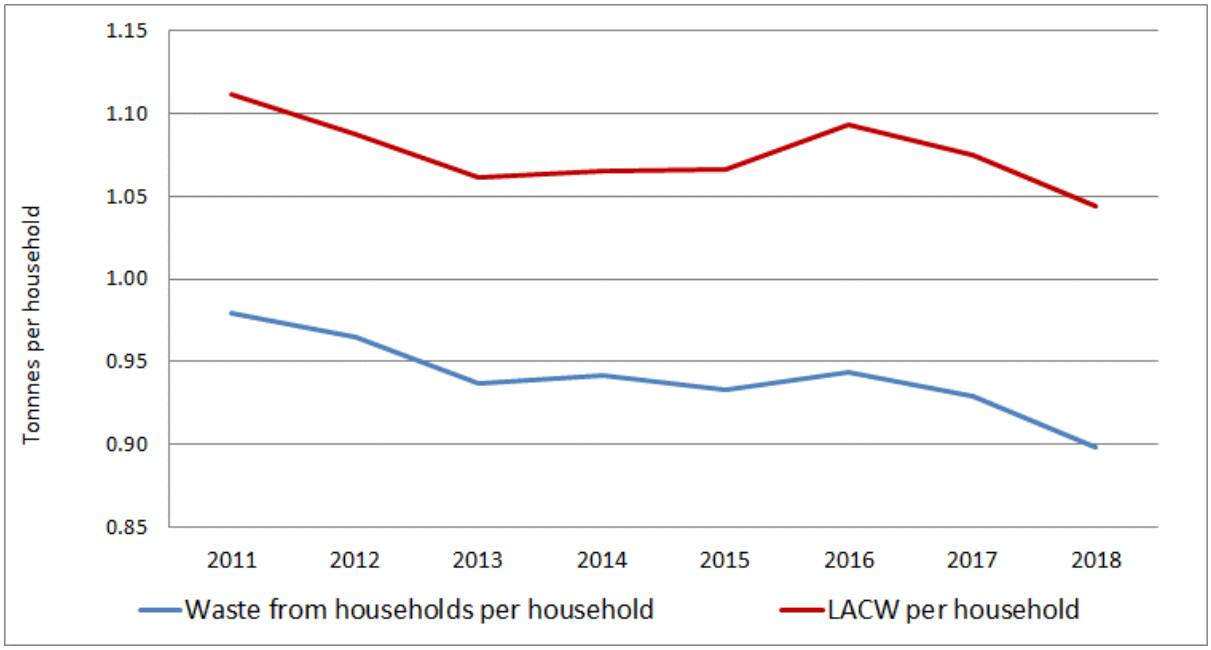
4.1.13 Waste generated could be expected to increase if households (and population) are projected to grow. However, economic growth and changing consumption habits will also influence waste production. Therefore, the two key influences on waste arisings are:

- the number of households (and to a lesser extent population) the growth of which could result in an increase in total household waste arisings; and
- the state of the economy, as economic decline and growth directly affect public consumption, purchasing habits and changes in consumption patterns, which may lead to an increase or decrease in per capita or per household waste generated.

4.1.14 Table 4.1 and Figure 4.3 show that both 'waste from households' per household and LACW per household have stayed relatively constant over the last seven years, with no significant shifts up or down. However, overall waste generation is showing a slight decrease. This would suggest that, historically, waste generation in Herefordshire is more closely linked to a change in the number of households rather than economic growth. A growth in LACW per household would indicate that economic growth had a greater influence.

4.1.15 A greater upturn is experienced in 2016 in LACW per household, which would imply economic growth is having an influence on LACW in Herefordshire. However, from 2017 the data shows waste generation levels reverting to those seen in years 2013 to 2015, with continued reduction in 2018.

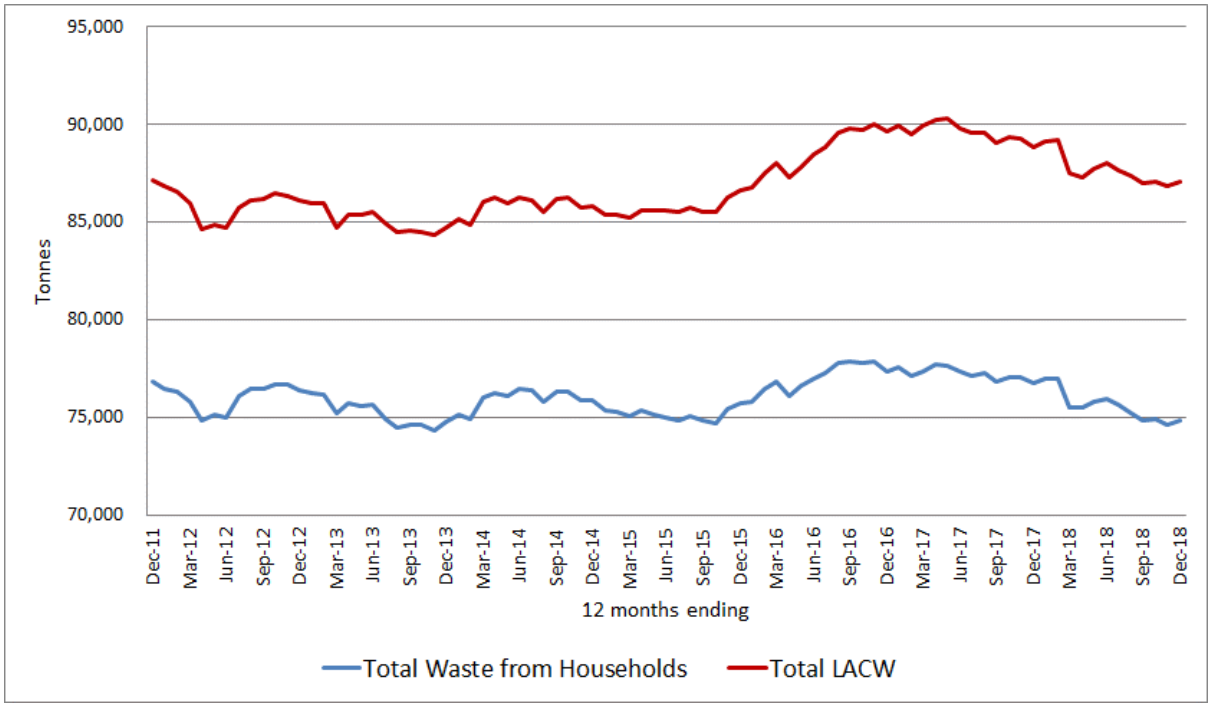
Figure 4.3 Trends in LACW and waste from households per household, Herefordshire, 2011 to 2018



4.1.16 Whilst annual waste arising data provide an indication of the trends, using a rolling 12-month tonnage helps to take account of seasonal variations and provides a clearer understanding of trends. Figure 4.4 provides the rolling 12-month tonnage data[10] for total LACW arisings using monthly data from December 2011 to December 2018 inclusive.

[10] Each data point presents the tonnage for the preceding 12 months, so that each data point represents a full year's tonnage.

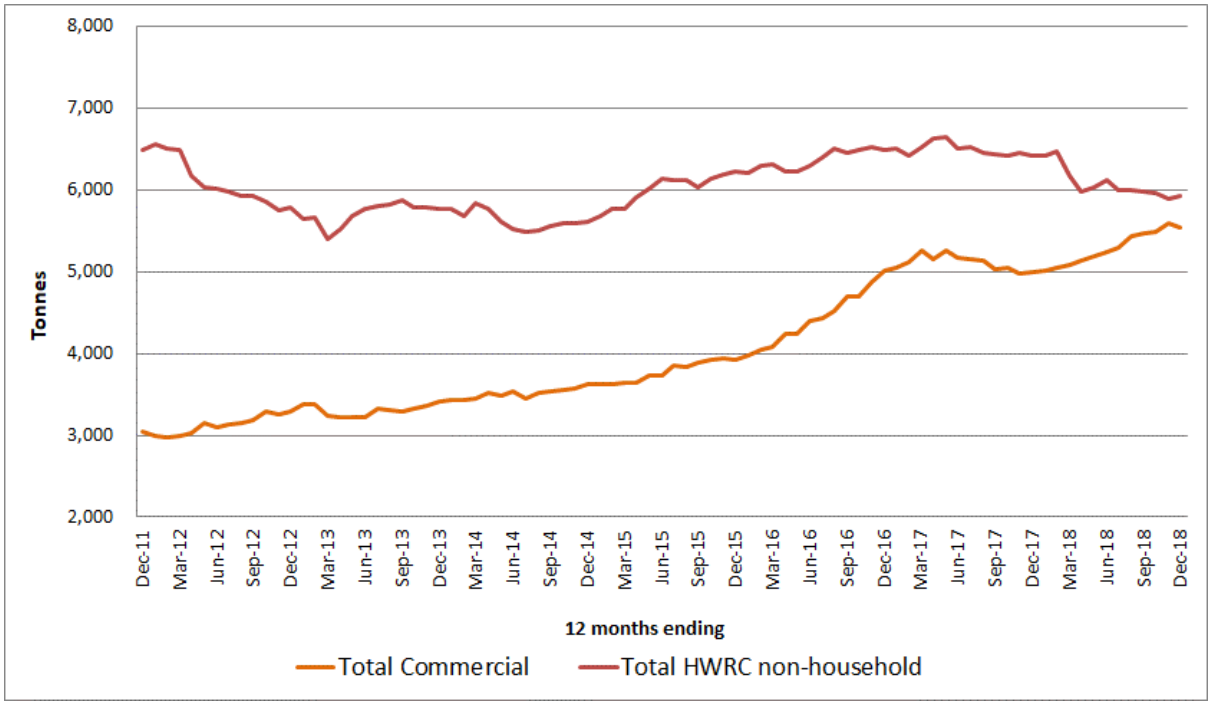
Figure 4.4 Total LACW and 'waste from households', rolling 12-month tonnage, Herefordshire, December 2011 to December 2018



4.1.17 Figure 4.4 shows a notable increase in Total LACW from September 2015 to September 2016, which then appears to stabilise through the first half of 2017. This is followed by a gradual reduction toward the end of 2017, and a more substantial drop by March 2018. Between August 2016 and August 2017, there have been some minor decreases in most elements of the LACW stream. However, there was a reduction in the 'waste from households' in the first two quarters of 2018.

4.1.18 However, as shown in Figure 4.5, the commercial waste element of LACW continued to grow until the end of 2016, before stabilising during 2017 and then rising again during 2018.

Figure 4.5 Total commercial and non-household CA site waste arisings, rolling 12-month tonnage, Herefordshire, December 2011 to December 2018



4.2 Commercial and Industrial (C&I) waste

Introduction

4.2.1 Over recent years C&I waste arisings estimates made at the national level have not been broken down to the regional or individual WPA level. Therefore C&I waste arisings need to be estimated using a number of datasets. The approach used in this Waste Need Assessment is based on the methodology developed by Defra in 2014[11] that takes account of revisions made by Defra since 2014.

4.2.2 However, it should be noted that the Defra methodology was designed to estimate arisings at the national level and so did not need to consider the origin of the waste. Therefore, the methodology has been adapted for use at the WPA level but the basic steps remain similar.

4.2.3 The method calculates the total amount of C&I waste by adding up:

- inputs to permitted facilities with Herefordshire as the origin and adjusting for waste handled through transfer stations and from waste management facilities;
- incineration inputs; and
- inputs to exemption facilities;

and subtracting LACW, CD&E waste, hazardous and agricultural wastes.

[11] Methodology to Estimate Waste Generation by the Commercial and Industrial Sector in England, Defra, 2014

Inputs to permitted facilities

4.2.4 Operators of permitted waste facilities are requested to provide information on the 'origin' of the waste accepted at their sites. Where data is supplied, the entry is normally completed showing the town or county where the waste came from.

4.2.5 However, where operators do not provide accurate information on the origin of waste, the WDI reports the origin as 'Not Codeable'; where possible, 'Not Codeable' waste is assigned to the region of origin. Having considered wastes identified as originating in Herefordshire, there is a need to consider the potential tonnage of 'Not Codeable' waste that can reasonably be assumed to have been generated in Herefordshire.

4.2.6 The WDI data for 2013 to 2018 were used to identify wastes received at permitted facilities which have the origin of waste identified as Herefordshire. The data were extracted by LoW 6-digit waste code (i.e. the classification codes for individual wastes) and by receiving site. Table 4.2 summarises the data extracted to show the quantities of waste received by sites in England with the origin identified as Herefordshire.

Table 4.2 Waste received at permitted facilities in England with Herefordshire origin 2013 to 2018 by LoW Chapter heading (rounded to nearest 10 tonnes)

LoW Chapter	Chapter Description	Tonnes					
		2013	2014	2015	2016	2017	2018
01	Mine and Quarry Wastes	-	-	-	-	-	2
02	Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing	30,130	38,620	95,970	121,710	134,170	126,020
03	Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard	180	220	270	250	5	3
04	Wastes from the leather, fur and textile industries	-	-	3	-	-	-
06	Wastes from inorganic chemical processes	8	30	2	40	3	5
07	Wastes from organic chemical processes	1	1	1	30	100	60
08	Wastes from the manufacture, formulation, supply and use (MFSU) of coatings (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks	255	150	250	350	600	480
09	Wastes from the photographic industry	23	20	7	2	<1	-
10	Wastes from thermal processes	7	40	90	150	120	80
11	Wastes from chemical surface treatment and coating of metals and other materials, non-ferrous hydro-metallurgy	997	80	220	60	1,580	1,670
12	Wastes from shaping and physical and mechanical surface treatment of metals and plastics	363	150	330	550	550	580
13	Oil wastes and wastes of liquid fuels (except edible oils, and those in chapters 05, 12 and 19)	1,880	1,630	1,100	1,190	1,750	1,730
14	Waste organic solvents, refrigerants and propellants (except 07 and 08)	121	20	20	30	100	110
15	Waste packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified	1,683	2,040	2,220	2,230	2,080	1,670
16	Wastes not otherwise specified in the list	6,865	24,760	11,570	14,990	13,790	15,050

LoW Chapter	Chapter Description	Tonnes					
		2013	2014	2015	2016	2017	2018
17	Construction and demolition wastes (including excavated soil from contaminated sites)	104,462	111,710	72,960	77,750	122,140	143,930
18	Wastes from human or animal health care and/or related research (except kitchen and restaurant wastes not arising from immediate health care)	1,299	420	360	450	410	300
19	Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use	63,090	43,030	52,350	81,330	25,900	32,620
20	Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions	178,997	182,600	209,590	221,940	231,140	236,460
Total		390,360	405,520	447,310	523,050	534,440	560,770
Tonnage rounded to nearest 10 tonnes, unless the tonnage was less than 10 tonnes, for which the tonnage rounded to the nearest 1 tonne							

4.2.7 There are three notable differences between the 2015 and 2016 datasets:

- Under LoW Chapter 2, 28,000 tonnes of waste with LoW code 02 07 04, 'materials unsuitable for consumption or processing from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)', was sent to Netheridge Sewage Treatment Works in Gloucestershire. It is possible that this is a one-off arising.
- An additional 29,000 tonnes were reported under LoW Chapter 19. The change is predominantly due to the increase in the following waste types; however, they will be filtered out at the next stage:
  - LoW code 19 07 03 (+2,000 tonnes), non-hazardous landfill leachate;
  - LoW code 19 12 02 (+4,650 tonnes), ferrous metal from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified;
  - LoW code 19 12 09 (+8,900 tonnes), minerals (for example sand, stones) from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified, which is likely to be from the processing of CD&E wastes;
  - LoW code 19 12 12 (+11,675 tonnes), other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11 (for example sorting, crushing, compacting, pelletising), which is potentially from increased processing of wastes at transfer stations.
- An additional 11,700 tonnes were reported under LoW Chapter 20, which will partly be as a result of the increase in LACW and some potential double counting of that waste when handled through transfer stations.

4.2.8 There are also some notable differences between the 2016 and 2017 datasets:

- Under LoW Chapter 2, the tonnage report against LoW code 02 07 04, 'materials unsuitable for consumption or processing from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)' was not a one-off arising. In 2017, 28,670 tonnes with LoW code 02 07 04, were sent to Netheridge Sewage Treatment Works in Gloucestershire.
- An additional 12,500 tonnes were reported under LoW Chapter 02, which is made up of some increase and decrease across the sub-sectors covered under LoW Chapter 02. The predominant change was an increase of 18,000 tonnes in the 'waste from agriculture, horticulture, aquaculture, forestry, hunting and fishing' which was off-set by reductions in the wastes from:
  - the preparation and processing of meat, fish and other foods of animal origin (-1,300 tonnes);
  - fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation (-3,150 tonnes); and
  - the dairy products industry (-1,250 tonnes).

The increases in the 'waste from agriculture, horticulture, aquaculture, forestry, hunting and fishing' are principally from the two waste streams LoW code 02 01 03 'plant-tissue waste' (+10,600 tonnes) and LoW code 02 01 03 'animal faeces, urine and manure' (+ 7,500 tonnes).

Both of these waste streams are likely to be handled through on-farm anaerobic digestion systems (for which there has been a significant increase in capacity over the last 5 years) and would not normally contribute to C&I waste arisings.

- An additional 44,400 tonnes were reported from the under LoW Chapter 17, C&D waste. The change is predominantly due to the increase in the following waste types; however, they will be filtered out at the next stage:
  - LoW code 17 01 07 (+9,400 tonnes), non-hazardous mixtures of concrete, bricks, tiles and ceramics;
  - LoW code 17 05 04 (+27,700 tonnes), non-hazardous soil and stones;
  - LoW code 17 08 02 (+3,150 tonnes), non-hazardous gypsum-based construction materials minerals; and
  - LoW code 17 09 04 (+3,500 tonnes), non-hazardous mixed construction and demolition wastes.
- A reduction of 55,400 tonnes reported under LoW Chapter 19. The change is predominantly due to the reduction in two waste types; however, they will be filtered out at the next stage:
  - LoW code 19 12 09 (-7,500 tonnes), minerals (for example sand, stones) from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified, which is likely to be related to the processing of CD&E wastes;
  - LoW code 19 12 12 (-42,000 tonnes), other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11 (for example sorting, crushing, compacting, pelletising), which is potentially from a change in coding by transfer stations processing of wastes.

4.2.9 There are also a number of changes between the 2017 and 2018 datasets:

- Under LoW Chapter 2, there was a reduction of just over 8,000 tonnes in the total amount of waste reported under LoW Chapter 02, which again is made up of some increases and decreases across the sub-sectors covered under LoW Chapter 02:
  - a 10,000 tonne reduction in 'waste from agriculture, horticulture, aquaculture, forestry, hunting and fishing', which reversed half the increase seen between 2016 and 2017;
  - an increase of 4,700 tonnes reported from 'fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation';
  - an increase of 6,000 tonnes in 'wastes from the dairy products industry'; and
  - an 8,700 tonne reduction in tonnes in 'wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)'.
- An additional 21,800 tonnes were reported the under LoW Chapter 17, C&D waste. The change is predominantly due to the increase in two waste types, much of which was received at Lugg Bridge Quarry; again, they will be filtered out at the next stage:
  - LoW code 17 01 07 (+16,300 tonnes), non-hazardous mixtures of concrete, bricks, tiles and ceramics; and

- LoW code 17 09 04 (+7,400 tonnes), non-hazardous mixed construction and demolition wastes.

- There were also increases in the wastes reported under LoW Chapter 19 and LoW Chapter 20; 6700 tonnes and 5,300 tonnes respectively

4.2.10 The next step aims to isolate the C&I waste fraction by filtering the data to remove:

- waste coded under LoW sub-chapter 02 01 'Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing', to exclude agricultural waste;
- waste coded under LoW Chapter 17 'Construction and demolition wastes (including excavated soil from contaminated sites)' to exclude CD&E waste;
- waste coded under LoW Chapter 19 'Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use' to prevent the double counting of wastes handled at waste management facilities; and
- waste deposited at Leominster HWRC & WTS, Rotherwas HWRC, WTS & MRF and Ledbury, Ross on Wye, Bromyard HWRC and Kington HWRC, as this is predominately household waste with the exception of commercial waste collected by Herefordshire Council which needs to be factored back into the estimates and CD&E waste received at HWRC (which would have been filtered out under LoW Chapter 17).

4.2.11 For the years 2013 to 2015, these steps reduced the tonnage by approximately 250,000 to 270,000 tonnes. Using the 2016 data, these steps reduced the tonnage by approximately 300,000 tonnes, for 2017 the tonnage was reduced by approximately 310,000 tonnes and for 2018 the tonnage was reduced by approximately 325,000 tonnes.

Waste Transfer Stations

4.2.12 There is a significant risk of double counting waste handled through waste transfer stations. Not least, depending on how waste is handled, the outgoing waste may or may not be assigned the same waste code. In addition, the sites receiving waste from a waste transfer station may assign the waste a different code(s) to that used by the waste transfer station.

4.2.13 An example of this is highlighted by the potential double counting of LACW handled through the Mercia Waste Management facilities. In 2015, approximately 47,600 tonnes of LACW was sent from Mercia Waste Management facilities in Herefordshire to Severn Waste Services' Hill and Moor Landfill, Pershore, coded under LoW Chapter 20. However, the waste received at the Hill and Moor Landfill from Herefordshire was recorded as:

- 39,500 tonnes under LoW code 19 12 12, which related to the waste received from the waste transfer station; and
- 8,100 tonnes under LoW 20 03 01 which related to the waste received from the HWRC.

4.2.14 So, whilst Step 3 above would have prevented the double counting of the waste coded under LoW Chapter 19, the waste coded under LoW Chapter 20 could be double counted. Therefore, a more detailed review of waste handled through waste transfer stations is needed.

4.2.15 Annex H summarises the key tonnages that need to be discounted to prevent double counting based on the detailed review. However, it should be noted that due to the

complexity of C&I waste flows it is not possible to definitively identify all potential occurrences of double counting.

4.2.16 As highlighted above, commercial waste collected by Herefordshire Council needs to be factored back into the estimate of C&I waste arisings. The commercial waste tonnages collected, which would be coded under LoW Chapter 20, were:

- 3,409 tonnes in 2013;
- 3,619 tonnes in 2014;
- 3,916 tonnes in 2015;
- 5,020 tonnes in 2016;
- 4,910 tonnes in 2017; and
- 5,530 tonnes in 2018.

Metals Recycling Sites

4.2.17 Metals recycling site/vehicle dismantlers generally use LoW codes 19 12 02 and 19 12 03 for the ferrous metal and non-ferrous metal removed from sites, however a combination of other codes are also used to describe the metals and components removed. In addition, small vehicle dismantlers often send their processed scrap metal to larger metals recycling site for bulking and onward shipment for recovery.

4.2.18 A detailed review of the waste removed from metals recycling site/vehicle dismantlers in 2013 highlighted 5,560 tonnes of waste that would not have been excluded by removing LoW Chapter 17 & 19 wastes as part of the initial analysis. However, the processes at metals recycling site/vehicle dismantlers generate additional waste streams, for example when a car is dismantled components within the car such as oils, lead-acid batteries etc. are separated as individual waste streams. In addition, 90 tonnes were transferred to another facility in Herefordshire which means it is likely to be double counted twice.

4.2.19 A detailed review of the waste removed from metals recycling site/vehicle dismantlers in 2014 highlighted 4,260 tonnes of waste that would not have been excluded by removing LoW Chapter 17 & 19 wastes as part of the initial analysis. In addition, 130 tonnes were transferred to another facility in Herefordshire which means it is likely to be double counted twice. There also appeared to be a data entry error with 5,600 tonnes of lead-acid batteries being removed from P & T Moore Vehicle Dismantlers, when the site only received 1,700 tonnes of waste in total. It is assumed that the figure had been entered as kilograms i.e. 5.6 tonnes, which would be consistent with the other tonnes of this material removed from the site.

4.2.20 The detailed review of the waste removed from metals recycling site/vehicle dismantlers in 2015 highlighted 5,640 tonnes of waste that would not have been excluded by removing LoW Chapter 17 & 19 wastes as part of the initial analysis. In addition, 310 tonnes were transferred to another facility in Herefordshire which means it is likely to be double counted twice.

4.2.21 The detailed review of the waste removed from metals recycling site/vehicle dismantlers in 2016 highlighted 5,650 tonnes of waste that would not have been excluded by removing LoW Chapter 17 & 19 wastes as part of the initial analysis. In addition, 360 tonnes were transferred to another facility in Herefordshire, which means it is likely to be double counted twice.

4.2.22 The detailed review of the waste removed from metals recycling site/vehicle dismantlers in 2017 highlighted 3,600 tonnes of waste that would not have been excluded by removing LoW Chapter 17 & 19 wastes as part of the initial analysis. In addition, 440 tonnes were transferred to another facility in Herefordshire, which means it is likely to be double counted twice.

4.2.23 The detailed review of the waste removed from metals recycling site/vehicle dismantlers in 2018 highlighted 5,960 tonnes of waste that would not have been excluded by removing LoW Chapter 17 & 19 wastes as part of the initial analysis. In addition, 420 tonnes were transferred to another facility in Herefordshire, which means it is likely to be double counted twice.

Estimated C&I waste arisings managed through permitted facilities in England with Herefordshire identified as origin

4.2.24 In collating the data from the analysis, it was noticed that in 2017 there was a significant tonnage of waste (9,550 tonnes) coded under LoW 20 01 08 'biodegradable kitchen and canteen waste', when in previous years less than 500 tonnes of waste were attributed to this LoW code. LoW 20 01 08 is normally used for separately collected food waste, and as Herefordshire Council does not collected separated food waste for households, the source of this waste was investigated further.

4.2.25 The waste was received at Cumberlow Green Farm (Permit No. EPR/QP3097NT) a composting facility in Buntingford, Hertfordshire. This indicated a potential error in the coding of the origin of the waste.

4.2.26 WDF was used to determine if any local authorities use Cumberlow Green Farm for the treatment of organic waste. In 2016 (the last full calendar year available in WDF) the data from WDF showed that the local authorities of Hertfordshire sent 29,800 tonnes of food and garden wastes to Cumberlow Green Farm, which is comparable to the 30,470 tonnes of food and garden wastes reported in the WDI 2016 with Herefordshire as the origin.

4.2.27 This would suggest that a proportion of the waste received at Cumberlow Green Farm has been incorrectly coded to Herefordshire as opposed to Hertfordshire in the WDI 2017. Therefore, waste received at Cumberlow Green Farm with an origin of Herefordshire has been excluded from the data.

4.2.28 Similarly, in 2018, there was a significant increase in the tonnage of waste reported under LoW Chapter 20 with its origin reported as Herefordshire.

4.2.29 Pearce Recycling Company Ltd (Permit No. EPR/FP3394SL), which operates a MRF in St Albans, Hertfordshire, was identified as receiving 16,600 tonnes of LoW 20 01 01 (paper and cars) and LoW 20 01 38 (non-hazardous wood waste) from Herefordshire. This indicated a potential error in the coding of the origin of the waste.

4.2.30 Again, WDF was used to determine if any local authorities use Pearce Recycling. The data for Q1 of 2018 showed that Hertfordshire County Council sent approximately 3,200 tonnes of paper, card and wood to Pearce Recycling. This would suggest waste has been incorrectly coded to Herefordshire as opposed to Hertfordshire in the WDI 2018. Therefore, waste received at Pearce Recycling with an origin of Herefordshire has been excluded from the data.

4.2.31 Table 4.3 draws together the analysis above to provide an estimate of the C&I waste arisings managed through permitted facilities in England with Herefordshire identified as the origin, concluding an interim total of 148,300 tonnes in 2017 and 158,000 tonnes in 2018. This indicates growth in the C&I waste arisings over the study period.

Table 4.3 Estimated C&I waste arisings managed through permitted facilities in England with Herefordshire identified as the origin, 2013 to 2018

LoW Chapter	Chapter Description	Tonnes					
		2013	2014	2015	2016	2017	2018
02	Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing	29,900	18,460	40,830	68,890	63,370	65,520
03	Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard	180	220	270	250	10	-
04	Wastes from the leather, fur and textile industries	-	-	3	-	-	-
06	Wastes from inorganic chemical processes	8	30	2	40	-	-
07	Wastes from organic chemical processes	1	1	1	30	100	60
08	Wastes from the MFSU of coatings (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks	250	150	250	350	600	480
09	Wastes from the photographic industry	23	20	7	2	-	-
10	Wastes from thermal processes	7	40	90	150	120	80
11	Wastes from chemical surface treatment and coating of metals and other materials, non-ferrous hydro-metallurgy	1,000	80	220	60	1,580	1,670
12	Wastes from shaping and physical and mechanical surface treatment of metals and plastics	360	150	330	550	550	580
13	Oil wastes and wastes of liquid fuels (except edible oils, and those in chapters 05, 12 and 19)	1,870	1,630	1,100	1,190	1,750	1,690
14	Waste organic solvents, refrigerants and propellants (except 07 & 08)	120	20	20	30	100	110
15	Waste packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified	1,680	2,040	2,210	2,110	2,080	1,670
16	Wastes not otherwise specified in the list	6,860	24,750	11,430	14,830	13,640	14,820
18	Wastes from human or animal health care and/or related research (except kitchen & restaurant wastes not arising from immediate health care)	1,300	420	360	450	410	300
20	Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions	56,970	45,010	52,090	63,010	67,580	77,420
Total following exclusion of LoW Sub-chapters 0201, Chapters 17 and 19, LACW, the estimated double counted wastes passing through WTS and mis-coded origins		100,530	93,010	109,210	151,930	151,900	164,400
Potential double counting at metal recycling sites		-5,560	-4,260	-5,640	-5,650	-3,600	-5,960
Estimated C&I waste arisings managed through permitted facilities in England with Herefordshire identified as origin (rounded to nearest 1,000 tonnes)		**95,000**	**89,000**	**104,000**	**146,000**	**148,000**	**158,000**
Chapter tonnages rounded to nearest 10 tonnes unless the tonnage is less than 10 tonnes, for which the tonnage is rounded to the nearest tonne.							

4.2.32 The 2016 and 2017 estimated arisings for C&I waste show a notable increase from that at 2015. Part of this increase is due to 28,000 to 29,000 tonnes of materials unsuitable for human consumption or processing from the production of alcoholic and non-alcoholic beverages being sent to a wastewater treatment facility.

4.2.33 In 2018, the quantity handled at waste water treatment plants has reduced to approximately 19,800 tonnes and despite this reduction the estimated arisings for C&I waste has increased by 10,000 tonnes to 158,000 tonnes. The 10,000 tonne increase is predominantly due to the increase in LoW Chapter 20 wastes, which was driven by increases in the following waste streams:

- LoW 200140 code 'metals' (+4,100 tonnes) which can be prone to double counting due to movements between MRS;
- LoW code 20 02 01 'biodegradable waste' (+1,500 tonnes)
- LoW code 20 03 01 'mixed municipal waste' (+3,000 tonnes);
- LoW code 20 03 04 'septic tank sludge' (+3,800 tonnes), which could potentially be due to the requirement to prevent discharges from septic tanks directly to a surface water. If a septic tank discharges directly to surface water, it must be replaced or upgraded by 1 January 2020. So, the increase in septic tank sludge could relate to the emptying of old septic tanks prior to replacement.

4.2.34 However, there has been a steady increase in the quantity of waste, with origins in the West Midlands, handled through permitted facilities between 2013 and 2018 (Table 4.5 below). This suggests that overall waste arisings are increasing, which is potentially linked to the improvement in the economy as it recovers from the recession.

4.2.35 Consequently, if the C&I waste estimate for forecasting purposes is assumed to be waste managed through permitted facilities minus the materials unsuitable for consumption or processing handled at waste water treatment plants (28,670 tonnes in 2017 and 19,800 tonnes in 2018) the estimates would be:

- 120,000 tonnes (rounded to the nearest 1,000 tonnes) in 2017; and
- 138,000 tonnes (rounded to the nearest 1,000 tonnes) in 2018.

'Not Codeable' waste

4.2.36 The origin of waste is normally recorded at the sub-region or WPA level, however when the origin of the waste is not known to this level the term 'Not Codeable' is used and the origin attributed to the region of origin. This means that wastes can be identified as arising in the West Midlands but 'Not Codeable' to a sub-region or WPA level. This in turn means that there is the potential for wastes that arise in Herefordshire to be included in the 'Not Codeable' wastes at the West Midlands level.

4.2.37 'Not Codeable' tonnages within the WDI can be significant and therefore need to be considered.

4.2.38 Table 4.4 presents the tonnage of waste with the origin identified as the West Midlands, along with the tonnage from the West Midlands that could not be coded to the sub-region or WPA levels.

Table 4.4 Quantity of 'Not Codeable' waste in West Midlands, 2013 to 2018

	Description	Tonnes					
		2013	2014	2015	2016	2017	2018
1	Origin identified as the West Midlands	12,827,289	14,148,269	15,884,277	17,172,672	18,461,852	17,592,373
2	'Not Codeable' to sub-region or WPA level	3,944,825	3,574,756	4,633,702	5,270,077	5,825,810	5,625,866
3	Percentage 'Not Codeable'	30.8%	25.3%	29.2%	30.7%	30.7%	32.0%

4.2.39 The figures show that for waste with the origin identified as the West Midlands, 25% to 32% of the waste cannot be attributed to the sub-region or WPA level. Therefore, if Herefordshire is typical of the region as a whole in this regard, the C&I waste estimates for Herefordshire could be 25% to 32% higher as a result of the 'Not Codeable' data at the West Midlands level within the WDI. This is equivalent to 20,000 to 45,000 tonnes waste, depending on which year is being considered.

4.2.40 However, as highlighted in paragraphs 3.1.12/13 there appears to have been an apparent improvement in reporting by the sites in Herefordshire, which could mean the amount of attributed to 'West Midlands - WPA not codeable' could be an overestimate, which in turn could lead to an overestimate of C&I arisings.

Waste handled at exempt facilities

4.2.41 Section 3.2 summarises the exempt activities registered in Herefordshire with the detailed analysis of the potential contribution from different exemptions set out in Table 3.8. The contribution to the C&I waste estimates is summarised in Table 4.5.

Table 4.5 Potential C&I waste quantities handled through exempt facilities in 2018

Exemption	Contribution to the C&I waste estimates	Number of Contributing Exemptions	Estimate C&I waste managed through exemption (tonnes)
D7 - Burning waste in the open	10 tonnes annum per exemption	38	380
T4 - Preparatory treatments (baling, sorting, shredding etc)	5,000 tonnes annum per contributing exemption	1	5,000
T23 - Aerobic composting and associated prior treatment	250 tonnes annum per exemption	6	1,500
U4 - Burning of waste as a fuel in a small appliance	10 tonnes annum per exemption	13	130
U8 - Use of waste for a specified purpose	50 tonnes per annum per exemption	13	650
Total			**7,660**

Waste sent directly to permitted facilities in Wales

4.2.42 Waste sent from Herefordshire directly to permitted facilities in Wales are not captured in the 2013 to 2015 WDI data. To provide an understanding of the waste potentially sent directly to permitted facilities in Wales for the WNA 2017, data from the 2011 and 2012 WDI (which included Welsh data) were reviewed.

4.2.43 Since the WNA 2017 was published, Natural Resources Wales ('NRW') has published waste permit returns for 2013 to 2018, which provides comparable data to the Environment Agency's WDI. This Assessment has consequently analysed the data from 2011 to 2018 to provide an understanding of the waste potentially sent directly to permitted facilities in Wales. This is presented in Table 4.6.

4.2.44 The data highlight that there are some potential issues with the coding of waste, particularly in years 2014 and 2015, with notable quantities coded under LoW 20 03 01 (mixed municipal waste). A detailed review of the waste received at permitted facilities in Wales and the waste removed from permitted facilities in Herefordshire highlighted the following points:

- The quantities and waste types removed from facilities in Herefordshire do not match the quantities and waste types received at facilities in Wales. There are a number of potential reasons for this, e.g. some wastes may be sent to facilities not covered by the Natural Resources Wales permit returns (e.g. exempt sites) the receiving site may use different LoW codes, the receiving site may not code the origin of the waste or code it incorrectly. This means it is difficult to actually determine waste potentially sent directly to permitted facilities in Wales.
- In 2016, over 70% of the waste removed from permitted facilities in Herefordshire was from the Eastside Recycling Facility and was predominantly coded under LoW Chapter 19. 5,150 tonnes of waste under LoW Chapter 20 was removed from facilities in Herefordshire and identified with Wales as the destination; however only 4,460 tonnes of waste was received at permitted facilities in Wales under LoW Chapter 20 with the origin identified as Herefordshire.
- In 2015, almost 22,000 tonnes of waste from the Eastside Recycling Facility and Quickskip (Hereford) Transfer Station was coded as LoW 20 03 01, as opposed to under LoW Chapter 19. In addition, 3,350 tonnes of biodegradable garden and park wastes (LoW 20 02 01) was sent to Wales from the Rotherwas Household HWRC/Transfer Station/MRF. So, whilst these wastes have been accounted for through the assessment as wastes received at permitted facilities in England, there is a risk of double counting them as they have been coded under Chapter 20.
- In 2014, 6,280 tonnes of waste under LoW Chapter 20 was removed from facilities in Herefordshire and identified with Wales as the destination; however, 13,070 tonnes of waste were received at permitted facilities in Wales under LoW Chapter 20 with the origin identified as Herefordshire. Equally 35,490 tonnes of waste under LoW Chapter 19 was removed from facilities in Herefordshire and identified with Wales as the destination; however only 7,570 tonnes of waste were received at permitted facilities in Wales under LoW Chapter 19 with the origin identified as Herefordshire.
- In the 2018 NRW Waste Permit Returns Data Interrogator, there are over 18,300 tonnes of waste with its origin as Herefordshire, which is sent to a Clinical Waste Transfer Station in Newport. This is the first time since 2013 and 2014 that waste has been reported as being

sent to a Clinical Waste Transfer Station in Wales from Herefordshire. A detailed review of this data highlighted the following information:

- the total tonnage was sent to a single facility Summerleaze Pet Crematorium, operated by Time Right Limited (Permit Number CP3595SX);
- the waste sent from Herefordshire consisted of:
  - 37 tonnes of waste coded under LoW Chapter 9 - Photographic Industry Wastes;
  - 100 tonnes of waste coded under LoW Chapter 15 - Waste Packaging; Absorbents, Wiping Cloths Etc N.O.S.;
  - 16,925 tonnes of waste coded under LoW Chapter 18 - Human and Animal Health Care Waste; and
  - 1,281 tonnes of waste coded under LoW Chapter 20 – Municipal Wastes.

- a total of just under 345,000 tonnes of waste were reported as being accepted at the Summerleaze Pet Crematorium in 2018.
  - The NRW permitted wastes sites database[12] indicates that the permitted capacity of the Summerleaze Pet Crematorium is 1,950 tonnes per annum. Based on this information, it has been concluded that the waste received tonnages in the 2018 NRW Waste Permit Returns Data Interrogator are incorrect and that it is most likely the figures have been reported in kilograms as opposed to tonnes. This would mean that the figures are overstated by a factor of 1,000. Consequently, the tonnages in the 2018 data for waste received at Summerleaze Pet Crematorium from Herefordshire have been adjust accordingly with the tonnage being 18.3 tonnes.

Table 4.6 Waste sent to permitted facilities in Wales from Herefordshire, 2011 to 2018

LoW Chapter	Tonnes							
	2011	2012	2013	2014	2015	2016	2017	2018
02: Agriculture and food processing wastes	0.04	20	1,191	0.001	30	66	1,138	7,876
03: Furniture, paper and cardboard manufacturing wastes	-	-	-	-	0.01	0.04	-	-
06: Inorganic chemical process waste	207	8	15	6	7	5	2	10
07: Wastes from organic chemical processes	-	7	-	-	-	-	-	0.2
08: Paints, adhesives, sealants and ink manufacturing waste	-	0.4	0.3	1	0.3	1	1	4
09: Photographic industry wastes	0.05	0.001	0.004	-	0.001	-		0.04
10: Thermal Processes Waste								
11: Chemical surface treatment and coating of metals waste	565	654	505	1,622	1,226	884	556	684
12: Shaping and physical treatment of metals and plastics	66	28	36	307	78	43	115	39

[12] https://naturalresources.wales/evidence-and-data/maps/find-details-of-permitted-waste-sites/?lang=en [27.11.2019@14:44]

LoW Chapter	Tonnes							
	2011	2012	2013	2014	2015	2016	2017	2018
13: Oil wastes and wastes of liquid fuels	189	124	237	451	239	12	91	90
14: Organic solvent, refrigerant and propellant waste	1	0.01	1	0.5	2	-		3
15: Waste packaging; absorbents, wiping cloths etc not otherwise specified.	8	3	11	11	8	149	74	318
16: Wastes not otherwise specified in the list	448	720	1,377	249	162	111	50	548
17: Construction and demolition wastes	19	1	373	1,495	359	212	626	3,360
18: Human and animal health care waste	55	33	51	369	13	-		17
19: Waste and water treatment wastes	18,295	15,810	5,051	7,569	2,438	10,437	21,658	31,371
20: Municipal wastes	1,441	419	1,227	13,070	27,444	4,464	2,939	1,259
Total	21,293	17,827	10,074	**25,151**	**32,007**	**16,385**	**27,250**	**45,581**
Total minus LoW Chapters 17 and 19	2,980	2,016	4,650	16,087	29,210	5,735	4,966	10,851

4.2.45 Wastes coded under LoW Chapters 17 (CD&E waste) and 19 (wastes from waste management facilities) received at permitted facilities in Wales with the origin identified as Herefordshire need to be discounted because they are not C&I waste or have already been considered in the wastes received at sites in Herefordshire. In addition, the data for 2014 and 2015 potentially needs to be discounted due to the issues with the coding of waste highlighted above.

4.2.46 Applying these steps to the data results in a range of 2,000 to 6,000 tonnes of waste that may have been sent directly to permitted facilities in Wales between 2011 and 2017. Given the uncertainty prevalent in the data, it is assumed that 4,000 tonnes (the midpoint in that range) of waste arising in Herefordshire was sent directly to Wales in 2014 and 2015.

4.2.47 However, in 2018 there was a notable increase in the estimated waste arisings from Herefordshire sent directly to Wales, to almost 11,000 tonnes. The increase was predominately due to an increase of 6,700 tonnes in the waste reported under LoW Chapter 02: Agriculture and food processing wastes. Almost 5,000 tonnes of the increase were wastes sent to Grosmont Lagoon at Grosmont Wood Farm near Abergavenny which is a non-hazardous waste transfer station permitted in May 2017. The site is operated by Whites Recycling Ltd, which specialise in liquid waste management and recycling to agricultural land of a variety of liquid wastes, such as food manufacture process liquid and brewery sludge.

C&I waste arisings estimates for Herefordshire

4.2.48 Having undertaken the steps described above to analyse the available data, Table 4.7 summarises the estimated C&I waste arisings estimated for Herefordshire for years 2013 to 2018.

Table 4.7 Estimated C&I waste arisings, Herefordshire, 2013 to 2018

	Description	Tonnes					
		2013	2014	2015	2016	2017	2018
1	Estimated C&I waste arisings managed through permitted facilities in England with Herefordshire identified as origin	95,000	89,000	104,000	118,000	120,000	138,000
2	'Not Codeable' waste	0 to 29,300	0 to 22,500	0 to 30,400	0 to 36,200	0 to 36,800	0 to 44,200
3	Waste handled at exempt facilities	8,000	8,000	8,000	8,000	8,000	8,000
4	Waste sent directly to permitted facilities in Wales	4,650	4,000	4,000	5,740	4,960	10,850
5	**Total (rounded to nearest 1,000 tonnes)**	**108,000 to 137,000**	**101,000 to 124,000**	**116,000 to 146,000[a]**	**132,000 to 168,000**	**133,000 to 170,000**	**157,000 to 201,000**

[a] The reference to 115,000 to 145,000 tonnes in the WNA 2017 was erroneous; the correct tonnage is stated here

Review of C&I waste arisings in Herefordshire against national data

4.2.49 Due to the calculation necessary to estimate C&I waste generation in Herefordshire, it was considered useful to review relevant national waste data sources.

4.2.50 The estimated C&I waste arisings for England in 2012 was 43.8 million tonnes[13]. However, in December 2016, Defra[14] published a statistical notice to summarise waste estimates for the UK which have been calculated for European reporting purposes (the December 2016 Notice).

4.2.51 The December 2016 Notice presents a revised estimate for 2012 along with estimates for 2013 and 2014 based on a revised methodology. The revised estimates are:

- England 2012: 24.4 million tonnes of C&I waste
- England 2013: 21.9 million tonnes of C&I waste
- England 2014: 19.8 million tonnes of C&I waste

4.2.52 The December 2016 Notice states that the changes are due to the removal of tonnages that were likely to have been double counted. However, no further explanation is provided in the Notice. Initial discussions with Defra about the changes in methodology advise that:

- due to the uncertainty over the quantity of waste potentially handled through exemptions and the potential for such wastes to be subsequently handled at permitted facilities, Defra has decided to exclude waste handled through exemptions from the new estimates; and
- the tonnage handled through HWRC may not have been excluded resulting in the potential for double counting of some household waste; therefore, all HWRC tonnages have also been excluded. However, around 15% of waste received at HWRC is sent to transfer stations and would have been excluded from the previous estimates, which means that the exclusion of all HWRC tonnages is likely to overestimate any double counting.

4.2.53 The estimates for Herefordshire set out in Table 4.7 exclude waste received at HWRC and, due to the limited number of non-farm exemptions, the tonnage handled at exempt sites is unlikely to significantly distort the estimates.

4.2.54 Based on the current waste data reporting systems and the uncertainty over the total generation levels, the evidence base for quantifying the contributions from different business sectors is limited.

4.2.55 The Office for National Statistics (ONS) holds data on enterprises/local units[15] by SIC, employment size band and local authority, which can be used to give a broad indication of the number of enterprise/local units in Herefordshire compared to England.

4.2.56 The ONS data indicates that 0.45% of local units in England are in Herefordshire; if it is assumed that C&I waste is directly proportional to the number of local units, arisings in Herefordshire would equate to:

[13] Defra, Digest of Waste and Resources Statistics, 2016 (March 2016)

[14] Defra, UK statistics on Waste Notice, December 2016

[15] Local units identify each location in which a company operates. E.g. Marks and Spencers - all stores, food stores, warehouses and offices at different locations will be separately identified and the number of employees at each reported.

- between 89,000 to 110,000 tonnes of the C&I waste arising in England between 2013 and 2015, based on Defra's revised methodology (December 2016); or
- approximately 195,000 tonnes of the C&I waste arisings in England based on the 2014 methodology.

4.2.57 However, in October 2018 Defra published a further revised figure for C&I waste arisings in England[16]. The C&I arisings estimate for England in 2016 was 33.1 million tonnes. Applying the proportion of local units, as above, to the latest Defra estimate would to equate to a C&I waste arising for Herefordshire of 149,000 tonnes, which is in approximately the mid-point of the Herefordshire-specific analysis above of 2016.

4.2.58 In March 2019 Defra published an estimate for the C&I waste arisings for England in 2017[17]. The C&I waste arisings estimate for England in 2017 was 37.9 million tonnes. Again, applying the proportion of local units, as above, to the latest Defra estimate would to equate to a C&I waste arising for Herefordshire of 170,000 tonnes, which is close to the mid-point of the Herefordshire-specific analysis for 2018.

4.2.59 In the March 2019 publication Defra states '*2017 figures are not completely directly comparable with earlier years. Caution should generally be exercised in interpreting apparent year-on-year changes in the C&I data, owing to inherent uncertainties in the underlying data and methodology*'.

4.2.60 Therefore, given the uncertainty over the national C&I waste estimates and the lack of granularity at a region or county level, the estimates resulting from the Herefordshire-specific analysis provide a range of tonnages to forecast future C&I waste arisings.

4.2.61 It should also be noted that, historically, waste generation has been linked to economic growth; however, the latest Defra estimates suggest that the correlation between economic growth and waste growth in the C&I sector may no longer exist. Until there is a better understanding of the revised Defra methodology (December 2016) it would be prudent to base future estimates on the assumption that the link between economic growth and waste growth remains, as this would provide a 'worst case' assessment.

4.3 Construction, Demolition and Excavation Waste (CD&E waste)

Introduction

4.3.1 The construction and demolition sector produces the largest amount of waste in the UK. However, the data on CD&E waste is limited and historically estimates of arisings have been based on industry surveys. In addition, there has been limited new research on CD&E waste arisings since 2010 and information published over the last few years has only been at the national level (UK or England). Furthermore, significant quantities of CD&E waste are not managed at permitted waste facilities which mean the data in the WDI only provides a limited picture of CD&E waste arisings and management.

[16] Defra, UK Statistics on Waste, 9th October 2018
[17] Defra, UK Statistics on Waste, 7th March 2019

CD&E waste arisings in Herefordshire

4.3.2 The last national study to break down CD&E waste estimates to the region and sub-regional level was the CLG Report, Survey of Arisings and Use of Alternatives to Primary Aggregates in England, 2005 Construction, Demolition and Excavation Waste (February 2007).

4.3.3 The report provided an estimate of the CD&E waste arisings in Herefordshire and Worcestershire for 2005, which is summarised in Table 4.8. Unfortunately, the estimates were not disaggregated to the Herefordshire level.

Table 4.8 CD&E waste arisings, Herefordshire and Worcestershire, 2005

row	Description	Tonnes
1	Estimated production of recycled graded aggregate	404,814
2	Estimated production of recycled ungraded aggregate	374,770
3	Estimated production of recycled soil (excluding topsoil)	69,349
4	Estimated tonnage of unprocessed CDEW entering licensed landfill for engineering, capping, disposal	335,602
5	Estimated weight of waste materials (mainly excavation waste) used on registered exempt sites	155,157
6	**Total**	**1339,692**
Source: Survey of Arisings and Use of Alternatives to Primary Aggregates in England, 2005 Construction, Demolition and Excavation Waste, CLG (February 2007).		

4.3.4 A report prepared for the West Midlands Regional Assembly, West Midlands Waste Facilities Phase 2: Future Capacity Requirements[18] in 2004, did provide an estimate for C&D wastes in Herefordshire of 351,000 tonnes per annum of the period up to 2007. The estimate was based on the relative levels of housing development in the West Midlands region.

4.3.5 A further report for the West Midlands Regional Assembly, A Study into Future Landfill Capacity in the West Midlands[19], provided estimates for the cumulative construction and demolition waste arisings for the period 2002/03 to 2025/26. The cumulative estimates for Herefordshire ranged from 6,250,585 tonnes to 7,423,664 tonnes for the period, which is equivalent to an average annual tonnage of between 260,000 and 310,000 tonnes.

National CD&E waste arisings estimates

4.3.6 To provide some context to the uncertainty over C&E waste arisings, estimates at the national level set out below are the estimates published by Defra between 2015 and 2019.

Defra, Digest of Waste and Resources Statistics, January 2015 and March 2016

4.3.7 The March 2016 Digest of Waste and Resources Statistics (at Figure 2.1 of that Digest) provides an estimate of all waste arisings in the UK between 2004 and 2012, with CD&E waste estimated to be in the region of 100 million tonnes in 2012. The data behind that Figure are summarised in Table 4.9.

[18] West Midlands Waste Facilities Phase 2: Future Capacity Requirements. Report for West Midlands Regional Assembly, Shropshire County Council (2004)

[19] A Study into Future Landfill Capacity in the West Midlands Report for West Midlands Regional Assembly, Scott Wilson (May 2007)

Table 4.9 CD&E waste arisings, Digest of Waste and Resources Statistics, March 2016

Year	Waste Arisings (million tonnes)
2004	99.2
2006	109.5
2008	101.0
2010	102.2
2012	100.2

4.3.8 This data, different from later data estimates set out below, *includes* excavation waste and dredging spoils. Another point to note is that whilst the 2010 and 2012 figures are produced on a consistent basis; the older figures are less well documented so there is uncertainty over the consistency with the 2010 and 2012 estimates.

4.3.9 The March 2016 Digest continues the headline tonnage data presented in the January 2015 Digest; however, this earlier source also includes an estimated waste generation per capita, of 1,573kg per capita in 2012, based on the UK CD&E estimate of 100.2 million tonnes.

4.3.10 However, in mid-December Defra published an updated UK Statistics on Waste Notice (Table 4.11), which again revised the methodology used to estimate CD&E waste arisings, which resulted in new estimates for CD&E waste arisings in the UK.

Defra, UK Statistics on Waste Notice, August 2016 and December 2016

4.3.11 In August 2016, Defra published a Statistics on Waste Notice to summarise waste estimates for the UK calculated for European reporting purposes; this data is reproduced in Table 4.10. It provides data on non-hazardous construction and demolition waste for both the UK and England for 2010 to 2012. These figures *exclude* excavation waste and dredging spoils, so are a subset of the data reported in the Digest of Waste and Resources Statistics.

4.3.12 In addition, the August 2016 Statistics on Waste Notice states '*Accurately quantifying C&D waste is challenging and whilst the absolute tonnage figures are subject to a relatively high level of uncertainty, there is not a significant impact on the final recovery rate*.'

Table 4.10 Non-hazardous Construction and Demolition Waste, UK and England, 2010 to 2012, Statistics on Waste Notice, August 2016

Year	UK			England		
	Generation (000 tonnes)	Recovery (000 tonnes)	Recovery rate (%)	Generation (000 tonnes)	Recovery (000 tonnes)	Recovery rate (%)
2010	45,419	39,129	86.2%	39,832	35,480	89.1%
2011	47,067	40,622	86.3%	41,152	36,754	89.3%
2012	44,786	38,759	86.5%	38,938	34,714	89.2%
Source: UK Statistics on Waste Notice, August 2016, Figures exclude excavation waste						

4.3.13 In December 2016, a revised Statistics on Waste Notice was published, presenting a revised set of estimates for 2010 to 2012, along with estimates for 2013 and 2014 calculated using a revised methodology. These data are reproduced in Table 4.11.

4.3.14 The revised estimates show an estimated increase in non-hazardous construction and demolition wastes (again, excluding excavation waste and dredging spoils):

- 2010: +4.1 million tonnes;
- 2011: +2.9 million tonnes;
- 2012: +6.4 million tonnes.

Table 4.11 Non-hazardous Construction and Demolition Waste, UK and England, 2010 to 2014, Statistics on Waste Notice, December 2016

Year	UK			England		
	Generation (000 tonnes)	Recovery (000 tonnes)	Recovery rate (%)	Generation (000 tonnes)	Recovery (000 tonnes)	Recovery rate (%)
2010	49,499	43,378	87.6%	43,912	39,729	90.5%
2011	49,995	43,803	87.6%	44,080	39,934	90.6%
2012	51,178	45,322	88.6%	45,331	41,278	91.1%
2013	51,930	46,622	89.8%	46,267	42,140	91.1%
2014	54,960	49,436	89.9%	49,109	44,887	91.4%
Source: UK Statistics on Waste Notice, December 2016, Figures exclude excavation waste						

Defra, Digest of Waste and Resource Statistics – 2017 and 2018 Editions, March 2017/May2018

4.3.15 Defra did release Digests of Waste and Resource Statistics in 2017 and 2018, but these did not contain information relevant to estimating CD&E waste arisings in Herefordshire.

Defra, UK Statistics on Waste Notice, March 2019

4.3.16 In March 2019 Defra published revised CD&E waste estimates from 2010 to 2016[20]; these data are reproduced in Table 4.12.

Table 4.12 Non-hazardous Construction and Demolition Waste, UK and England, 2010 to 2016, UK Statistics on Waste Notice, March 2019

Year	UK			England		
	Generation (million tonnes)	Recovery (million tonnes)	Recovery rate (%)	Generation (million tonnes)	Recovery (million tonnes)	Recovery rate (%)
2010	59.2	53.1	89.7%	53.6	49.4	92.2%
2011	60.2	55.0	91.4%	54.9	50.8	92.5%
2012	55.8	50.8	91.1%	50.5	46.4	92.0%
2013	57.1	52.0	91.2%	51.7	47.6	92.0%
2014	61.5	56.3	91.5%	55.9	51.7	92.4%
2015	63.8	58.1	91.1%	57.7	53.3	92.3%
2016	66.2	60.2	91.0%	59.6	55.0	92.1%
Source: Defra UK Statistics on Waste Notice, March 2019, Figures exclude excavation waste and hazardous C&D waste estimates.						

4.3.17 In the statistics notice Defra highlights that *'Revisions made to all figures, in line with updates made to underlying Mineral Products Association data. This has increased absolute tonnages for both generation and recovery by 10-20% each year in comparison to previously published figures, but had little impact on the recovery rate, which has remained around 90% throughout the timeseries'*.

Summary of Defra CD&E waste estimates

4.3.18 Table 4.13 presents the collation of the Defra CD&E waste estimates for England and UK between 2010 and 2016 using both the data in the March 2019 UK Statistics on Waste Notice and the accompanying statistical data set[21], which covers the waste generation and management figures for the whole of the UK compiled for EU reporting purposes. The table also provides an estimation of waste generation per capita for each element: non-hazardous C&D waste; hazardous C&D waste; and excavation waste and dredging spoils.

4.3.19 The data indicates that CD&E waste generation is increasing and that the total tonnage estimates are greatly influenced by the levels of excavation waste and dredging spoils.

4.3.20 The waste per capita estimates have increased from those used in the WNA 2017 due to the increased arising estimates published by Defra in March 2019:

- England CD&E waste per capita estimate for 2014 has increased from 1,980kg/capita to 2,151kg/capita (+171kg/capita); and
- UK CD&E waste per capita estimate for 2014 has increased from 1,864kg/capita to 2,017kg/capita (+153kg/capita).

[20] Defra, UK Statistics on Waste, 7th March 2019

[21] https://www.gov.uk/government/statistical-data-sets/env23-uk-waste-data-and-management#history [27.11.2019@14:55]

Table 4.13 Summary of Defra CD&E waste data, England and UK, 2010 to 2016

	England	2010	2011	2012	2013	2014	2015	2016
1	Non-hazardous C&D generation ('000 tonnes)	53,600	54,900	50,500	51,700	55,900	57,700	59,600
2	Hazardous C&D generation ('000 tonnes)	566		744		620		684
3	Excavation waste/dredging spoils ('000 tonnes)	47,436		48,856		60,297		60,014
4	**Total CD&E waste generation ('000 tonnes)**	**101,602**		**100,100**		**116,817**		**120,298**
5	Population ('000)[a]	52,642,500	53,107,200	53,493,700	53,865,800	54,316,600	54,786,300	55,268,100
6	Non-hazardous C&D kg per capita	1,018	1,034	944	960	1,029	1,062	1,078
7	Hazardous C&D kg per capita	11		14		11		12
8	Excavation waste/dredging spoils kg per capita	901		913		1,110		1,086
9	**Total CD&E waste kg per capita**	**1,930**		**1,871**		**2,151**		**2,177**
	UK	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
10	Non-hazardous C&D generation ('000 tonnes)	59,200	60,200	55,800	57,100	61,500	63,800	66,200
11	Hazardous C&D generation ('000 tonnes)	688		924		743		801
12	Excavation waste/dredging spoils ('000 tonnes)	59,022		57,397		68,041		69,196
13	**Total CD&E waste generation ('000 tonnes)**	**118,911**		**114,121**		**130,284**		**136,196**
14	Population ('000)[b]	62,759,500	63,285,100	63,705,000	64,105,700	64,596,800	65,110,000	65,648,100
15	Non-hazardous C&D kg per capita	943	951	876	891	952	988	1,008
16	Hazardous C&D kg per capita	11		15		11		12
17	Excavation waste/dredging spoils kg per capita	940		901		1,053		1,054
18	**Total CD&E waste kg per capita**	**1,895**		**1,791**		**2,017**		**2,075**

[a] ONS England population mid-year estimate, accessed 22nd October 2019
https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/timeseries/enpop/pop

[b] ONS United Kingdom population mid-year estimate, accessed 22nd October 2019
https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/timeseries/ukpop/pop

CD&E waste arisings estimates for Herefordshire

4.3.21 The published data highlights the limited information on which to base CD&E waste arisings estimates and whilst the historical data for Herefordshire provides an indication of the levels of CD&E waste, it does not reflect the impacts of the recession or changes in CD&E waste management practices.

4.3.22 The 2019 Defra estimates are the first national estimates for CD&E wastes that have been published since the WNA 2017 and consequently the analysis of arisings has been updated to reflect the revised estimates and the new national estimates for 2016.

4.3.23 Herefordshire's population in 2016 was 189,500[22] which would give an estimated CD&E waste arising of:

- 412,000 tonnes (rounded) in 2016, based on the England CD&E waste per capita estimates of 2,177kg/capita; or
- 393,000 tonnes (rounded) in 2016, based on the UK CD&E waste per capita estimates of 2,075kg /capita.

4.3.24 Table 4.14 provides a breakdown of these estimates by the headline CD&E waste streams.

Table 4.14 CD&E waste generation estimates, Herefordshire, 2016 (rounded to nearest 1,000 tonnes)

	CD&E waste stream	England kg/capita	Estimate arisings (tonnes)	UK kg/capita	Estimate arisings (tonnes)
1	Non-hazardous C&D	1,078	204,000	1,008	191,000
2	Hazardous C&D	12	2,000	12	2,000
3	Excavation waste/dredging spoils	1,086	206,000	1,054	200,000
4	Total	2,177	412,000	2,075	393,000
Based on a population of 189,500 in 2016 for Herefordshire.					

4.3.25 Whilst Table 4.14 relies upon national averages, the estimates can be related back to Herefordshire by using population data. The estimates could still overestimate the CD&E waste generated in Herefordshire in 2016, which may be below the national average particularly in relation to the excavation waste and dredging spoils.

4.3.26 The WNA 2017 estimated Herefordshire's CD&E arising to be in a range of 357,000 to 379,000 tonnes for 2016, depending on whether the England or UK estimates of kg/capita are used. This compares to a range of 393,000 to 412,000 tonnes for 2016 based on the revised Defra estimates. This equates to a 9% to 10% increase in the previous estimate which is consistent with the change in the Defra estimates.

[22] https://understanding.herefordshire.gov.uk/population/ Spreadsheet '2018-mid-year-population-estimates-for-herefordshire' [23.10.2019@16:15]

4.4 Agricultural Waste

Published agricultural waste data

4.4.1 There is limited published data on agricultural waste, with this assessment relying upon Defra estimates of agricultural waste generated for reporting under the EC Waste Framework Directive and EC Waste Statistics Regulations.

4.4.2 Table 4.15 shows the Defra estimates of the waste produced by the agriculture, forestry and fishing sector for 2010, 2012 and 2014. However, there is no breakdown by the three sectors or below the England level. In addition, these estimates relate to non-natural agricultural waste. There are no published estimates of naturally occurring agricultural waste, which is managed on farms.

Table 4.15 Estimates of waste produced by the agriculture, forestry and fishing sector, England, 2010, 2012 and 2014

	EWC-STAT description	Tonnes		
		2010	2012	2014
1	Used oils	21,571	22,067	20,591
2	Chemical wastes	103,009	95,281	105,708
3	Health care & biological wastes	1,021	1,015	1,025
4	Metallic wastes, mixed	954	4,254	4,449
5	Paper & cardboard wastes	5,843	5,678	5,629
6	Rubber wastes	21,798	10,696	11,316
7	Plastic wastes	82,291	82,293	82,268
8	Discarded equipment	9	9	10
9	Discarded vehicles	31,071	38,798	26,742
10	Batteries & accumulators' wastes	3,110	3,176	3,363
11	Animal & mixed food waste	14,348	14,169	14,109
12	Household & similar wastes	478	777	777
13	Mixed & undifferentiated materials	2,986	8,947	11,711
14	Other mineral wastes		21,293	19,919
15	Mineral waste from waste treatment & stabilised waste	20,919		
16	Total waste generation	309,409	308,454	307,617

Source: Defra, UK Statistics on Waste, December 2016
https://www.gov.uk/government/statistical-data-sets/env23-uk-waste-data-and-management

4.4.3 In the Defra UK Statistics on Waste Notice March 2019 and the accompanying statistical data set[23], the data on the waste produced by the agriculture, forestry and fishing sector was updated, to include estimates for 2016. In addition, the 2016 Notice did not include data for discarded vehicles, with the tonnages for discarded vehicles excluded from the figures for 2010, 2012 and 2014. Consequently, revised total generation figures for those years were

[23] https://www.gov.uk/government/statistical-data-sets/env23-uk-waste-data-and-management#history [27.11.2019@15:12]

provided, that simply excluded the discarded vehicles tonnages for those years. For completeness the revised datasets are presented in Table 4.16.

Table 4.16 Estimates of waste produced by the agriculture, forestry and fishing sector, England, 2010, 2012, 2014 and 2016

	EWC-STAT description	Tonnes			
		2010	2012	2014	2016
1	Used oils	21,571	22,067	20,591	20,514
2	Chemical wastes	103,009	95,281	105,708	109,003
3	Health care & biological wastes	1,021	1,015	1,025	1,005
4	Metallic wastes, mixed	954	4,254	4,449	4,578
5	Paper & cardboard wastes	5,843	5,678	5,629	5,638
6	Rubber wastes	21,798	10,696	11,316	11,738
7	Plastic wastes	82,291	82,293	82,268	82,266
8	Discarded equipment	9	9	10	<1
9	Batteries & accumulators' wastes	3,110	3,176	3,363	3,488
10	Animal & mixed food waste	14,348	14,169	14,109	13,122
11	Household & similar wastes	478	777	777	779
12	Mixed & undifferentiated materials	2,986	8,947	11,711	12,063
13	Other mineral wastes		21,293	19,919	19,872
14	Mineral waste from waste treatment & stabilised waste	20,919			0
15	Total waste generation	278,337	269,656	280,874	284,067

Source: Defra UK Statistics on Waste Notice, March 2019, https://www.gov.uk/government/statistical-data-sets/env23-uk-waste-data-and-management

4.4.4 Defra also publishes information on the number of commercial agricultural holdings and the area farmed by county/unitary authority, which can be used as a means of proportioning the estimated arisings to an administrative level. This is presented in Table 4.17.

Table 4.17 Commercial agricultural holdings and the area farmed, Herefordshire and England, 2010, 2013 and 2016

	2010			2013			2016		
	England	H'shire	%	England	H'shire	%	England	H'shire	%
Number of holdings	105,449	2,649	2.51%	102,836	2,664	2.59%	106,853	2,812	2.63%
Farmed area (hectares)	8,887,289	172,246	1.94%	9,086,480	182,470	2.01%	9,120,623	176,862	1.94%

Source: Defra, Structure of the agricultural industry in England and the UK at June Spreadsheet 'structure_june_eng_county_01oct19' accessed 23rd October 2019 https://www.gov.uk/government/statistical-data-sets/structure-of-the-agricultural-industry-in-england-and-the-uk-at-june

4.4.5 If it is assumed that the amount of waste generated is proportional to the number of commercial agricultural holdings or area farmed, it would mean that between 2% and 2.6% of the non-natural agricultural waste would be produced in Herefordshire. For 2016, this equates to 5,700 to 7,400 tonnes of non-natural agricultural waste, which compares to 6,000 to 8,000 tonnes of non-natural agricultural waste estimated in the WNA 2017.

4.4.6 Waste coded under LoW sub-chapter 02 01 'Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing' which is handled at permitted facilities can be extracted from the WDI. The data were extracted by LoW 6-digit waste code (i.e. the classification codes for individual wastes) and by receiving site. The extracts from the WDI for the quantities of waste coded under LoW sub-chapter 02 01 received at sites in England with the origin identified as Herefordshire are summarised in Table 4.18.

Table 4.18 Waste coded under LoW sub-chapter 02 01 received at permitted facilities in England with Herefordshire origin, 2013 to 2018

LoW code	Description	Tonnes					
		2013	2014	2015	2016	2017	2018
02 01 01	Sludges from washing and cleaning	147	2,719	1,360	597	455	739
02 01 02	Animal-tissue waste	-	-	0.8	-		2
02 01 03	Plant-tissue waste	-	840	21,262	20,423	31,039	19,606
02 01 04	Waste plastics (except packaging)	-	-	2.6	2	1	0
02 01 06	Animal faeces, urine and manure (including spoiled straw), effluent, collected separately and treated off-site	63	16,150	31,746	31,118	38,605	39,090
02 01 07	Wastes from forestry	-	-	0.1	-		
02 01 08*	Agrochemical waste containing hazardous substances	0.02	11	3	0.1	0.04	0.1
02 01 09	Agrochemical waste other than those mentioned in 02 01 08		136				
02 01 10	Waste metal	15	266	701	531	578	814
02 01 99	Wastes not otherwise specified		33	68	147	118	247
Total		**224**	**20,156**	**55,144**	**52,818**	**70,795**	**60,498**
For hazardous wastes the six-digit codes in the LoW have an asterisk (*) next to them.							

4.4.7 The data show that there has been a significant increase in the waste received at permitted facilities, which will be as a result of the development of on-farm anaerobic digestion systems (section 3.1) being used to treat plant-tissue waste and animal faeces, urine and manure.

4.4.8 Historically these wastes would have been managed by methods such as spreading on land and would not have been captured in waste management data. Table 4.18 does not reflect the total quantity of natural agricultural waste generated in Herefordshire, only that which enters a permitted facility.

4.4.9 In addition, wastes such as packaging, discarded vehicles and oils etc. would be captured under LoW Chapters 13, 15 and 16 and included in the C&I wastes estimates; it is not possible to identify the generating sector.

4.4.10 In 2015, of the waste coded under LoW sub-chapter 02 01 received at permitted facilities in Herefordshire, 65% had origins identified as Herefordshire and 34% had origins identified as the West Midlands but not codeable to the WPA level.

4.4.11 In 2016, 88% had origins identified as Herefordshire, with all but 250 tonnes having origins identified as Staffordshire or the West Midlands, but not codeable to the WPA level.

4.4.12 By 2017 and 2018, over 95% had origins identified as Herefordshire, with the remainder predominantly from the West Midlands.

4.5 Hazardous Waste

4.5.1 The HWI for 2011 to 2018 were used to identify the hazardous waste that arose in Herefordshire. Table 4.19 summarises the hazardous waste arisings by LoW Chapter heading.

Table 4.19 Hazardous waste arising, Herefordshire, 2011 to 2018 (including transfer stations)

LoW Chapter	Tonnes							
	2011	2012	2013	2014	2015	2016	2017	2018
01: Mining and Minerals	-	-	-	-	0.2	-	-	-
02: Agricultural and Food Production	1	1	0.04	0.8	2.7	0.4	4	2
03: Wood and Paper Production	-	27	-	22	27	9	1	19
05: Petroleum, Gas and Coal Processing Wastes	-	-	-	-	-	0.4	1	1
06: Inorganic Chemical Processes	303	71	149	124	87	95	6	6
07: Organic Chemical Processes	1	-	0.2	1.6	1.2	1	-	0.2
08: MFSU Paints, Varnish, Adhesive and Inks	867	831	759	729	665	589	655	783
09: Photographic Industry	11	10	11	8.6	8.0	5	3	3
10: Thermal Process Waste (inorganic)	5	6	4.6	0.7	0.9	5	3	3
11: Metal Treatment and Coating Processes	1,782	2,122	1,772	1,238	1,321	1,384	1,419	1,578
12: Shaping/Treatment of Metals and Plastics	138	131	248	116	77	158	95	82
13: Oil and Oil/Water Mixtures	2,096	2,281	1,891	2,273	1,718	1,927	1,790	2,040
14: Solvents	94	60	78	62	59	59	114	111
15: Packaging, Cloths, Filter Materials	285	220	280	332	326	217	263	242
16: Not Otherwise Specified	3,828	3,550	3,567	1,209	1,238	1,672	4,364	5,082
17: CD&E waste and Asbestos	1,432	1,132	1,137	2,547	4,765	1,160	800	2,040
18: Healthcare	743	649	464	469	432	424	406	343
19: Waste/Water Treatment Industry	8	7	5.9	9.1	10	73	11	7
20: Municipal Wastes	1,012	1,028	642	361	328	352	288	307
Total	**12,607**	**12,125**	**11,009**	**9,500**	**11,066**	**8,130**	**10,224**	**12,648**

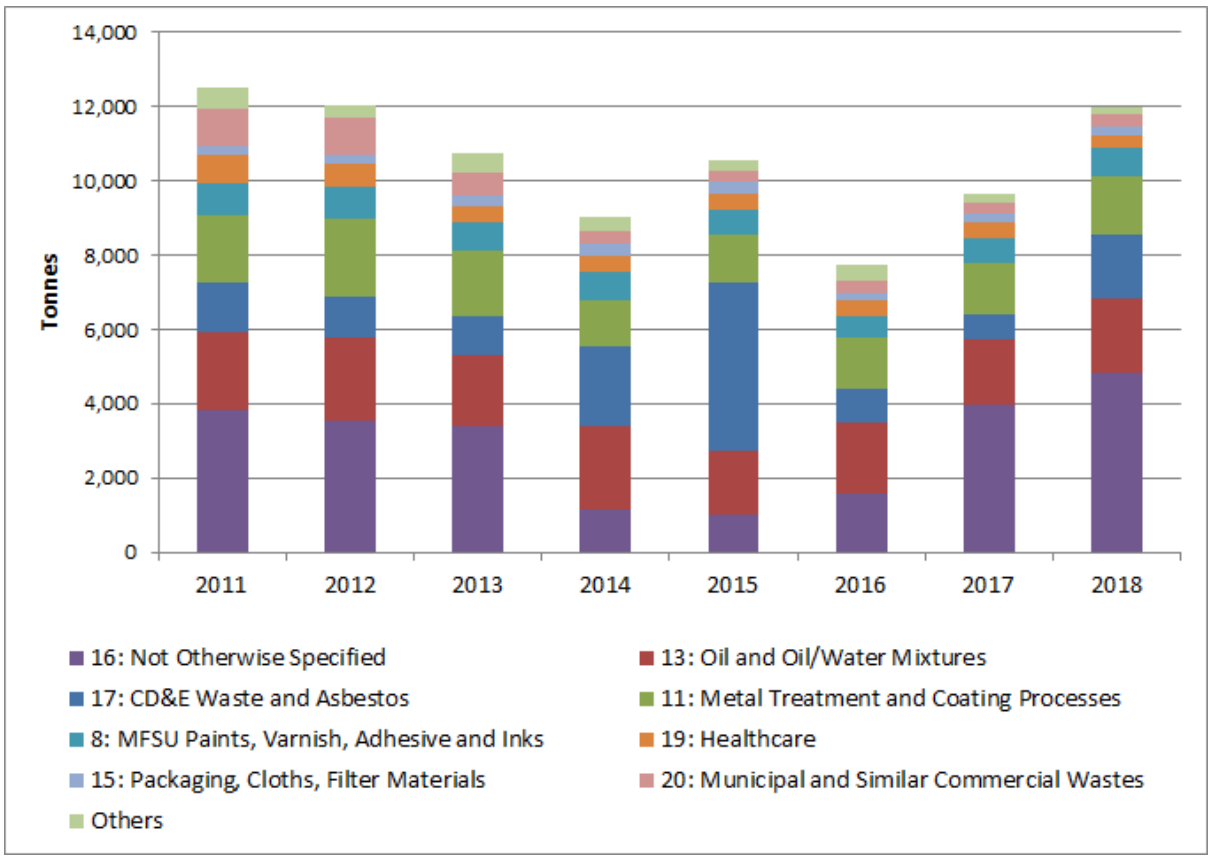
4.5.2 However, the figures need to be adjusted to take account of waste handled through transfer stations in Herefordshire, which is the principal type of hazardous waste facility in the county with the exception of metal recycling/vehicle de-polluting sites. Table 4.20 presents the hazardous waste arisings for Herefordshire from 2011 to 2018, excluding waste arising and deposited at transfer stations in Herefordshire.

Table 4.20 Hazardous waste arising, Herefordshire, 2011 to 2018 (excluding waste arising and deposited at transfer stations in Herefordshire)

LoW Chapter	Tonnes							
	2011	2012	2013	2014	2015	2016	2017	2018
01: Mining and Minerals	-	-	-	-	0.2	-	-	-
02: Agricultural and Food Production	1.0	0.7	0.0	0.2	2.7	0.4	4.2	2.1
03: Wood and Paper Production	-	27	-	22	27	8.7	0.8	19
05: Petroleum, Gas and Coal Processing Wastes	-	-	-	-	-	0.4	0.6	1.5
06: Inorganic Chemical Processes	303	71	149	124	87	95	5.5	5.9
07: Organic Chemical Processes	1.4	-	0.2	1.6	1.2	1.0	-	0.2
08: MFSU Paints, Varnish, Adhesive and Inks	867	831	756	728	665	587	655	782
09: Photographic Industry	11	10	11	8.6	8.0	5.1	2.7	2.6
10: Thermal Process Waste (inorganic)	4.6	5.7	4.6	0.7	0.9	5.3	2.8	2.9
11: Metal Treatment and Coating Processes	1,782	2,122	1,772	1,238	1,321	1,384	1,419	1,578
12: Shaping/Treatment of Metals and Plastics	138	131	248	116	77	158	95	82
13: Oil and Oil/Water Mixtures	2,093	2,280	1,880	2,251	1,709	1,921	1,759	2,010
14: Solvents	94	60	78	62	59	59	114	111
15: Packaging, Cloths, Filter Materials	282	218	279	331	324	216	263	241
16: Not Otherwise Specified	3,819	3,519	3,405	1,130	1,015	1,580	3,978	4,808
17: CD&E waste and Asbestos	1,370	1,077	1,048	2,177	4,512	876	647	1,711
18: Healthcare	743	649	464	468	429	414	406	343
19: Waste/Water Treatment Industry	8.4	7	5.9	9.1	10	73	11	6.8
20: Municipal Wastes	1,001	1,021	637	340	316	343	282	302
Total	**12,520**	**12,028**	**10,739**	**9,006**	**10,565**	**7,727**	**9,646**	**12,009**

4.5.3 Figure 4.6 presents the date from Table 4.20.

Figure 4.6 Hazardous waste arising, Herefordshire, 2011 to 2018



4.5.4 The data show that hazardous waste arisings decreased between 2011 and 2014, believed to be mainly due to the reduction in waste coded under LoW Chapter 16 'Not Otherwise Specified' (which includes end of life vehicles, WEEE, batteries etc.). There was a small increase between 2014 and 2015, followed by a further decrease in 2016. This was mainly driven by the increases/decreases in hazardous waste generated from construction and demolition activities. In 2017, the arisings increased again, with the increase driven by a notable increase in LoW Chapter 16 'Not Otherwise Specified', back to the levels seen in years 2011 to 2013. In 2018, there was a further increase driven by:

- a further increase in LoW Chapter 16 'Not Otherwise Specified' (namely end-of-life vehicles LoW code 16 01 04*); and
- what would appear to be a one-off large arising of 1,137 tonnes of a construction and demolition waste LoW code 17 03 01* bituminous mixtures containing coal tar.

4.5.5 A more detailed analysis of the specific wastes streams highlights that over the last 7 years the hazardous waste arisings have been dominated by 12 wastes types, which have made up between 70% to 80% of the hazardous waste generated in the county.

4.5.6 These waste streams are summarised in Table 4.21 and show that:

- Prior to 2014, there was processing of waste electrical and electronic equipment, which has now ceased, hence the reduction in LoW code 16 02 15* 'Hazardous components removed from discarded equipment (WEEE)'.

- There has been a change in the types of wastes generated from chemical surface treatment and coating of metals and other materials (LoW Chapter 11), which would suggest that some treatment processes have been added at the point of production to neutralise some of the acid wastes generated.
- During 2014 and 2015, there was an increase in the hazardous waste produced by the construction and demolition sector (LoW codes 17 05 03* and 17 06 05*). The generation of hazardous C&D waste is dependent on the nature of the developments being undertaken at any one time e.g. demolition of building containing asbestos or the removal of contaminated soils etc. Therefore, the quantities of hazardous C&D waste can fluctuate significantly year on year, as highlighted by the generation of LoW code 17 03 01* bituminous mixtures containing coal tar in 2018 (as mentioned in paragraph 4.4.4).
- Over the last four years, generation levels across 9 of the 12 waste streams are relatively constant. The exceptions are:
    - hazardous C&D waste (LoW codes 17 05 03* and 17 06 05*), discussed above; and
    - end-of-life vehicles (LoW code 16 01 04*) where there has been a significant increase in 2017 and 2018.

Table 4.21 Main hazardous waste types, Herefordshire, 2011 to 2018

LoW Code	Description	Tonnes							
		2011	2012	2013	2014	2015	2016	2017	2018
08 03 12*	Waste ink containing hazardous substances	678	609	626	602	492	425	400	526
11 01 05*	Pickling acids	1,211	1,738	1,550	728	613	852	871	815
11 01 11*	Aqueous rinsing liquids containing hazardous substances	128	24	48	473	444	486	411	388
13 02 05*	Mineral-based non-chlorinated engine, gear and lubricating oils	1,184	1,282	1,022	1,084	940	1,260	1,060	1,217
13 05 08*	Mixtures of wastes from grit chambers and oil/water separators	339	210	239	280	151	172	292	325
16 01 04*	End-of-life vehicles	85	186	1,038	511	532	1,042	3,508	4,309
16 02 15*	Hazardous components removed from discarded equipment (WEEE)	2,011	2,502	1,565	1	1	0.2	0.001	2
16 06 01*	Lead batteries	1,106	436	372	282	343	202	497	432
17 05 03*	Soil and stones containing hazardous substances	179	42	8	750	3,232	40	254	17
17 06 05*	Construction materials containing asbestos	1,151	869	929	1,309	1,296	870	368	720
18 01 03*	Healthcare wastes whose collection and disposal is subject to special requirements in order to prevent infection	723	628	451	449	412	410	387	318
20 01 35*	Discarded electrical and electronic equipment	708	625	436	309	279	327	211	19

Hazardous wastes management

4.5.7 Table 4.22 and Figure 4.7 provide the breakdown of the generic waste management methods used to manage the hazardous waste arisings in Herefordshire between 2015 and 2018, with the breakdown of generic waste management methods by LoW Chapter heading for 2015 to 2018 provided in Annex I, to show the comparison of management method and generic waste type.

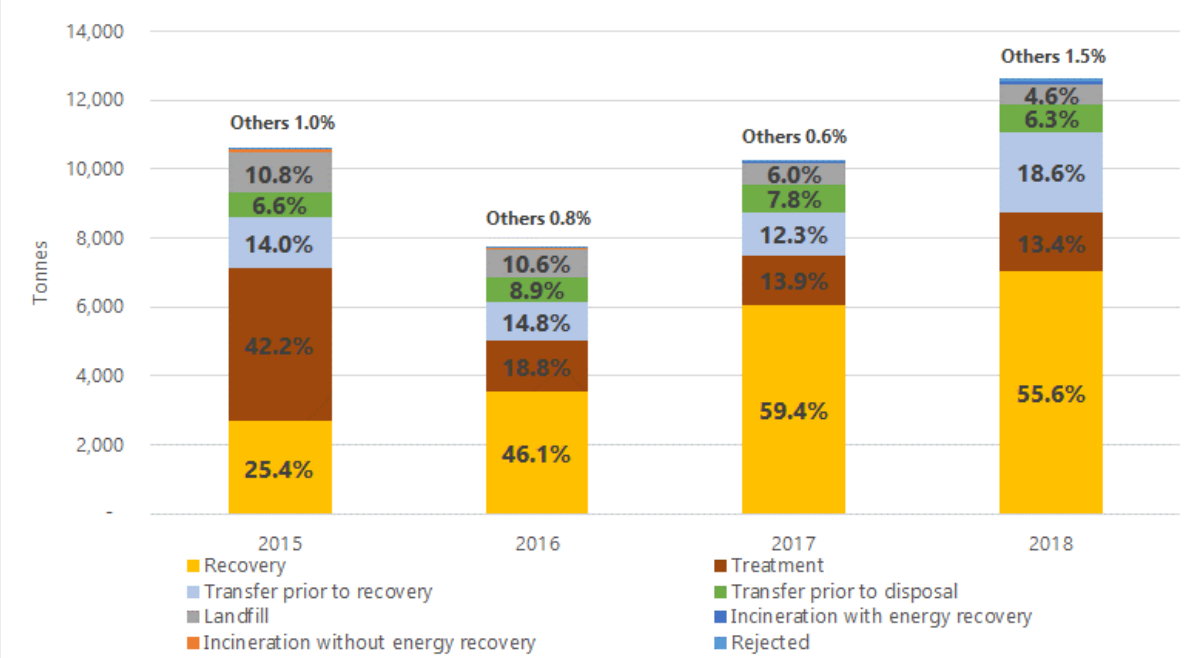
Table 4.22 Breakdown of generic hazardous waste management methods, 2015 to 2018

	Generic Waste Management Method	2015		2016		2017		2018	
		Tonnes	%	Tonnes	%	Tonnes	%	Tonnes	%
1	Incineration with energy recovery	17	0.2%	18	0.2%	36	0.3%	69	0.5%
2	Incineration without energy recovery	78	0.7%	38	0.5%	21	0.2%	8	0.1%
3	Landfill	1,145	10.8%	817	10.6%	614	6.0%	584	4.6%
4	Recovery	2,681	25.4%	3,564	46.1%	6,070	59.4%	7,036	55.6%
5	Rejected	7	0.1%	2	0.03%	2	0.02%	110	0.9%
6	Transfer prior to disposal	696	6.6%	691	8.9%	797	7.8%	801	6.3%
7	Transfer prior to recovery	1,484	14.0%	1,145	14.8%	1,259	12.3%	2,351	18.6%
8	Treatment	4,458	42.2%	1,451	18.8%	1,425	13.9%	1,690	13.4%

4.5.8 The data shows that the management method is driven by the proportion of different waste types generated each year. For example, in 2015 the proportion of 'treatment' was highest due the quantity of hazardous C&D waste sent for treatment, where in 2017 and 2018 the proportion of 'recovery' was highest due the quantity of end-of-life vehicles.

4.5.9 The variations generally relate to the levels of recovery and treatment with the other management methods remaining broadly consistent from one year to the next.

Figure 4.7 Breakdown of generic hazardous waste management methods, 2015 to 2018



4.5.10 Table 4.23 and Figure 4.8 provide the breakdown of the regions of deposit for hazardous waste arisings in Herefordshire between 2015 and 2018.

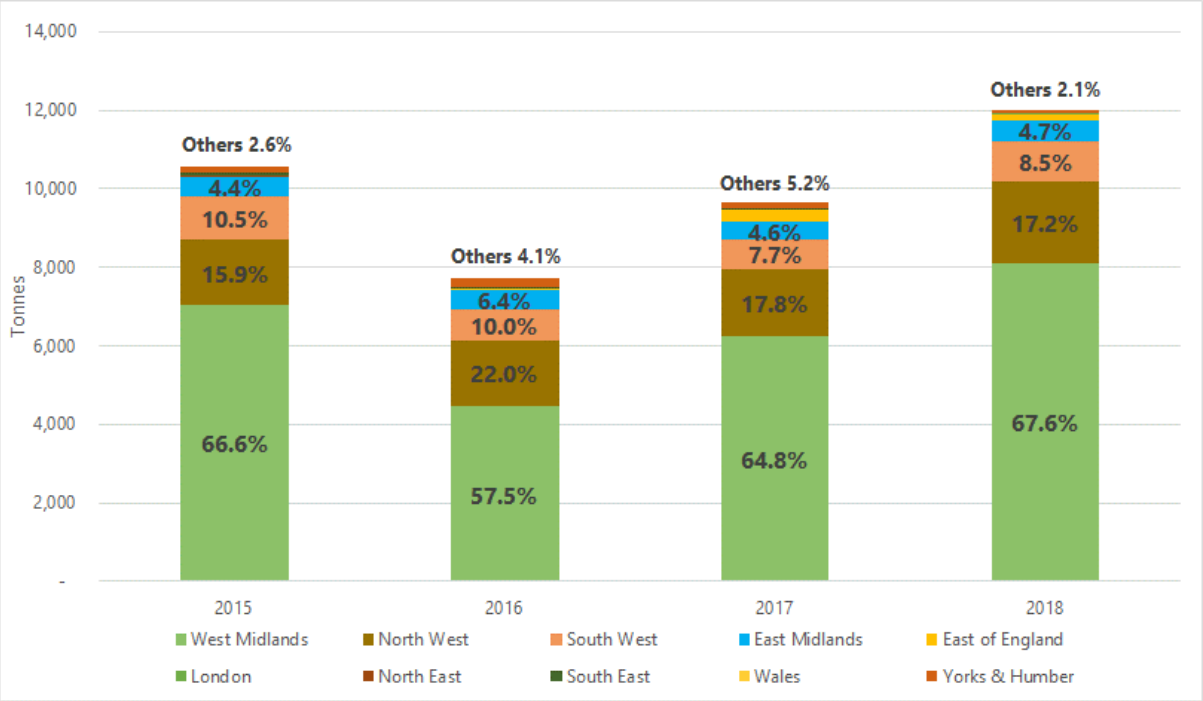
Table 4.23 Hazardous waste by deposit region, 2015 to 2018

	Deposit Region	2015		2016		2017		2018	
		Tonnes	%	Tonnes	%	Tonnes	%	Tonnes	%
1	East Midlands	467	4.4%	496	6.4%	447	4.6%	563	4.7%
2	East of England	19	0.2%	53	0.7%	324	3.4%	152	1.3%
3	London	4	0.0%	5	0.1%	3	0.0%	7	0.1%
4	North East	13	0.1%	4	0.1%	5	0.0%	3	0.0%
5	North West	1,678	15.9%	1,697	22.0%	1,713	17.8%	2,064	17.2%
6	South East	82	0.8%	20	0.3%	11	0.1%	20	0.2%
7	South West	1,113	10.5%	769	10.0%	741	7.7%	1,017	8.5%
8	Wales	n/r	-	n/r	-	3	0.0%	n/r	-
9	West Midlands	7,032	66.6%	4,447	57.5%	6,246	64.8%	8,113	67.6%
10	Yorks & Humber	157	1.5%	235	3.0%	154	1.6%	70	0.6%

4.5.11 The data highlight that approximately 60% to 70% of hazardous waste was deposited in the West Midlands.

4.5.12 The quantities sent to each region, other than the West Midlands, remain broadly consistent from one year to the next, with the West Midlands accommodating the variations in the tonnages generated in Herefordshire.

Figure 4.8 Hazardous waste by deposit region, 2015 to 2018



4.6 Radioactive waste

4.6.1 Radioactive waste is not 'controlled waste' under UK legislation; however, WPA should plan for the sustainable management of low level radioactive waste.

4.6.2 The Environment Agency regulates the disposal of radioactive waste. In 2016, two organisations within Herefordshire held permits (known as authorisations) that allow the accumulation and disposal of radioactive waste. However, by 2018 there was only one active authorisation.

4.6.3 For completeness, details of the organisations holding authorisations in 2016, 2018 and 2019 are included in Table 4.24. However, the need for future treatment/disposal capacity for radioactive waste is not considered in this assessment as materials are normally, and most appropriately, managed at the national level.

Table 4.24 Authorisations in Herefordshire for the keeping and use of radioactive material and/or disposal of radioactive waste

Organisation	Location	Permission No.	Approved	Active in 2016	Active in 2018	Active in 2019
Wye Valley NHS Trust	Hereford County Hospital, Stonebow Road, Hereford, HR1 2ER	BF6973	06/05/1999	Yes	Yes	Yes
		BW8623	01/01/2004	Yes	Yes	Yes
Sequani Ltd	Bromyard Road Industrial Estate, Ledbury, HR8 1LH	CE5429	10/11/2010	Yes	No	No
		CE5437	10/11/2010	Yes	No	No

Source: Environment Agency Public Registers, accessed 21st November 2016, 31st October 2018 and 8th October 2019 https://environment.data.gov.uk/public-register/view/search-radioactive-substances-permits

4.7 Summary of estimates for waste generated in Herefordshire

4.7.1 Table 4.25 provides a summary of the estimated waste arisings in Herefordshire between 2015 and 2018.

Table 4.25 Estimated waste generation in Herefordshire, 2015 to 2018

row	Waste Stream	2015 (tonnes)	2016 (tonnes)	2017 (tonnes)	2018 (tonnes)
1	LACW	86,600	89,650	88,870	87,050
2	C&I waste	116,000 to 146,000[a]	132,000 to 168,000	133,000 to 170,000	157,000 to 201,000
3	CD&E waste[b]	357,000 to 379,000[c]	393,000 to 412,000[d]	393,000 to 412,000	393,000 to 412,000
4	Agricultural waste (non-natural)[e]	6,000 to 8,000	5,700 to 7,400	6,000 to 8,000	6,000 to 8,000
5	**Total (rounded to nearest 100 tonnes)[f,g]**	**565,000 to 619,600**	**620,400 to 677,100**	**620,900 to 678,900**	**643,100 to 708,100**
6	Hazardous waste[h]	10,500	7,750	9,650	12,000

Notes:

[a] The reference to 115,000 to 145,000 tonnes in the WNA 2017 was erroneous, the correct tonnages are stated here. The total for 2015 is also corrected.

[b] In March 2019 Defra published revised estimates for CD&E wastes which increases national CD&E wastes estimates by between 10% and 20%.

[c] Estimate from WNA 2017.

[d] Estimate based on 2016 Defra estimates.

[e] In March 2019 Defra published 2016 data, which excluded discarded vehicles from the total generations figure for agricultural waste (non-natural). This change is reported for that year in this table, but otherwise the higher estimated arising is used.

[f] The total has been updated from the WNA 2017 and WNA Update 2018 to recognise that hazardous wastes are a subset of the other waste streams.

[g] For CD&E waste and Agricultural waste in 2017 and 2018, where the most recent estimates are based on 2016 data, the highest values from 2015 or 2016 have been used to estimate the total arisings for 2017 and 2018

[h] Hazardous wastes are reported for information only. Within the Assessment they are assumed as a subset of the other waste streams

4.7.2 This Waste Need Assessment indicates:

- an increase of 55,000 to 58,000 tonnes from 2015 to 2016, predominantly as a result of the revised estimate for C&I and CD&E wastes;
- followed by an increase of 500 to 1,900 tonnes from 2016 to 2017; and
- finally, an increase of 22,000 to 29,000 tonnes between 2017 and 2018, again predominantly as a result of the revised estimate for C&I and CD&E wastes.

4.7.3 With the exception of the increase in CD&E wastes, based on Defra's revised estimates, these are not significant increases and are reflective of the different tonnage that may be received into any one facility across different years. It is important to remember that the available data can only be used to give a broad understanding of wastes generated in Herefordshire; it is generally not possible to be certain or specific.

Difference between tonnage managed through permitted facilities and estimated arisings

4.7.4 Of greater interest to plan making is consideration of the difference in tonnage between the amount of waste that was managed through permitted facilities and the estimated arisings. Table 3.2, line 16) identifies that permitted facilities in Herefordshire accepted 416,097 tonnes of waste in 2016; most of which (86%) originated in Herefordshire. In 2017, the permitted facilities accepted 443,498 tonnes (Table 3.2, line 16) 88% of which originated in Herefordshire. In 2018, permitted facilities accepted 463,209 tonnes (Table 3.2, line 16) 90% of which originated in Herefordshire.

4.7.5 This indicates a difference of some 200,000 tonnes (across all three years) between the wastes managed within Herefordshire and the wastes estimated to have arisen.

4.7.6 This may be due to a number of reasons including: data imprecision; wastes going directly out of Herefordshire; double counting of wastes at waste transfer stations; and exclusion of the exempt activities.

5. Waste Forecasts

5.1 Local Authority Collected Wastes (LACW)

5.1.1 As previously identified, future waste arisings are primarily linked to two main factors:

- the state of the economy; and
- changes in household numbers.

5.1.2 In addition, there are several policy and regulatory initiatives designed to impact on future waste generation, including:

- producer responsibility initiatives for packaging, recently extended to other products, e.g. batteries, electrical goods and electronic equipment and vehicles;
- waste prevention initiatives (e.g. light-weighting of packaging within industry and commerce) and national and local campaigns to encourage the public to use food and resources more efficiently and to reduce the waste they generate;
- possible effects of end-markets for recycled materials; and
- increased collections and services for recycling and composting.

5.1.3 Therefore, when selecting long-term growth/reduction rates there is a need to consider:

- potential reduction in the rate of waste growth (or absolute reduction in waste arisings) as a result of the factors described above;
- factors that have, or will, distort trend analysis such as a change of collection systems, legislation (e.g. Landfill Tax) or seasonal factors (e.g. exceptionally dry years result in lower levels of garden waste); and
- the elements of the waste stream to be included or excluded in the trend analysis to ensure consistency (e.g. exclusion of commercial waste collected by the Council and fly-tipped waste).

5.1.4 To forecast waste from households up to 2041, the trends in the waste generated per household were used to produce a number of waste growth scenarios, which were then combined with household projections provided by the Department for Communities and Local Government (now named the MHCLG).

5.1.5 To forecast the remainder of LACW, future non-household waste generation needed to be factored into the estimates. The non-household waste stream predominantly comprised commercial waste and non-household CD&E waste collected at HWRC. Figures 4.4 and 4.5 show that whilst the HWRC non-household waste fraction has remained relatively constant over the past 12 months (it is still equivalent to the 2011 tonnage) the commercial waste fraction has steadily increased since 2011 up to the end of 2016, since when it has stayed relatively constant.

5.1.6 Table 5.1 presents the series of waste per household growth scenarios originally used in the WNA 2017, to provide an estimate of future waste from households, along with assumptions about the non-household waste fraction.

5.1.7 There are a number of factors, in addition to those presented above, which will affect the quantities of non-household waste collected by local authorities in the future. These include:

- number, type of businesses and productivity/levels of waste generated;
- level of commercial waste service a local authority wishes to deliver;
- number of small and medium enterprises (SME) in different local authorities;
- nature and drivers of business types e.g. what their business activities are and the type of waste they generate;
- policy drivers, such as packaging e.g. light-weighting of packaging; and
- private sector waste collection companies seeking to maintain market share of commercial waste collections.

5.1.8 Due to the number of variables in the above factors, it is difficult to forecast any significant increase or decrease in the quantity of non-household waste collected by local authorities. It has therefore been assumed that the tonnage of non-household waste will remain constant within a scenario.

Table 5.1 LACW growth scenarios

Scenario	Waste per household assumptions	Non-household assumptions
1	Static waste from households per household based on the average of annual arisings over the period 2013 to 2015 of 0.937 tonnes/household.	Waste not from households remains static at 2015 level of 10,875 tonnes per annum.
2	Static waste from households per household based on the 12 months ending August 2016 of 0.95 tonnes per household.	Waste not from households remains static at the 12 months ending August 2016 level of 11,775 tonnes per annum.
3	To reflect the growth over the 12 month period ending August 2016, waste from households per household increases by 1.9% per annum from the 12 months ending August 2016 figure of 0.95 tonnes per household up to 2020, then static.	Waste not from households remains static at the 12 months ending August 2016 level of 11,775 tonnes per annum.
3a	Same as Scenario 3, but with waste from households per household continuing to increase beyond 2020 but at half the rate of the period up to 2020, i.e. 0.95% per annum.	Waste not from households remains static at the 12 months ending August 2016 level of 11,775 tonnes per annum.
4	This scenario, uses the waste generated by households (i.e. include CD&E wastes) and applies a waste per household figure of 1.01 tonnes to the DCLG household projections, which is based on the average in annual arisings over the period 2013 to 2015.	Remaining non-household waste remains static at 4,650 tonnes per annum.
4a	Same as Scenario 4 but based on 12 months ending August 2016, using a figure of 1.03 tonnes per household.	Same as Scenario 4 but based on 12 months ending August 2016, with the remaining non-household waste static at 5,250 tonnes per annum.

5.1.9 The resulting LACW forecasts are presented in Table 5.2 and Figure 5.1, up to 2035. Figure 5.1 includes historic LACW arisings back to 2005/06[24], not least to highlight the impact of the recession on LACW and to show the predicted forecasts in context with previous years.

5.1.10 Paragraph 4.1.4 highlights that the 2016 LACW actual arisings are consistent with LACW growth scenarios 2 and 4a, with the figure sitting at the midpoint of the forecasts for 2016. However, the 2017 actual arisings data shows a small reduction in the overall arisings. Consequently, the forecast arisings sit between the LACW growth scenarios 2 and 4a, and scenarios 1 and 4.

5.1.11 In 2018, there was a further reduction in actual arisings of total LACW, being fractionally higher than the 2015 arisings but sitting just below the LACW growth scenarios 1 and 4 based on ONS household projections. Although there has been a reduction in LACW arisings in 2017 and 2018, it would be prudent to see if the arisings reduce further or stabilise before revising the forecasts used for waste planning purposes.

5.1.12 However, an additional growth scenario has been added in Table 5.3 and Figure 5.2 to show the impact of applying the average annual growth in LACW between 2013 and 2018 of 0.5% per annum (Scenario 5).

5.1.13 In addition, the waste forecasts for the ONS household projections has been extended to 2041. As the scenarios are mainly driven by housing growth, the forecasts based on the ONS household projections are lower than those based on the MHCLG household projections, by between 2,000 and 2,400 tonnes by 2035.

5.1.14 The forecasts based on the ONS household projections have been used as the ONS data is the most recent dataset. The figures show that if household waste generation rates do not increase from either the 2015 tonnages or mid-2016 estimates, LACW could increase to between 98,8500 to 101,700 tonnes per annum (Scenarios 1, 2 and 4) by 2041, driven only by the increasing number of households.

5.1.15 However, if the higher growth in waste experienced between August 2015 and August 2016 is factored into the forecasts, either as short term increases up to 2020 (Scenario 3) or prolonged growth up to 2041 (Scenario 3a), total LACW could increase to between 110,000 to 131,500 tonnes per annum by 2041.

5.1.16 When, the average growth between 2013 and 2018 is considered, (the new Scenario 5) the total LACW could increase to 98,500 tonnes by 2041, which is broadly consistent with Scenarios 1, 2 and 4. Hence, it is confirmed to be prudent to see if the arisings reduce further or stabilise before revising the forecasts used for waste planning purposes.

[24] Defra Local Authority Collected and Household Waste Statistics

Table 5.2 LACW forecast based on MHCLG household projections, Herefordshire, 2016 to 2035 (rounded to nearest 100 tonnes)

Scenario	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
1	86,600	87,700	88,300	89,000	89,700	90,400	91,000	91,600	92,300	92,900	93,500	94,100	94,700	95,200	95,800	96,300	96,800	97,300	97,800	98,200	98,600
2	86,600	89,600	90,300	91,000	91,700	92,400	93,000	93,600	94,300	94,900	95,500	96,100	96,700	97,300	97,900	98,400	98,900	99,400	99,900	100,300	100,700
3	86,600	91,100	93,300	95,600	97,900	100,300	101,000	101,700	102,400	103,100	103,800	104,500	105,100	105,800	106,400	106,900	107,500	108,000	108,500	109,000	109,500
3a	86,600	91,100	93,300	95,600	97,900	100,300	101,900	103,400	105,000	106,600	108,300	109,900	111,500	113,100	114,800	116,400	118,000	119,600	121,200	122,800	124,400
4	86,600	87,400	88,100	88,900	89,600	90,300	91,000	91,700	92,400	93,000	93,700	94,300	95,000	95,600	96,200	96,700	97,300	97,800	98,300	98,800	99,200
4a	86,600	89,700	90,400	91,100	91,900	92,600	93,300	94,000	94,700	95,400	96,100	96,700	97,400	98,000	98,600	99,200	99,700	100,200	100,700	101,200	101,700

Figure 5.1 LACW forecast based on MHCLG household projections, Herefordshire, 2016 to 2035 (rounded to nearest 100 tonnes)

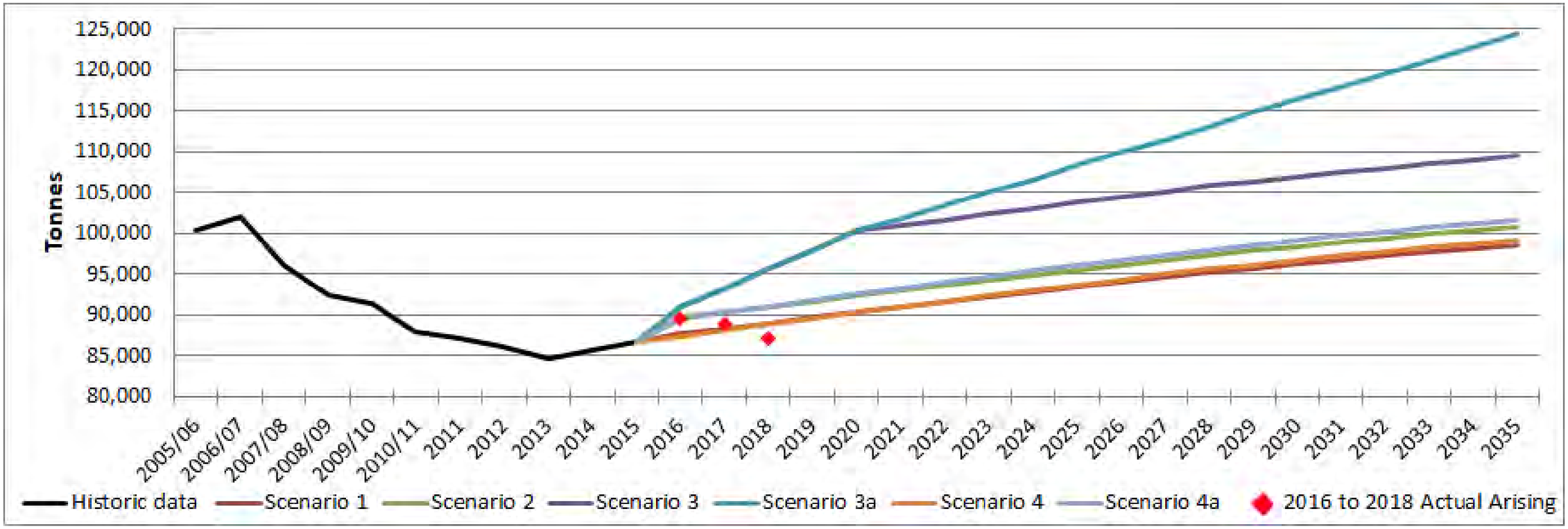
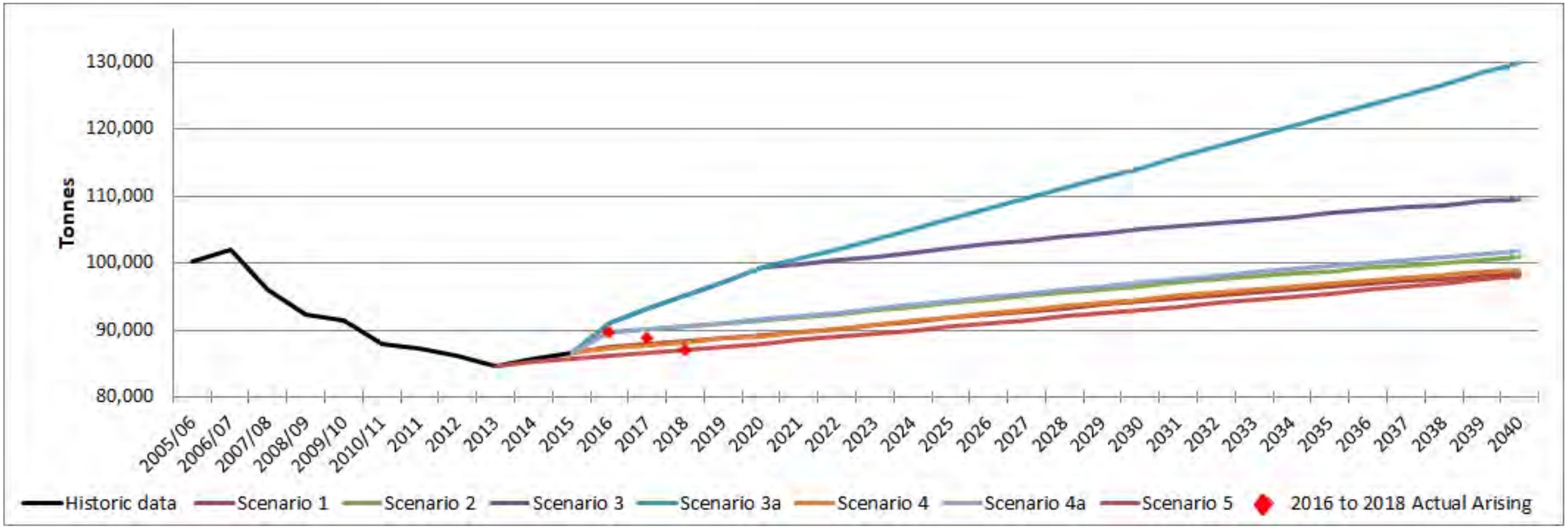


Table 5.3 LACW forecast based on ONS household projections, Herefordshire, 2016 to 2041 (rounded to nearest 100 tonnes)

Scen	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
1	86,600	87,400	87,900	88,300	88,800	89,200	89,600	90,200	90,700	91,300	91,800	92,300	92,800	93,300	93,800	94,300	94,700	95,200	95,600	96,100	96,500	96,900	97,300	97,700	98,000	98,400	98,800
2	86,600	89,600	90,100	90,500	91,000	91,400	91,800	92,400	93,000	93,500	94,100	94,600	95,100	95,600	96,100	96,600	97,100	97,500	98,000	98,400	98,800	99,300	99,600	100,000	100,400	100,800	101,100
3	86,600	91,100	93,100	95,100	97,200	99,300	99,800	100,400	101,000	101,600	102,200	102,800	103,300	103,900	104,500	105,000	105,500	106,000	106,500	106,900	107,400	107,900	108,300	108,700	109,200	109,500	110,000
3a	86,600	91,100	93,100	95,100	97,200	99,300	100,600	102,100	103,600	105,100	106,600	108,100	109,600	111,200	112,700	114,200	115,800	117,300	118,900	120,400	122,000	123,600	125,100	126,700	128,300	129,900	131,500
4	86,600	87,200	87,700	88,200	88,700	89,100	89,600	90,200	90,800	91,400	91,900	92,500	93,000	93,600	94,100	94,600	95,100	95,600	96,100	96,500	97,000	97,400	97,800	98,200	98,600	99,000	99,400
4a	86,600	89,600	90,100	90,600	91,100	91,600	92,000	92,600	93,200	93,800	94,400	95,000	95,500	96,100	96,600	97,100	97,700	98,100	98,600	99,100	99,500	100,000	100,400	100,900	101,300	101,700	102,100
5	85,644	86,109	86,576	87,045	87,500	88,000	88,500	89,000	89,500	90,000	90,500	91,000	91,500	92,000	92,500	93,000	93,500	94,000	94,500	95,000	95,500	96,000	96,500	97,000	97,500	98,000	98,500

Figure 5.2 LACW forecast based on ONS household projections, Herefordshire, 2016 to 2041 (rounded to nearest 100 tonnes)



5.2 Commercial and Industrial Waste (C&I waste)

5.2.1 If future C&I waste arisings are assumed to be predominantly linked to the number and types of businesses within Herefordshire, economic growth forecasts can be used as a means of estimating future C&I waste arisings.

5.2.2 However, as with any form of forecasting, predicting economic performance over a 20 year period is difficult due to the range of external factors that affect economic growth. In addition, as highlighted previously, the quality and lack of granularity of C&I waste data means it is not possible to produce estimates for the waste produced by different sectors and businesses, which could then be applied to the business profile of the county. This means that any C&I waste forecast needs to be viewed as a broad estimate, which should be reviewed periodically.

Herefordshire economic growth forecasts

5.2.3 There are no publicly available economic growth forecasts specifically for Herefordshire. Whilst national and regional forecasts could be applied, the Council's 'Facts and Figures about Herefordshire'[25] website states that '*Herefordshire's economic output is low compared to regionally and nationally when measured per head of population'*. Therefore, applying national or regional forecasts is likely to result in an overestimate of future waste arisings.

5.2.4 GVA[26] forecasts specific to Herefordshire and Worcestershire were obtained from Experian for the WNA 2017. These forecasts are considered more likely to better reflect the potential economic growth in Herefordshire but could again result in overestimates if the economic growth in Worcestershire is stronger than in Herefordshire.

5.2.5 At the Herefordshire level, the Economic Development Strategy, Invest Herefordshire: Herefordshire's Economic Vision, December 2016, includes an aim for economic growth of an *'increase GVA per head by 10% in real terms, from £19,500 to £21,500 by 2031 (at 2015 prices)*'. This level of growth is equivalent to an average annual growth of 0.65% in GVA.

5.2.6 Herefordshire Council[27] now reports that in 2017, '*Herefordshire's Gross Value Added (a measure of the value of the economy) was £3,878 million; representing 8% growth since 2016 and the third highest annual growth of all the West Midlands local authority areas'*.

5.2.7 In addition, the Marches Local Enterprise Partnership (LEP), which covers Shropshire, Herefordshire and Telford & Wrekin, published a Strategic Economic Plan[28] ('SEP') in 2019. The vision of the SEP is to grow the economy from £8.78 billion 2016 to 23.8 billion by 2038, which is equivalent to an average annual growth of 2.3% per annum in GVA. However, SEP Evidence Base[29] (October 2018) reports that the GVA growth between 2014 and 2016 was only 0.9%, which highlights the ambitious nature of the SEP. In addition, the SEP Evidence

[25] https://factsandfigures.herefordshire.gov.uk/about-a-topic/economy/productivity-and-gross-value-added.aspx [27.11.2019@16:12]

[26] Gross Value Added (GVA) measures the contribution to the economy of each individual producer, industry or sector in the United Kingdom and is a headline measure used to monitor economic performance.

[27] https://understanding.herefordshire.gov.uk/economy-place/topics-relating-to-the-economy/ [29.11.2019@16:18]

[28] https://www.marcheslep.org.uk/download/economic_plans/strategic-economic-plan-update-2019/The-Marches-LEP-Strategic-Economic-Plan-2019.pdf [30.11.2019@16:19]

[29] https://www.marcheslep.org.uk/download/economic_plans/strategic-economic-plan-update-2019/The-Marches-SEP-Evidence-Base.pdf [30.11.2019@16:21]

Base highlights the change in the UK GVA between 2014 and 2016 as 2.2%, which would appear to reinforce the view that '*Herefordshire's economic output is low compared to regionally and nationally when measured per head of population*'.

5.2.8 The Experian GVA forecasts are now around two years old. However, recognising the ongoing economic uncertainty caused by Brexit, it is not considered that any greater degree of certainty would be achieved by seeking an update on these forecasts from Experian. Therefore, the Experian GVA forecasts have been retained and used again in this Assessment.

5.2.9 If it is assumed that businesses and therefore C&I waste will grow in line with GVA, these economic growth forecasts can be used to develop scenarios to estimate future C&I waste arisings. It is recognised that the Experian GVA forecasts only run to 2037; for the period 2038 to 2041, the percentage GVA growth between 2034 and 2037 has been used.

5.2.10 Due to the lack of certainty in the available data, this WNA has been undertaken using the same scenarios presented in the WNA 2017, but separately using the data from 2015, 2017 and 2018, extended to 2041. Tables 5.4 to 5.6 present the scenarios considered individually for each year.

Table 5.4 C&I waste growth scenarios based on 2015 C&I waste estimates

Scenario	Basis	Forecast Starting Point[a]
1a	C&I waste growth in line with Hereford and Worcestershire GVA forecast	Lower 2015 C&I waste estimate 116,000 tonnes
1b	C&I waste growth in line with the Invest Herefordshire GVA growth target of 10% by 2031 (equivalent to an average annual growth of 0.65%)	
2a	C&I waste growth in line with Hereford and Worcestershire GVA forecast	Higher 2015 C&I waste estimate 146,000 tonnes
2b	C&I waste growth in line with the Invest Herefordshire GVA growth target of 10% by 2031 (equivalent to an average annual growth of 0.65%)	

[a] The references to 115,000 to 145,000 tonnes in the WNA 2017 was erroneous, the correct tonnages are stated here.

Table 5.5 C&I waste growth scenarios based on 2017 C&I waste estimates

Scenario	Basis	Forecast Starting Point
1a	C&I waste growth in line with Hereford and Worcestershire GVA forecast	Lower 2017 C&I waste estimate 133,000 tonnes
1b	C&I waste growth in line with the Invest Herefordshire GVA growth target of 10% by 2031 (equivalent to an average annual growth of 0.65%)	
2a	C&I waste growth in line with Hereford and Worcestershire GVA forecast	Higher 2017 C&I waste estimate 170,000 tonnes
2b	C&I waste growth in line with the Invest Herefordshire GVA growth target of 10% by 2031 (equivalent to an average annual growth of 0.65%)	

Table 5.6 C&I waste growth scenarios based on 2018 C&I waste estimates

Scenario	Basis	Forecast Starting Point
1a	C&I waste growth in line with Hereford and Worcestershire GVA forecast	Lower 2018 C&I waste estimate (157,000 tonnes)
1b	C&I waste growth in line with the Invest Herefordshire GVA growth target of 10% by 2031 (equivalent to an average annual growth of 0.65%)	
2a	C&I waste growth in line with Hereford and Worcestershire GVA forecast	Higher 2018 C&I waste estimate 201,000 tonne)
2b	C&I waste growth in line with the Invest Herefordshire GVA growth target of 10% by 2031 (equivalent to an average annual growth of 0.65%)	

5.2.11 The resulting C&I waste forecasts are presented in Table 5.7 (for 2015 estimates), Table 5.8 (for 2017 estimates) and Table 5.9 (for 2018 estimates). These tables are presented graphically at Figure 5.3 (for 2015 estimates), Figure 5.4 (for 2017 estimates) and Figure 5.5 (for 2018 estimates)

Table 5.7 C&I waste estimates based on 2015 C&I waste estimate, Herefordshire, 2015 to 2041 (rounded to nearest 1,000 tonnes)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
C&I sectors GVA forecast (£millions)[a]	10,892	11,101	11,212	11,379	11,569	11,787	12,027	12,295	12,586	12,860	13,128	13,378	13,625	13,871	14,111	14,363	14,626	14,891	15,156	15,418	15,685	15,956	16,233	n/a	n/a	n/a	n/a
GVA forecast % growth		1.9%	1.0%	1.5%	1.7%	1.9%	2.0%	2.2%	2.4%	2.2%	2.1%	1.9%	1.8%	1.8%	1.7%	1.8%	1.8%	1.8%	1.8%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
Invest Herefordshire GVA growth target[b]		0.65%																									
Scenario 1a	116,000	118,000	119,000	121,000	123,000	126,000	128,000	131,000	134,000	137,000	140,000	142,000	145,000	148,000	150,000	153,000	156,000	159,000	161,000	164,000	167,000	170,000	173,000	176,000	179,000	182,000	185,000
Scenario 1b	146,000	149,000	150,000	153,000	155,000	158,000	161,000	165,000	169,000	172,000	176,000	179,000	183,000	186,000	189,000	193,000	196,000	200,000	203,000	207,000	210,000	214,000	218,000	221,000	225,000	229,000	233,000
Scenario 2a	116,000	117,000	118,000	118,000	119,000	120,000	121,000	121,000	122,000	123,000	124,000	125,000	125,000	126,000	127,000	128,000	129,000	130,000	130,000	131,000	132,000	133,000	134,000	135,000	136,000	136,000	137,000
Scenario 2b	146,000	147,000	148,000	149,000	150,000	151,000	152,000	153,000	154,000	155,000	156,000	157,000	158,000	159,000	160,000	161,000	162,000	163,000	164,000	165,000	166,000	167,000	168,000	169,000	171,000	172,000	173,000

[a]. Hereford and Worcestershire GVA forecast for C&I sectors (Source: Experian ©)
[b]. Invest Herefordshire GVA growth target of 10% by 2031 (equivalent to an average annual growth of 0.65%)

Table 5.8 C&I waste estimates based on 2017 C&I waste estimate, Herefordshire, 2017 to 2041 (rounded to nearest 1,000 tonnes)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
C&I sectors GVA forecast (£millions)[a]		11,101	11,212	11,379	11,569	11,787	12,027	12,295	12,586	12,860	13,128	13,378	13,625	13,871	14,111	14,363	14,626	14891	15156	15418	15685	15,956	16,233	n/a	n/a	n/a	n/a
GVA forecast % growth				1.5%	1.7%	1.9%	2.0%	2.2%	2.4%	2.2%	2.1%	1.9%	1.8%	1.8%	1.7%	1.8%	1.8%	1.8%	1.8%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
Invest Herefordshire GVA growth target[b]				0.65%																							
Scenario 1a			133,000	135,000	137,000	140,000	143,000	146,000	149,000	153,000	156,000	159,000	162,000	165,000	167,000	170,000	173,000	177,000	180,000	183,000	186,000	189,000	193,000	196,000	199,000	203,000	206,000
Scenario 1b			170,000	173,000	175,000	179,000	182,000	186,000	191,000	195,000	199,000	203,000	207,000	210,000	214,000	218,000	222,000	226,000	230,000	234,000	238,000	242,000	246,000	250,000	255,000	259,000	264,000
Scenario 2a			133,000	134,000	135,000	136,000	136,000	137,000	138,000	139,000	140,000	141,000	142,000	143,000	144,000	145,000	146,000	147,000	148,000	148,000	149,000	150,000	151,000	152,000	153,000	154,000	155,000
Scenario 2b			170,000	171,000	172,000	173,000	174,000	176,000	177,000	178,000	179,000	180,000	181,000	183,000	184,000	185,000	186,000	187,000	189,000	190,000	191,000	192,000	194,000	195,000	196,000	197,000	199,000

1. Hereford and Worcestershire GVA forecast for C&I sectors (Source: Experian ©)
2. Invest Herefordshire GVA growth target of 10% by 2031 (equivalent to an average annual growth of 0.65%)

Table 5.9 C&I waste estimates based on 2018 C&I waste estimate, Herefordshire, 2018 to 2041 (rounded to nearest 1,000 tonnes)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
C&I sectors GVA forecast (£millions)[a]		11,101	11,212	11,379	11,569	11,787	12,027	12,295	12,586	12,860	13,128	13,378	13,625	13,871	14,111	14,363	14,626	14891	15156	15418	15685	15,956	16,233	n/a	n/a	n/a	n/a
GVA forecast % growth				1.5%	1.7%	1.9%	2.0%	2.2%	2.4%	2.2%	2.1%	1.9%	1.8%	1.8%	1.7%	1.8%	1.8%	1.8%	1.8%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
Invest Herefordshire GVA growth target[b]				0.65%																							
Scenario 1a				157,000	160,000	163,000	166,000	170,000	174,000	177,000	181,000	185,000	188,000	191,000	195,000	198,000	202,000	205,000	209,000	213,000	216,000	220,000	224,000	228,000	232,000	236,000	240,000
Scenario 1b				201,000	204,000	208,000	212,000	217,000	222,000	227,000	232,000	236,000	241,000	245,000	249,000	254,000	258,000	263,000	268,000	272,000	277,000	282,000	287,000	292,000	297,000	302,000	307,000
Scenario 2a				157,000	158,000	159,000	160,000	161,000	162,000	163,000	164,000	165,000	166,000	168,000	169,000	170,000	171,000	172,000	173,000	174,000	175,000	176,000	178,000	179,000	180,000	181,000	182,000
Scenario 2b				201,000	202,000	204,000	205,000	206,000	208,000	209,000	210,000	212,000	213,000	214,000	216,000	217,000	219,000	220,000	222,000	223,000	224,000	226,000	227,000	229,000	230,000	232,000	233,000

1. Hereford and Worcestershire GVA forecast for C&I sectors (Source: Experian ©)
2. Invest Herefordshire GVA growth target of 10% by 2031 (equivalent to an average annual growth of 0.65%)

Figure 5.3 C&I waste estimates 2015 to 2041, based on 2015 data

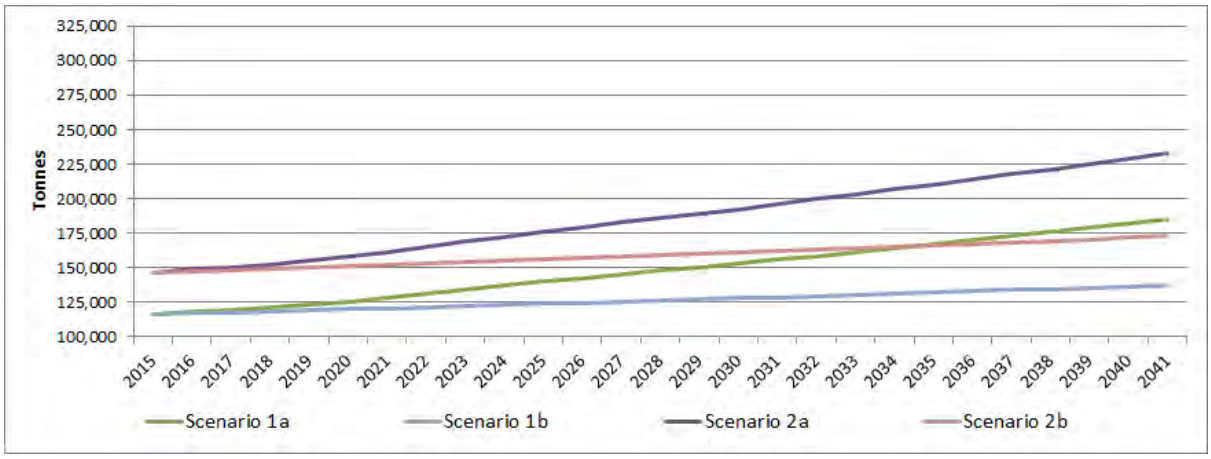


Figure 5.4 C&I waste estimates 2017 to 2041, based on 2017 data

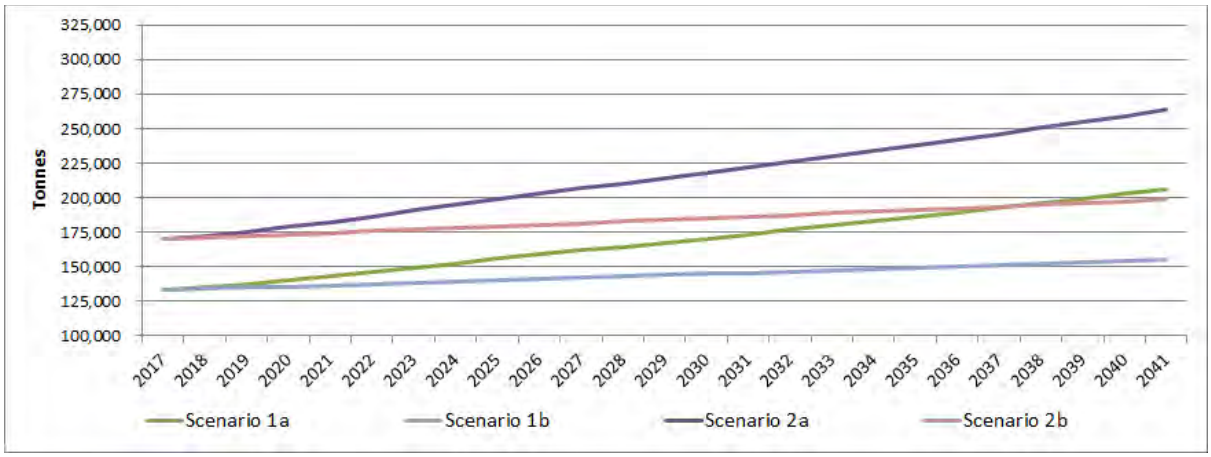
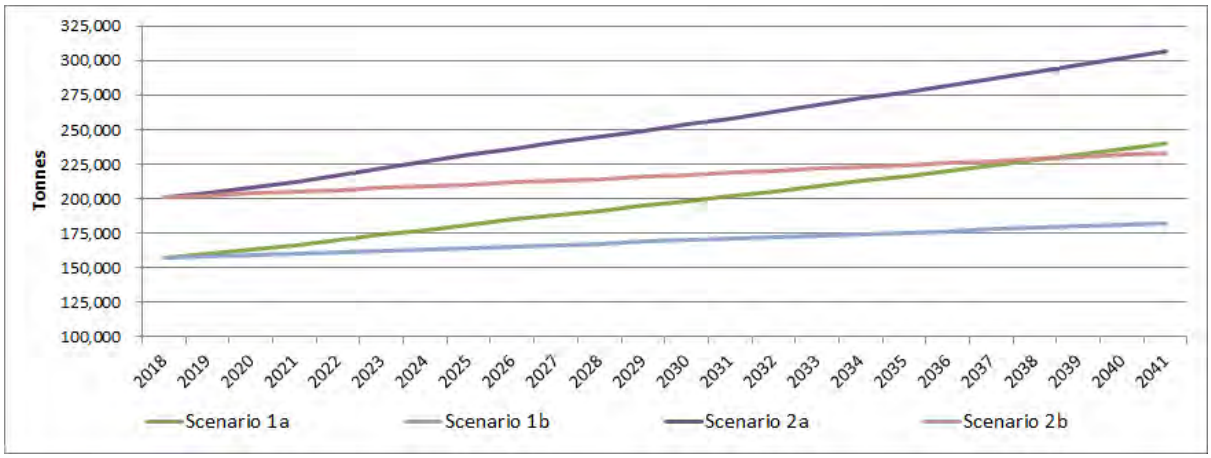


Figure 5.5 C&I waste estimates 2018 to 2041, based on 2018 data



5.2.12 For the purposes of assessing future capacity demand it is concluded that a range of C&I waste arisings between Scenarios 1a and 2b should be used, taking account of the estimated arisings calculated for 2015 to 2018, which is equivalent to between 185,000 and 233,000 tonnes by 2041. Scenarios 1a and 2b appear to be the more realistic forecasts, with 1b and 2a potentially acting as outliers.

5.2.13 It would be beneficial to keep these waste forecasts under review as the MWLP is developed. However, the C&I waste forecasts to be taken into assessing future capacity need are:

- Scenario 1a, using 2015 data, to give a minimum tonnage; and
- Scenario 2b, using 2017 data, to give a medium tonnage.
- Scenario 2b, using 2018 data, to give a maximum tonnage.

5.3 Construction, Demolition and Excavation Waste (CD&E waste)

5.3.1 To forecast future CD&E waste arisings, the link between CD&E waste and construction sector growth, based on the Hereford and Worcestershire GVA data as gained from Experian, has been used. Two scenarios have been considered:

- Scenario 1: Growth based on Hereford and Worcestershire construction sector GVA growth and a baseline figure of 357,000 tonnes in 2015 (based on original 2014 UK waste per capita estimates); and
- Scenario 2: Growth based on Hereford and Worcestershire construction sector GVA growth and a baseline figure of 379,000 tonnes in 2015 (based on original 2014 England waste per capita estimates).

5.3.2 The Experian GVA forecasts are now around two years old. However, recognising the ongoing economic uncertainty caused by Brexit, it is not considered that any greater degree of certainty would be achieved by seeking an update on these forecasts from Experian. Therefore, the Experian GVA forecasts have been retained and used again in this Assessment. It is recognised that the Experian GVA forecasts only run to 2037; for the period 2038 to 2041, the percentage GVA growth between 2036 and 2037 has been used.

5.3.3 The resulting forecasts are presented in Table 5.10. The forecasts have been broken down into the key elements of the CD&E waste stream based on relative proportions estimated in 2014 and assuming that these remain constant.

Table 5.10 CD&E waste forecast, Herefordshire, 2016 to 2041 (rounded to nearest 1,000 tonnes)

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Hereford and Worcestershire construction sector GVA (£ millions)[a]		937.4	923.0	919.8	920.1	929.4	945.0	962.8	982.3	1002.4	1021.4	1041.5	1060.6	1077.8	1093.1	1106.7	1120.1	1133.9	1147.8	1161.5	1174.9	1189.4	1204.5	1219.8	n/a	n/a	n/a	n/a
Hereford and Worcestershire construction sector GVA growth			-1.5%	-0.3%	0.0%	1.0%	1.7%	1.9%	2.0%	2.0%	1.9%	2.0%	1.8%	1.6%	1.4%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
1	Non-hazardous C&D	163,000	160,000	160,000	160,000	162,000	164,000	167,000	171,000	174,000	178,000	181,000	184,000	187,000	190,000	192,000	195,000	197,000	200,000	202,000	204,000	207,000	209,000	212,000	215,000	218,000	220,000	223,000
	Hazardous C&D	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
	Excavation waste/ dredging spoils	192,000	189,000	188,000	188,000	190,000	194,000	197,000	201,000	205,000	209,000	213,000	217,000	221,000	224,000	227,000	229,000	232,000	235,000	238,000	241,000	244,000	247,000	250,000	253,000	256,000	259,000	263,000
	Total	**357,000**	**351,000**	**350,000**	**350,000**	**354,000**	**360,000**	**366,000**	**374,000**	**381,000**	**389,000**	**396,000**	**403,000**	**410,000**	**416,000**	**421,000**	**426,000**	**431,000**	**437,000**	**442,000**	**448,000**	**454,000**	**459,000**	**465,000**	**471,000**	**477,000**	**482,000**	**489,000**
2	Non-hazardous C&D	173,000	170,000	170,000	170,000	172,000	174,000	178,000	181,000	185,000	189,000	192,000	196,000	199,000	202,000	204,000	207,000	209,000	212,000	214,000	217,000	220,000	222,000	225,000	228,000	231,000	234,000	237,000
	Hazardous C&D	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
	Excavation waste/ dredging spoils	204,000	201,000	200,000	200,000	202,000	206,000	210,000	214,000	218,000	222,000	227,000	231,000	235,000	238,000	241,000	244,000	247,000	250,000	253,000	256,000	259,000	262,000	265,000	269,000	272,000	276,000	279,000
	Total	**379,000**	**373,000**	**372,000**	**372,000**	**376,000**	**382,000**	**390,000**	**397,000**	**405,000**	**413,000**	**421,000**	**429,000**	**436,000**	**442,000**	**447,000**	**453,000**	**458,000**	**464,000**	**469,000**	**476,000**	**482,000**	**487,000**	**493,000**	**500,000**	**506,000**	**513,000**	**519,000**

[a] Source: Experian ©

5.3.4 However, as highlighted previously Defra revised its CD&E waste estimates, with the effect of increasing the total CD&E waste estimates by between 10% and 20%. Therefore, the scenarios have been re-run using a revised 2016 baseline figure:

- Scenario 1a: Baseline figure of 393,000 tonnes in 2016 (based on 2016 England waste per capita estimates); and
- Scenario 2a: Baseline figure of 412,000 tonnes in 2016 (based on 2016 England waste per capita estimates).

5.3.5 The resulting forecasts are presented in Table 5.11. The forecasts have been broken down into the key elements of the CD&E waste stream based on relative proportions estimated in 2016 and assuming that these remain constant.

5.3.6 Both sets of estimates are presented in Figure 5.6 and show that the net impact of the revised Defra figures is to increase the forecast estimates by approximately 55,000 tonnes by 2041.

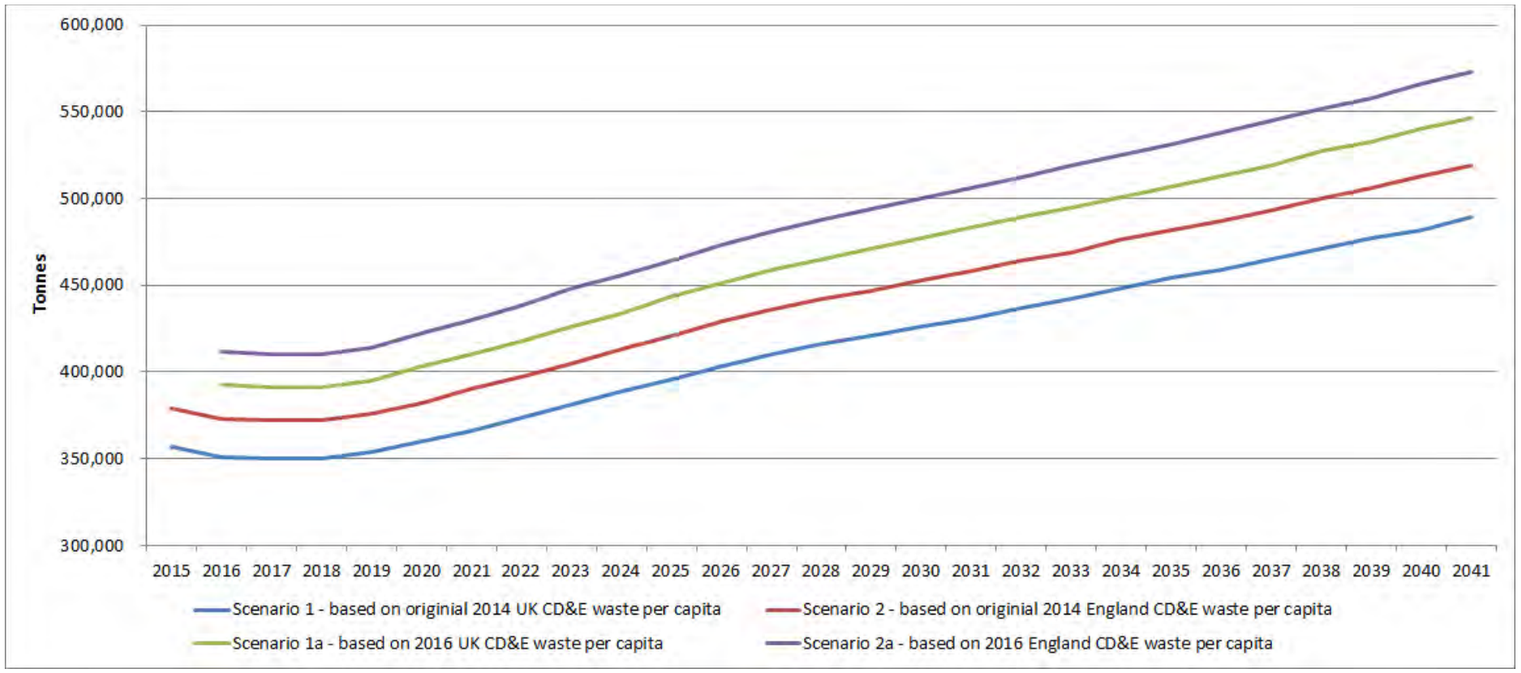
5.3.7 As highlighted above, the forecasts could overestimate future CD&E waste generation in Herefordshire, particularly in relation to excavation waste and dredging spoils. It might be considered unlikely, given the rural nature of Herefordshire, that approximately 200,000 250,000 tonnes of excavation waste would be produced every year. Therefore, as with the C&I waste forecasts, it is recommended that the CD&E waste forecasts are kept under review as the MWLP is developed.

Table 5.11 Revised CD&E waste forecast based on updated Defra CD&E waste estimates, Herefordshire, 2016 to 2041 (rounded to nearest 1,000 tonnes)

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Hereford and Worcestershire construction sector GVA (£ millions)[a]		937.4	923.0	919.8	920.1	929.4	945.0	962.8	982.3	1002.4	1021.4	1041.5	1060.6	1077.8	1093.1	1106.7	1120.1	1133.9	1147.8	1161.5	1174.9	1189.4	1204.5	1219.8	n/a	n/a	n/a	n/a
Hereford and Worcestershire construction sector GVA growth			-1.5%	-0.3%	0.0%	1.0%	1.7%	1.9%	2.0%	2.0%	1.9%	2.0%	1.8%	1.6%	1.4%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
1	Non-hazardous C&D		191,000	190,000	190,000	192,000	196,000	199,000	203,000	207,000	211,000	216,000	219,000	223,000	226,000	229,000	232,000	235,000	238,000	240,000	243,000	246,000	249,000	252,000	256,000	259,000	262,000	265,000
	Hazardous C&D		2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
	Excavation waste/ dredging spoils		200,000	199,000	199,000	201,000	205,000	209,000	213,000	217,000	221,000	226,000	230,000	234,000	237,000	240,000	243,000	246,000	249,000	252,000	255,000	258,000	261,000	264,000	268,000	271,000	275,000	278,000
	Total		**393,000**	**391,000**	**391,000**	**395,000**	**403,000**	**410,000**	**418,000**	**426,000**	**434,000**	**444,000**	**451,000**	**459,000**	**465,000**	**471,000**	**477,000**	**483,000**	**489,000**	**495,000**	**501,000**	**507,000**	**513,000**	**519,000**	**527,000**	**533,000**	**540,000**	**546,000**
2	Non-hazardous C&D		204,000	203,000	203,000	205,000	209,000	213,000	217,000	222,000	226,000	230,000	234,000	238,000	242,000	245,000	248,000	251,000	254,000	257,000	260,000	263,000	266,000	270,000	273,000	276,000	280,000	284,000
	Hazardous C&D		2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
	Excavation waste/ dredging spoils		206,000	205,000	205,000	207,000	211,000	215,000	219,000	224,000	228,000	232,000	237,000	241,000	244,000	247,000	250,000	253,000	256,000	259,000	262,000	265,000	269,000	272,000	276,000	279,000	283,000	286,000
	Total		**412,000**	**410,000**	**410,000**	**414,000**	**422,000**	**430,000**	**438,000**	**448,000**	**456,000**	**464,000**	**473,000**	**481,000**	**488,000**	**494,000**	**500,000**	**506,000**	**512,000**	**519,000**	**525,000**	**531,000**	**538,000**	**545,000**	**552,000**	**558,000**	**566,000**	**573,000**

[a] Source: Experian ©

Figure 5.6 CD&E waste forecasts, Herefordshire, 2016 to 2041



5.4 Agricultural Waste

5.4.1 Future waste arisings will be dictated by the nature of agricultural activity within Herefordshire. However, as highlighted in the River Wye SAC Nutrient Management Plan, Evidence base and options appraisal[30], it is not possible to predict the future when it comes to agriculture in the River Wye catchment.

5.4.2 In the WNA 2017, the range for non-natural agricultural waste was 6,000 to 8,000 tonnes. However, using the most resent Defra data, for 2016, slightly reduces the estimated range to 5,700 to 7,400 tonnes, predominately due to the exclusion of discarded vehicles from the total generations figure by Defra.

5.4.3 Therefore, for prudence, it is assumed that the non-natural agricultural waste will remain in the range 6,000 to 8,000 tonnes and that the amount of natural agricultural waste which is managed at permitted facilities will be dictated by the development of on-farm AD systems.

5.4.4 Between 2014 and 2016, there were six planning permissions granted for AD systems. These are not listed as permitted facilities in the 2015 EA WDI, and so have the potential to increase the AD capacity in the county in the future. There were no new AD sites accepting waste in 2016 but two new sites accepted waste in 2017 and a further site in 2018.

5.5 Hazardous Waste

5.5.1 The analysis of hazardous waste arisings highlights that over the last couple of years generation levels of hazardous wastes have, on the whole, been relatively constant and that the trend in arisings is now mainly affected by the level of hazardous waste produced by the construction and demolition sector.

5.5.2 Therefore, based on this analysis of the arisings between 2011 and 2018, it is estimated that the annual hazardous waste arising in the future will be in the range 8,000 to 12,000 tonnes, with the actual tonnage being dependent on the quantity of contaminated soil and asbestos containing waste generated by the construction and demolition sector.

5.5.3 In addition, the generation levels of different waste streams are relatively small and are unlikely to warrant the development of specialist waste treatment capacity.

5.6 Summary of Waste Forecasts

5.6.1 This WNA has sought to incorporate any relevant fresh evidence to forecast future waste arisings and compare the data from 2015, 2017 and 2018.

5.6.2 Consequently, the forecasts based on each dataset are presented:

- Table 5.12 summarises the waste forecasts for Herefordshire for years 2020, 2025, 2030, 2035 and 2041 based on the 2015 data, used in the WNA 2017. These forecasts have not been extended to 2041 because the LACW forecasts were based on the DCLG/ MHCLG household projections at the time, which did not extend to 2041;

[30] https://www.gov.uk/government/publications/nutrient-management-plan-river-wye [13.11.2019@10:54]

- Table 5.13 summarises the waste forecasts for Herefordshire for years 2020, 2025, 2030, 2035 and 2041 based on the updated 2017 data (where it was available) and as reported in the WNA Update 2018; and
- Table 5.14 summarises the waste forecasts for Herefordshire for years 2020, 2025, 2030, 2035 and 2041 based on the 2018 data, which includes analysis based on new Defra estimates for CD&E and agricultural wastes. For this it should be noted that the baseline figures are based on the most recent Defra dataset, which is for 2016.

Table 5.12 Summary of waste forecasts for years 2020, 2025, 2030 and 2035, based on 2015 data

Waste Stream		Tonnes (rounded to nearest 1,000 tonnes)						
		Baseline	Forecast					
		2015	2020	2025	2030	2035	2041	
Local authority collected waste		86,600	90,300 to 100,300	93,500 to 108,300	96,300 to 116,400	98,600 to 124,400	n/a	1
Commercial and industrial waste		116,000 to 146,000	126,000 to 151,000	140,000 to 156,000	153,000 to 161,000	166,000 to 167,000	n/a	2
Construction, demolition and excavation waste	Total	357,000 to 379,000	360,000 to 382,000	396,000 to 421,000	426,000 to 453,000	454,000 to 482,000	n/a	3
	Non-hazardous C&D	163,000 to 173,000	164,000 to 174,000	181,000 to 192,000	195,000 to 207,000	207,000 to 220,000	n/a	4
Agricultural waste (non-natural)		6,000 to 8,000	6,000 to 8,000					5
Hazardous waste (subset of other waste streams)		10,500	9,000 to 12,000					6

Table 5.13 Summary of waste forecasts for years 2020, 2025, 2030, 2035 and 2041, based on 2017 data

Waste Stream		Tonnes (rounded to nearest 1,000 tonnes)						
		Baseline	Forecast					
		2017	2020	2025	2030	2035	2041	
Local authority collected waste		88,900	89,100 to 99,300	91,800 to 106,600	94,300 to 114,200	95,500 to 122,000	98,800 to 131,500	1
Commercial and industrial waste		133,000 to 170,000	140,000 to 173,000	156,000 to 179,000	170,000 to 185,000	186,000 to 191,000	186,000 to 191,000	2
Construction, demolition and excavation waste	Total	357,000 to 379,000	360,000 to 382,000	396,000 to 421,000	426,000 to 453,000	454,000 to 482,000	489,000 to 519,000	3
	Non-hazardous C&D	163,000 to 173,000	164,000 to 174,000	181,000 to 192,000	195,000 to 207,000	207,000 to 220,000	223,000 to 237,000	4
Agricultural waste (non-natural)		6,000 to 8,000	6,000 to 8,000					5
Hazardous waste (subset of other waste streams)		9,500	8,000 to 12,000					6

Table 5.14 Summary of waste forecasts for years 2020, 2025, 2030, 2035 and 2041, based on 2018 data

Waste Stream		Tonnes (rounded to nearest 1,000 tonnes)						
		Baseline	Forecast					
		2018	2020	2025	2030	2035	2041	
Local authority collected waste		87,000	88,000 to 99,300	90,500 to 106,600	93,000 to 114,200	95,500 to 122,000	98,500 to 131,500	1
Commercial and industrial waste		157,000 to 201,000	163,000 to 204,000	181,000 to 210,000	198,000 to 217,000	216,000 to 224,000	233,000 to 240,000	2
Construction, demolition and excavation waste	Total	393,000 to 412,000	403,000 to 422,000	444,000 to 464,000	477,000 to 500,000	507,000 to 531,000	546,000 to 573,000	3
	Non-hazardous C&D	191,000 to 204,000	196,000 to 209,000	216,000 to 230,000	232,000 to 248,000	246,000 to 263,000	265,000 to 284,000	4
Agricultural waste (non-natural)		5,700 to 7,400	6,000 to 8,000					5
Hazardous waste (subset of other waste streams)		12,000	8,000 to 12,000					6

5.6.3 Largely due to data constraints, a difference in tonnage is not seen in the CD&E or agricultural waste streams between the 2015 and 2017 data. However, the 2018 does reflect the most recent Defra estimates for the CD&E or agricultural waste streams.

5.6.4 LACW data confirms that, overall, there has been a slight increase in waste generated between 2015 and 2018, which incorporates an increase in 2016 followed by decreases in 2017 and 2018. Whilst the 2018 arisings sit just below the LACW growth scenarios 1 and 4 based on ONS household projections, it has been considered prudent to retain the existing growth scenarios to see if the arisings reduce further or stabilise before revising the forecasts used for waste planning purposes. However, the lower end of the LACW growth scenarios have been adjusted in the 2018 forecasts to reflect the fractionally lower minimum tonnage resulting from Scenario 5. The variations within the forecast scenario for 2015 and 2017 are due to the 2017 forecast being based on more recent ONS household projections as opposed to the MHCLG household projections.

5.6.5 C&I waste forecasts grow in line with the uplift in the estimated arisings calculated for 2017 and 2018.

5.6.6 Hazardous waste continues to remain in the range identified in the WNA 2017.

6. Capacity Needs

6.1 Introduction

6.1.1 The different waste streams considered within this Assessment can have quite different management methods and expectations, particularly in relation to recycling and recovery targets. This section considers the policy relevant to each waste stream to consider future waste management capacity requirements.

6.2 Local Authority Collected Waste (LACW)

6.2.1 At the national level (England) there are two principal targets relating to the management of LACW:

- recycling and composting of household waste: 50% by 2020
- recovery[31] of municipal waste: 75% by 2020.

6.2.2 These are national targets but are not formally cascaded down to local authorities. The Waste Strategy for Herefordshire and Worcestershire: Managing Waste for a Brighter Future[32] does reflect these targets and seeks to exceed them through achieving a more challenging recovery target of recovering value from a minimum of 78% of municipal waste by 2015. Whilst this target was not achieved in 2015 or 2016, it was met since 2017 as the EnviRecover Facility commenced operating.

6.2.3 Recycling and recovery targets are still to be set for the period beyond 2020. The WNA 2017 relied upon the concurrent European Commission proposals set out in the EU Circular Economy Package (CEP) of:

- a preparation for re-use and recycling (including composting/anaerobic digestion) target of 60% of municipal waste[33] by 2025;
- a preparation for re-use and recycling (including composting/anaerobic digestion) target of 65% of municipal waste by 2030;
- a gradual limitation on landfilling of municipal waste, to 10% by 2035; and
- a requirement for the separate collection of bio-waste[34] for recycling (although no date is specified in the proposals).

6.2.4 Recognising the June 2016 decision to leave the European Union, it was unclear whether these targets would be adopted in the UK. However, in the absence of any future proposal for England at the time, they were used to consider future management capacity requirements for LACW.

[31] Recovery encompasses reuse, recycling, composting and energy recovery.

[32] The Joint Municipal Waste Management Strategy for Herefordshire and Worcestershire 2004 - 2034, First review August 2011

[33] As explained in section 2.1 of this report, the term municipal waste is wider than LACW and includes wastes from other sources that is comparable to household waste in nature, composition and quantity. Consequently, this target would apply to a proportion of C&I waste.

[34] Bio-waste means biodegradable garden and parks waste, food and kitchen waste from households, restaurants, caterers and retail premises and comparable waste from food processing plants.

6.2.5 These recycling targets were later softened, with several countries, including the UK, recognising that they may not be achievable. In Spring 2018, following much debate between Member States, the European Commission and representatives of the European Parliament, agreement was reached on the revisions to the Waste Framework Directive and the Landfill Directive, including the following targets:

- a preparation for re-use and recycling (including composting/anaerobic digestion) target of 55% of municipal waste by 2025;
- a preparation for re-use and recycling (including composting/anaerobic digestion) target of 60% of municipal waste by 2030;
- a preparation for re-use and recycling (including composting/anaerobic digestion) target of 65% of municipal waste by 2035;
- a gradual limitation on landfilling of municipal waste, to 10% by 2035;
- a requirement for the separate collection of textiles and hazardous waste from households, by 2025; and
- a requirement for the separate collection of bio-waste for recycling by 2024.

6.2.6 The UK government had previously signalled that these measures will be incorporated within UK legislation, even after the UK leaves the EU. The RWS (the latest national waste strategy) confirms the Government's intention to adopt the targets in the EU CEP stating, in Section 6.1.1:

'*The EU (Withdrawal) Act 2018 will ensure existing EU environmental law continues to have effect in UK law after we leave the EU, providing businesses and stakeholders with maximum certainty. This includes any commitments from the Circular Economy Package (CEP) in relation to waste and recycling that are part of UK legislation when we leave*'.

6.2.7 Consequently, Table 6.1 presents the potential future capacity required to manage Herefordshire's LACW using the targets set out in the EU CEP, which means reducing the recycling and composting targets for 2025 (from 60% to 55%) and 2030 (65% to 60%) whilst retaining 65% recycling and composting by 2035. In addition, the maximum allowed landfill has also been adjusted to reflect a more gradual reduction i.e. a maximum of 20% by 2025, 15% by 2030 and again retaining the 10% by 2035.

6.2.8 Two scenarios are used to consider the residual waste fraction (i.e. that remaining after recycling):

- assuming that the maximum allowable level of landfill is fully utilised; and
- assuming that all residual LACW is sent directly to a residual waste treatment facility.

Table 6.1 Forecast LACW waste management requirement (rounded to nearest 100 tonnes)

Description	2020	2025	2030	2035	2041	
LACW Forecasts						
Minimum	88,000	90,500	93,000	95,500	98,500	1
Maximum	99,300	106,600	114,200	122,000	131,500	2
Recycling and composting						
Potential recycling and composting targets	50%	55%	60%	65%	65%	3
Recycling and composting capacity requirement						
Minimum (tonnes)	44,000	49,800	55,800	62,100	64,000	4
Maximum (tonnes)	49,700	58,600	68,500	79,300	85,500	5
Landfill						
Maximum allowed landfill assuming 75% municipal waste recovery by 2020 and gradual limitation to 2035 target	25%	20%	15%	10%	10%	6
Landfill capacity requirement						
Minimum (tonnes)	22,000	18,100	14,000	9,600	9,900	7
Maximum (tonnes)	24,800	21,300	17,100	12,200	13,200	8
Residual treatment requirement						
Minimum assuming maximum allowed landfill is utilised (tonnes)	22,000	22,600	23,200	23,800	24,600	9
Maximum assuming maximum allowed landfill is utilised (tonnes)	24,800	26,700	28,600	30,500	32,800	10
Minimum assuming no LACW direct to landfilled (tonnes)	44,000	40,700	37,200	33,400	34,500	11
Maximum assuming no LACW direct to landfilled (tonnes)	49,600	48,000	45,700	42,700	46,000	12

Increased recycling

6.2.9 Consultation responses have sought a reduction in waste growth and increased recycling rates. A reduction in waste growth is not considered appropriate, as the MWLP is principally a land use document, seeking to provide opportunities for new development. Increased recycling levels have been considered, with the consequent capacity requirements.

6.2.10 It is worth remembering that the LACW management routes are already potentially higher than has been ratified by the European Commission. However, a further scenario of 70% recycling and composting and a maximum of 5% residual waste to landfill by 2030 has been modelled, and the results reported in Table 6.2.

Table 6.2 Forecast LACW management requirement, high recycling & composting (rounded to nearest 100 tonnes)

Description	2020	2025	2030	2035	2041	
LACW Forecasts						
Minimum	88,000	90,500	93,000	95,500	98,500	1
Maximum	99,300	106,600	114,200	122,000	131,500	2
Recycling and composting						
Potential recycling and composting targets	50%	65%	70%	70%	70%	3
Recycling and composting capacity requirement						
Minimum (tonnes)	44,600	59,700	66,000	67,600	69,000	4
Maximum (tonnes)	49,700	69,300	79,900	85,400	92,100	5
Landfill						
Maximum allowed landfill assuming 75% municipal waste recovery by 2020 and gradual limitation to 5% landfill by 2035	25%	10%	5%	5%	5%	6
Landfill capacity requirement						
Minimum (tonnes)	22,300	9,200	4,700	4,800	4,900	7
Maximum (tonnes)	24,800	10,700	5,700	6,100	6,600	8
Residual treatment requirement						
Minimum assuming maximum allowed landfill is utilised (tonnes)	22,200	22,900	23,600	24,100	24,600	9
Maximum assuming maximum allowed landfill is utilised (tonnes)	24,800	26,600	28,600	30,500	32,800	10
Minimum assuming no LACW direct to landfilled (tonnes)	44,500	32,100	28,300	28,900	29,500	11
Maximum assuming no LACW direct to landfilled (tonnes)	49,600	37,300	34,300	36,600	39,400	12

6.2.11 This scenario indicates an increased demand for recycling/composting capacity of c.10,000 tonnes over years 2020 and 2025, which drops to c.5,000 to 6,000 tonnes over the later years of the plan period, with consequent reductions in landfill and residual waste management capacity. This recycling/composting capacity demand is not considered to be significant in plan making terms.

Potential future LACW management capacity demand

6.2.12 Table 3.1 identifies that permitted capacity within the county is limited to facilities that offer transfer with basic treatment or provide biological treatment; there is no residual waste treatment or disposal capacity such as MBT, RDF production, incineration (with or without energy recovery) or landfill.

6.2.13 However, Herefordshire Council has historically worked with Worcestershire County Council to manage effectively the authorities' LACW jointly. This collaboration has resulted in the production of a Joint Municipal Waste Management Strategy and joint procurement of strategic waste management capacity, namely:

- a materials recovery facility (MRF) at Norton, near Worcester. The EnviroSort Facility has a permitted capacity of 105,000 tonnes per year; and
- an energy from waste (EfW) facility at Hartlebury, near Stourport. The EnviRecover Facility has a permitted capacity of 200,000 tonnes per year and became operational in 2017.

6.2.14 Consequently, whilst these facilities are not located in Herefordshire, long term capacity is available to manage Herefordshire's LACW; the contract is live until 2024, with the potential for a five-year extension. At the end of the contract period, the facilities revert to the two authorities; EnviRecover to shared ownership and EnviSort to Worcestershire County Council. The use of these facilities for waste generated within both Worcestershire and Herefordshire has been considered carefully through the planning process and there is no planning reason why this should change throughout the plan period, or after.

6.2.15 Conclusions in relation to future LACW management capacity focus on the following:

- **Management of separately collected bio-waste**: Currently, the only form of bio-waste separately collected for composting is the garden waste collected at HWRC. Therefore, if the separate collection of bio-waste for recycling becomes a requirement, capacity would be necessary to handle separately collected food and garden waste.
  - Based on the assumption above of a 50:50 between recycling and composting, by 2035 there could be 31,000 to 39,500 tonnes of bio-waste to manage, which could increase to 32,000 to 42,750 tonnes by 2041. The type and size of biological treatment capacity would depend on how the bio-waste is collected e.g. separate food and garden waste or mixed food and garden waste.
  - There is currently significant capacity at biological treatment facilities in Herefordshire (not including on-farm AD systems) 334,000 tonnes between 2015 and 2018, of which approximately 106,000 tonnes was utilised in 2015, 78,000 tonnes in 2016, 60,000 tonnes in 2017 and 49,000 tonnes in 2018. This would suggest there should be sufficient capacity to handle the increase in bio-waste, although this will be dependent on the design/configuration of the biological treatment facilities.
- **Sufficient MRF capacity**: It is not possible to accurately predict the future composition of LACW due to the limited data currently available, that composition changes with time and that policy evolves over time. Consequently, the proportion of material that will need to be recycled or composted to achieve a 65% recycling and composting target is not clear. If it is assumed that there will a 50:50 split between recycling and composting, by 2035 there could be 31,000 to 39,500 tonnes of material to be recycled, which could increase to 32,000 to 42,750 tonnes by 2041.

- However, it is uncertain how much material would need to be handled at a MRF with proposed policy changes encouraging greater source separation. It is possible more materials will be collected separately and sent directly (or via transfer station) to reprocessors, for example the scrap metal, cardboard, timber etc. Also materials will continue to be collected at HWRC. The current split between kerbside and HWRC recycling is approximately 70:30. If this split is maintained, between 22,500 and 30,000 tonnes[35] of additional material from Herefordshire may need to be handled through a MRF by 2041.
- There may be pressure on the current contracted MRF capacity by the end of the plan period, depending on the amount of recyclable material sent to the EnviroSort Facility from Worcestershire. It is also dependent on the configuration of the EnviroSort Facility, which is likely to change over the plan period.

▪ **Sufficient EfW Facility capacity by 2030**: The EnviRecover Facility capacity is 230,000 tonnes per annum. If it is assumed that this equates to 35% of the LACW generated, because 65% of the waste will be recycled or composted by 2030, this would be equivalent to a total LACW arising of approximately 575,000 tonnes, across both Herefordshire and Worcestershire.

- Currently, Herefordshire and Worcestershire generate a total of just 390,000 tonnes per annum[36]. Even with growth in LACW arisings and assuming a 65% recycled or composted rate is achieved, there should remain sufficient capacity to handle the residual LACW generated by 2041. There would need to be a growth of 1.6% per annum in LACW arisings for the 230,000 tonne capacity at the EnviRecover Facility to be exceeded by 2041, if the 65% recycled or composted rate is achieved.

6.3 Commercial and Industrial Waste (C&I waste)

6.3.1 There are no specific targets for the management of C&I waste. Beyond 2020, the European Commission proposes to set recycling and recovery targets for municipal waste (section 6.2). Recognising that the Commission's use of the term 'municipal waste' includes wastes from other sources that is comparable to household waste in nature, composition and quantity, some C&I waste would become subject to these targets.

6.3.2 Given the nature of current data capture systems and the inability to track flows of C&I waste, it is not possible to quantify accurately either the C&I fraction of municipal waste, or how much is recycled or recovered at the national level, let alone at the Herefordshire level.

6.3.3 As with LACW, EU CEP targets have been used to assess future management capacity requirements for non-hazardous C&I waste. Whilst this may overestimate the recycling/recovery requirement and underestimate the landfill need, as a municipal waste target would only apply to the waste comparable to household waste in nature, composition and quantity, it is likely that the Landfill Tax will continue to drive other C&I wastes away from landfill.

[35] 70% of the 32,000 to 42,750 tonnes of waste assumed to be recycled.
[36] Defra, LACW Statistic, 2018/19

6.3.4 It is assumed that hazardous C&I waste will be handled through specialist hazardous waste management facilities (section 6.6). Table 6.3 presents the potential future capacity required to manage Herefordshire's non-hazardous C&I waste.

6.3.5 Again, two scenarios are used to consider the residual waste fraction (i.e. that remaining after recycling):

- assuming that the maximum allowable level of landfill is fully utilised; and
- assuming that all residual C&I waste is sent directly to a residual waste treatment facility.

Increased recycling

6.3.6 As with the LACW waste capacity requirements, a further scenario of 70% recycling and composting and a maximum of 5% to landfill by 2030 has been modelled and the results are presented in Table 6.4.

6.3.7 This increased recycling scenario indicates an increased demand of 8,300 to 9,500 tonnes of recycling/composting capacity, and consequent reductions in landfill and residual waste manage capacity.

Table 6.3 Forecast C&I waste management requirement (rounded to nearest 1,000 tonnes)

Description	2020	2025	2030	2035	2041	
C&I Forecasts						
Minimum (Scenario 1a) using 2015 data	126,000	140,000	153,000	167,000	185,000	1
Medium (Scenario 2b) using 2017 data	173,000	179,000	185,000	191,000	199,000	2
Maximum (Scenario 2b) using 2018 data	204,000	210,000	217,000	224,000	233,000	3
Recycling and composting						
Potential recycling and composting targets	50%	55%	60%	65%	65%	
				Recycling and composting capacity required		
Minimum (tonnes)	63,000	77,000	91,800	108,600	120,300	4
Medium (tonnes)	86,500	98,500	111,000	124,200	129,400	5
Maximum (tonnes)	102,000	115,500	130,200	145,600	151,500	6
Landfill						
Maximum allowed landfill assuming 75% C&I waste recovery by 2020 and gradual limitation to 2035 target	25%	20%	15%	10%	10%	
				Landfill capacity required		
Minimum (tonnes)	31,500	28,000	23,000	16,700	18,500	7
Medium (tonnes)	43,300	35,800	27,800	19,100	19,900	8
Maximum (tonnes)	51,000	42,000	32,600	22,400	23,300	9
Residual treatment requirement						
Minimum assuming maximum allowed landfill is utilised	31,500	35,000	38,200	41,700	46,200	10
Medium assuming maximum allowed landfill is utilised	43,200	44,700	46,200	47,700	49,700	11
Maximum assuming maximum allowed landfill is utilised	51,000	52,500	54,200	56,000	58,200	12
Minimum assuming no C&I waste direct to landfilled	63,000	63,000	61,200	58,400	64,700	13
Medium assuming no C&I waste direct to landfilled	86,500	80,500	74,000	66,800	69,600	14
Maximum assuming no C&I waste direct to landfilled	102,000	94,500	86,800	78,400	81,500	15

Table 6.4 Forecast C&I waste management requirement, high recycling and composting (rounded to nearest 1,000 tonnes)

Description	2020	2025	2030	2035	2041	
C&I Forecasts						
Minimum (Scenario 1a) using 2015 data	126,000	140,000	153,000	167,000	185,000	1
Medium (Scenario 2b) using 2017 data	173,000	179,000	185,000	191,000	199,000	2
Maximum (Scenario 2b) using 2018 data	204,000	210,000	217,000	224,000	233,000	3
Recycling and composting						
Potential recycling and composting targets	50%	65%	70%	70%	70%	
					Recycling and composting capacity required	
Minimum (tonnes)	63,000	91,000	107,100	116,900	129,500	4
Medium (tonnes)	86,500	116,400	129,500	133,700	139,300	5
Maximum (tonnes)	102,000	136,500	151,900	156,800	163,100	6
Landfill						
Maximum allowed landfill assuming 75% C&I waste recovery by 2020 and gradual limitation to 2035 target	25%	10%	5%	5%	5%	
					Landfill capacity required	
Minimum (tonnes)	31,500	14,000	7,700	8,400	9,300	7
Medium (tonnes)	43,300	17,900	9,300	9,600	10,000	8
Maximum (tonnes)	51,000	21,000	10,900	11,200	11,700	9
Residual treatment requirement						
Minimum assuming maximum allowed landfill is utilised	31,500	35,000	38,200	41,700	46,200	10
Medium assuming maximum allowed landfill is utilised	43,200	44,700	46,200	47,700	49,700	11
Maximum assuming maximum allowed landfill is utilised	51,000	52,500	54,200	56,000	58,200	12
Minimum assuming no C&I waste direct to landfilled	63,000	49,000	45,900	50,100	55,500	13
Medium assuming no C&I waste direct to landfilled	86,500	62,600	55,500	57,300	59,700	14
Maximum assuming no C&I waste direct to landfilled	102,000	73,500	65,100	67,200	69,900	15

Potential future C&I waste management capacity demand

6.3.8 Recognising the lack of clarity available within the C&I waste data sets, forecasting the future level of new waste management capacity cannot be precise.

6.3.9 This Assessment suggests that to meet the assumed recycling and composting targets, across the whole of the C&I waste stream, would require 92,000 to 130,000 tonnes of capacity at 2030 (Table 6.3, rows 4 and 6) which would increase to a maximum demand of 151,500 tonnes at 2041 (Table 6.3, row 6). Comparing this to the calculated requirement at 2020 would indicate a requirement for an additional c.30,000[37] to 60,000[38] tonnes of recycling/composting capacity (by 2030 and 2041 respectively).

6.3.10 If the higher recycling and composting targets are applied, requires 107,000 to 152,000 tonnes of capacity at 2030 (Table 6.4, rows 4 and 6) which would increase to a maximum demand of 163,000 tonnes at 2041 (Table 6.4, row 6). Again, comparing this to the calculated requirement at 2020 would indicate a requirement for an additional c.44,000[39] to 66,500[40] tonnes of recycling/composting capacity (by 2030 and 2041 respectively).

6.3.11 Section 3.1 (Table 3.3) identifies that there is, potentially, unused capacity within Herefordshire that would be sufficient to accommodate this additional requirement:

- transfer with basic treatment (84,000 tonnes in 2018);
- metal recycling (132,000 tonnes in 2018); and
- biological treatment capacity (285,000 tonnes in 2018).

6.3.12 Consequently, no additional capacity is required to handle the increased levels of recycling and compost needed to achieve the targets, even the higher rates. However, the ability of the existing facilities to treat additional materials for recycling and biological treatment will depend on the nature of the material diverted from the residual waste and any physical constraints at the sites (i.e. facilities not being able to handle waste up to their permit limit).

6.3.13 There is no residual waste treatment or disposal capacity such as MBT, RDF production, energy from waste or landfill facilities. The treatment/disposal of residual C&I waste is reliant on facilities outside Herefordshire. Consequently, if Herefordshire is to achieve equivalent self-sufficiency in managing its residual C&I wastes, additional capacity will need to be delivered.

6.3.14 Furthermore, that capacity will need to incorporate the wastes calculated to otherwise be disposed to landfill. Table 6.3 (rows 13 and 15) indicates that 61,200 to 86,800 tonnes of residual C&I waste treatment/disposal capacity could be required by 2030, if the assumed

[37] Table 6.3 (row 4) identifies a minimum of 91,800 tonnes of capacity required at 2030, an increase of 28,800 tonnes on 2020. Row 6 identifies a maximum of 130,200 tonnes at 2030, an increase of 28,200 tonnes. This gives the lower calculated increase of c.30,000 at 2030.

[38] Table 6.3 (row 4) identifies a minimum of 120,300 tonnes of capacity required at 2041, an increase of 57,300 tonnes on 2020. Row 6 identifies a maximum need for 151,500 tonnes at 2041, an increase of 49,500 tonnes on 2020. This gives the upper range of c.60,000 at 2041.

[39] Table 6.4 (row 4) identifies a minimum of 107,100 tonnes of capacity required at 2030, an increase of 44,100 tonnes on 2020. Row 6 identifies a maximum of 151,900 tonnes at 2030, an increase of 49,900 tonnes. This gives the lower calculated increase of c.44,000 at 2030.

[40] Table 6.4 (row 4) identifies a minimum of 129,500 tonnes of capacity required at 2030, an increase of 66,500 tonnes on 2020. Row 6 identifies a maximum of 163,100 tonnes at 2041, an increase of 61,100 tonnes. This gives the lower calculated increase of c.66,500 at 2041.

targets are applied to the whole C&I waste stream; at 2041 the level of demand would be between 64,700 and 81,500 tonnes (there is a decrease in residual demand because recycling has increased).

6.3.15 Whilst the remaining potential capacity requirement is not insignificant, it is not particularly large; such capacity could be provided within a single facility or through a small number of facilities operating on an industrial estate. This would be the case even if increased recycling/composting targets are applied.

6.4 Construction, Demolition and Excavation Waste (CD&E waste)

6.4.1 Article 11(2)(b) of the European Waste Framework Directive[41] sets a target to recover at least 70% of non-hazardous C&D Waste by 2020. This is a national target, but it is not formally cascaded down to local authorities. In December 2016, Defra reported that this target is already being met within the UK, with a recovery rate of over 90% for each year between 2010 and 2014[42].

6.4.2 Beyond 2020 recovery targets for CD&E waste are still to be set. The European Commission's current proposals do not make any change to the current recovery target for non-hazardous construction and demolition waste but do require Member States to '*take measures to promote sorting systems for construction and demolition waste and for at least the following: wood, aggregates, metal, glass and plaster*'.

6.4.3 In considering future capacity requirements for CD&E waste, the following assumptions have been made:

- Clean uncontaminated excavation wastes will be predominately be used for backfilling, which is defined as a recovery operation where suitable waste is used for reclamation purposes in excavated areas or for engineering purposes in landscaping or construction instead of other non-waste materials which would otherwise have been used for that purpose.
- Hazardous C&D waste will be handled through specialist hazardous waste management facilities (section 6.5).
- At least 70% of non-hazardous C&D waste will be recovered per annum during the plan period.

6.4.4 Based on these assumptions the potential future waste treatment capacity required to handle Herefordshire's CD&E waste is summarised in Tables 6.5 and 6.6. There is a high level of uncertainty associated with CD&E wastes estimates and forecasts, which is explained in section 4.4

[41] Directive 2008/98/EC
[42] UK Statistics on Waste, Defra, December 2016

Table 6.5 Forecast waste management capacity required for forecast non-hazardous CD&E waste based on 2015 waste arisings estimates (tonnes)

Description	2020	2025	2030	2035	2041	
Backfilling capacity of excavation waste / dredging spoils						
Minimum	194,000	213,000	229,000	244,000	263,000	1
Maximum	206,000	227,00	244,000	259,000	279,000	2
Non-hazardous C&D forecasts						
Minimum	164,000	181,000	195,000	207,000	223,000	3
Maximum	174,000	192,000	207,000	220,000	237,000	4
Non-hazardous C&D recovery						
Assumed recovery target of 70% for non-hazardous C&D waste	70%	70%	70%	70%	70%	
Recovery capacity required						
Minimum (tonnes)	114,800	126,700	136,500	144,900	156,100	5
Maximum (tonnes)	121,800	134,400	144,900	154,000	165,900	6
Maximum required if the current UK recovery rate of 90% for non-hazardous C&D is maintained	90%	90%	90%	90%	90%	
Recovery capacity required						
Minimum (tonnes)	147,600	162,900	175,500	186,300	200,700	7
Maximum (tonnes)	156,600	172,800	186,300	198,000	213,300	8
Non-hazardous C&D landfill						
Maximum allowed landfill assuming 70% of non-hazardous C&D is recovered	30%	30%	30%	30%	30%	
Landfill capacity required						
Minimum (tonnes)	49,200	54,300	58,500	62,100	66,900	9
Maximum (tonnes)	52,200	57,600	62,100	66,000	71,100	10
Maximum required if the current UK recovery rate of 90% for non-hazardous C&D is maintained	10%	10%	10%	10%	10%	
Landfill capacity required						
Minimum (tonnes)	16,400	18,100	19,500	20,700	22,300	11
Maximum (tonnes)	17,400	19,200	20,700	22,000	23,700	12

Table 6.6 Forecast waste management capacity required for forecast non-hazardous CD&E waste based on 2018 waste arisings estimates (tonnes)

Description	2020	2025	2030	2035	2041	
Backfilling capacity of excavation waste / dredging spoils						
Minimum	205,000	226,000	243,000	258,000	278,000	1
Maximum	211,000	232000	250,000	265,000	286,000	2
Non-hazardous C&D forecasts						
Minimum	196,000	216,000	232,000	246,000	265,000	3
Maximum	209,000	230,000	248,000	263,000	284,000	4
Non-hazardous C&D recovery						
Assumed recovery target of 70% for non-hazardous C&D waste	70%	70%	70%	70%	70%	
Recovery capacity required						
Minimum (tonnes)	137,200	151,200	162,400	172,200	185,500	5
Maximum (tonnes)	146,300	161,000	173,600	184,100	198,800	6
Maximum required if the current UK recovery rate of 90% for non-hazardous C&D is maintained	90%	90%	90%	90%	90%	
Recovery capacity required						
Minimum (tonnes)	176,400	194,400	208,800	221,400	238,500	7
Maximum (tonnes)	188,100	207,000	223,200	236,700	255,600	8
Non-hazardous C&D landfill						
Maximum allowed landfill assuming 70% of non-hazardous C&D is recovered	30%	30%	30%	30%	30%	
Landfill capacity required						
Minimum (tonnes)	58,800	64,800	69,600	73,800	79,500	9
Maximum (tonnes)	62,700	69,000	74,400	78,900	85,200	10
Maximum required if the current UK recovery rate of 90% for non-hazardous C&D is maintained	10%	10%	10%	10%	10%	
Landfill capacity required						
Minimum (tonnes)	19,600	21,600	23,200	24,600	26,500	11
Maximum (tonnes)	20,900	23,000	24,800	26,300	28,400	12

6.4.5 Section 3.1 identifies that there is treatment/recovery capacity available for handling CD&E waste, with annual permitted capacity (in 2016) of:

- 58,000 tonnes for the deposit of waste to land (recovery);
- 75,000 tonnes of soil production; and
- approximately 100,000 tonnes of physical treatment capacity, although it should be noted that one site with 75,000 tonnes of permitted capacity has accepted less than 200 tonnes per annum for the last 3 years.

6.4.6 By 2018, both the deposit of waste to land (recovery) and soil production sites had closed. Instead, a CD&E physical treatment facility had opened with a permitted capacity of 250,000 tonnes per annum, which received approximately 100,000 tonnes in 2018.

6.4.7 However, it is difficult to isolate the treatment capacity required for CD&E waste as some of the CD&E waste will be:

- handled at facilities that also receive LACW and C&I waste e.g. household, commercial and industrial transfer stations;
- handled at exempt facilities/sites; or
- processed at the site of production by mobile screening, crushing and grading equipment.

6.4.8 In terms of exemption facilities/sites, there are over 320 U1 exemptions (Use of waste in construction) registered in Herefordshire in 2016, which can be an outlet for CD&E wastes. By 2018, the number of U1 exemptions increased to 1,025. However, these exemptions cannot be considered as a guaranteed capacity to manage CD&E wastes because:

- some exemptions could be short term but remain on the register for 3 years; or
- in terms of on farm exemptions (which account for over 96.5% of the U1 exemptions) the need for material may be periodic, e.g. for the repair of farm tracks, and the exemption has been registered just in case material is required.

6.4.9 If it is assumed that half the U1 exemptions are active in any given year and the tonnage received at each exemption ranges from 100 to 500 tonnes, the registered exemptions could provide between 50,000 to 250,000 tonnes of recovery capacity. As highlighted in section 5.4, it is considered unlikely, given the rural nature of Herefordshire, that arisings in the region of 200,000 tonnes (the upper end of the range) of excavation waste would be produced every year.

6.4.10 Based on this assessment the following capacity demand for CD&E waste should be considered:

- Recovery (including recycling and re-use): 185,000 to 250,000 tonnes per annum by 2041, based on the most recent Defra estimate, through permitted and exempt facilities/sites. This is potentially covered by the existing facilities and exemptions, for example the use of waste under U1 exemptions would be considered as recovery and over 100,000 tonnes is handled at permitted physical treatment and waste transfer/treatment facilities.
- Landfill: 20,000 to 85,000 tonnes per annum, depending on the level of recovery achieved.
- For any developments that will generate significant quantities of excavation waste, the developer would need to demonstrate that there is sufficient capacity to handle the proposed arisings e.g. through backfilling or quarry restoration.

6.4.11 It is likely that some thought will need to be given to identifying strategic locations for the future management of non-hazardous CD&E waste.

6.5 Agricultural Waste

6.5.1 It is estimated that small quantities of non-natural agricultural waste are generated in Herefordshire, between 6,000 to 8,000 tonnes. This waste will consist of materials such as

used oils, scrap metal, paper, cardboard and plastic wastes etc. much of which will be captured in the C&I waste estimates. These wastes will be coded under LoW Chapters 13, 15 and 16 and consequently the agricultural element cannot be differentiated.

6.5.2 Future waste arisings will be dictated by the nature of agricultural activity within Herefordshire. However, as highlighted in the River Wye SAC NMP, it is not possible to predict the future when it comes to agriculture in the River Wye catchment.

6.5.3 Therefore, it is assumed that the non-natural agricultural waste will remain in the range of 6,000 to 8,000 tonnes and that the amount of natural agricultural waste that is managed at permitted facilities will be dictated by the development of on-farm AD systems. Between 2013 and 2018, the number of on-farm AD systems increased from one to ten sites, with a combined permitted capacity of 479,500 tonnes in 2018 and an input of 66,300 tonnes.

6.5.4 If manures and slurries are not used appropriately within a farm, there is the potential for over-application of nitrogen and other minerals, and also for potential impacts upon water resources. On-farm AD systems provide a method of managing such materials and the digestate produced has a lower biological oxygen demand that can be used as a more uniform, easily calibrated fertiliser than the original untreated manure[43].

6.5.5 The very low tonnages forecast to arise indicate that agricultural wastes should continue to be appropriately managed by the private sector; the MWLP does not need to identify strategic locations for its management.

6.6 Hazardous Waste

6.6.1 Small quantities of hazardous waste are generated within Herefordshire, 10,500 tonnes in 2015, 8,000 tonnes in 2016 and 12,000 tonnes in 2018 (a very small fraction of the 4 million tonnes consigned in England)[44].

6.6.2 Whilst there is a legal requirement for England to have in place a range of facilities for the recovery of hazardous wastes, this is a national requirement that is not cascaded down to local authorities. The Government considers that the waste industry has the expertise necessary to determine where infrastructure should be located and the most appropriate technologies to use[45]. In part, this recognises that there is a need to account for economies of scale, as treatment facilities will only be economically viable above a certain capacity. Whilst this principle holds true across all waste management facilities, it is particularly relevant to hazardous waste, as this is normally generated in very small tonnages at any one location. Furthermore, the cumulative effect of a number of smaller facilities, may, in some cases, be larger than those for one large facility[46].

6.6.3 The National Policy Statement for Hazardous Waste: A framework document for planning decisions on nationally significant hazardous waste infrastructure was published in June 2013 ('the Hazardous Waste NPS'). It sets out policy for nationally significant infrastructure projects that comprise:

[43] Defra, Anaerobic Digestion Strategy and Action Plan, 2011
[44] Waste Management Plan for England, December 2013
[45] Principle 2 of the Strategy for Hazardous Waste Management in England, 2010
[46] National Policy Statement for Hazardous Waste: A framework document for planning decisions on nationally significant hazardous waste infrastructure, Defra, June 2013

- final recovery/disposal hazardous waste facilities with a permitted hazardous waste throughput capacity in excess of 30,000 tonnes per annum; or
- hazardous waste landfill or deep storage facility with a permitted hazardous waste throughput or acceptance capacity in excess of 100,000 tonnes per annum; or
- alterations to existing plant with an increase in capacity of 30,000 tonnes per annum or 100,000 tonnes for landfill.

6.6.4 The Hazardous Waste NPS does not preclude the provision of smaller scale facilities and applications for developments below the thresholds will continue to be considered by waste planning authorities under the existing planning system. However, the policy set out in the NPS may be a material consideration when determining any such application.

6.6.5 In conclusion, there would not appear to be a need for the MWLP to identify strategic locations for the management of hazardous waste within Herefordshire. Due to the location of the county, it is unlikely to be a destination chosen for a nationally significant infrastructure project, whilst smaller facilities should be capable of being accommodated on industrial estates and similar locations.

6.7 Summary of Capacity Requirements

6.7.1 Table 6.7 summarises the key capacity requirements concluded from the assessment for each waste stream.

Table 6.7 Summary of key points from capacity need assessment

Waste Stream	Capacity Need Assessment – Key Points
LACW	Permitted capacity within the county is limited to facilities that offer transfer with basic treatment or provide biological treatment. There is no residual waste treatment or disposal capacity such as MBT, RDF production, incineration (with or without energy recovery) or landfill. Herefordshire Council has historically worked with Worcestershire County Council to manage effectively the authorities' LACW. This collaboration has resulted in the production of a Joint Municipal Waste Management Strategy and joint procurement of strategic waste management capacity. Whilst these facilities are not located in Herefordshire, long term capacity is available to manage Herefordshire's LACW (through the EnviSort and EnviRecover Facilities). If the separate collection of bio-waste for recycling becomes a requirement, capacity would be necessary to handle separately collected food and garden waste, calculated to be in the region of 32,000 to 42,750 tonnes by 2041. There is currently significant capacity at biological treatment facilities in Herefordshire, which should offer sufficient capacity to handle separately collected local authority collected bio-waste. This Assessment calculates an additional 22,500 to 30,000 tonnes of material that may require handling through a MRF. This additional tonnage may place some pressure on the EnviroSort Facility, depending on how it is configured and how much waste is sent to it from Worcestershire. The EnviRecover Facility is considered to have sufficient capacity throughout the plan period. The available capacity at these sites should be monitored to understand any pressure points on this capacity, particularly towards the end of the plan period. This Assessment concludes that there will be sufficient capacity to manage LACW though the plan period, with no immediate demand for new facilities.
C&I waste	Permitted capacity within the county is limited to facilities that offer transfer with basic treatment, metal recycling and biological treatment capacity. There is no residual waste treatment or disposal capacity such as MBT, RDF production, energy from waste or landfill facilities. The treatment and disposal of residual C&I waste is reliant on facilities outside Herefordshire. This Assessment suggests that by 2030, depending on the levels of recycling and composting achieved 30,000 to 44,000 tonnes of additional recycling/composting capacity would be required, potentially increased to 60,000 to 65,000 tonnes by 2041. However, it has also been identified that there is a substantial amount of unused capacity at permitted sites already operating within Herefordshire. If Herefordshire is to achieve equivalent self-sufficiency in managing its residual C&I wastes, additional capacity will need to be delivered to manage residual C&I waste. This capacity will need to incorporate the wastes calculated to, otherwise, be disposed to landfill, resulting in a need for 61,200 to 86,800 tonnes by 2030 or 64,700 and 81,500 tonnes by 2041. However, this conclusion is made on the recognised uncertainties inherent with the data.

Waste Stream	Capacity Need Assessment – Key Points
CD&E waste	Permitted capacity within the county is focussed on the recovery of CD&E wastes, with limited disposal options. Based on this assessment the following capacity demand for CD&E waste should be considered: Recovery (including recycling and re-use): 195,000 to 250,000 tonnes per annum by 2041 through permitted and exempt facilities /sites, although this is potentially covered by the existing facilities and exemptions, for example the use of waste under U1 exemptions would be considered as recovery, and over 100,000 tonnes is handled at permitted physical treatment and waste transfer/treatment facilities. Landfill: 20,000 to 85,000 tonnes per annum, depending on the level of recovery achieved; and However, this conclusion is made on the recognised uncertainties inherent with the data.
Agricultural waste (non-natural)	It is estimated that small quantities of non-natural agricultural waste are generated in Herefordshire, between 6,000 to 8,000 tonnes. Based on this level of generation, non-natural agricultural wastes should continue to be appropriately managed by the private sector, and likely within the C&I waste stream. On-farm anaerobic digestion provides a method of managing natural agricultural wastes, including manures and slurries.
Hazardous waste	Small quantities of hazardous waste are generated within Herefordshire, estimated at 10,500 tonnes in 2015, 8,000 tonnes in 2016 and 12,000 tonnes in 2018 (a very small fraction of the 4 million tonnes consigned in England). In general, hazardous waste treatment and disposal facilities are considered at a national level because of the need to account for economies of scale. This is reflected in the Hazardous Waste NPS which requires final recovery/disposal hazardous waste facilities with capacity in excess of 30,000 tonnes per annum to be considered as nationally significant infrastructure projects. Therefore, based on the small quantities generated in Herefordshire, there would not appear to be a need for the MWLP to identify strategic locations for the management of hazardous waste within Herefordshire. Due to the location of the county, it is unlikely to be a destination chosen for a nationally significant infrastructure project, whilst smaller facilities should be capable of being accommodated on industrial estates and similar locations.

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Spatial Context and Sites Report

HEREFORDSHIRE MINERALS AND WASTE LOCAL PLAN DRAFT PLAN

Hendeca
MARCH 2018

Contents

Annex

1. Introduction

1.1 Purpose of this report

1.1.1 Paragraph 157 of the National Planning Policy Framework (NPPF) identifies a number of items that local plans should include. The following are particularly relevant to the spatial element of plan making and site identification:

- indicate broad locations for strategic development on a key diagram and land-use designations on a proposals map;
- allocate sites to promote development and flexible use of land, bringing forward new land where necessary, and provide detail on form, scale, access and quantum of development where appropriate; and
- identify land where development would be inappropriate, for instance because of its environmental or historic significance.

1.1.2 In addition, Planning Policy Guidance[1] advises that *'mineral planning authorities should plan for the steady and adequate supply of minerals in one or more of the following ways (in order of priority)*:

- *Designating Specific Sites – where viable resources are known to exist, landowners are supportive of minerals development and the proposal is likely to be acceptable in planning terms. Such sites may also include essential operations associated with mineral extraction;*
- *Designating Preferred Areas, which are areas of known resources where planning permission might reasonably be anticipated. Such areas may also include essential operations associated with mineral extraction; and/or*
- *Designating Areas of Search – areas where knowledge of mineral resources may be less certain but within which planning permission may be granted, particularly if there is a potential shortfall in supply.*'

1.1.3 This report has been prepared to consider the spatial context of Herefordshire and to identify sites or areas that are considered appropriate for development, and those that are not. This report presents both development of the spatial strategy for the Minerals and Waste Local Plan (MWLP) and consideration of specific sites.

1.2 Evidence Base

1.2.1 There are four key elements of evidence considered in this report:

- the Herefordshire Local Plan Core Strategy, 2011 – 2031 (the Core Strategy);
- the underlying geology, the natural and built environments of Herefordshire;
- existing and proposed minerals and waste sites in Herefordshire; and

[1] Paragraph: 008, Reference ID: 27-008-20140306. Revision date: 06.03.2014. https://www.gov.uk/guidance/minerals

- other inputs, the Sustainability Appraisal, Habitats Regulation Assessment Scoping Report and responses to the Issues and Options Report.

1.2.2 Each of these are considered in more detail within this report as they set the baseline for developing a spatial strategy and identifying strategic locations for minerals and waste development.

1.2.3 The identified sites are referred to throughout this report, with minerals locations identified by the prefix 'M' and waste sites by the prefix 'W'. Details of all the site considered are provided in Annexes A and B, whilst section 3 of this report presents the site analysis that has been undertaken.

Other plan making assessments

1.2.4 The analysis of the sites and locations considered in this report has been informed by high level Geographic Information System (GIS) data, which has enabled the key sensitivities within Herefordshire to be identified and preferred areas for development shortlisted. It is recognised that local plans, including those with site allocations, need also to be subject to other assessments, not least habitats regulations assessment and strategic flood risk assessment. The other plan making assessments are being undertaken alongside preparation of the MWLP.

2. The Evidence Base

2.1 Core Strategy

Overarching spatial strategy and key strategic decisions

2.1.1 The overarching spatial strategy for Herefordshire is set out at section 3 of the Core Strategy (paragraphs 3.17 to 3.24). It was developed through robust consideration of the evidence base, iterative consultation and wide-ranging analysis under Sustainability Appraisal/Strategic Environmental Assessment and Habitats Regulations Assessment. The Core Strategy was adopted in 2015 and remains a relevant source of evidence in preparing the Minerals and Waste Local Plan.

2.1.2 Figure 3.2 of the Core Strategy sets out the key strategic decisions that have been taken. The first two of these are particularly relevant to waste development and should underpin the spatial strategy for waste:

- focussing the majority of development to Hereford and the market towns; and
- focussing the largest strategic allocation (after Hereford) to Leominster.

2.1.3 The third key strategic decision commits to promoting a western relief road as part of the transport package for Hereford. This is relevant to both minerals and waste development as thought is given to how those materials will be transported around the county.

2.1.4 The fourth and fifth key strategic decisions focus upon housing; they are not directly related to the spatial strategy for either minerals or waste, albeit the three development types do interact. Relevant to minerals and waste is an understanding that some development may be appropriately located in the rural areas. Indeed, paragraph 3.19 recognises that the decision not to accommodate all development within the county's urban areas is based on the recognition of Herefordshire's dispersed settlement pattern. However, this is to be balanced with the intention to focus most development within and adjoining the urban areas.

2.1.5 These principles are therefore the starting point of the spatial strategy for the MWLP.

Core Strategy policy

2.1.6 Core Strategy policy SS4 establishes principles for movement and transportation that will also be relevant to minerals and waste development. Minerals infrastructure includes rail sidings that enable freight to be moved from road to rail and former workings provide opportunities for improved access to the outdoors. Transport will be an important matter for both minerals and waste development. In addition, internal transport arrangements, within mineral sites, should be considered as an element of operational infrastructure.

2.1.7 Core Strategy policy SS5 presents new strategic employment land provision at Hereford, Leominster, Ledbury and Ross-on-Wye. It also identifies the Hereford Enterprise Zone at Rotherwas and proposals for employment land at Bromyard and Kington. Waste management is a technology-led sector and would appropriately be included within the description of '*knowledge intensive industries*' and '*environmental technologies' that are intended to be 'facilitated where they do not have an adverse impact on the community or local environment*.'

2.1.8 These types of locations are considered to be appropriate, in principle, for the development of waste management facilities.

2.1.9 '*The strategy for improving environmental quality will support the creation of sustainable communities through protecting existing built, heritage and natural environment assets, the better use of resources and addressing the causes and effects of climate change.*' This strategy is directly applicable to both minerals and waste development, which can also provide opportunities for green infrastructure delivery.

2.1.10 The approach of addressing issues at a landscape scale is also relevant, particularly to minerals development which can be extensive and influential within the landscape in which it is located.

2.1.11 Paragraph 3.94 recognises that greenfield land will need to be used in delivering the scale of development set out in the Core Strategy. This is particularly important for new mineral workings, which invariably requires the development of land that is greenfield. Policy SS6 provides an appropriate approach to considering new development locations.

2.1.12 Addressing climate change remains a global priority; both minerals and waste development has the opportunity to make significant contribution locally. Policy SS7 provides a structure for the MWLP, which should further consider the role to be played by minerals and waste sites.

The difference between minerals and waste

2.1.13 It is a fact that minerals can only be worked (extracted) where they exist. Consequently, any spatial strategy for minerals extraction must be driven by the underlying geology of an area; it is not possible to start with the Core Strategy.

2.1.14 However, where there is a broad expanse of mineral resource, it is possible to consider prioritising one area over another, an exercise which should be expected to draw upon the Core Strategy in terms of identifying key constraints to and drivers for development (eg landscape designations and growth centres).

2.1.15 Waste development should be located so as to provide a network of facilities that would allow waste to be treated in one of the nearest appropriate installations. Put simply, one might expect waste facilities to be located within, or close to, settlements. As built development, waste facilities are subject to the spatial strategy set out in the Core Strategy.

Conclusions

2.1.16 The Core Strategy presents a comprehensive spatial portrait and establishes principles that are relevant to the spatial strategy for minerals and waste development. This should be relied upon as the starting point for the MWLP. It need not be repeated but any specific change from it should be made clear within the new plan.

2.1.17 The overarching spatial strategy and policies SS4, SS5 and SS7 are all relevant to the MWLP and should form the backbone to its spatial strategy. Consequently, waste development will be focussed at Hereford, Leominster and the market towns.

2.1.18 As has already been observed, minerals extraction can only take place where it occurs, consequently this urban focus cannot generally be followed for minerals development. The review of the underlying geology and natural and built environment of Herefordshire has identified both key areas of search for minerals development and those areas that should be

constrained from future development. Not surprisingly these also generally follow the approach to development set out in both the NPPF and the Core Strategy, such as giving great weight to conserving landscape and scenic beauty in Areas of Outstanding Natural Beauty.

2.1.19 As set out in Table 3.3 of the Issues and Options Report, the Core Strategy contains a number of development management policies that would apply to proposals for minerals and waste development. There are few matters that require new policy to be presented in the MWLP; this is not surprising as there are few development management matters that are inherently different for minerals and waste developments than for any other development type.

2.1.20 Application of these Core Strategy policies will generally provide an appropriate level of development management for minerals and waste development (although some additional provisions are required such as in relation to site reclamation). There is no evidence to suggest that a table of environmental constraints, such as those presented in Table 3.4 of the Issues and Options Report, are required.

2.2 The Underlying Geology and the Natural and Built environments of Herefordshire

2.2.1 It has already been demonstrated that the spatial strategy of the Herefordshire Core Strategy is appropriate to waste management. This section consequently focusses on minerals reserves, their safeguarding and identifying preferred areas of search. However, some of the matters considered are also relevant to waste and comment is made as appropriate.

Underlying geology

2.2.2 The British Geological Survey (BGS) has mapped the underlying geology of Herefordshire, which provides the starting point for understanding where mineral lies within the county. BGS data is not provided to a level of detail that enables us to understand the quality or depth of the mineral; this is only identified through mineral exploration activities such as taking borehole samples, which is beyond the remit of plan making.

2.2.3 Figure 2.1 presents the BGS data for Herefordshire with identified minerals sites mapped. The term 'identified' is used as not all the sites are active. Figure C.1 in Annex C presents just the BGS data mapping, without the sites.

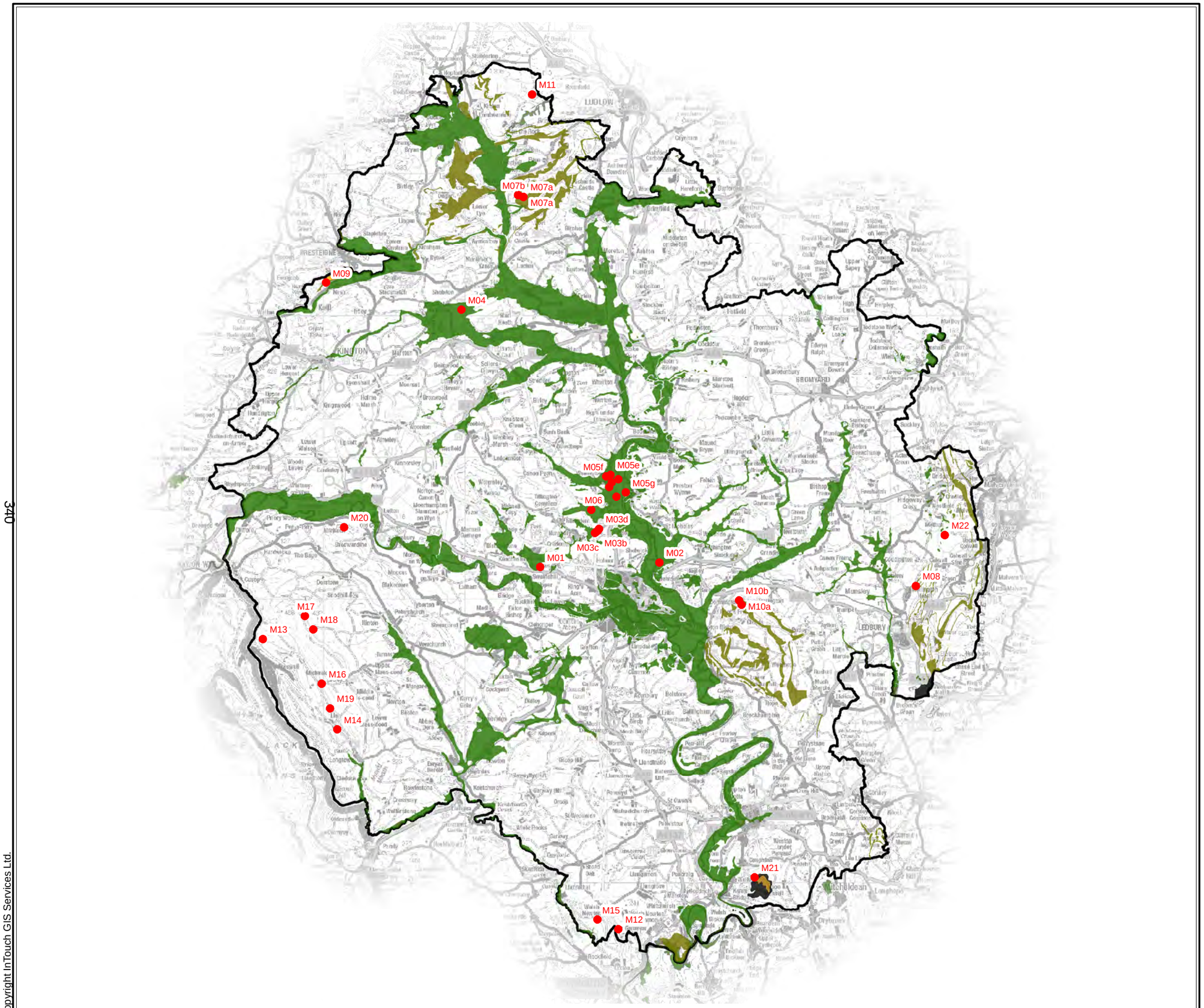
2.2.4 Whilst, superficial **sand and gravel reserves** are present across much of the county, the more significant resources generally follow the river corridors as these deposits are generally made by fluvial activity. The permitted sand and gravel quarries and associated proposal areas are all located within the significant areas of reserve: Sites M03 Upper Lyde and M05 Wellington, to the north of Hereford; and Site M04 Shobdon, located in the north-western corner of the county.

2.2.5 **Limestone** (in Herefordshire this is crushed and used as an aggregate) deposits lie to the north, south and east of the county. The active limestone quarries are located in these reserves: Site M07, Leinthall Quarry is located to the north; whilst Site M10, Perton Quarry is located just south east of Hereford.

2.2.6 The BGS data indicates that there are reasonably extensive reserves of sand and gravel and limestone, such that preferred areas of search and identified sites should be presented within the MWLP.

Herefordshire Minerals and Waste Local Plan

Figure 2.1
Mineral resources in Herefordshire with identified sites



Mineral Reserves

- Brick clay
- Coal
- Limestone (including dolomite)
- Sandstone: Pre-Cambrian, Ordovician, Silurian Greywacke
- Superficial sand/gravel
- Identified Sites

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2.2.7 The BGS data only shows a small resource of **sandstone**, located to the north west of the county, adjacent to the boundary with Wales and just south of Presteigne. However, there are a number of active sandstone delves located elsewhere in Herefordshire:

- Site M20, Westonhill Wood is situated in the west of the county, west of Hereford, just south of the junction between the A4112 and the A438;
- Sites M13 Black Hill, M16 Llandraw, M17 Pennsylvani, and M18 Sunnybank are situated in the south west of the county; and
- Site M12 Callow is in the very south of Herefordshire, just north of Monmouth.

2.2.8 The BGS data indicates that there are limited reserves of these minerals and it would be difficult to identify preferred areas of search for sandstone. In addition, within Herefordshire sandstone is worked as small delves, small working areas that are more appropriately considered on a site by site basis. Consequently, preferred areas of search are not identified.

2.2.9 Small deposits of **building clay and coal** are shown in the BGS data, located in the very south of the county, just south of Ross-on-Wye and Ledbury, including Site M22 Howle Hill. The lack of clay deposits is important in terms of waste management; there are no non-inert landfill sites in Herefordshire, reflecting the lack of a suitable geology for such facilities.

2.2.10 There is no evidence of building clay having been worked in Herefordshire. Whilst there is some evidence of coal extraction in the past, it is also extremely unlikely that this mineral will be worked in Herefordshire in the future. Existing reserves will be safeguarded, but no preferred areas of search will be promoted within the MWLP.

The natural and built environments of Herefordshire

2.2.11 GIS data relevant to the natural and built environments of Herefordshire has been layered over the BGS data. This approach uses relevant constraints and opportunities to identify the preferred areas for future mineral development.

2.2.12 Figure 2.2 shows all the data layers applied to the minerals resource mapping with the identified sites also mapped. The data sets selected have been informed by the spatial strategy policy of the Core Strategy, which incorporates the natural and built environment priorities for the county. Figure C.2 at Annex C presents the data layers without the identified sites.

2.2.13 As this exercise applies across the county, it has been undertaken at a high level and focussed on some key constraints: National Park; Area of Outstanding Natural Beauty; Natura 2000 sites; UK ecological designations; groundwater source protection zones; and urban areas. These criteria are explained at Table 2.1. They are considered appropriate to establish those areas where minerals development would not be encouraged.

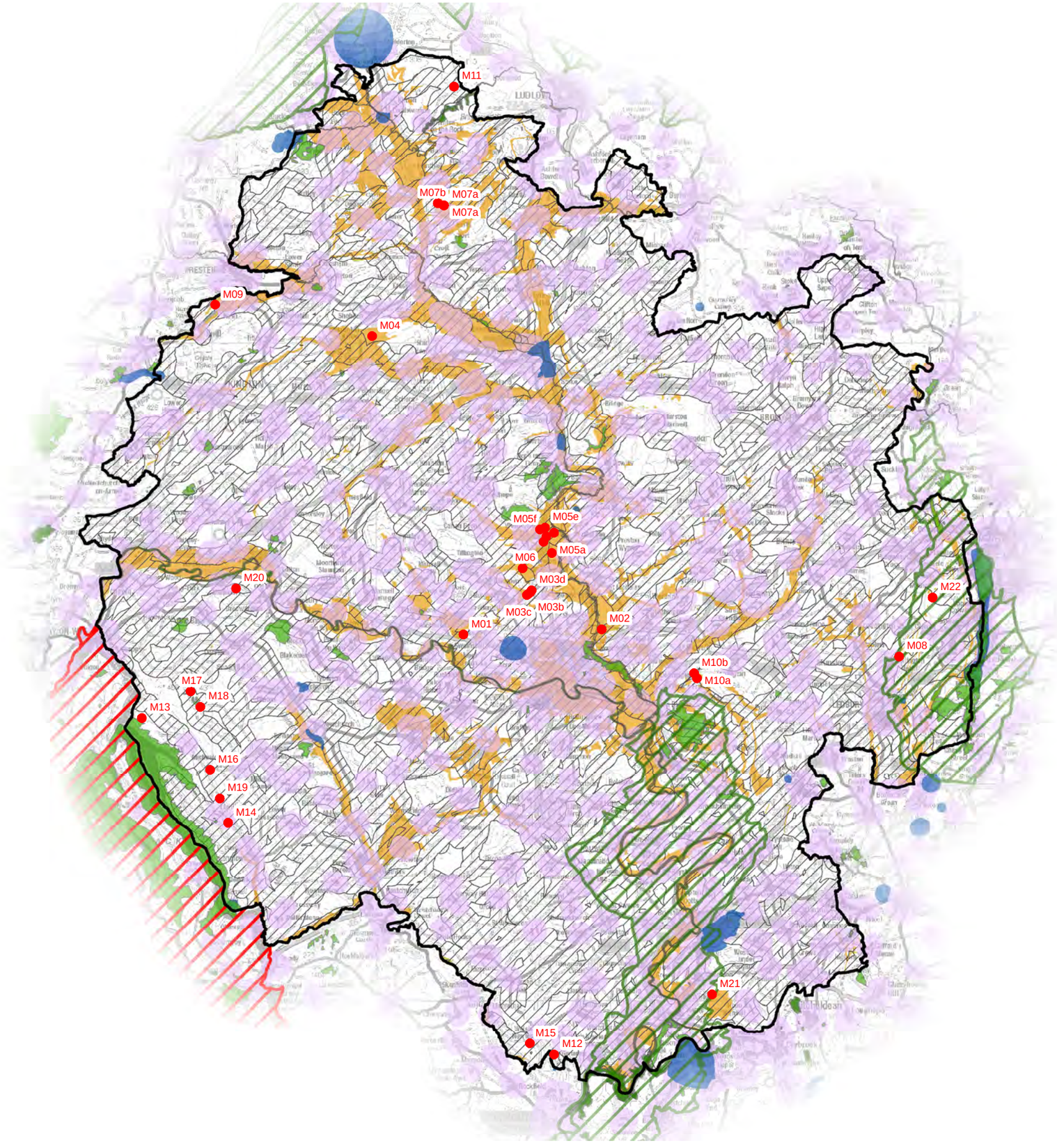
2.2.14 Sites M08, M21 and M22 are located within, or on the boundary of, an Area of Outstanding Natural Beauty (AONB, Malvern Hills and Wye Valley). Sites M08 and M21 are restored and need not be considered further. However, Site M22 is an area proposed to be worked in Mathon; this location, within the Malvern Hills AONB, and the lack of substantial mineral reserve showing from the BGS data means that this area is not preferred for future mineral extraction.

2.2.15 None of the sites are located within a Natura 2000 (European level) or national level ecology designation, although Site M13 is very close to the eastern edge of the Black Mountains, a

Site of Special Scientific Interest. Sites M05d and M05g are adjacent to the River Lugg SSSI. Sites M02, M17, M18 and M20 are also close to SSSI. Sites M10a and M10b have a SSSI within the site, designated for its geological and fossil interest.

2.2.16 Similarly, none of the sites lie within a source protection zone. Some sites do appear to lie within built-up areas. These may lie within the 50m buffer or simply be a result of the data and mapping used, as a fine level of detail is not available at this scale of mapping.

2.2.17 GIS road data has been used to indicate areas of search. Instead of being applied as a constraint, it is used as an opportunity. Herefordshire is a very rural county and there is very little opportunity for transport modes other than road. The GIS data set OS Open Roads (see Table 2.1) has been used to identify all the roads across Herefordshire. In assessing the discrete sites, this criterion has focussed on the 'A' and 'B' classified roads. However, the roads across the north of Herefordshire are predominantly unclassified. Consequently, in identifying preferred search areas the criterion considers proximity to all and any road, not only those that are 'A' or 'B' classified.



Herefordshire Minerals and Waste Local Plan

Figure 2.2
Constraints data applied to mineral resource, with identified sites

- Identified Sites
- Mineral Reserves (BGS Geology)
- Brecon Beacons National Park
- AONB
- Natura2000 Sites
- UK Ecological Designations
- Source Protection Zones
- Built Up Areas 500m Buffer
- Road Access

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Identifying preferred areas of search

2.2.18 Planning Policy Guidance[2] advises three ways that authorities should plan for the steady and adequate supply of minerals; with the third tier being to identify areas of search, '*where knowledge of mineral resources may be less certain but within which planning permission may be granted, particularly if there is a potential shortfall in supply.*' The BGS mapping with constraints applied provides a good starting point from which to identify preferred areas of search; however, at this scale the data should be carefully reviewed to finalise the areas to be allocated in policy.

2.2.19 The mapping indicates a significant amount of sand and gravel reserve across the northern two-thirds of Herefordshire. Consequently, the **sand and gravel** reserves will be further considered to identify those areas that are preferred to be worked throughout the plan period.

2.2.20 Sites M02, M03, M05 and M06 are all located within the large expanse of reserve that wraps around the northern and eastern sides of Hereford. Site M04 is located to the north-west, on the edge of another substantial area of reserve. These reserves lend themselves to be identified as preferred areas of search: the area around Sites M02, M03, M05 and M06 are well located to supply aggregate for the growth proposed in Hereford; the area around Site M04 provides an alternative location within the county, bringing resilience to supply.

2.2.21 Focusing future sand and gravel workings within these areas provides the industry with access to a large area of reserve, but means that policy can avoid a proliferation of minerals development across the county. Optimal extraction can be promoted at these areas before new reserves are opened.

2.2.22 However, there also needs to be a local balance to focusing development. There are active quarries and new working proposals at both Sites M03 and M05. As with all areas where there is the potential for multiple sites to be worked in close proximity to each other, a proliferation of infrastructure should be avoided, to minimise and manage the adverse effects from quarrying.

2.2.23 The remaining areas of reserve will be identified as areas of search. There are no current, permitted workings in these areas and there have been no submissions from the industry to work them.

2.2.24 Both **limestone** Sites M09 and M10 are located in the preferred areas of search. However, access into Site M09 is known to be less than ideal and there appears to be limited options to access this reserve. This is not a preferred location for future mineral extraction and will be identified as an area of search only.

2.2.25 There are several reserves of limestone in the north of Herefordshire. Site M07 lies just outside the identified preferred area, however this is due to the urban areas data identifying the local settlement as an urban area, rather than an environmental constraint. Limestone extraction is successfully undertaken in this location currently and there is no evidence currently available to suggest it would not be appropriate to work the area further.

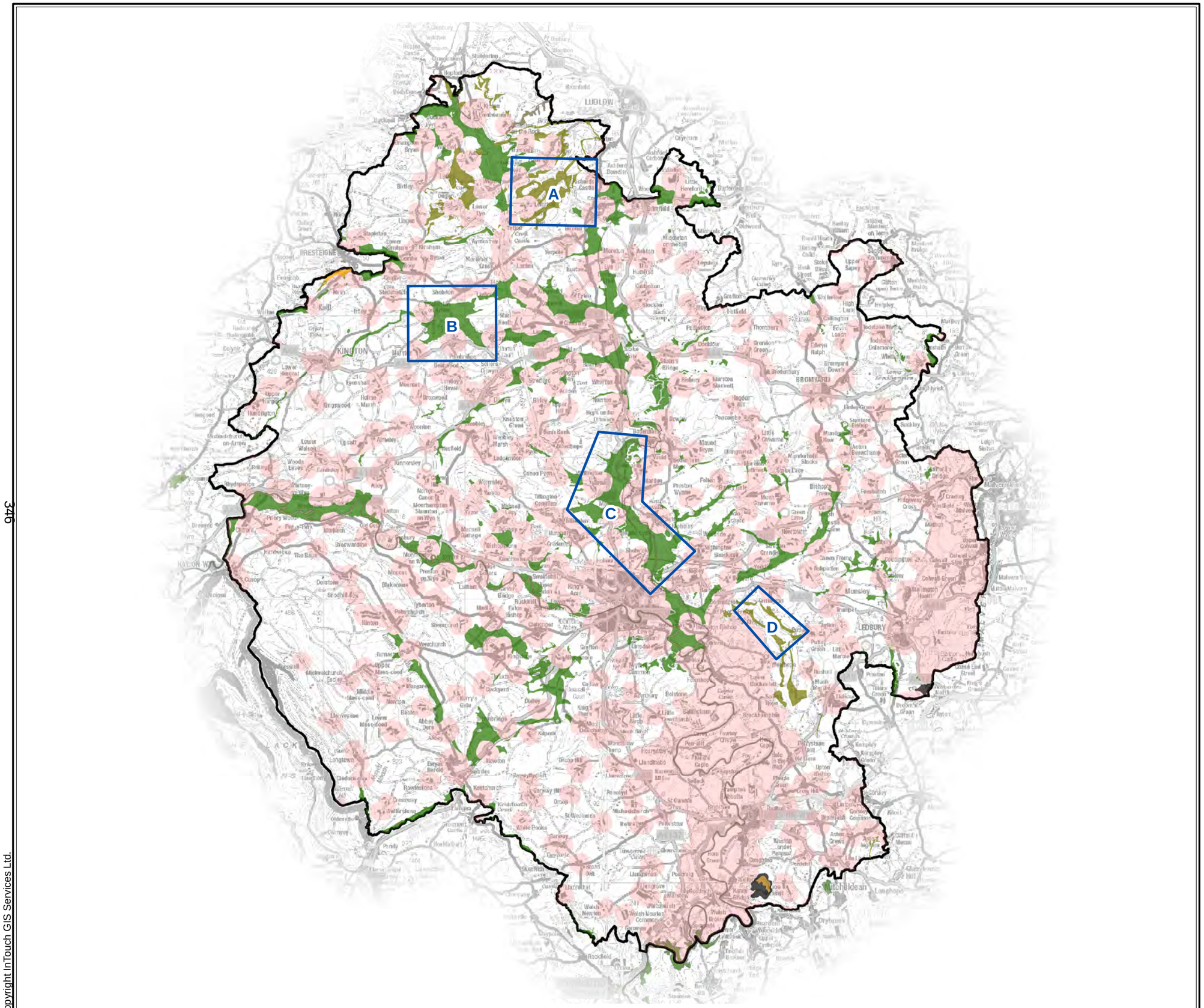
[2] Paragraph: 008, Reference ID: 27-008-20140306. Revision date: 06.03.2014 https://www.gov.uk/guidance/minerals

2.2.26 As there are only two working limestone quarries within Herefordshire, the remaining areas of reserve (apart from that around Site M09) will be identified as preferred areas of search; a third quarry would bring additional resilience to crushed rock supply.

2.2.27 As previously discussed, preferred areas of search are not identified for **sandstone, clay** or **coal**.

2.2.28 Figure 2.3 presents the areas of search for minerals development, i.e. those areas lying outside the identified constraints, distinguishing between those that are preferred and those that are not.

2.2.29 This mapping does not show the identified sites, that detail is presented on Figure C.3 at Annex C. This change in approach has been used here because this would be the basis of mapping for inclusion in the Draft MWLP where it would be inappropriate to show all the identified sites, i.e. including those that would have little or no impact through the plan period.



Herefordshire Minerals and Waste Local Plan

Figure 2.3
Preferred Areas of Search

Preferred Areas of Search

Mineral Reserves

- Brick clay
- Coal
- Limestone (including dolomite)
- Sandstone: Pre-Cambrian, Ordovician, Silurian Greywacke
- Superficial sand/gravel
- Constrained Areas

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Safeguarding

2.2.30 Paragraph 143 of the NPPF requires authorities to '*define Minerals Safeguarding Areas and adopt appropriate policies in order that known locations of specific minerals resources of local and national importance are not needlessly sterilised by non-mineral development, whilst not creating a presumption that resources defined will be worked; and define Minerals Consultation Areas based on these Minerals Safeguarding Areas*.'

2.2.31 Guidance from the BGS suggests that safeguarding should extend beyond the known resource boundary, to create a buffer to reduce the risk of incompatible development occurring in close proximity to the mineral resource. The extent of these boundaries varies depending upon the type of mineral and the extraction method.

2.2.32 Responses to the Issues and Options Report indicate a preference for the MWLP to safeguard mineral facilities and to include a buffer around the site (Option M18). However, there is no distance or area for safeguarding mineral reserves, and associated infrastructure set down in policy and so it is for each authority to determine the appropriate area.

2.2.33 The response from Tarmac, a significant sand and gravel operator within Herefordshire, proposed a preference for minerals consultation areas, rather than a buffer zone around each site. This is also the approach set out in the NPPF (paragraph 143) and is presented by Worcestershire County Council in its emerging Minerals Local Plan, which proposes Mineral Consultation Areas up to 250m around each site/area.

2.2.34 Herefordshire is a unitary authority, and there is no evidence to suggest this will change to a two-tier authority over the plan period. Consequently, a Minerals Consultation Area is rather superfluous, as the authority would be consulting itself, a centralised planning team.

2.2.35 Instead, the focus for safeguarding in the MWLP should be on ensuring the longevity of the reserve that exists. The approach to be carried into policy will be to safeguard all the mineral reserve identified in the BGS mapping (excluding that covered by the urban areas criterion and 500m buffer) and the preferred sites/areas identified through the sites analysis. This approach safeguards a maximum amount of mineral in a realistic manner, recognising that some land will already have been developed and is not available for mineral extraction, but also that the economic growth for Herefordshire to come from urban development needs to be balanced with minerals development.

2.2.36 The urban areas criterion was based on the OS 'Strategi' open mapping products, using the 'Urban' layer. 'Urban' in this product is described as '*an area containing a concentration of buildings and other structures'.*

2.2.37 The safeguarded areas also means that all potential areas of search will be presented; they may not all be appropriate or even preferred areas for development, but they will be recognised as areas of mineral reserve.

2.2.38 Paragraph 143 of the NPPF also encourages local authorities to safeguard:

- 'existing, planned and potential rail heads, rail links to quarries, wharfage and associated storage, handling and processing facilities for the bulk transport by rail, sea or inland waterways of minerals, including recycled, secondary and marine-dredged materials; and
- existing, planned and potential sites for concrete batching, the manufacture of coated materials, other concrete products and the handling, processing and distribution of substitute, recycled and secondary aggregate material.'

2.2.39 Transport modes other than road are very limited in Herefordshire. There is one branch rail line in Herefordshire associated with mineral facilities, at Moreton-on-Lugg. This line has two end points: an active railhead adjacent to Wellington Quarry; and inactive track, laid within the Moreton Business Park.

2.2.40 The Moreton-on-Lugg railhead is operated by Tarmac, who state that it is used extensively for the purposes of storage, loading and distribution by rail of hard stone minerals, principally to London and the south east of England. The stone originates from Tarmac quarries in Wales, principally Dolyhir and Gore and is delivered to Wellington by road. Tarmac identifies the potential to export sand and gravel by rail from this location and regard the railhead as an important piece of infrastructure.

2.2.41 There are rail tracks running into the Moreton Business Park. Whilst any former railhead has been removed and the tracks do not appear to have been used for some time, they could be reinstated in the future. Located within the Business Park, these tracks provide the potential for a range of freight items to be moved by rail.

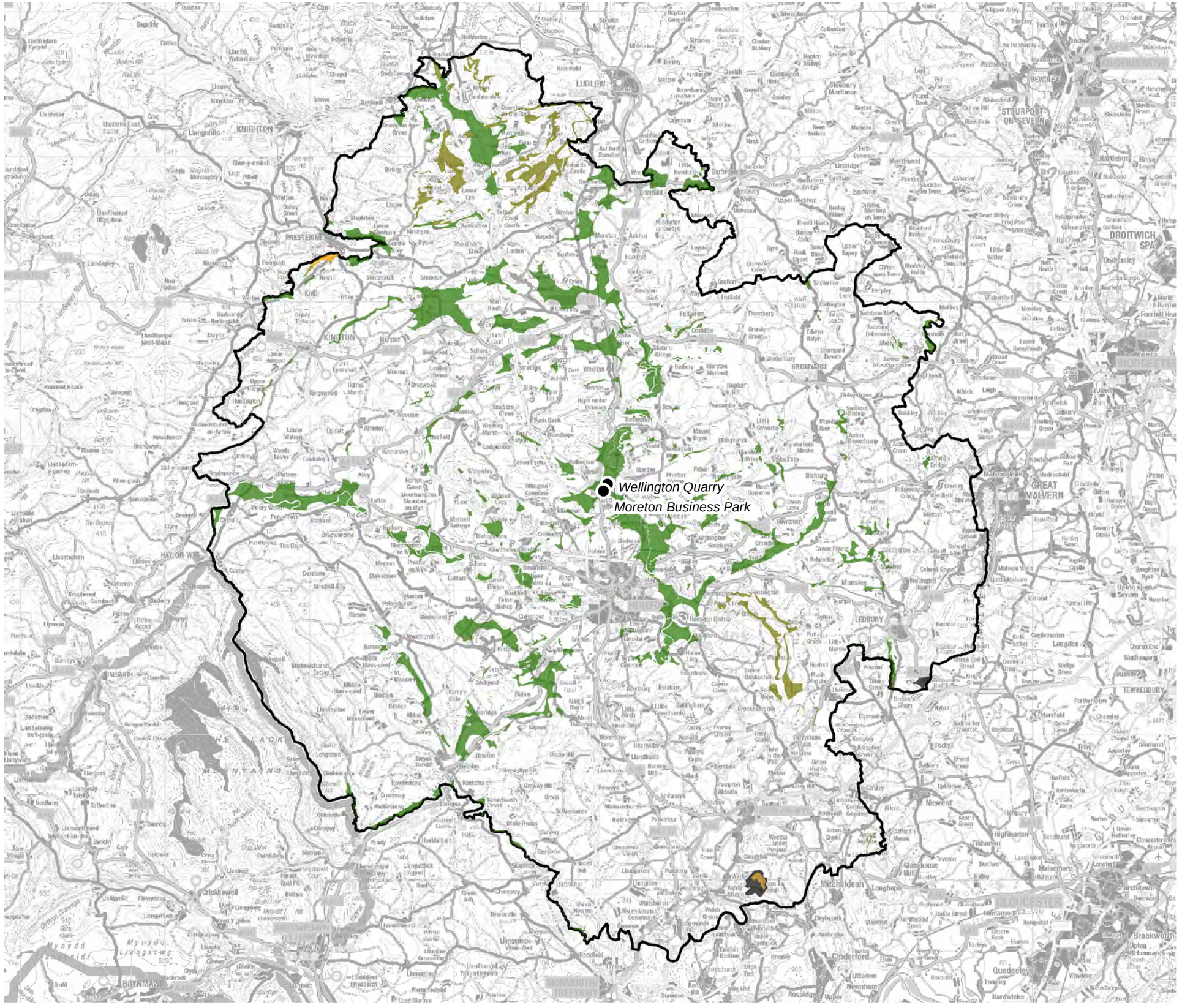
2.2.42 Rail tracks and heads are difficult and expensive items of infrastructure to develop and their key usefulness comes from being in the vicinity of where the mineral resource is located. Both these items are proposed to be safeguarded.

2.2.43 There are a number of facilities across Herefordshire that undertake concrete batching, stone coating, block production and the handling, processing and distribution of recycled aggregates. These plant are located within existing mineral workings, on industrial estates and at sites within the preferred areas of search. Those facilities that operate on an existing or proposed site would be safeguarded by association with the identified mineral reserve and safeguarding policy.

2.2.44 That such facilities operate on industrial estates across Herefordshire, and that they have been developed recently, indicates that they are reasonably unconstrained in terms of where they are located and that further safeguarding may not be required within Herefordshire. Consequently, such facilities are not proposed to be separately safeguarded. Again, this matter is simplified by Herefordshire being a unitary authority, considering all development proposals in a single planning team.

2.2.45 The areas and facilities proposed to be safeguarded are shown on Figure 2.5.

Figure 2.4
Safeguarded Minerals Resource Areas and Rail Heads



Mineral Reserves

- Brick clay
- Coal
- Limestone (including dolomite)
- Sandstone: Pre-Cambrian, Ordovician, Silurian Greywacke
- Superficial sand/gravel
- Rail Heads

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2.3 Existing and Proposed Minerals and Waste Sites in Herefordshire

Overview

2.3.1 An element of the MWLP is to identify individual sites and/or locations that can make a contribution to meeting the need within Herefordshire for mineral production or waste management. This section of the report sets out the approach used in the analysis of existing and proposed minerals and waste sites in Herefordshire.

2.3.2 Information relevant to each site is provided at Annexes A (minerals) and B (waste). This provides the key features considered at each location in identifying its future role within the MWLP. The conclusions from the sites analysis are presented at section 3 of this report.

2.3.3 The initial approach set out to use desk-based analysis to shortlist the number of sites to be taken through a detailed assessment. However, due to a number of uncertainties arising through this first phase of analysis (such as level of operation, site boundary etc) the decision was made to visit all of the sites identified and to undertake a more qualitative assessment of the potential future role.

2.3.4 It is important to be clear that site assessment to the level of detail that would be expected to accompany a planning application has not been undertaken; this would be excessive for plan making purposes. The analysis has been undertaken at a level appropriate to identify key constraints and opportunities at each location and to inform policy development, i.e. concluding whether, in principle, a site would be appropriate for further development and whether the combination of sites would be sufficient to enable key aims of the plan to be achieved.

Criteria

2.3.5 A number of criteria have been deployed in analysing the sites and their potential future role. The criteria are wide ranging and seek to consider relevant matters as set out in the National Planning Policy Framework (NPPF) and Core Strategy.

2.3.6 GIS has been used for criteria that can be effectively assessed through the use of spatial data. This analysis has incorporated a number of criteria suggested through the responses to the Issues and Options Report, including the agricultural land classification and source protection zones. In undertaking this initial site assessment, the Environment Agency recommended use of: EA Flood Map for Planning; Council SFRA work; Source Protection Zone (SPZ) maps; and aquifer maps. It also recommended consideration of Air Quality Management Areas (AQMA) water supply, and watercourses. GIS data for flooding, SPZ, AQMA and major rivers has been utilised in the site assessment. The GIS data sets used are those that are publicly available, not least to ensure the work can be replicated by any other party. Information on aquifers and water supply were not readily available. A strategic flood risk assessment (SFRA) is being undertaken separately.

2.3.7 Table 2.1 presents the criteria and scoring matrix used for each of the GIS based criteria.

2.3.8 Consideration has also been given to the viability, availability and deliverability of each site, incorporating matters such as its potential role in economic growth, including rural prosperity and a supported tourism industry. The conclusions of this analysis are presented in Annexes A and B.

Table 2.1 Criteria and scoring matrix for each of the GIS based criteria

Criteria	Scoring Approach		
	Red	**Amber**	**Green**
Site size	<3.5ha	3.5-4ha	> 4Ha
Natura 2000 designated sites	<5km	5km - 15km	>15km
Nationally designated ecology sites/ancient woodland	<250m	250m - 5km	>5km
National Park and AONB designations	<1km	1km - 5km	>5km
Agricultural Land Classification	On Grade 1 or 2	On Grade 3	On Grade 4, Non-Agricultural or Urban
Local ecology records or local wildlife site	Designated site or protected species on site	n/a	No protected species or designation
Air Quality Management Areas	<250m	250m - 1km	>1km
Road access ('A' and 'B' roads), railheads and wharves	>500m	250m – 500m	< 250m
Sensitive buildings (schools/hospitals)	< 500m	500m – 1km	>1km
Cultural and Historic designated sites	<250m	250m - 1km	>1km
Aerodrome/airfield safety	<5km	5km - 15km	>15km
MOD Danger Areas and No Fly zones (Amber Low Fly Zones)	<5km	5km - 15km	>15km
Major rivers[1]	< 250m	250m – 500m	>500m
Flood Zone[1]	In Flood Zone 3	In Flood Zone 2	In Flood Zone 1
Source Protection Zones (SPZ)	In SPZ Zone 1	In SPZ Zone 2	In SPZ Zone 3 or no Zone
Designated national walking/cycling trails	<250m	n/a	>250m

Notes

1. Taking into account that mineral sites can be water-compatible development and that waste development can be identified as 'less vulnerable'.
2. Greenbelt was initially considered but on examination there was found to be no Greenbelt designation in Herefordshire.

2.4 Other Inputs

Sustainability Assessment/Strategic Environmental Assessment

2.4.1 The Issues and Options Report was subjected to a Sustainability Appraisal. This was undertaken on behalf of Herefordshire Council by Land Use Consultants and the results published in a report 'Sustainability Appraisal of the Herefordshire Minerals and Waste Local Plan' issued in August 2017 (the SA Report). The proposed vision and strategic objectives for the MWLP and the options considered for minerals and waste were appraised against a set of sustainability objectives to assess whether there are likely to be positive or negative effects on those sustainability objectives.

2.4.2 The MWLP Vision was found to have a largely positive effect on a range of sustainability objectives, but was found to give rise to negative effects on transport and restoration. Policy of the MWLP can require high standards of site restoration to be achieved, seeking net gains where appropriate; this approach would lessen long term negative effects of quarrying. A recommendation was made that the Vision could be updated to refer to the use of sustainable transport modes for minerals and waste which would reduce road traffic, congestion and pollution. As has already been recognised, there is little realistic alternative to road transport within Herefordshire.

2.4.3 The strategic objectives were generally found to have positive effects, although some negative effects are identified for strategic Objectives 5 and 7 because they seek to support the extraction of primary resources. No recommendations are made to address these negative effects.

2.4.4 The SA Report notes that the options lack detail and therefore are subject to greater uncertainty than will be the case at the Regulation 19 Publication stage, once policy wording has been drafted and potential development sites are identified. However, in general, the options have been found to have a wide range of positive and significant positive effects on the Sustainability Assessment objectives, although a number of potentially minor and significant negative impacts are also associated with some options.

2.4.5 In particular, the SA Report identified Option M3[3] as having significant negative effects on mineral resources because it was considered to support the significant provision of additional permitted sand and gravel reserves, which it believed would considerably increase the rate of extraction of mineral resources. The MWLP preparation team recognises that mineral extraction can have some negative impacts; however, it is a recognised purpose of the plan to enable new operations to occur in appropriate locations.

2.4.6 Options W1[4] and W3[5] are identified as having significant negative effects on the waste hierarchy, climate change and pollution because they would not identify sites for managing

[3] Option M3: Make provision for significant additional reserves of sand and gravel to be permitted, on the basis that demand will rise in line with the Core Strategy housing trajectory and permitted reserves will be exhausted before the end of the MWLP timeframe.

[4] Option W1: Do not identify sites to manage LACW over the lifetime of the MWLP. Monitor quantities of LACW generated and keep forecasts of future generation under review. Include policy within the MWLP to allow proposals to come forward for new capacity to manage LACW in the event that this is required in the future.

[5] Option W3: Do not allocate sites to provide new capacity to manage C&I waste over the lifetime of the MWLP. Monitor quantities of C&I waste generated and keep forecasts of future generation under review. Include policy

municipal and commercial and industrial wastes within Herefordshire, resulting in waste not being managed at high levels of the waste hierarchy and impacts on traffic and greenhouse gas emissions through the export of waste. No recommendations are made in the SA Report to address these negative effects. This matter will be addressed by identifying sites and locations in the MWLP to manage a range of wastes, including LACW and C&I waste. An objective of the MWLP is to achieve net self-sufficiency within Herefordshire enabling waste to be managed in accordance with the hierarchy.

Habitats Regulations Assessment

2.4.7 The Issues and Options Report was subjected to a Habitats Regulation Assessment. This was undertaken on behalf of Herefordshire Council by Land Use Consultants and the results published in a report 'HRA Scoping Report for the Herefordshire Minerals and Waste Local Plan issued in August 2017.'

2.4.8 The HRA Scoping Report identifies the European sites to be included in the HRA for the MWLP and describes the key issues for the HRA to consider.

2.4.9 It also reflects on the HRA of the Herefordshire Local Plan Core Strategy, concluding that the Local Plan's policies would not lead to likely significant effects either alone or in combination on European sites within 15km of Herefordshire, although the sensitivity of the River Wye SAC is identified.

2.4.10 The HRA Scoping Report identifies the potential policies of the Core Strategy that may have an adverse impact on the European sites, concluding that these impacts are appropriately managed through other policies within the Core Strategy and an emerging Nutrient Management Plan; further these policies are not directly relevant to the HRA of the MWLP.

2.4.11 However, the HRA Scoping Report does highlight the sensitivity of the River Wye SAC to development, advising that (paragraph 2.8):

'*The sensitivity of the River Wye SAC to minerals or waste development, either alone or in combination with other plans (including the Core Strategy) will be assessed within the HRA*.'

2.4.12 The HRA Scoping Report makes no recommendations for the MWLP as yet. It does set out the method to be used in undertaking the HRA of the MWLP when it is drafted and seeks comment from Natural England on the approach set out.

Issues and Options Report

2.4.13 This section of the report does not seek to address all comments raised in response to the Issues and Options Report – only those that are relevant to spatial matters and site location within the MWLP, and which are not addressed elsewhere, i.e. in the reports titled: Preparing the Draft Plan (March 2018); Minerals Need Assessment (Update 2018); and Waste Need Assessment (Update 2018).

2.4.14 **Ataghan Limited Stoke Edith Estate** (Ataghan) supports the approach to safeguarding mineral resource and co-location of recycling activities on minerals sites, whilst recognising that permanent facilities might also be required. The MWLP will be developed to provide a range of options for the recovery of construction, demolition and excavation wastes. Ataghan

within the MWLP to allow proposals to come forward for new residual C&I waste treatment/disposal capacity in the event that this is required in the future.

does not consider it appropriate for the MWLP to introduce '*more prescriptive guidelines than would otherwise appear in guidance and legislation*.'

2.4.15 Support is given to Option M16, and it is recognised to offer the most flexibility for mineral resources. Preference seems to be given to Option M18[6] in relation to safeguarding, although it recognises that this approach has its flaws and requires further detail. In the 2016 Call for Sites, Ataghan promoted an extension to Perton Quarry (Site M10) which has been considered as part of the sites analysis.

2.4.16 Lichfields responded on behalf of **Bourne Leisure Ltd**. The focus of this response was on ensuring that protection was provided for residents, businesses and visitors against the adverse amenity impacts that can arise from minerals and waste developments. Bourne Leisure considers that the thresholds presented in Table 3.4 were unclear and insufficient, and suggests that '*all minerals and waste proposals should be assessed based on the type and nature of the proposal and the specific impact(s) on the identified receptor*'. This is a principle well-established within planning and consequently will be found in the emerging MWLP. Specific responses are made in relation to heritage assets and Registered Parks and Gardens; these are considered within the detailed site analysis.

2.4.17 The **Campaign to Protect Rural England Herefordshire** (CPREH) raises concerns about some of the evidence base documents that are referred to and that impact upon the spatial approach to be developed within the MWLP. Their concerns are noted, however these documents have been through their own preparation process, including examination and concerns have not been raised by the statutory consultees. The BGS data is discussed at section 2.2 of this report. A strategic flood risk assessment, and habitats regulations assessment, of the MWLP are being undertaken separately.

2.4.18 The CPREH seeks to avoid excessive haulage, in terms of both volume and distance across the county when or if a non-Herefordshire source is readily available; policy should seek to minimise the transport of heavy/bulky materials by road. The road network is considered in the site analysis and alternative modes of transport will be considered in preparing the MWLP, albeit they are limited within Herefordshire.

2.4.19 Matters in relation to agricultural land quality, green infrastructure, flood risk and the natural and historic landscape are considered in the sites analysis and will be addressed further in preparing the MWLP. Table 3.4 is considered to be arbitrary with little practical application.

2.4.20 A compromise between Options M11[7] and M12[8] is recommended. The CPREH would like to see firm policy guiding decision making on any fracking proposal.

[6] Option M18: Safeguard existing minerals sites and associated facilities, including transport facilities, from other development that may have the potential to constrain or prevent mineral operations at those sites, including a buffer zone around the site.

[7] Option M11: Adopt specific policies to provide a basis for determining proposals for hydrocarbon exploration, appraisal and extraction on the basis that this could become a possibility within the lifetime of the MWLP.

[8] Option M12: Do not adopt specific policies for hydrocarbon exploration, appraisal and extraction on the basis that this is unlikely to occur within the lifetime of the MWLP, relying instead on development management policies to determine future applications. This option recognises that associated policies may be added in a periodic review of the MWLP prior to 2031.

2.4.21 CPREH also promotes a new/additional household waste site to be located to the north/north west of Hereford City. CPREH supports Option W7[9] to require adequate provision for the management of agricultural wastes.

2.4.22 The **Coal Authority** has responded that: Options M11[7] and M12[8] are appropriate for dealing with the uncertainty over potential future hydrocarbon activity in Herefordshire; and that Options M17[10] and M18[6] constitute appropriate options for safeguarding mineral sites. Further, the Coal Authority expects the whole extent of the Surface Coal Resource area within Herefordshire to be identified in any Mineral Safeguarding Area designation; this has been done.

2.4.23 **Dinmore Aggregates Ltd** promotes new locations for sand and gravel extraction; these have been considered in the detailed site analysis (sites M05c and M05d).

2.4.24 The **Environment Agency** raises the need to consider the following matters: strategic flood risk; Water Framework Directive and the Severn River Basin Management Plan; and ground water resources. A strategic flood risk assessment of the MWLP is being undertaken separately. The Water Framework Directive and Severn River Basin Management Plan have been reviewed; these are recognised to be important documents but not integral to this stage of policy development. Ground water resources are included in the criteria used to review each of the sites and locations being considered.

2.4.25 The Environment Agency has also provided comment on the proposed extension sites identified in the Issues and Options Report. These comments have been incorporated into the detailed sites analysis.

2.4.26 **Gladman Development Ltd** considers that the need for the prior extraction of minerals should be '*suitably balanced against competing development needs.' Consequently, 'the defined Mineral Safeguarding Areas, should exclude existing urban areas, and areas on the edge of existing settlements, where residential and/or employment development is considered appropriate and sustainable.*' The approach discussed above, at section 2.2, seeks to avoid urban areas in identifying the preferred areas of search, but there may be some overlap with the Mineral Consultation Areas. This is because safeguarding necessarily needs to be appropriate for a future timeframe beyond the plan period. Those areas that are identified for residential and/or employment development but are currently greenfield with a viable mineral reserve in situ can be worked prior to the built development.

2.4.27 The **Green Party** supports the plan area as proposed, but does not consider it is appropriate to have waste facilities located adjacent to Ancient Woodland. Options M11[7] and M12[8] are not supported and a ban on hydrocarbon extraction is promoted. There is no evidence to support a complete ban on hydrocarbon extraction and this option is not pursued further.

2.4.28 **Historic England** supports the general reliance upon the Herefordshire Core Strategy, but requests more focussed policy in relation to restoration principles for mineral sites, including recognition of what might be appropriate in the context of heritage assets and historic landscape. Historic England finds Table 3.4 somewhat confusing and recommends that all

[9] Option W7: Include policy to require adequate provision for the management and disposal of waste materials, liquids and litter from agricultural activities.

[10] Option M17: Safeguard existing minerals sites and associated facilities, including transport facilities, from other development that may have the potential to constrain or prevent mineral operations at those sites, do not include a buffer around the site.

heritage assets are included, making reference to its advice note. It supports reference to the continued need for building stone in heritage projects. Heritage assets are included as a criterion in the site analysis and will be considered further in preparing the MWLP.

2.4.29 McLoughlin Planning made representations on behalf of **John Jones Civil Engineers Ltd** (JJCE) not least supporting the plan area as proposed and promoting land at disused railway cutting near Woods End (Site W41). This site has been considered in the sites analysis. JJCE considers that the environmental constraints identified in Table 3.4 are broadly correct but do not include groundwater source protection zones, archaeologically sensitive sites, agricultural land classifications, access to roads or residential properties. Further, they are unclear how the distances would translate into policy and recommend that they are used to highlight potential constraints.

2.4.30 The **Minerals Products Association** (MPA) '*does not accept that most if not all the list in table 3.4 are necessarily constraints to mineral working*' and again refers to the NPPF as the principal guide for dealing with such matters. Table 3.4 is considered to exceed the requirements of this national policy, whilst the distances are considered to be '*arbitrary and not based on any evidence or policy*'.

2.4.31 The MPA considers that a criteria-based approach should be taken to ensure that building stone is available throughout the plan period.

2.4.32 The MPA supports the proposed safeguarding of minerals and associated infrastructure, supporting Option M18[6] and so encouraging the use of buffer zones to prevent inappropriate development encroaching on these resources; it does not provide any suggestions on how to define this buffer zone.

2.4.33 **Natural England** requested that topics of soil, agricultural land quality, reclamation and nature improvement areas are considered in preparing the MWLP. The agricultural land classification is one of the elements used in the site analysis and the other elements will be considered in preparing policy of the MWLP.

2.4.34 **Councillor Newman** raises concerns that fracking, or the associated infrastructure, may be enabled within a '*most precious landscape and environmental asset*' including AONB, SSI and SAC, with a protected water aquifer located under Ross on Wye. These designations are considered in the site analysis and the impact on tourism will be addressed in further developing the MWLP.

2.4.35 **Kingsland Parish Council** raised a number of views and concerns including support for safeguarding and protecting existing waste sites and associated facilities.

2.4.36 The **River Wye Preservation Trust** (RWPT) agrees with the plan area as set out, but considers it unfortunate that joint working with Worcestershire County Council is not continued. The merits of this approach are recognised, but joint working is not appropriate at this time due to the different stages of plan making reached within the two authorities. Various reference documents that might impact upon spatial matters are identified by RWPT and these have been considered in preparing the MWLP. In response to Table 3.4, the RWPT suggests watercourses, National Nature Reserves and Local Nature Reserves are all included. In addition, the RWPT proposes a 1km constraint zone between all development types and identified designations. The criteria identified by the RWPT are used in the site analysis and buffer zones are being considered; a distance of 1km is likely to be excessive in many instances.

2.4.37 All options for minerals supply are generally considered appropriate; however, the RWPT also suggests that supply may be more appropriately met by sources outside of Herefordshire and these options should be explored. In accordance with national policy expectations, the MWLP is based on the premise of achieving net self-sufficiency across both minerals and waste. This is considered to be the most appropriate starting point for policy, however it should be achieved through sustainable development.

2.4.38 The RWPT promotes a ban on permitting hydrocarbon exploration or exploitation. There is no evidence to support a complete ban on hydrocarbon extraction and this option is not pursued further.

2.4.39 In relation to waste, the RWPT promotes development of more biological treatment plant at locations close to where the waste is generated. This would fit with the spatial approach being developed. The RWPT also promotes provision of mixed waste management sites within a location that has potential to serve farming districts. This will be considered further in preparing policy of the MWLP; however Herefordshire is a very rural county and there is little to suggest a clear spatial strategy for such an approach.

2.4.40 The RWPT promotes the Lugg Bridge Quarry site as a recreational/conservation facility and considers that additional recycling here is not desirable. The site is already operating as both a concrete batching plant and construction, demolition and excavation waste recovery plant. The response from statutory consultees is that the site is appropriate for its current uses and extensions may also be permissible. The MWLP is unlikely to promote the site for a recreation/conservation facility whilst the current uses are in operation.

2.4.41 **Staffordshire County Council's** response included recognition that planned provision should be in line with NPPF paragraph 145 and that other supply options may need to be considered if there is uncertainty about the continuity of supply from sources outside of Herefordshire. The Council also suggested that mineral safeguarding areas should be defined in accordance with NPPF paragraph 143 and taking into account the data from the BGS.

2.4.42 Heaton Planning has responded on behalf of **Tarmac Trading Ltd** (Tarmac) and made specific representations about sites at: Wellington Quarry (Sites M05a, M05b and M05c); Moreton-on-Lugg Railhead; Shobdon Quarry (Site M04); and Nash Scar Quarry (Site M09). These comments have been incorporated into the detailed sites analysis and the proposed extensions have been considered.

2.4.43 In response to question 4[11], Heaton Planning comments upon the scarcity of some mineral resource within Herefordshire and so cautions against utilising environmental constraints too rigidly. Similarly, in response to question 14[12], Heaton Planning considers it is not appropriate to consider all the identified historic and environmental assets as definite constraints to minerals development, instead relying upon the test set out in the NPPF. The criteria used to review each of the sites and locations under consideration has been developed so as to reflect the NPPF.

2.4.44 Heaton Planning concludes that it is often more sustainable to extend existing or permitted operations and states that Tarmac would support this approach above giving priority to new

[11] Question 4: Do you consider that the documents identified in Table 2.1 constitute the documents appropriate to consider in development of the MWLP?

[12] Question 13: Do you agree with the reasoning given in Table 3.3 for the review of the Core Strategy general policies? Please give your reasons.

green field sites. Option M16[13] is considered to be the most appropriate. A minerals consultation area (in accordance with NPPF, paragraph 143) is preferred over a buffer zone.

2.4.45 **Welsh Water** has responded with specific comments made in relation to individual sites. These have been incorporated into the detailed site analysis.

2.4.46 The **Woodland Trust** agrees with the list of objectives set in Table 3.2, strongly supporting environmental objectives which commit to protecting, restoring and enhancing the natural environment. Table 3.4 is considered correct and complete, with a further recommendation to also recognise ancient trees outside woodland and veteran trees as environmental constraints. However, the distances presented in Table 3.4 are not agreed with; ancient woodland should be considered an environmental constraint for waste facilities even if they are located further away than adjacent to a proposed development site. Further, it is proposed that a planted buffer of 50m should be required between all minerals extraction and ancient woodland.

2.4.47 **Worcestershire County Council** (WCC) made wide ranging comments, including recognition of the need for safeguarding mineral and waste sites, and storage, handling and processing infrastructure. A number of designations and assets were promoted to be considered as part of Table 3.4. These have been incorporated into the site analysis where practicable and considered as part of developing the MWLP generally.

2.4.48 Options M13[14] to[15],[16] M16[13] are all considered appropriate, with Option M13 the most closely aligned with guidance in relation to mineral site identification. The County Council also suggests that '*sufficient flexibility should be incorporated to enable additional reserves to be permitted regardless of, rather than limited to, whether the reserves at the remaining operational quarry prove to be insufficient*.' WCC considers Option M18[6] as the most appropriate in regard to buffer zones around sites. This is the approach currently being developed in its emerging Minerals Local Plan, including a 250m buffer to define the Mineral Consultation Area.

2.4.49 In relation to the location of waste facilities, WCC notes that much of Herefordshire's municipal waste is treated through facilities located in Worcestershire. '*Should additional facilities be required to manage LACW, the plan should make provision to enable this to take place in Herefordshire, should this be appropriate. In addition, much of Herefordshire's LACW is currently managed at facilities in Worcestershire, but we consider that (in line with our earlier comments) the MWLP should seek to achieve self-sufficiency in waste management capacity overall. We therefore consider that any site allocations should be as flexible as possible and should not unnecessarily limit the waste stream which can be managed on any individual site*.'

2.4.50 Under the current municipal waste management contract, much of Herefordshire's LACW is transferred to two plants located in Worcestershire for materials and energy recovery:

[13] Option M16: Allocate suitable sites from those put forward in the call for sites and identify areas of search within which applications for development will be looked upon favourably, but also allow for proposals for development to come forward regardless of location.

[14] Option M13: Allocate suitable sites from those put forward by landowners and operators in the call for sites which comply with the policies in the MWLP.

[15] Option M14: Do not allocate sites but identify areas of search within which applications for development will be looked upon favourably as long as they comply with the policies in the MWLP.

[16] Option M15: Do not allocate sites and do not identify areas of search, but assess any applications regardless of location on the basis of compliance with the policies in the MWLP.

EnviroSort (a materials recovery facility located in Norton); and EnviRecover (an energy from waste facility located on the Hartlebury Trading Estate). Any remaining residual wastes are then deposited to landfill at Pershore, also in Worcestershire. This contract is live until early 2024, with the potential for a five year extension. At the end of the contract period, the facilities revert to the two authorities. Consequently, it considered unlikely that any other treatment capacity will be required for the majority of Herefordshire's municipal waste throughout the plan period. A new Household Waste Recycling Centre became operational in 2016 at Kington, near Ledbury. A flexible approach is being pursued in preparing the MWLP, with the intention to enable Herefordshire to be net self-sufficient in waste management capacity and providing opportunities to manage the range of waste arisings.

2.4.51 Option W12[17] is favoured as the approach to waste site identification, with Option W14[18] preferred for safeguarding.

2.4.52 Many of WCC's comments were also made in the response from **Wychavon District Council, Worcester City Council and Malvern Hills District Council**, who are working together to prepare the South Worcestershire Development Plan.

2.4.53 A number of **online responses** were made, many of which did not give detailed responses and which only responded to the first few questions.

2.4.54 Generally it can be concluded that:

- the plan area following the administrative boundary of Herefordshire is supported;
- respondents would like the MWLP to contain the greatest flexibility for enabling new minerals development. The approach to be taken in the MWLP will be to allocate those proposed areas that are considered appropriate in principle and to develop a policy framework that will identify preferred areas of search and so enable other proposals for development to come forward;
- respondents would like to see greatest flexibility within the MWLP for enabling new waste development. The approach to be taken in the MWLP will be to allocate discrete sites that are considered appropriate in principle and develop a policy framework that will identify enable other proposals for development to come forward.
- there is an equal level of support for Options M11[7] and M12[8], although there are also some strong petitions to ban the extraction of hydrocarbons altogether. The available evidence indicates that there is little likelihood of either conventional or unconventional hydrocarbon extraction occurring within the plan period. A criteria-based approach will be pursued in the MWLP, with no sites or preferred areas identified.

2.4.55 An element of the Issues and Options Report that perhaps received most response was Table 3.4. The distances set out in Table 3.4 of the Issues and Options Report were presented in order to gain reaction from consultees to inform the policy position. The table prompted a wide range of views, although generally responders were not supportive of it or found it confusing. In addition, the review of the Core Strategy found that the development

[17] Option W12: Allocate suitable sites from those put forward in the call for sites and identify types of sites or types of location within which application for development will be looked upon favourably, but also allow for proposals for development to come forward regardless of location.

[18] Option W14: Safeguard existing waste sites and associated facilities, including transport facilities, from other development that may have the potential to constrain or prevent waste operations at those sites, including a buffer around the site.

management principles are generally applicable and appropriate to minerals and waste development. Consequently, Table 3.4 is not intended to be developed further and is dismissed from inclusion in the MWLP.

2.4.56 In addition, Planning Policy Guidance[19] indicates that separation distances/buffer zones '*should be established on a site-specific basis and should be effective, properly justified, and reasonable. It should take into account:*

- *the nature of the mineral extraction activity;*
- *the need to avoid undue sterilisation of mineral resources,*
- *location and topography;*
- *the characteristics of the various environmental effects likely to arise; and*
- *the various mitigation measures that can be applied*.'

2.4.57 Consequently, policy will make clear that buffer zones/separation distances may be required in specific circumstances, but the nature and extent of these areas will be based on site specific assessments and other forms of mitigation measures (such as working scheme design and landscaping) that will be expected to be available at the time of considering a development proposal.

[19] Paragraph: 018, Reference ID: 27-018-20140306. Revision date: 06.03.2014 https://www.gov.uk/guidance/minerals

3. Existing and Proposed Minerals and Waste Sites

3.1 Introduction

3.1.1 This section presents the key conclusions drawn for each site assessed and how that has informed the approach to allocating sites/locations in the MWLP.

3.1.2 The approach to the site analysis and the criteria used are presented at section 2.3 of this report. Full details of each of the sites are provided at Annexes A (minerals) and B (waste).

3.2 Minerals

3.2.1 The Minerals Need Assessment of February 2017 identified 21 sites. A number of new areas for development, generally adjacent or close to existing quarries were proposed in the Call for Sites undertaken in 2016 and 2017, along with a suggestion to recommence sand and gravel extraction in the vicinity of Mathon.

3.2.2 In December 2017, a further proposal was made for mineral extraction near Wellington Quarry. This has been incorporated into the sites analysis.

3.2.3 Each of these sites has been considered in order to understand its current role and future potential, and to inform a general understanding of minerals and waste development within Herefordshire. Table 3.1 presents the conclusions from the minerals sites analysis. It should be noted that there are some sub-divisions within the site references, for example Site M05 is assessed as seven discrete sites (labelled a to g).

Table 3.1 Conclusions of minerals sites analysis

Site Reference	Site Name	Site Description	Role in MWLP
Sand and Gravel			
M01	Stretton Sugwas Quarry (Hereford Quarry)	Closed site, restored	None
M02	Lugg Bridge Quarry	Closed site, used for waste recycling and concrete plant	None at site Preferred area of search
M03	Upper Lyde Quarry	Inactive, due to re-open in 2018 and proposed extensions	Allocate new areas Preferred area of search
M04	Shobdon Quarry	Inactive, partially worked site Due to re-open during the plan period	Allocate new areas Preferred area of search
M05	Wellington Quarry	Active site and proposed extensions	Allocate new areas (excluding M05f) Preferred area of search
M06	St Donat's Quarry	Closed site, restored	None at site Preferred area of search
M22	Land at South Hide Farm and South End Farm, Mathon	Proposed areas close to former extraction area now restored	None Remaining resource not a priority due to ANOB highway and amenity constraints.
Limestone			
M07	Leinthall Quarry	Active site and proposed extension	Allocate new areas Preferred area of search
M08	Loxter Ashbed Delve	Closed site, restored	None
M09	Nash Scar Quarry	Mothballed site, unlikely to be re-opened due to poor stability of the rock face	None

Site Reference	Site Name	Site Description	Role in MWLP
M10	Perton Quarry	Active site and proposed extension	Allocate new areas
Sandstone			
M11	Brakes Farm Delve	Closed, to be restored	None
M12	Callow Delve	Active site	Time extension
M13	Black Hill Delve	Active site	Size extension
M14	High House Delve	Closed site, unsuccessful delve	None
M15	Hunters Post Delve	Closed site, restored	None
M16	Llandraw Delve	Active site	Size extension
M17	Pennsylvani Delves	Active site	Time extension
M18	Sunnybank Delve	Active site	Time extension
M19	Tybubach Delve	Closed, to be restored	None
M20	Westonhill Wood Delves	Active site	Size extension
Coal			
M21	Howle Hill Quarry	Closed site, restored	None

Sites dismissed from further consideration

3.2.4 The following sites have been discounted from further consideration: M01 Stretton Sugwas; M02 Lugg Bridge Quarry; M06 St Donat's Quarry; M08 Loxter Ashbed Delve; M11 Brakes Farm Delve; M14 High House Delve; M15 Hunters Post Delve; M19 Tybubach Delve; and M21 Howle Hill. These sites have been inactive for mineral workings for some time and have been restored, are currently being restored, or have been put to some other use.

3.2.5 Site M22 Land at Mathon is not considered suitable for new quarry working. The area promoted is located in the Malvern Hills Area of Outstanding Natural Beauty, a designation that provides the highest status of protection in relation to landscape and scenic beauty in Herefordshire. In addition, whilst Herefordshire is an agricultural county, the area around Mathon seems particularly rural with narrow, twisting country lanes and tight-knit villages where housing abuts the public highway. There is no discernible, efficient highway route out of this area for sand and gravel to reach market. There are other sites within the identified preferred areas of search able to provide a suitable level of sand and gravel resource throughout the proposed plan period.

3.2.6 Site M09, Nash Scar is not considered likely to be re-opened. It has been mothballed for nearly 30 years, over which time the site has become very overgrown, there are likely considerable ecology/biodiversity matters which would need to be addressed. The access lane to Nash Scar Quarry involves a very sharp turn off the public highway and is a single lane track that leads directly past housing. The working faces of the quarry are extremely high and unstable, with no benching, and there would be serious health and safety constraints to making this a practicable working site again.

Sand and gravel – M03 Upper Lyde

3.2.7 Site M03a is due to open in 2018, following the completion of local highway improvements. Site M03b would appear to be a logical extension and is considered acceptable in principle.

3.2.8 Site M03c extends westward and would open up a new field, which appears to drop away also in a westward direction. Some care would therefore be needed to ensure that the workings did not result in unacceptable impacts, particularly visual impacts. For these reasons, this site is least preferred, and is not intended to be allocated. If working this location was demonstrated to be achievable without unacceptable impacts, then it might be more logical to work this field prior to moving onto site M03d.

3.2.9 Site M03d is located on the other side of the local access road, but is at a lower land level than the other M03 sites and is reasonably well contained. The sand and gravel won at this site is proposed to be taken to the Former Lugg Bridge Quarry for processing and consequently a proliferation of plant can be avoided. The site is appropriately located to make use of the local highway network improvements implemented as part of working site M03a.

3.2.10 Within the submissions made in response to the Call for Sites 2016, the reserve across sites M03b, M03c and M03d total c.700,000 tonnes and is proposed to be worked at 50,000tpa over a period of 14 years.

Sand and gravel – M04 Shobdon

3.2.11 No new area of working has been proposed at Shobdon. However, the existing quarry has processing plant on site and benefits from reasonable road access. In principle, the land around Shobdon Quarry would be appropriate for further mineral extraction and is proposed as a preferred area of search.

3.2.12 There is no information on the amount of mineral available at this location. However, further working here would provide some flexibility to the MWLP and robustness to the continuity of sand and gravel supply.

Sand and gravel – M05 Wellington

3.2.13 Numerous new working areas have been proposed for sand and gravel workings in the vicinity of Wellington Quarry. In principle, they appear to be acceptable, although they all have matters that will require comprehensive assessment in conjunction with any planning application, for example the proximity of site M05d and M05g to the River Lugg and aquifer.

3.2.14 Whilst the area appears in principle to be suitable for mineral extraction, it would be undesirable for there to be a proliferation of associated infrastructure, including processing plant. Policy should seek to avoid this occurring; it is anyway unnecessary, with established plant operating at site M05a. Further, there are known to be highway concerns in relation to the junction with the A49 and the local route travelling east. Consequently, it is considered necessary to phase the order of working in this area.

3.2.15 At November 2017 there remained around 2 years of permitted reserve in site M05a[20]. Tarmac is currently pursuing an application to work mineral from an area of the consented site that was originally intended to remain as a noise buffer. The consented areas should be worked out first, with progressive restoration. Either of sites M05b and M05c might then be worked, followed by M05g. These are all on the same side of the A49 and local access road as site M05a and can readily access the existing plant operated within site M05a. Both sites M05b and M05c appear to be logical extensions to site M05a. Due to its proximity to the River Lugg and railway, M05g might take longer to prepare for working.

3.2.16 Either of sites M05d and M05e might then be worked, as a second phase within the MWLP. Both these sites will be constrained in the available working area due to the need to leave buffers, with: the River Lugg; Green Farm; the A49; and the railway. Consequently, whilst they are located on the other side of the local access road, it would make sense for mineral extracted at these sites to be processed at the plant located at site M05a. This would minimise any further constraint on the working area and avoid a proliferation of processing plant. Further, it would mean that the secondary access through the Moreton-on-Lugg Business Park would be available at times of flood.

3.2.17 Site M05f is the least preferred location; it is not a logical extension to the existing workings, situated on the opposite side of the A49 and beginning to wrap around Wellington Village. It is not clear where mineral extracted at this site would be processed. The MWLP should seek to avoid a proliferation of processing plant, leaving the sand and gravel to be moved to plant at the other sites, on the other side of the A49. The A49 is a busy road and frequent HGV crossings would be hazardous. An option of installing conveyors under the A49 is likely to be too costly. Consequently site M05f is not proposed to be allocated.

[20] Pers.Comm. David Sycamore, Tarmac, 02.11.2017

3.2.18 Within the submissions made in response to the Call for Sites 2016, the reserve across sites M05c and M05d is estimated to be 2,250,000 tonnes. It is proposed to be worked at an annual rate of 100,000 to 150,000 tonnes, therefore the total area would supply mineral, year on year, for a period of approximately 20 years. The other areas proposed to be allocated would supplement that landbank.

Sand and gravel conclusions

3.2.19 There are three permitted quarries for sand and gravel, all of which should be working within the plan period. Whilst their working dates cannot be confirmed, having three separate quarrying areas provides an element of flexibility and robustness to the continuity of supply.

3.2.20 Much of the proposed sand and gravel extraction areas are located close to these permitted sites, and most are considered appropriate to allocate for future working. Using information provided in the Call for Sites submissions there is a minimum of nearly 3 million tonnes of sand and gravel resource available across these areas. In addition, there are further preferred areas of search and new operations in these areas of search would add to the robustness of sand and gravel supply within Herefordshire.

Crushed rock

3.2.21 Extensions to both Leinthall (M07a) and Perton (M10a) Quarries have been proposed. In principle, both these sites appear to be appropriate for further mineral working. It is not intended to prioritise one site over the other; they both have planning merits and disadvantages that will need to be considered in detail in preparing any subsequent application. Having both sites allocated within the MWLP and operating at the same time will give some robustness to continuity of supply.

3.2.22 Within the submissions made in response to the Call for Sites 2016, the reserve across Site M07b is around 7 million tonnes. Information has not been provided to date on the reserve at Site M10b. In addition, preferred areas of search have been identified for working limestone reserves within Herefordshire.

Building stone

3.2.23 Discussions with those working the delves visited generally indicated that there is enough sandstone resource permitted within the delve they were working to last through the plan period. However, some of the delves were stated to be running out of stone, but identified suitable reserve close by, and some delves have time limited consents that may need to be extended to enable working to continue through the plan period.

3.2.24 All the active sandstone delves appeared suitable in principle to be able to gain an extension of time for mineral working. This applies to sites: M12 Callow Delve; M13 Black Hill Delve; M16 Llandraw Delve; M17 Pennsylvani Delves; M18 Sunnybank Delve; and M20 Westonhill Wood Delves.

3.2.25 In principle sites: M13 Black Hill Delve; M16 Llandraw Delve; and M20 Westonhill Wood Delves seem also to be appropriate for an extension in size of the working area.

Clay, coal and unconventional hydrocarbons

3.2.26 There are minimal deposits of clay, coal and unconventional hydrocarbons in Herefordshire, with no evidence to suggest that these will be worked in Herefordshire within the plan period.

3.2.27 No site is proposed to be allocated for the extraction of clay, coal or unconventional hydrocarbons.

3.3 Waste

3.3.1 The Waste Need Assessment of February 2017 identified 35 waste facilities operating in Herefordshire. The expansion of two existing sites was proposed in the Call for Sites 2016, and one new waste site is proposed in response to the Issues and Options Report. The Waste Need Assessment Update 2018 has been prepared to incorporate 2016 data; this has identified an additional four sites that have gained an environmental permit. Sites numbered W01 to W41 are the 41 existing and proposed waste facilities.

3.3.2 Sites W42 to W57 are the mineral sites selected to be considered for waste uses, principally the recovery of construction, demolition and excavation wastes and the deposit of waste. This list excludes sites:

- M02 Former Lugg Bridge Quarry, as it is separately recognised as a waste site (W13);
- M06 St Donat's, as it was recognised to be a mothballed site and has been confirmed to be restored;
- M08, M11 and M21 as these were confirmed to have been restored; and
- M22 as this area is not appropriate to be worked, due to the AONB designation and highway constraints.

3.3.3 Sites W58 to W66 are the locations identified in Herefordshire Core Strategy policy E1 and the strategic employment sites. Most of these lie within Hereford and Leominster, with one each identified in Ledbury and Ross-on-Wye.

3.3.4 Each of these sites has been considered in order to understand its current role and future potential, and to inform a general understanding of minerals and waste development within Herefordshire. Table 3.2 presents the conclusions of the waste sites analysis.

Table 3.2 Conclusions of waste sites analysis

Site Reference	Site Name	Site Description	Conclusions for MWLP
Waste Sites			
W01/W17	Eastside Recycling Facility	Eastside 2000 Ltd: Hazardous and non-hazardous WTS 40,824 tonnes	Note – located on strategic employment site
W02	Quickskip (Hereford) Transfer Station	Non-hazardous WTS 37,780 tonnes	Note – located on strategic employment site
W03	Wye Valley Skips	Non-hazardous WTS 2016 new site 296 tonnes	Note – not preferred location for development
W04	Marlbrook Farm	Non-hazardous WTS 9,847 tonnes	Note – not preferred location for development
W05	Leominster HWS and HWRC	Municipal non-hazardous WTS and HWRC 25,718 tonnes	Allocate
W06	Rotherwas HWS and HWRC	Municipal non-hazardous WTS, MRF and HWRC 56,103 tonnes	Note – located on strategic employment site
W07	Ledbury HWRC	HWRC 2,585 tonnes	Allocate
W08	Ross-on-Wye HWRC	HWRC 4,753 tonnes	Note – located on industrial estate
W09	Bromyard HWRC	HWRC 2,066 tonnes	Note – located on industrial estate

Site Reference	Site Name	Site Description	Conclusions for MWLP
W10	Kington HWRC	HWRC 2016 new site 850 tonnes	Allocate
W11	H C D Ltd	Material Recycling Facility 2016 new site 2,950 tonnes	Note – located on industrial estate/not preferred location for development
W12	Land adjacent to Unit 3, Balfour Beatty	Physical Treatment 3,345 tonnes	Note – located on strategic employment site
W13	Former Lugg Bridge Quarry	Physical Treatment Intensification proposed 50,956 tonnes	Allocate
W14	Kingspan Insulation Ltd	Physical Treatment 205 tonnes	Note – not appropriate for waste uses beyond existing/not preferred location for waste uses
W15	Quickskip Chapel Road	Physical Treatment 2016 new site 6,825 tonnes	Note – located on strategic employment site
W16	Quickskip Fir Tree Lane	Physical Treatment Site cleared at site visit 2,200 tonnes	Note – located on strategic employment site
W17/W01	Eastside Recycling Facility	Avalon Metals: Car breakers 24,340 tonnes	Note – located on strategic employment site
W18	J & R Recovery	Car Breaker Site cleared at site visit 76 tonnes	Dismiss - site cleared and not preferred location for waste uses

Site Reference	Site Name	Site Description	Conclusions for MWLP
W19	City Spares MRS	Car Breaker Site cleared at site visit 30 tonnes	Allocate
W20	P & T Moore Vehicle Dismantlers	Car Breaker 1,478 tonnes	Dismiss – not preferred location for development
W21	Streamhall Garage	Car Breaker 201 tonnes	Note – located on industrial estate
W22/23	R Smith Metals	Car Breaker 792 tonnes	Note – located on industrial estate
W23/22	Former EMR Facility	Car Breaker 1,607 tonnes	Note – located on industrial estate
W24	Cobhall Cottage	Car Breaker 216 tonnes	Dismiss – not preferred location for development
W25	Yaidon Farm	Biological Treatment 28,590 tonnes	Note – not preferred location for development
W26	Much Fawley Farm	Biological Treatment 12,432 tonnes	Note – not appropriate for waste uses beyond existing, associated with agricultural holding
W27	Court Farm	Biological Treatment 5,977 tonnes	Note – not appropriate for waste uses beyond existing, associated with agricultural holding
W28	Eign Waste Treatment Centre	Biological Treatment 30,714 tonnes	Note – not appropriate for waste uses beyond existing
W29	Gelpack Excelsior	Non-hazardous Waste Transfer/Treatment	Note – located on strategic employment site

Site Reference	Site Name	Site Description	Conclusions for MWLP
		Company in administration 19 tonnes	
W30	County Hospital	Clinical Waste Transfer 23 tonnes	Note – not appropriate for waste uses beyond existing, associated with healthcare
W31	Two Hoots Farm	Anaerobic Digestion (farm waste) 4,477 tonnes	Note – not appropriate for waste uses beyond existing, associated with agricultural holding
W32	Bowley Court	Anaerobic Digestion (farm waste) 3,807 tonnes	Note – not appropriate for waste uses beyond existing, associated with agricultural holding
W33	Penllan Farm	Anaerobic Digestion (farm waste) 4,466 tonnes	Note – not appropriate for waste uses beyond existing, associated with agricultural holding
W34	Herefordshire Biogas	Anaerobic Digestion (farm waste) 12,155 tonnes	Note – not appropriate for waste uses beyond existing, associated with agricultural holding
W35	The Biogas Facility	Anaerobic Digestion (farm waste) 11,810 tonnes	Note – not appropriate for waste uses beyond existing, associated with agricultural holding
W36	Trevase Farm	Anaerobic Digestion (farm waste) 1,468 tonnes	Note – not appropriate for waste uses beyond existing, associated with agricultural holding
W37	Eardisley Park Farm	Anaerobic Digestion (farm waste) 1,475 tonnes	Note – not appropriate for waste uses beyond existing, associated with agricultural holding

Site Reference	Site Name	Site Description	Conclusions for MWLP
W38	The Leen Digester	Anaerobic Digestion (farm waste) 16,712 tonnes	Note – not appropriate for waste uses beyond existing, associated with agricultural holding
W39	Land at Lower Vern	Deposit of waste to land (recovery) 9,108 tonnes	Dismiss – not preferred location for development
W40	MF Bennion (Potatoes) Ltd Rose Farm, Dymock	Proposed for increase in current activity: 25,000 Open windrow composting facility for processing green waste 25,000 In-vessel composting facility for the processing of green and food waste 25,000 Anaerobic Digestion	Dismiss – located in Gloucestershire
W41	Disused railway cutting near Woods End, Stanford Bishop	Proposed site for inert waste disposal. Estimated 35,000 tonnes of waste per year, over a five-year period	Dismiss – not preferred location for development
Minerals sites			
W42	Stretton Sugwas Quarry	Closed site, restored	Dismiss – site restored
W43	Upper Lyde Quarry	Active site and proposed areas	Identify – potential for inert waste disposal
W44	Shobdon Quarry	Inactive, partially worked site	Identify – potential for inert waste disposal

Site Reference	Site Name	Site Description	Conclusions for MWLP
W45	Wellington Quarry	Active site and proposed areas	Identify – potential for inert waste disposal
W46	Leinthall Quarry	Active site and proposed area	Dismiss – site to be restored with on-site overburden and soils
W47	Nash Scar Quarry	Mothballed	Dismiss – site to be restored with on-site overburden and soils
W48	Perton Quarry	Active site and proposed area	Dismiss – site to be restored with on-site overburden and soils
W49	Callow Delve	Active site	Dismiss – site to be restored with on-site overburden and soils
W50	Black Hill Delve	Active site	Dismiss – site to be restored with on-site overburden and soils
W51	High House Delve	Closed site, unsuccessful delve	Dismiss – site closed
W52	Hunters Post Delve	Closed site, restored	Dismiss – site closed
W53	Llandraw Delve	Active site	Dismiss – site to be restored with on-site overburden and soils
W54	Pennsylvani Delve	Active site	Dismiss – site to be restored with on-site overburden and soils
W55	Sunnybank Delve	Active site	Dismiss – site to be restored with on-site overburden and soils
W56	Tyubach Delve	Being restored	Dismiss – site to be restored with on-site overburden and soils
W57	Westonhill Wood Delves	Active site	Dismiss – site to be restored with on-site overburden and soils
Strategic Employment Sites			
W58	Rotherwas Industrial Estate	Strategic Employment Site	Identify – good potential for co-location and strategic facility
W59	Westfields Trading Estate	Strategic Employment Site	Identify – good potential for co-location, likely small scale facility
W60	Three Elms Trading Estate	Strategic Employment Site	Identify – good potential for co-location, likely small scale facility
W61	Holmer Road, Hereford	Strategic Employment Site	Identify – though recognise little immediate potential

Site Reference	Site Name	Site Description	Conclusions for MWLP
W62	Leominster Enterprise Park	Strategic Employment Site	Identify – good potential for co-location and strategic facility
W63	Southern Avenue, Leominster	Strategic Employment Site	Identify – good potential for co-location and strategic facility
W64	Land between Little Marcle Road and Ross Road, Ledbury	Strategic Employment Site	Identify – good potential for co-location and strategic facility
W65	Model Farm, Ross-on-Wye	Strategic Employment Site	Identify – good potential for co-location and strategic facility
W66	Moreton Business Park, Moreton-on-Lugg	Strategic Employment Site	Identify – good potential for co-location and strategic facility

Notes

MRF – materials recovery facility

HWRC – household waste recycling centre

HWS – household waste site

WTS – waste transfer station

Sites dismissed from further consideration

3.3.5 Sites W18, W20, W24, W39, W40 and W41 are all dismissed from further consideration and are not preferred locations for future waste management:

- Site W18 J&R Recovery had been cleared at the time of the site visit. It is located in Hereford and so within the spatial strategy preferred areas, but it has poor access. It forms part of an industrial area and new waste development may be brought through using policy on industrial estates; however, it is not a preferred location to promote for new waste development.
- Both sites W20 P&T Moore Vehicle Dismantlers and W24 Cobhall Cottage are located outside of the spatial strategy preferred areas. Site W20 has very poor road access, whilst the route to Cobhall Cottage leads directly past a number of houses. These are not preferred locations at which to promote new waste development.
- Site W39 Land at Lower Vern is located outside of the spatial strategy preferred areas.
- Site W40 Rose Farm, Dymock is located in Gloucestershire. MF Bennion (Potatoes) Ltd is receiving municipal wastes from Herefordshire, but it is not appropriate for the MWLP to allocate this site for further development as it lies outside the plan area.
- Site W41 Disused railway cutting near Woods End is located outside the spatial strategy preferred areas and has poor access.

3.3.6 All of the former or previous minerals sites are dismissed, apart from sites W43, W44 and W45, which are discussed below. Sites W42, W51, W52 and W56 are closed sites, either already restored or being restored. The remaining minerals sites may be currently active, but their restoration plans foresee reclamation through using on-site soils and overburden. Due to the nature of these sites, none of them appeared to be appropriate to promote for waste management development.

Strategic employment sites and industrial estates

3.3.7 All of the strategic employment sites apart from sites W59 and W60 are concluded to be appropriate locations for new waste management development, including that of a strategic nature. Site W61 was fully occupied at the time of the site visit and may not become available over the plan period; nevertheless, it would be appropriate for strategic waste development should the site be vacated.

3.3.8 At the time of the site visits, sites W59 and W60 were observed to be rather sprawling industrial estates, with congested internal roads and small, tightly packed, plots. Waste management development would be appropriate at these locations, but facilities are likely to be smaller in nature.

3.3.9 There are many benefits of co-locating waste management facilities in urban areas and alongside manufacturing/employment/industrial sectors. This arrangement is a key element to achieving the circular economy within Herefordshire, as resources can readily be shared between businesses. The term 'resources' is used here to cover: materials and wastes; heat and power; and intellectual property, or ideas development and realisation.

3.3.10 Located on the Rotherwas Industrial Estate, Site W01/17, operated by the Wye Valley Group, is already achieving the circular economy within its operations; waste materials are brought to site and separated ready for re-use; extracted fuels are used within the Group's fleet of

vehicles; some of the more domestic items are repaired and/or upcycled by in-house craftsmen and sold on site.

3.3.11 Skylon Park, the Hereford Enterprise Zone located within Rotherwas, provides particular opportunities to develop effective working relationships across the engineering, manufacturing and waste sectors.[21] Businesses also benefit from the University of Wolverhampton's Business Solutions Centre and the Herefordshire Growth Hub, co-located at Skylon Court and offering a wide range of support and advice to businesses.

3.3.12 Skylon Park has four key sectors, including sustainable technologies. The overview[22] for this sector recognises that:

'*Many of our advanced engineering businesses are providing innovative, low carbon solutions to businesses in a host of other sectors. Clustering sustainable technology businesses on Skylon Park will maximise the potential to develop beneficial connections and trade in the wider local area.*'

3.3.13 Waste management is a key element of the sustainable technologies sector, and should be encouraged to fulfil the Enterprise Zone's ambition for renewable energy supply to deliver heat and power to new businesses on Skylon Park.

3.3.14 There are a number of industrial estates/employment sites/business parks distributed across Herefordshire. Similar benefits can be gained from co-locating waste management facilities at industrial estates; however, unlike the strategic employment sites, many are also located outside of the spatial strategy preferred areas. These are unlikely to be appropriate for all waste management development, though they may fulfil a local function.

3.3.15 Waste sites that are located on a strategic employment site or industrial estate will not be allocated in the MWLP. The MWLP will contain policy to promote waste management development, including that of a strategic nature, at the identified strategic employment sites and will recognise that industrial estates will in principle be appropriate for waste related development. It is therefore not necessary to allocate the discrete sites that are located on strategic employment sites or industrial estates. Furthermore, these types of locations experience a reasonably high level of plot turnover; recognising this level of potential for change over the lifetime of the MWLP, it would be inappropriate to allocate discrete sites within the estates.

Sites that are noted but not allocated in the MWLP

3.3.16 There is a substantial number of waste facilities operating on a range of location types. These are providing a waste management function currently, but it is either unnecessary or inappropriate to promote them within the MWLP for the following reasons:

- Sites W01, W02, W06, W12, W15, W16, W17, and W29 are all located on a strategic employment site.
- Sites W08, W09, W11, W21, W22 and W23 are all located on industrial estates. All of these, apart from Site W11 HCD Ltd, are located within the spatial strategy preferred areas.

[21] http://enterprisezones.communities.gov.uk/enterprise-zone-finder/hereford-enterprise-zone/

[22] http://www.skylonpark.co.uk/case-studies/jenks-associates-ltd.aspx#.Wk-FFd9l-Uk

- Sites W03, W04 and W25 are all located outside of the spatial strategy preferred areas. They may be performing a useful waste management function and could rely on that planning history to enable future development. However, they are not preferred locations at which to promote waste management development.
- Sites W26, W27, W31, W32, W33, W34, W35, W36, W37 and W38 are all anaerobic digestion or biological treatment facilities, generally associated with the agricultural holding on which they are located. They generally fall outside of the spatial strategy preferred areas and are considered inappropriate for further development, except potentially some expansion in the capacity provided.
- Site W14 Kingspan is a manufacturing plant for a range of building materials, using waste materials to recover heat and power for the manufacturing process. The site is not expected to become available over the plan period and is not situated within the spatial strategy preferred areas.
- Sites W28 Eign Waste Treatment Centre and W30 County Hospital are both situated in Hereford and therefore satisfy the spatial strategy. However, they are not proposed to be promoted for future waste management development, because they both perform a function that is unlikely to cease throughout the plan period and the sites are unlikely to become available. It might be physically possible to undertake additional waste management operations at the Eign Waste Treatment Centre, but it has very poor road access and better sites are available within Hereford.

Minerals sites to be identified for inert waste disposal in restoration

3.3.17 Sites W43, W44 and W45 are all current, permitted sand and gravel quarries. In principle, they are considered appropriate locations for the disposal of inert wastes in order to recover the land for beneficial purposes. These sites will be allocated for this purpose in the MWLP.

Sites to be allocated in the MWLP

3.3.18 **Sites W05, W07 and W10** are all currently used for the LACW and may not become available during the plan period. However, they are all appropriate locations for the management of waste and may be used for different wastes or different technologies than are currently present. They are all located within the spatial strategy preferred areas.

3.3.19 Site W10 Kington HWRC is in close proximity to Site W25 Yaidon Farm, which is not intended to be allocated in the MWLP. There is little to distinguish between the sites but this decision was made on the basis of two factors. Site W10 falls within the settlement boundary of Kington, whereas Site W25 lies outside of it. Site W25 is used for biological waste management operations, using structures not dissimilar to those that might otherwise be seen as part of agricultural activities. Being located close to one of the smallest market towns in Herefordshire, it is not considered an appropriate location for further waste management development, except modest extensions to the activities currently undertaken. The evidence base does not indicate that a significant increase of this infrastructure is required and a modest expansion of existing activities would not benefit significantly from allocation in the MWLP.

3.3.20 **Site W19** had been cleared at the time of the site visit; the former operator had deceased and his estate has sold the site. It is located on the southern edge of Hereford, falling within Core Strategy policy HD6 and satisfies the spatial strategy. It is in close proximity to the Rotherwas Industrial Estate and forms part of the area identified for Skylon South.

3.3.21 Whilst not large, the site provides an ideal opportunity to pursue energy recovery infrastructure, either biological (such as anaerobic digestion) or combustion (such as incineration or gasification).

3.3.22 The former City Spares site currently occupies a relatively rural area surrounding Hereford; in the future, with the allocated expansion plans, this area will include employment and housing. Consequently, this use of this site should be focussed on those technologies that will deliver energy. Principally this focus will deliver a key objective of the Enterprise Zone and Skylon Park; it is also the type of facility more likely to support the investment necessary to deliver a high quality, well designed development that would complement the southern expansion.

3.3.23 **Site W13 Former Lugg Bridge Quarry** is an operational site, recovering construction, demolition and excavation wastes. In the call for sites it is proposed for significant intensification. Site W13 is located just beyond the settlement boundary of Hereford and benefits from good road access into the city. Its location consequently fits with the spirit of the spatial strategy even if it falls slightly outside the defined area. The evidence base does suggest that a significant increase of recovery capacity for this waste stream is required; as an operating facility and part of a wider waste management business that has aspirations to grow, it is demonstrated to be a viable site. The Environment Agency raises no objections to the site and it is concluded to be appropriate to be allocated in the MWLP.

Safeguarding

3.3.24 Safeguarding for minerals reserves and associated infrastructure has been discussed, at section 2.2, but safeguarding of waste facilities is yet to be concluded.

3.3.25 It would be inappropriate to safeguard all the existing waste management sites: some are not operating in preferred locations; some of those that reported waste inputs in 2016 had been cleared at the time of the site visit; and most of the sites operating in Herefordshire are located on industrial estates or similar. Waste management facilities might be expected to change over time, identifying a set list of facilities could quickly become out of date.

3.3.26 It is necessary to safeguard minerals because they can only be worked where they lie; they are severely limited in terms of where else they can be worked. Waste facilities are not so constrained and, as is seen within Herefordshire already, the waste industry makes good use of industrial estate locations.

3.3.27 However, it is recognised that caution should be given to the loss of operating waste management infrastructure, particularly when that would occur through subsequent encroachment from a non-waste development. The intention is to safeguard those facilities that align with the spatial strategy for waste. This avoids both safeguarding existing facilities that are inappropriately located and preparing a list of facilities that becomes out of date within the plan period, but provides some protection for this essential infrastructure.

3.3.28 This position is simplified by Herefordshire being a unitary authority, with planning applications being considered within a single team and the opportunity available to consider the impact of a new development on an existing facility.

4. Conclusions for the MWLP

4.1 Introduction

4.1.1 This section of the report presents the key conclusions drawn from considering the spatial context for the MWLP and assessing the potential role for sites around the county.

4.2 Principles

4.2.1 The plan area for the MWLP will comprise the administrative boundary of the county of Herefordshire.

4.2.2 The Core Strategy provides an appropriate spatial strategy to use in considering waste management; it is not so readily applied to minerals development but does identify key areas of constraint and growth that are appropriate to consider.

4.2.3 The Core Strategy also generally provides an appropriate level of development management policy for minerals and waste development, although some additional provision will need to be made, for example in relation to mineral site reclamation.

4.2.4 The BGS data identifies reasonably extensive resources of sand and gravel and limestone, such that preferred areas of search are identified (Figure 2.4) having applied relevant criteria. Preferred areas of search are not prepared for building stone, clay or coal; these areas are very much more limited, and the demand for these resources is more limited throughout the plan period.

4.2.5 All mineral reserves are intended to be safeguarded save those that lie within, or within 50m of a settlement. This safeguarding is intended to include minerals ancillary infrastructure that lies within a quarry. The safeguarded reserves are shown on Figure 2.5. In addition, the Moreton-on-Lugg railhead and rail tracks lying within the Moreton Business Park are also proposed to be safeguarded.

4.2.6 Those waste facilities that align with the spatial strategy are proposed to be safeguarded, but not those mineral processing plants that do not lie within a quarry. The evidence does not indicate that this is necessary, particularly having regard to the fact that Herefordshire is a unitary authority.

4.2.7 A mineral consultation area is not proposed. As a unitary authority, Herefordshire has just one planning department and does not require a formalised consultation area.

4.3 Site Allocations

Minerals

4.3.1 Sand and gravel reserves at: Upper Lyde (Sites M03); Shobdon (Site M04); and Wellington (Sites M05) are all proposed to be allocated in the MWLP. Using information provided in the Call for Sites submissions these allocations would provide a minimum of nearly 3 million tonnes of sand and gravel resource. In addition, there are further preferred areas of search and new operations in these areas of search would add to the robustness of sand and gravel supply within Herefordshire.

4.3.2 Crushed rock reserves at Leinthall (Sites M07) and Perton (Sites M10) quarries are both proposed to be allocated in the MWLP. Within the submissions made in response to the Call for Sites 2016, the reserve across Site M07b is around 7 million tonnes. Information has not been provided to date on the reserve at Site M10b. In addition, preferred areas of search have been identified for working limestone reserves within Herefordshire.

4.3.3 All the active sandstone delves appeared suitable in principle to be able to gain an extension of time for mineral working. This applies to sites: M12 Callow Delve; M13 Black Hill Delve; M16 Llandraw Delve; M17 Pennsylvani Delves; M18 Sunnybank Delve; and M20 Westonhill Wood Delves.

4.3.4 In addition, sites: M13 Black Hill Delve; M16 Llandraw Delve; and M20 Westonhill Wood Delves seem also to be appropriate for an extension in size of the working area.

4.3.5 No site is proposed to be allocated for the extraction of clay, coal or unconventional hydrocarbons.

Waste

4.3.6 There are many waste management sites operating in Herefordshire that are located on an industrial estate or strategic employment site. These are the preferred locations for new waste management facilities and will be promoted in policy.

4.3.7 Many of the sites not operating in these locations are also situated beyond the areas covered by the spatial strategy; these are not preferred sites for waste management development and consequently are not intended to be promoted in policy.

4.3.8 Five discrete sites that are not within an industrial estate or strategic employment site, do lie within the spatial strategy and are considered appropriate for future waste management development. These sites are considered appropriate in principle to accommodate a range of waste treatment and recovery operations. Each of these sites are proposed to be allocated in the MWLP:

- Site W05 Leominster HWS and HWRC;
- Site W07 Ledbury HWRC;
- Site W10 Kington HWRC;
- Site W13 Former Lugg Bridge Quarry; and
- Site W19 City Spares MRS.

4.3.9 In addition, there are three sand and gravel sites that are considered appropriate for the deposit of inert wastes disposal to achieve the recovery of land following mineral extraction. These are: Sites W43 Upper Lyde; Site W44 Shobdon; and Sites W45 Wellington.

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Publication Draft MWLP: Appendix A

Allocated sites and the key development criteria

Herefordshire Minerals and Waste Local Plan

March 2020, updated August 2020

HENDECA LTD

Contents

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Policy M3(2,a)

Herefordshire Minerals and Waste Local Plan

March 2020
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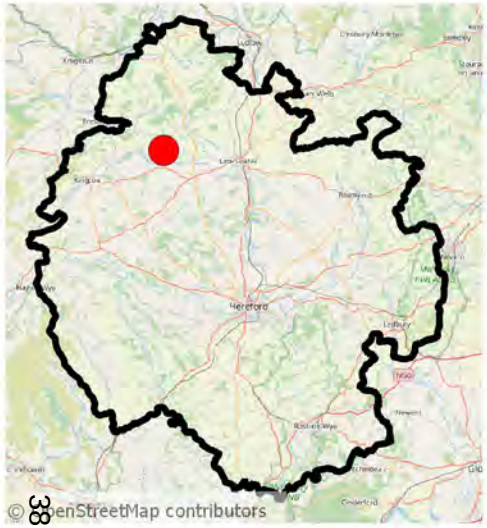
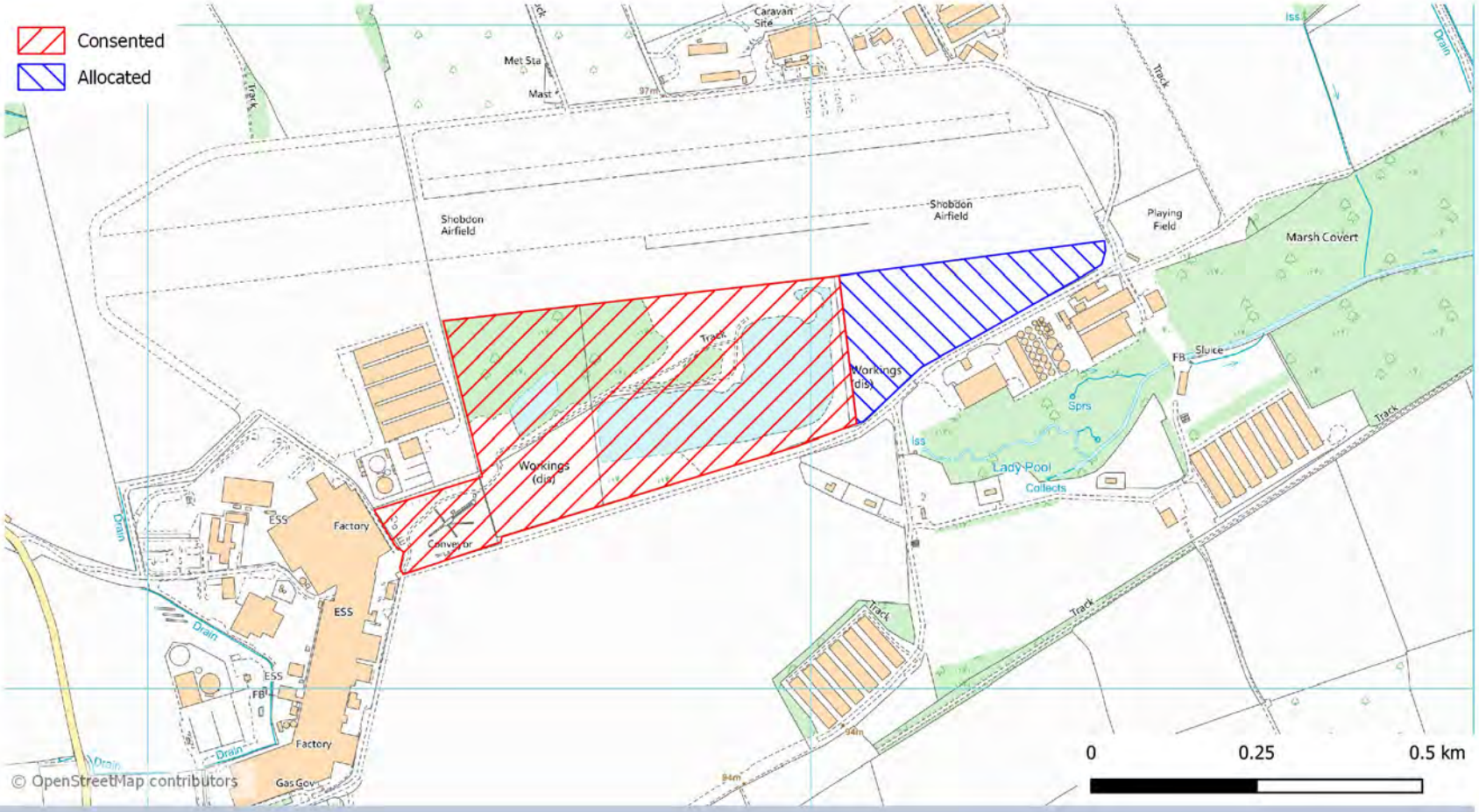
Herefordshire Council
Allocated Sites

Shobdon Quarry
Policy: M3(2,a)



Consented Area:	**18.13 ha**
Allocated Area:	**4.81 ha**
Easting:	**339824**
Northing:	**260459**



Key Development Criteria:

Archaeology: Need to demonstrate the potential for archaeological remains to be present on the site, through desk-based assessment and/or field evaluation as appropriate. Mitigation will include recording, protection or recovery of any assets.

Flood Risk: Need to demonstrate that: the site will be safe in the event of a flood; risk is not increased on site or elsewhere; and where possible, flood risk is decreased. Flood alleviation should be considered in designing site reclamation.

Geodiversity: Need to demonstrate the level of effect on geodiversity and incorporate mitigation measures as appropriate. Mitigation will include recording, protection or recovery of any assets.

Green infrastructure and reclamation: Operation and reclamation phases should deliver priorities of the Herefordshire Green Infrastructure Strategy, in particular those associated with District Enhancement Zone 2. Site design should deliver a net gain in biodiversity, providing enhancement for priority bird species, and incorporate key features of the landscape character.

Ground water: Glaciofluvial sand and gravel deposits represent a secondary aquifer in hydraulic continuity with watercourses. Need to demonstrate the potential risks to the water environment.

Housing: Need to demonstrate the level of effect on residential amenity at nearby properties.

Pinsley Brook: Need to demonstrate the level of effect on water quality and hydrology in Pinsley Brook.

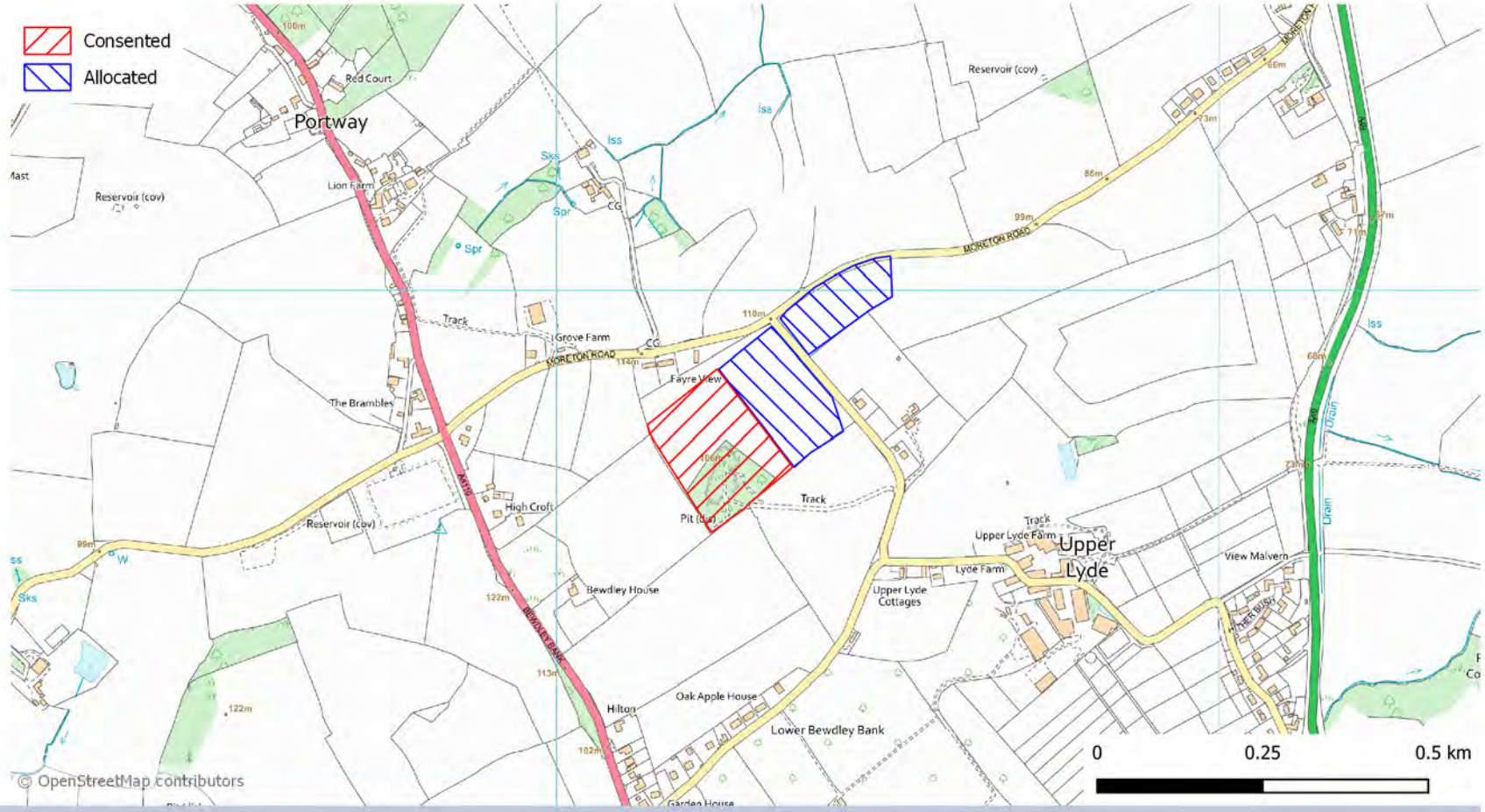
Phased working: Need to demonstrate optimum phasing of the allocated area, including how existing infrastructure will be used (to include at least site access and processing equipment) and reclamation at the earliest opportunity. A proliferation of ancillary infrastructure will not be permitted.

River Wye SAC: Development should demonstrate nutrient neutrality or betterment.

Shobdon Airfield: Need to demonstrate the level of effect on the current and likely future operations of Shobdon Airfield.

Herefordshire Council Allocated Sites

Upper Lyde Quarry
Policy: M3(2,a)



Consented Area:	**2.79 ha**
Allocated Area:	**3.21 ha**
Easting:	**349282**
Northing:	**244805**

Key Development Criteria:

Archaeology: Need to demonstrate the potential for archaeological remains to be present on the site, through desk-based assessment and/or field evaluation as appropriate. Mitigation will include recording, protection or recovery of any assets.

Geodiversity: Need to demonstrate the level of effect on geodiversity and incorporate avoidance, mitigation and monitoring measures as appropriate. Mitigation will include recording, protection or recovery of any assets.

Green infrastructure and reclamation: Operation and reclamation phases should deliver priorities of the Herefordshire Green Infrastructure Strategy, in particular those associated with District Strategy Corridor 2 and Hereford Fringe Zone 4. Site design should deliver a net gain in biodiversity, providing enhancement for priority bird species, and incorporate key features of the landscape character.

Ground water: Glaciofluvial sand and gravel deposits represent a secondary aquifer in hydraulic continuity with watercourses. Need to demonstrate the potential risks to the water environment.

Housing: Need to demonstrate the level of effect on residential amenity at nearby properties.

Phased working: Need to demonstrate optimum phasing of the allocated area, including how existing infrastructure will be used (to include at least site access and processing equipment) and reclamation at the earliest opportunity. A proliferation of ancillary infrastructure will not be permitted.

River Lugg: Need to demonstrate the level of effect on water quality and hydrology of these watercourses.

River Lugg SSSI: Need to demonstrate the level of effect on the key features of this designation.

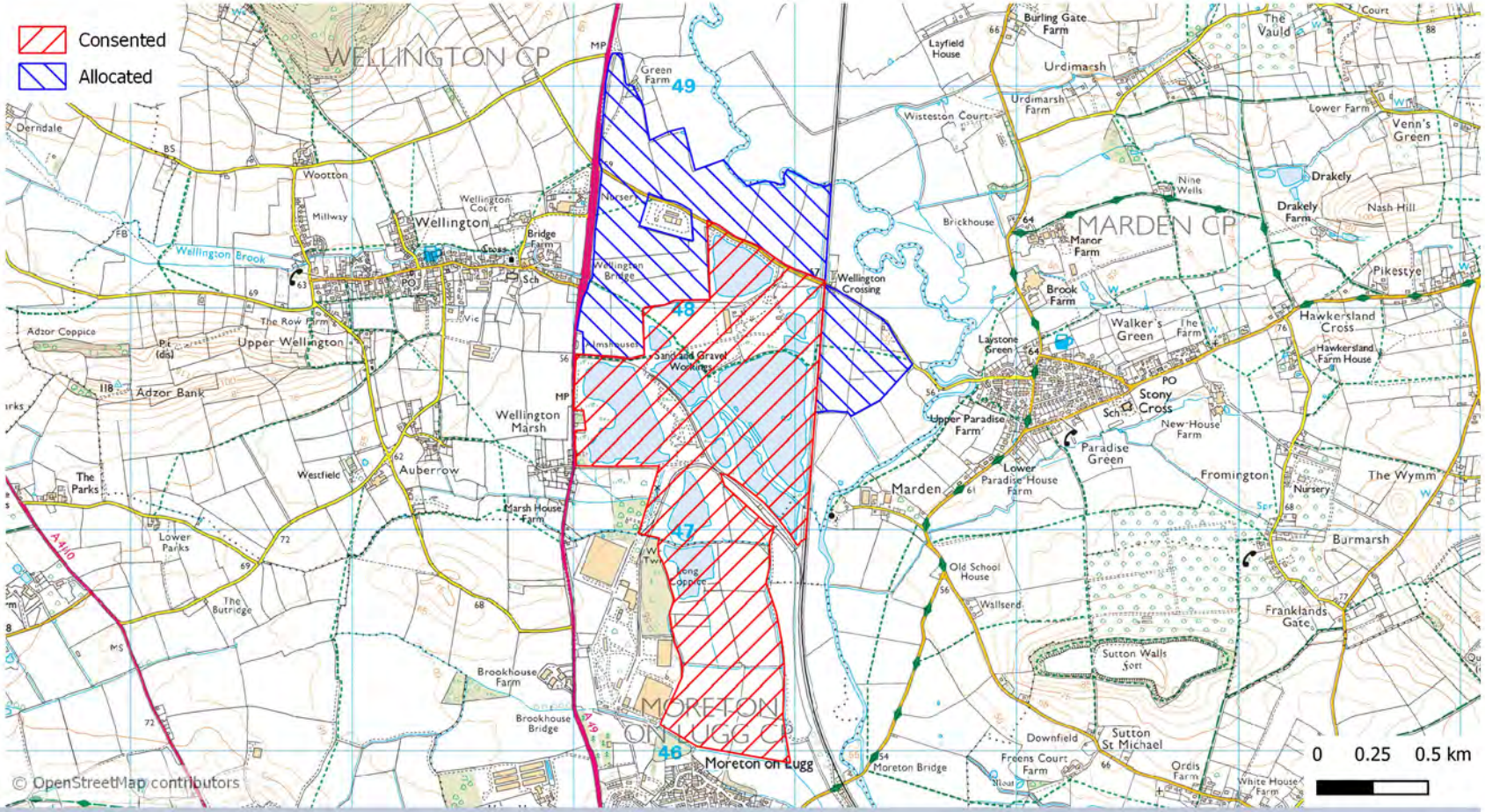
River Wye SAC: An Appropriate Assessment is required to demonstrate the likely significant effect(s) on the SAC. Development should demonstrate nutrient neutrality or betterment.

Road network: Highways England identifies the site as located near to the strategic road network. Need to demonstrate the level of effect on the local road network in the vicinity of the site.

Herefordshire Council
Allocated Sites

Wellington Quarry
Policy: M3(2,a)

Consented Area:	**152.88 ha**
Allocated Area:	**80.83 ha**
Easting:	**350685**
Northing:	**247580**



Key Development Criteria:

Archaeology and geodiversity: Need to demonstrate the potential for archaeological remains or geological features to be present on the site, through desk-based assessment and/or field evaluation as appropriate. Mitigation will include recording, protection or recovery of any assets.

Flood Risk: Need to demonstrate that: the site will be safe in the event of a flood; risk is not increased on site or elsewhere; and where possible, flood risk is decreased. Flood alleviation should be considered in designing site reclamation.

Footpath: Wellington footpaths 23, 23A and 34 cross the site and may require diversion or a non-working buffer such that the amenity value and connectivity of the footpaths are maintained.

Green infrastructure: Operation and reclamation phases should deliver priorities of the Herefordshire Green Infrastructure Strategy, in particular those associated with District Strategy Corridor 1 and District Enhancement Zone 3. Site design should deliver a net gain in biodiversity, providing enhancement for priority habitats, and incorporate key features of the landscape character.

Ground water: Glaciofluvial sand and gravel deposits represent a secondary aquifer in hydraulic continuity with watercourses. Need to demonstrate the potential risks to the water environment.

Heritage assets: Need to demonstrate the level of effect on heritage asset(s) and their setting(s), particularly listed buildings and Sutton Walls Fort.

Marches Line: A non-working buffer may be required such that railway safety is maintained.

Phased working: Need to demonstrate optimum phasing of the allocated area, including how existing infrastructure will be used (to include at least site access and processing equipment) and reclamation at the earliest opportunity. A proliferation of ancillary infrastructure will not be permitted.

River Lugg and Wellington Brook: Need to demonstrate the level of effect on water quality and hydrology of these watercourses.

River Lugg LWS and SSSI: Need to demonstrate the level of effect on the key features of this designation.

River Wye SAC: An Appropriate Assessment is required to demonstrate the likely significant effect(s) on the SAC. Development should demonstrate nutrient neutrality or betterment.

Road network: Highways England identifies this site as located near to the strategic road network. Need to demonstrate the level of effect on the A49 and that vehicles can access and leave the site, to and from the public highway, safely.

Sensitive properties: Need to demonstrate the level of effect on the amenity, health & safety and environment of nearby sensitive properties (school and housing).

Utilities: Utility infrastructure (high pressure gas, water mains and foul sewer) that cross the site may require diversion or a non-working buffer to enable the site to be worked.

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Policy M4(2,a)

Herefordshire Minerals and Waste Local Plan

March 2020
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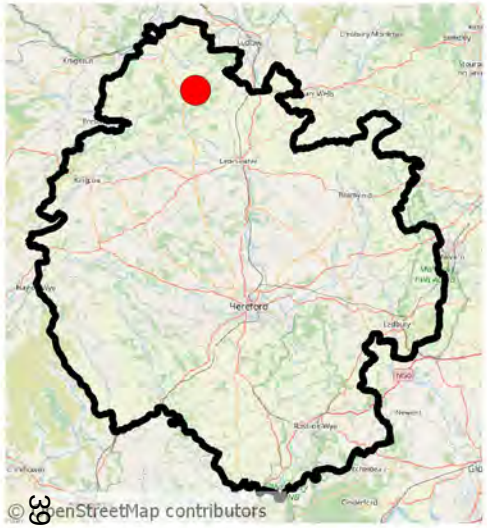
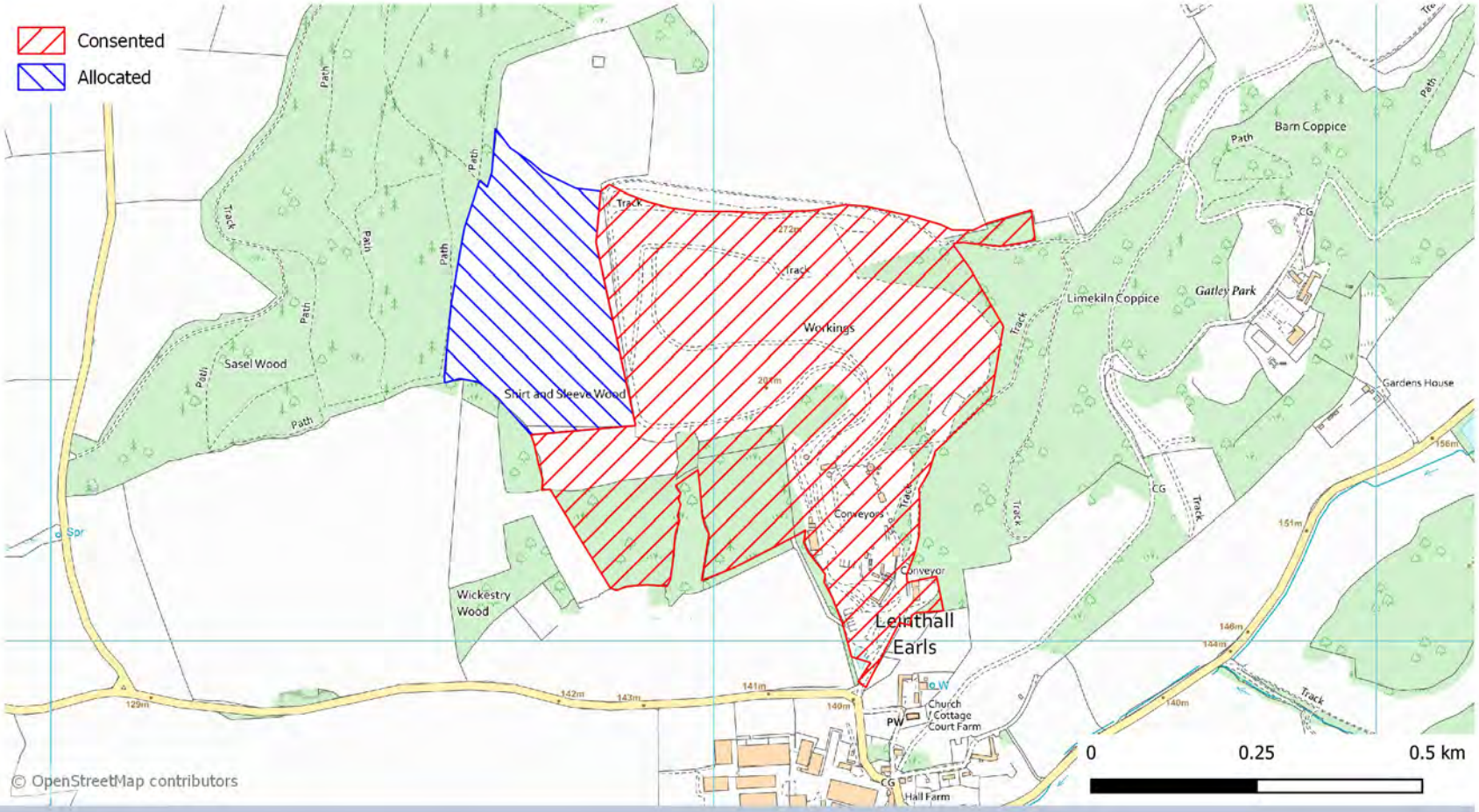
Herefordshire Council
Allocated Sites

Leinthall Quarry
Policy: M4(2,a)



Consented Area:	**31.46 ha**
Allocated Area:	**8.55 ha**
Easting:	**344024**
Northing:	**268401**

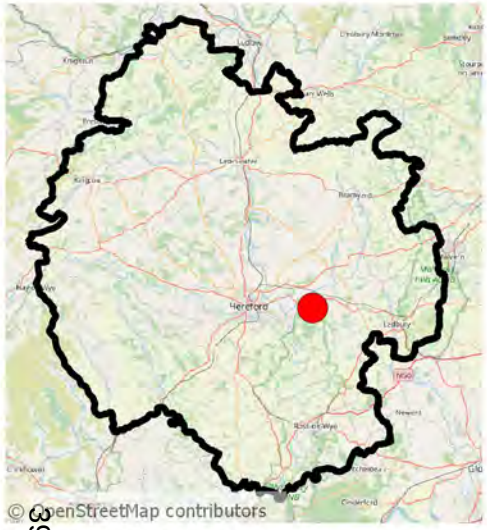


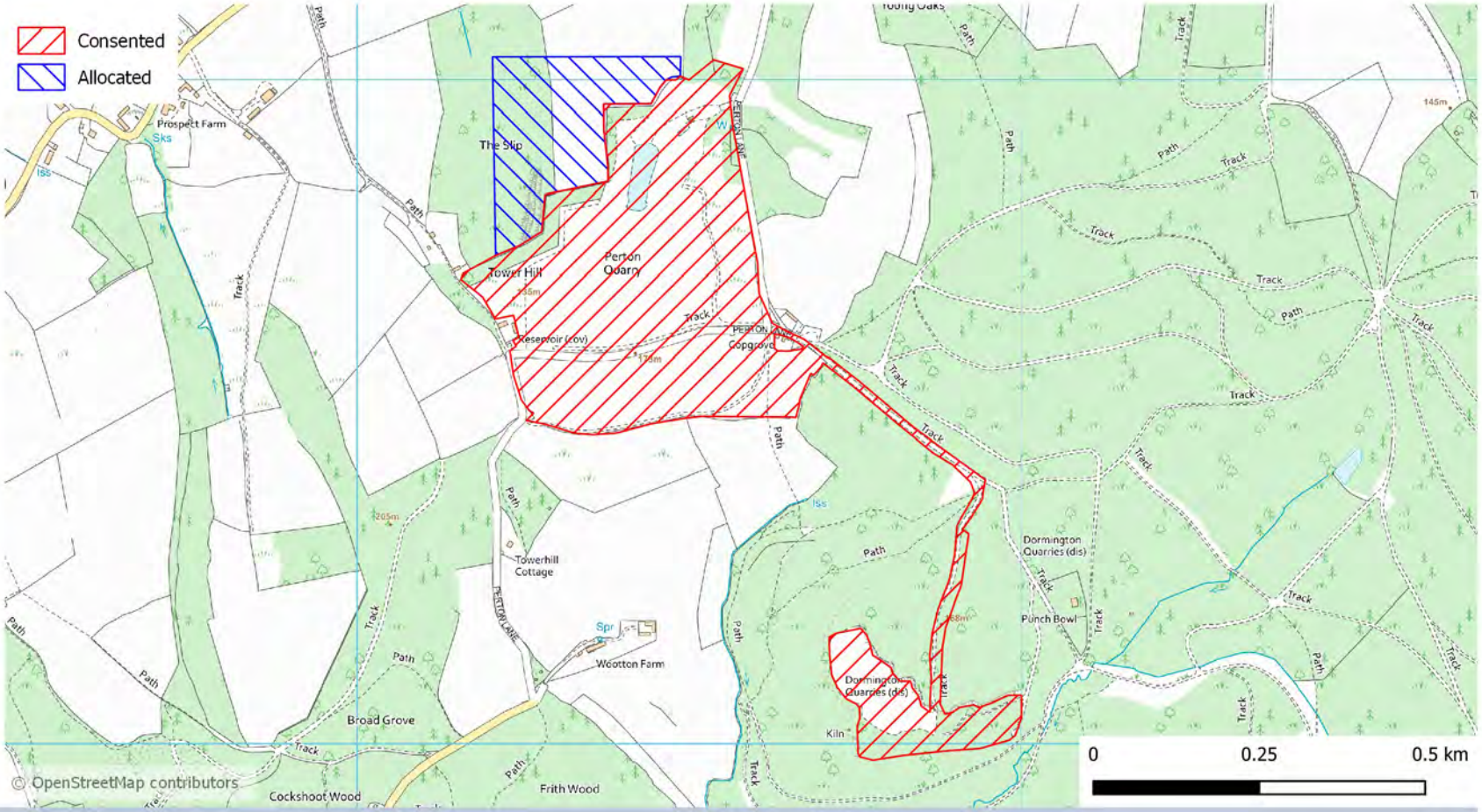
Key Development Criteria:

Dark Skies: Need to demonstrate that lighting will be kept to the minimum required to ensure safe working conditions on site.
Downton Gorge SAC: An Appropriate Assessment is required to demonstrate the likely significant effect(s) on the SAC.
Geodiversity: Need to demonstrate the level of effect on geodiversity and incorporate mitigation measures as appropriate. Mitigation will include recording, protection or recovery of any assets.
Green infrastructure: Operation and reclamation phases should deliver priorities of the Herefordshire Green Infrastructure Strategy, in particular those associated with District Strategy Corridor 9. Site design should deliver a net gain in biodiversity, linking priority habitats, and incorporate key features of the landscape character.
Ground water: Located within the hard rock of the Silurian Aymestry Limestone Formation, classified as a secondary aquifer. Need to demonstrate the potential risks to the water environment.
Heritage assets: Need to demonstrate the level of effect on heritage assets and their settings, particularly of Croft Ambrey Hill Fort and Croft Castle Park.
Phased working: Need to demonstrate optimum phasing of the allocated area, including how existing infrastructure will be used (to include at least site access and processing equipment) and reclamation at the earliest opportunity. A proliferation of ancillary infrastructure will not be permitted.
River Teme SSSI and River Lugg SSSI: Need to demonstrate the level of effect on the key features of these designations.
Veteran tree: Need to demonstrate level of effect on ancient yew tree located to the south of the site.

Herefordshire Council
Allocated Sites

Perton Quarry
Policy: M4(2,a)





Consented Area:	**20.69 ha**
Allocated Area:	**4.64 ha**
Easting:	**359470**
Northing:	**239658**

Key Development Criteria:

Archaeology: Need to demonstrate the potential for archaeological remains to be present on the site, through desk-based assessment and/or field evaluation as appropriate. Mitigation will include recording, protection or recovery of any assets.

Dark Skies: Need to demonstrate that lighting will be kept to the minimum required to ensure safe working conditions on site.

Geodiversity, Perton Roadside Section and Quarry SSSI: Need to demonstrate the level of effect on geodiversity and incorporate mitigation measures as appropriate. Mitigation will include recording, protection or recovery of any assets.

Green infrastructure: Operation and reclamation phases should deliver priorities of the Herefordshire Green Infrastructure Strategy, in particular those associated with District Strategy Corridor 3. Site design should deliver a net gain in biodiversity, providing enhancement for priority bird species, and incorporate key features of the landscape character.

Ground water: Located within the Silurian Limestones and shales of the Woolhope Dome structure, classified as a secondary aquifer. Need to demonstrate the potential risks to the water environment.

Peregrine Falcons: This is a species protected under Schedule 1 of the Wildlife and Countryside Act 1981.

Phased working: Need to demonstrate optimum phasing of the allocated area, including how existing infrastructure will be used (to include at least site access and processing equipment) and reclamation at the earliest opportunity. A proliferation of ancillary infrastructure will not be permitted.

River Lugg SSSI: Need to demonstrate the level of effect on the key features of this designation.

River Wye SAC: An Appropriate Assessment is required to demonstrate the likely significant effect(s) on the SAC. Development should demonstrate nutrient neutrality or betterment.

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Policy M5

Herefordshire Minerals and Waste Local Plan

March 2020
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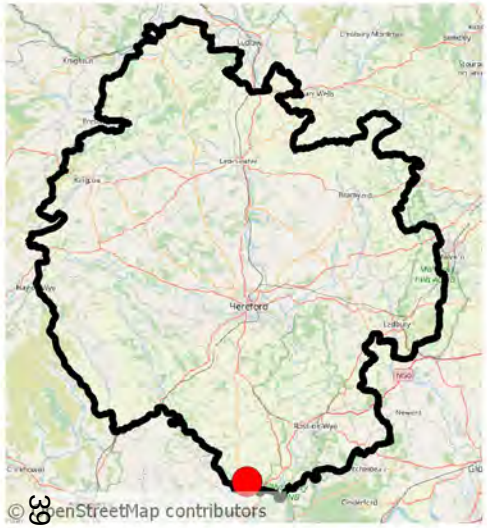
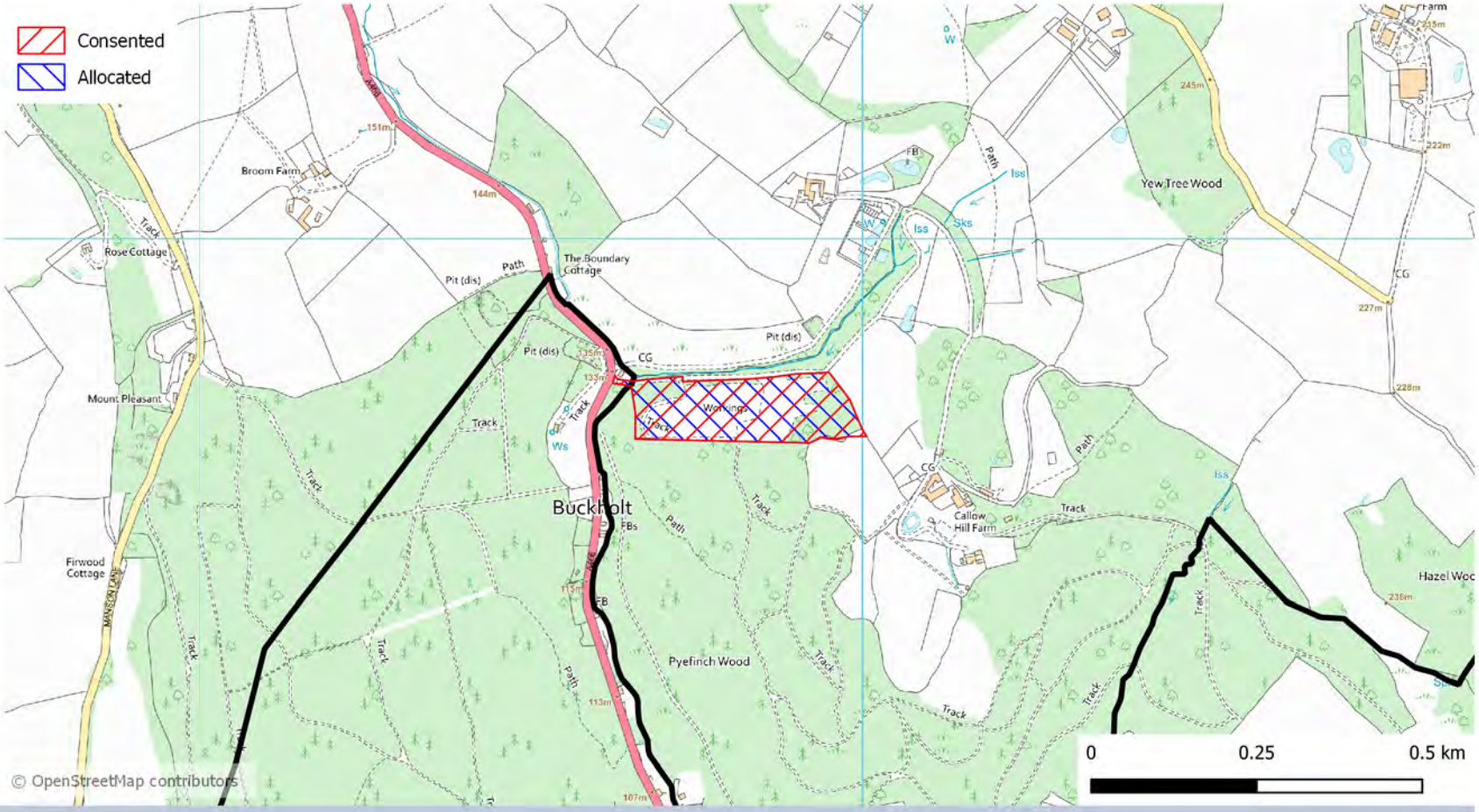
Herefordshire Council Allocated Sites

Callow Delve
Policy: M5(1,a)



Consented Area:	**3.13 ha**
Allocated Area:	**3.13 ha**
Easting:	**350821**
Northing:	**216744**

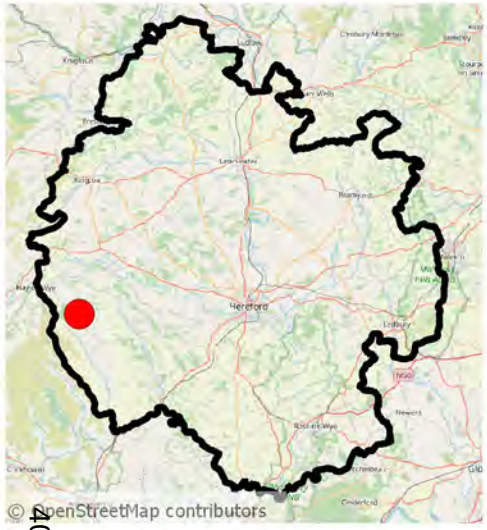


Key Development Criteria:

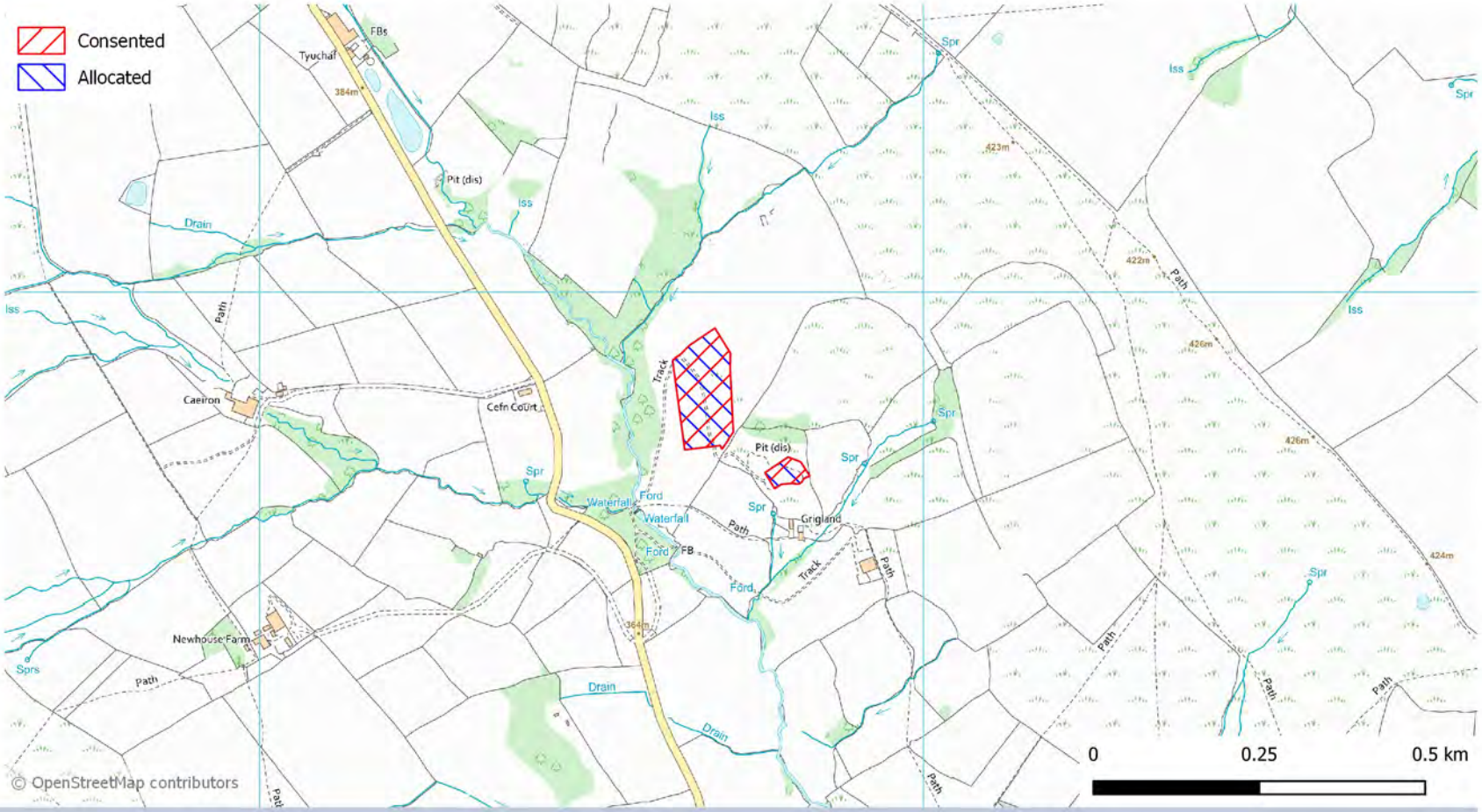
Ancient Woodland: Need to demonstrate the level of effect on the ancient woodland, leaving a buffer adequate to protect the designation.
Dark Skies: Need to demonstrate that lighting will be kept to the minimum required to ensure safe working conditions on site.
Flood Risk: Need to demonstrate that: the site will be safe in the event of a flood; risk is not increased on site or elsewhere; and where possible, flood risk is decreased. Flood alleviation should be considered in designing site reclamation.
Green infrastructure: Operation and reclamation phases should deliver priorities of the Herefordshire Green Infrastructure Strategy. Site design should deliver a net gain in biodiversity, providing enhancement for priority bird species, and incorporate key features of the landscape character.
Ground water: Located within the Brownstones formation, classified a secondary aquifer and adjacent to a groundwater spring source protection zone for public drinking water supply. Need to demonstrate the potential risks to the water environment, including private drinking water supply.
River Wye SAC: An Appropriate Assessment is required to demonstrate the likely significant effect(s) on the SAC. Development should demonstrate nutrient neutrality or betterment.
Site Access: Need to demonstrate that vehicles can continue to access and leave the site, to and from the public highway, safely.
Woodland at Welsh Newton & Callow Hill LWS: Need to demonstrate the likely effect on the key features of the designated site.
Wye Valley Woodlands SAC and Wye Valley & Forest of Dean Bat Sites SAC: An Appropriate Assessment is required to demonstrate the likely significant effect(s) on the SAC. Need to demonstrate how habitat severance for horseshoe bats will be prevented, which may require the periphery woodland to be retained.

Herefordshire Council
Allocated Sites

Pennsylvani Delves
Policy: M5(1,a)



Consented Area:	1.46 ha
Allocated Area:	1.46 ha
Easting:	328686
Northing:	238834

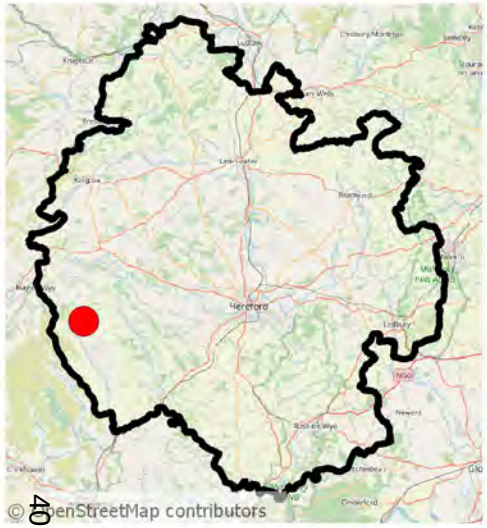


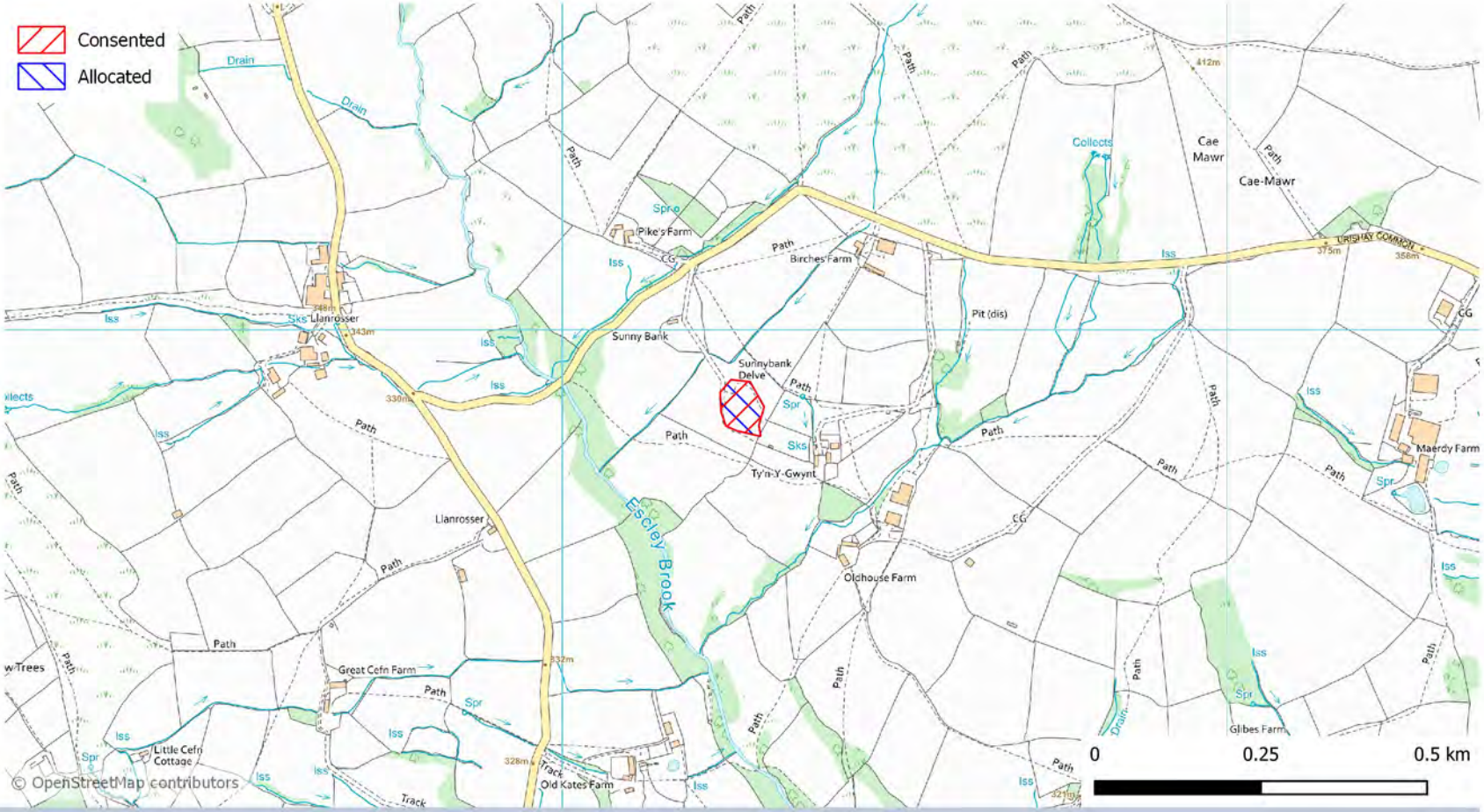
Key Development Criteria:

Caeiron Meadow SSSI and Pikes Farm Meadows SSSI: Need to demonstrate the level of effect on the key features of these designations.
Dark Skies: Need to demonstrate that lighting will be kept to the minimum required to ensure safe working conditions on site.
Green infrastructure: Operation and reclamation phases should deliver priorities of the Herefordshire Green Infrastructure Strategy, in particular those associated with District Strategy Corridor 8. Site design should deliver a net gain in biodiversity, linking priority habitats, and incorporate key features of the landscape character.
MOD Danger Area and Low Fly Zone: Need to demonstrate the level of effect on the current and likely future operations within the MOD Danger Area and Low Fly Zone.
Site Access: Need to demonstrate that vehicles can continue to access and leave the site, to and from the public highway, safely.

Herefordshire Council
Allocated Sites

Sunnybank Delve
Policy: M5(1,a)





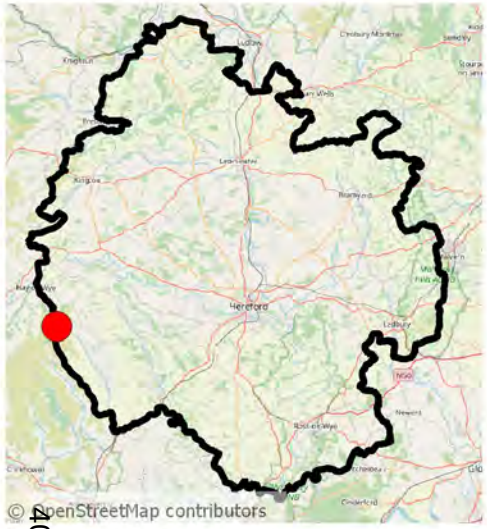
Consented Area:	**0.42 ha**
Allocated Area:	**0.42 ha**
Easting:	**329269**
Northing:	**237884**

Key Development Criteria:

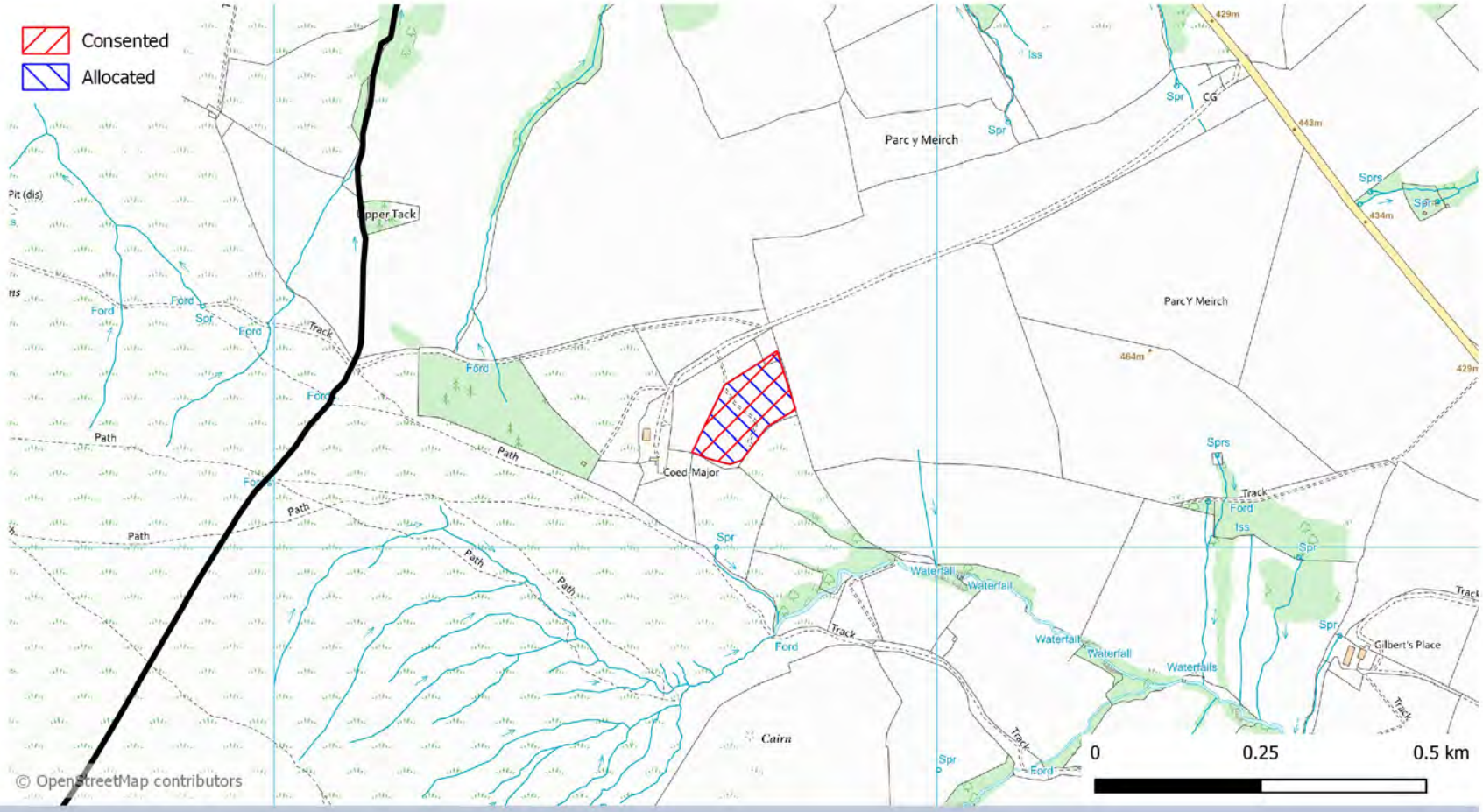
Dark Skies: Need to demonstrate that lighting will be kept to the minimum required to ensure safe working conditions on site.
Green infrastructure: Operation and reclamation phases should deliver priorities of the Herefordshire Green Infrastructure Strategy, in particular those associated with District Strategy Corridor 8. Site design should deliver a net gain in biodiversity, providing enhancement for priority bird species, and incorporate key features of the landscape character.
Housing: Need to demonstrate the level of effect on residential amenity at nearby properties.
MOD Danger Area and Low Fly Zone: Need to demonstrate the level of effect on the current and likely future operations within the MOD Danger Area and Low Fly Zone.
Pikes Farm Meadows SSSI: Need to demonstrate the level of effect on the key features of this designation.

Herefordshire Council Allocated Sites

Black Hill Delve
Policy: M5(1,a&b)



Consented Area:	**1.38 ha**
Allocated Area:	**3.13 ha**
Easting:	**325711**
Northing:	**237205**

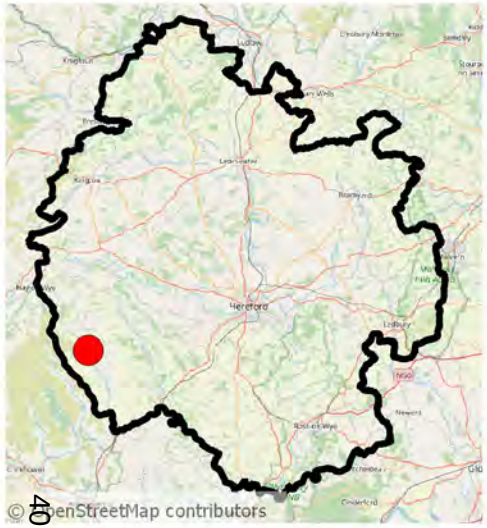


Key Development Criteria:

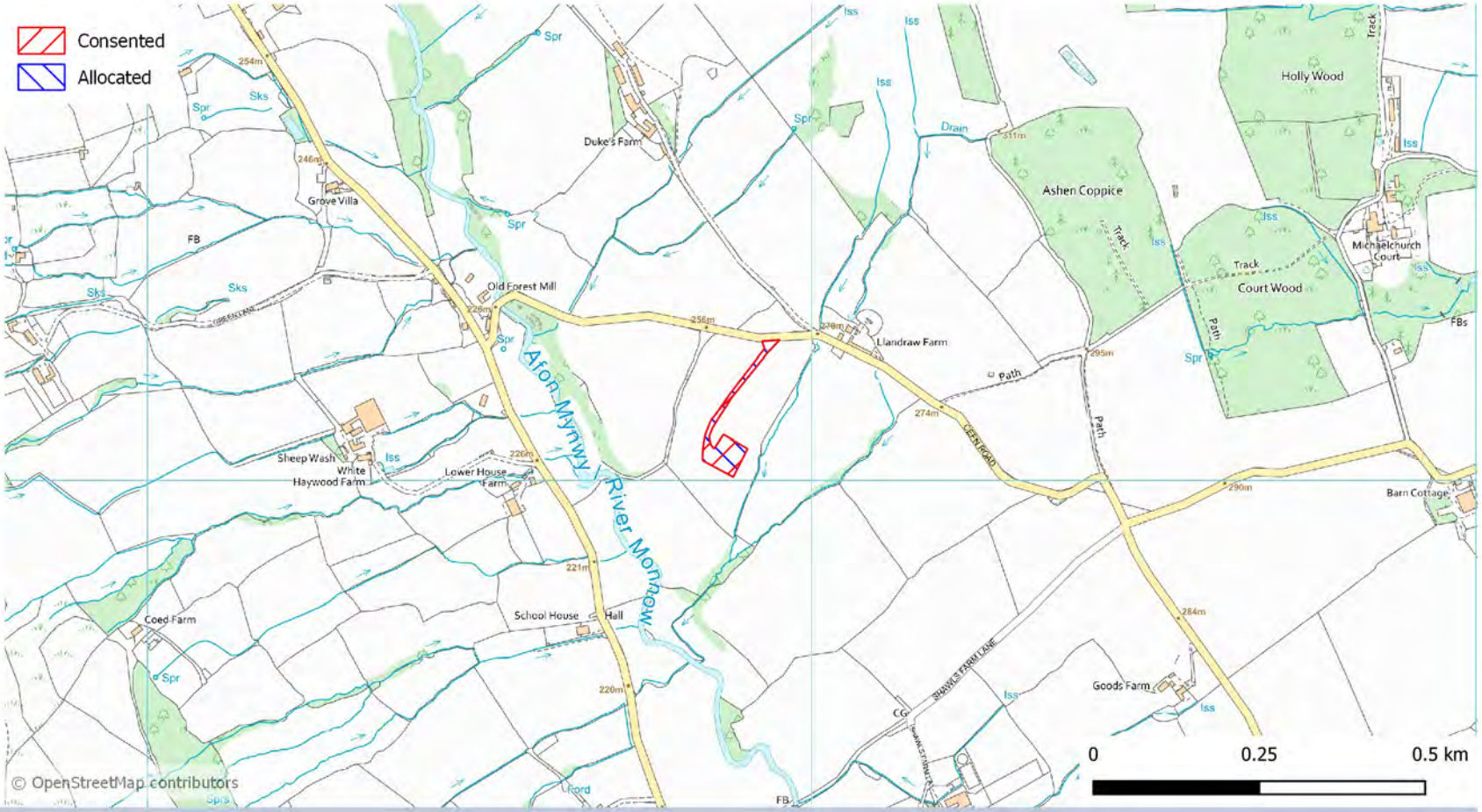
Archaeology and geodiversity: Need to demonstrate the potential for archaeological remains or geological features to be present on the site, through desk-based assessment and/or field evaluation as appropriate. Mitigation will include recording, protection or recovery of any assets.
Ancient Woodland: Need to demonstrate the level of effect on the ancient woodland, leaving a buffer adequate to protect the designation.
Black Mountains SSSI: Need to demonstrate the level of effect on the key features of this designation.
Dark Skies: Need to demonstrate that lighting will be kept to the minimum required to ensure safe working conditions on site.
Green infrastructure: Operation and reclamation phases should deliver priorities of the Herefordshire Green Infrastructure Strategy, in particular those associated with District Strategy Corridor 8. Site design should deliver a net gain in biodiversity, linking priority habitats, and incorporate key features of the landscape character.
Ground water: Located in the St. Maughans sandstone bedrock formation, classified a secondary aquifer. Need to demonstrate the potential risks for the water environment.
MOD Low Fly Zone: Need to demonstrate the level of effect on the current and likely future operations within the MOD Low Fly Zone.
River Monnow: Need to demonstrate the level of effect on water quality and hydrology of the River Monnow.
Site Access: Need to demonstrate that vehicles can continue to access and leave the site, to and from the public highway, safely.

Herefordshire Council
Allocated Sites

Llandraw Delve
Policy: M5(1,a&b)



Consented Area:	**0.39 ha**
Allocated Area:	**0.39 ha**
Easting:	**329876**
Northing:	**234074**

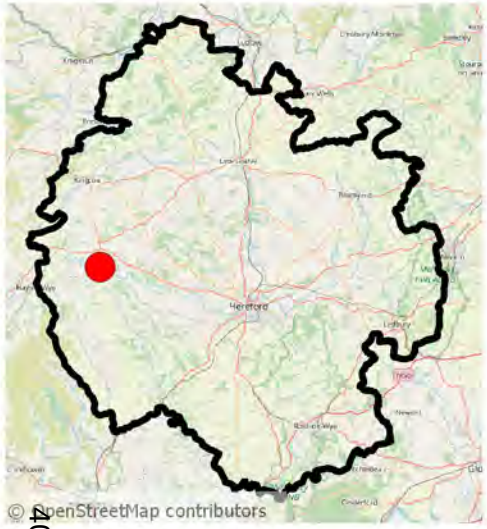


Key Development Criteria:

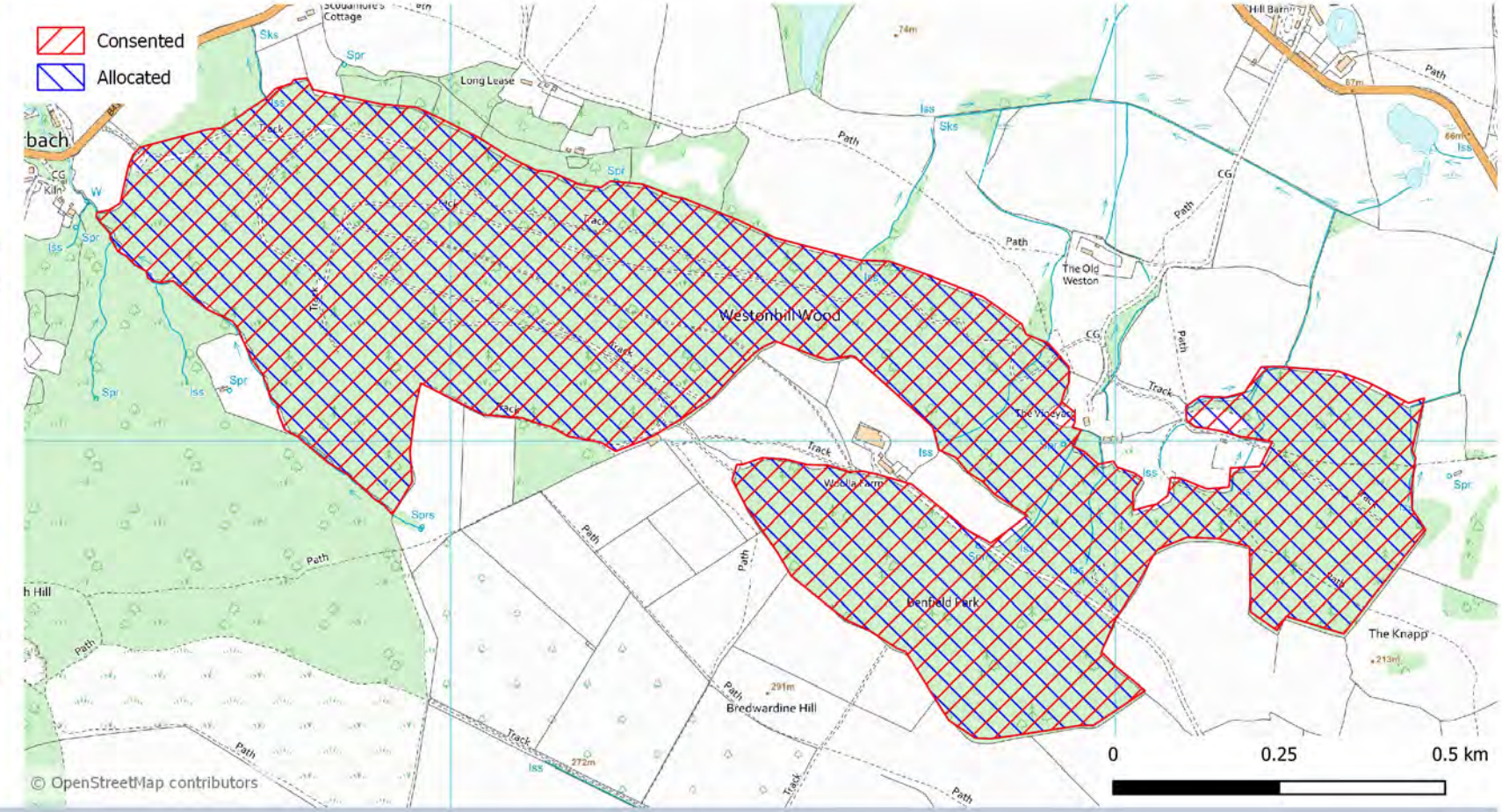
Dark Skies: Need to demonstrate that lighting will be kept to the minimum required to ensure safe working conditions on site.
Green infrastructure: Operation and reclamation phases should deliver deliver priorities of the Herefordshire Green Infrastructure Strategy, in particular those associated with District Strategy Corridor 8. Site design should deliver a net gain in biodiversity, providing enhancement for priority bird species, and incorporate key features of the landscape character.
Ground water: Located in the St. Maughans sandstone bedrock formation, classified a secondary aquifer and proximate to the side of the Black Mountains where many springs and watercourses issue off the slopes. Need to demonstrate the potential risks for the water environment.
MOD Danger Area and Low Fly Zone: Need to demonstrate the level of effect on the current and likely future operations within the MOD Danger Area and Low Fly Zone.
River Monnow: Need to demonstrate the level of effect on water quality and hydrology of the River Monnow.
Site Access: Need to demonstrate that vehicles can continue to access and leave the site, to and from the public highway, safely.

Herefordshire Council
Allocated Sites

Westonhill Wood Delves
Policy: M5(1,a&b)



Consented Area:	**73.41 ha**
Allocated Area:	**73.41 ha**
Easting:	**331442**
Northing:	**245082**



Key Development Criteria:

Airfield: Need to demonstrate the level of effect on the current and likely future operations of the nearby airfield.
Ancient Woodland: Need to demonstrate the level of effect on the ancient woodland, leaving a buffer adequate to protect the designation.
Archaeology and geodiversity: Need to demonstrate the potential for archaeological remains or geological features to be present on the site, through desk-based assessment and/or field evaluation as appropriate. Mitigation will include recording, protection or recovery of any assets.
Dark Skies: Need to demonstrate that lighting will be kept to the minimum required to ensure safe working conditions on site.
Green infrastructure: Operation and reclamation phases should deliver priorities of the Herefordshire Green Infrastructure Strategy, in particular those associated with District Strategy Corridor 7. Site design should deliver a net gain in biodiversity, providing enhancement for priority habitats, and incorporate key features of the landscape character.
Ground water: Located on secondary aquifer of the Devonian. Need to demonstrate the potential risks to the water environment, including drinking water.
Housing: Need to demonstrate the level of effect on residential amenity at nearby properties.
Heritage assets: Need to demonstrate the level of effect on heritage asset(s) and their setting(s).
Merbach Hill LWS, Benfield Park LWS and Westonhill Wood LWS: Need to demonstrate the level of effect on the key features of these designations.
River Wye SAC: An Appropriate Assessment is required to demonstrate the likely significant effect(s) on the SAC. Development should demonstrate nutrient neutrality or betterment.
River Wye SSSI: Need to demonstrate the level of effect on the key features of this designation.
Site Access: Need to demonstrate that vehicles can continue to access and leave the site, to and from the public highway, safely.

hendeca

Policy W5(2)

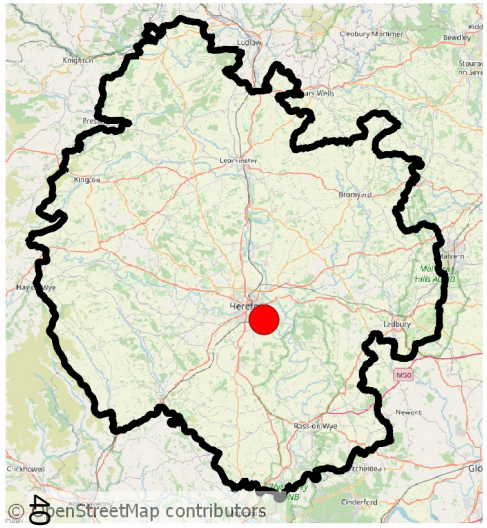
Presented in the same order as the Core Strategy

Herefordshire Minerals and Waste Local Plan

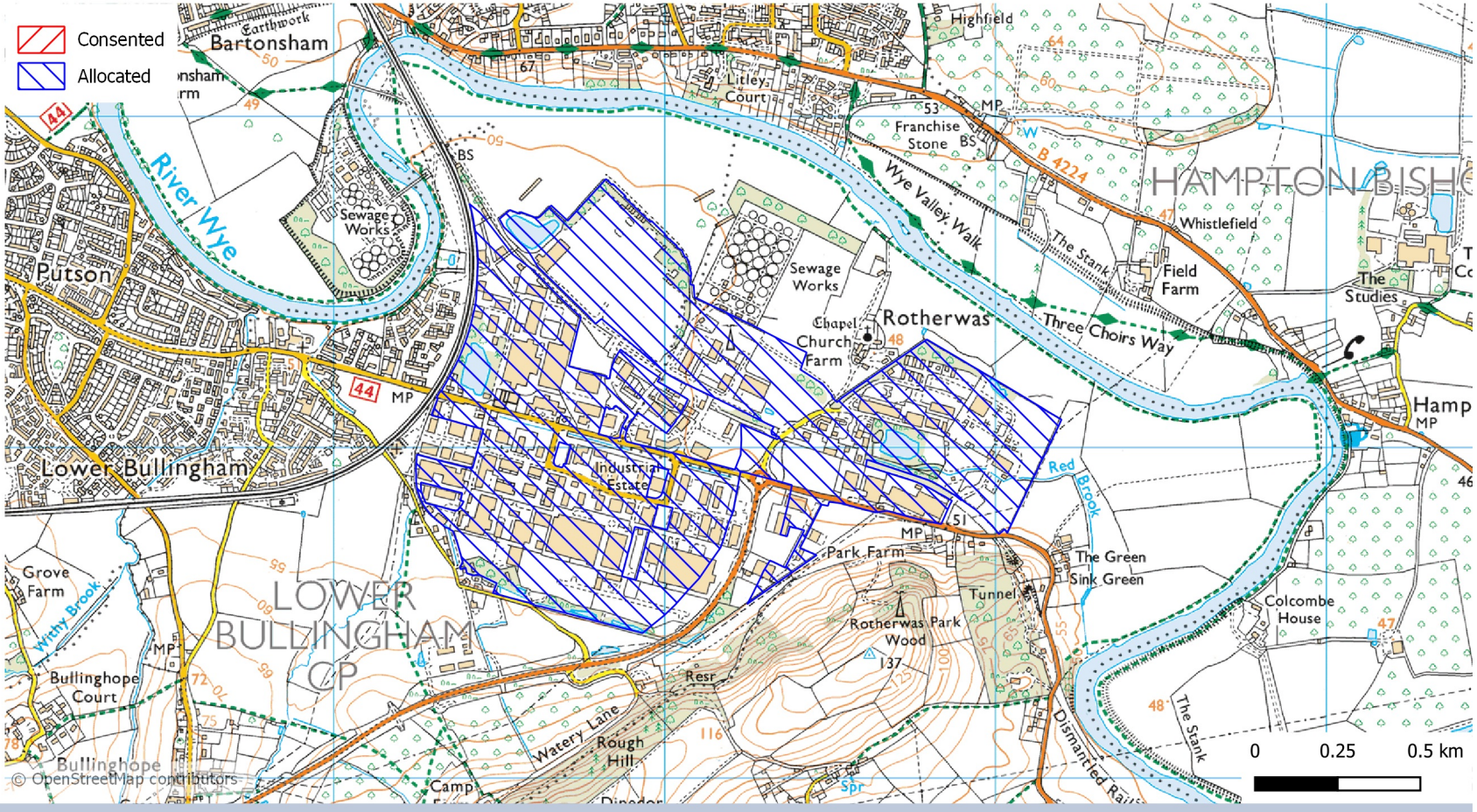
March 2020
HENDECA LTD

Herefordshire Council Allocated Sites

Hereford Enterprise Zone (Rotherwas Industrial Estate) Policy: W5(2)



Consented Area:	**0 ha**
Allocated Area:	**122.75 ha**
Easting:	**353054**
Northing:	**238070**



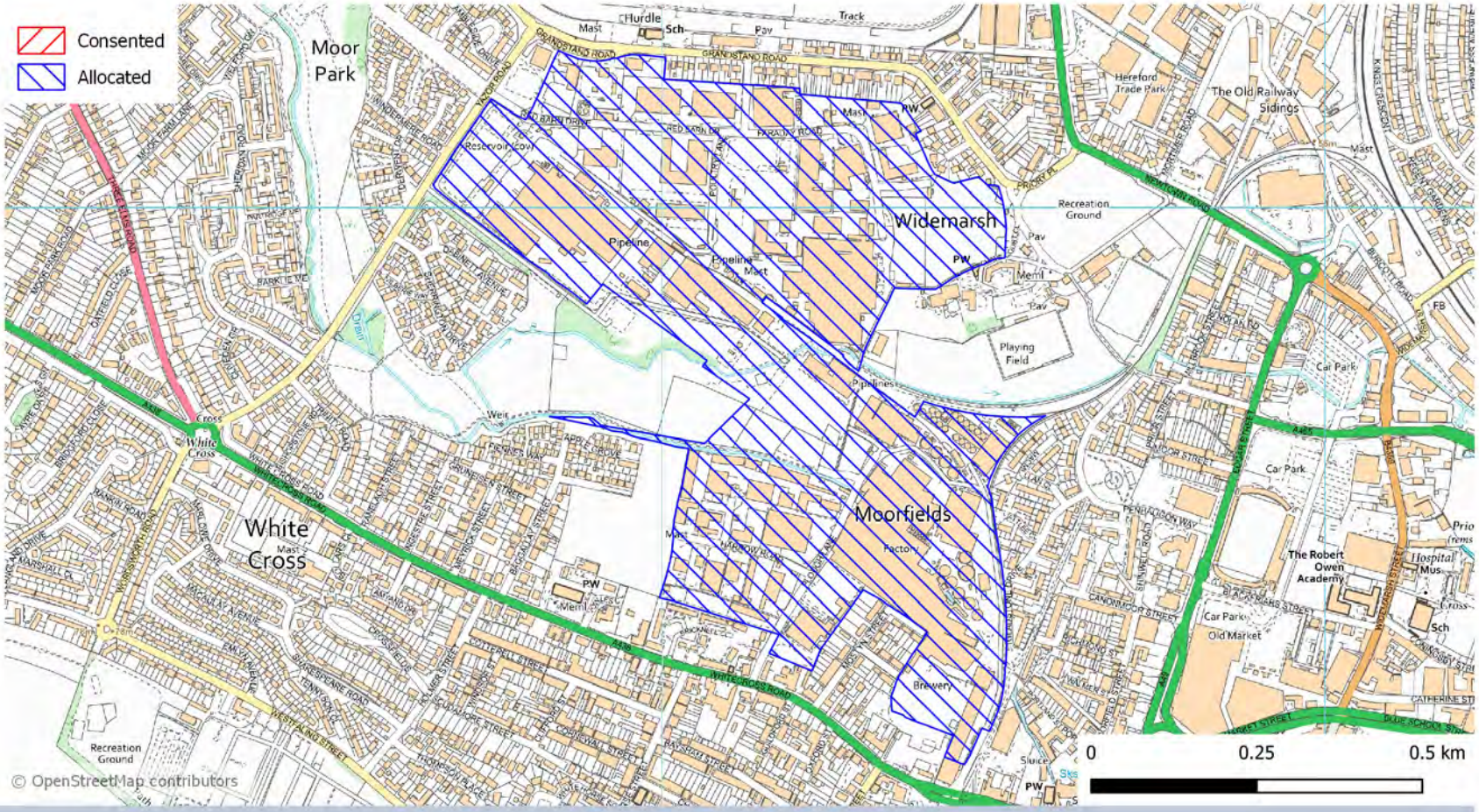
Key Development Criteria:

Ancient Woodland: Need to demonstrate the level of effect on the ancient woodland, leaving a buffer adequate to protect the designation.
Archaeology: Need to demonstrate the potential for archaeological remains to be present on the site, through desk-based assessment and/or field evaluation as appropriate. Mitigation will include recording, protection or recovery of any assets.
Contaminated land: Recognising the site as a former munitions factory, there is a high potential for contaminated land. The site is located within a drinking water protected area. Need to demonstrate how any contamination on site will be identified and remediated, particularly with reference to protection of drinking water.
Flood Risk: Site-specific flood risk assessment required to demonstrate compliance with Local Development Order. Reference should be made to the Drainage and Flood Management Strategy (2009 and as amended).
Hampton Grange medical facility: Need to demonstrate the level of effect on the amenity, health & safety and environment of this medical facility.
Heritage assets: Need to demonstrate the level of effect on heritage asset(s) and their setting(s), particularly listed buildings and the scheduled monuments Rotherwas House and Rotherwas Chapel.
Landscaping: Site design should deliver a net gain in biodiversity, linking priority habitat, and providing enhancement for priority habitats, and incorporate key features of the landscape character.
Pool at Rotherwas LWS: Need to demonstrate the level of effect on the key features of this designation.
River Wye: Need to demonstrate the level of effect on water quality and hydrology of the River Wye.
River Wye SAC: An Appropriate Assessment is required to demonstrate the likely significant effect(s) on the SAC. Development should demonstrate nutrient neutrality or betterment.
River Wye SSSI: Need to demonstrate the level of effect on the key features of this designation.
Veteran tree: Need to demonstrate level of effect on ancient black poplars located within the site, with a priority given to avoidance.

Herefordshire Council
Allocated Sites

Westfields Trading Estate
Policy: W5(2)

Consented Area:	0 ha
Allocated Area:	45.56 ha
Easting:	350175
Northing:	240792

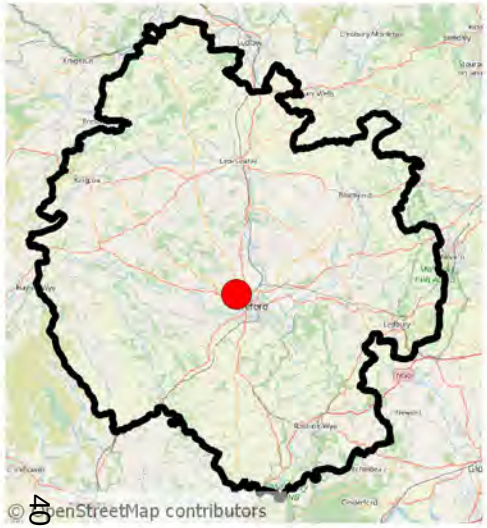


Key Development Criteria:

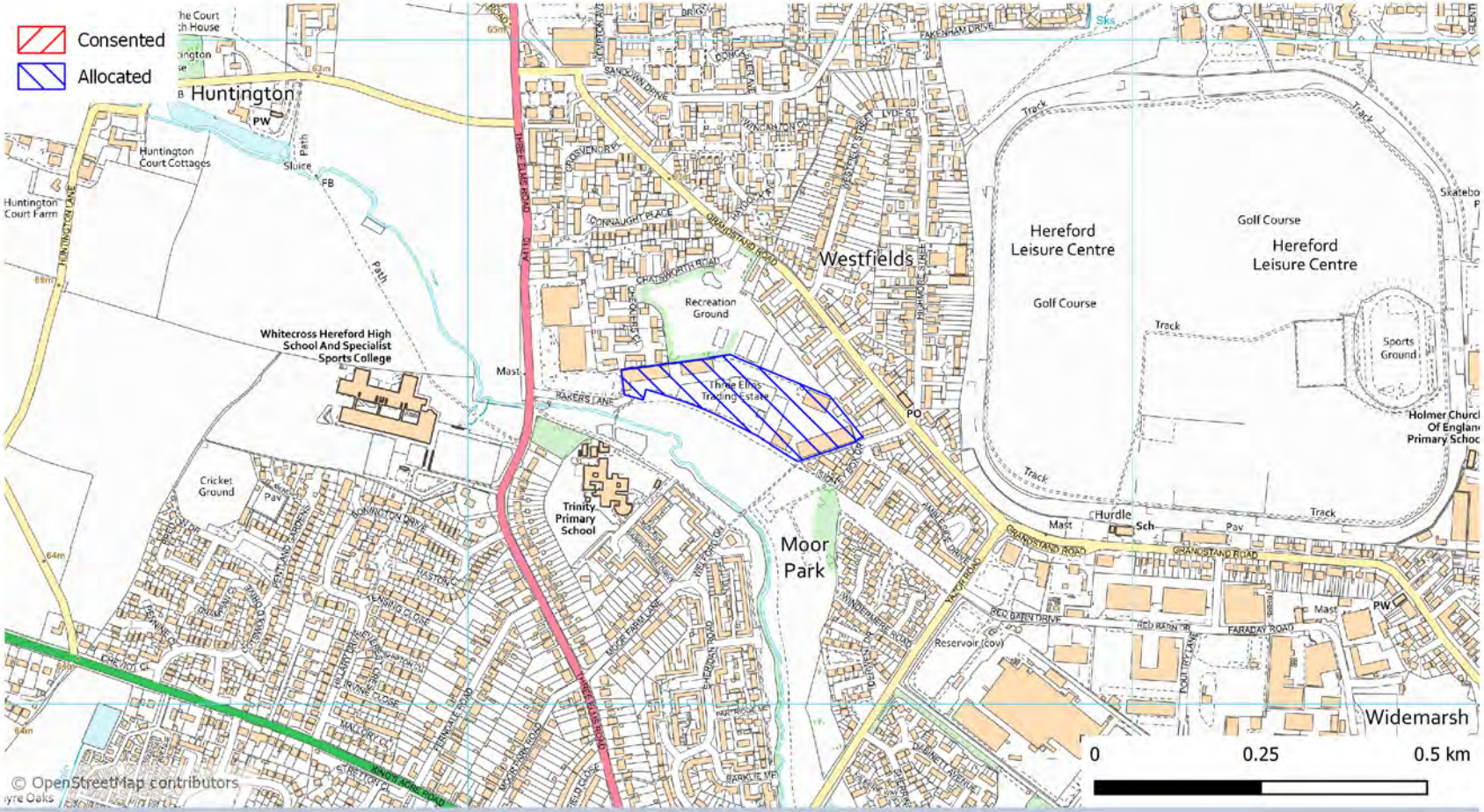
Flood Risk: Need to demonstrate that: the site will be safe in the event of a flood; risk is not increased on site or elsewhere; and where possible, flood risk is decreased.
Hereford AQMA: Need to demonstrate the level of effect on air quality, particularly within the Hereford AQMA.
Heritage assets: Need to demonstrate the level of effect on heritage asset(s) and their setting(s), particularly listed buildings in the vicinity of the site.
Landscaping: Site design should deliver a net gain in biodiversity, providing enhancement for priority habitats, and incorporate key features of the landscape character.
Plough Lane LWS, Widemarsh Brook LWS and Yazor Brook LWS: Need to demonstrate the level of effect on the key features of these designations.
Sensitive properties: Need to demonstrate the level of effect on the amenity, health & safety and environment of nearby sensitive properties (schools).
River Wye SAC: An Appropriate Assessment is required to demonstrate the likely significant effect(s) on the SAC. Development should demonstrate nutrient neutrality or betterment.
Widemarsh Brook and Yazor Brook: Need to demonstrate the level of effect on water quality and hydrology of the Yazor Brook.

Herefordshire Council
Allocated Sites

Three Elms Trading Estate
Policy: W5(2)



Consented Area:	**0 ha**
Allocated Area:	**2.77 ha**
Easting:	**349425**
Northing:	**241455**



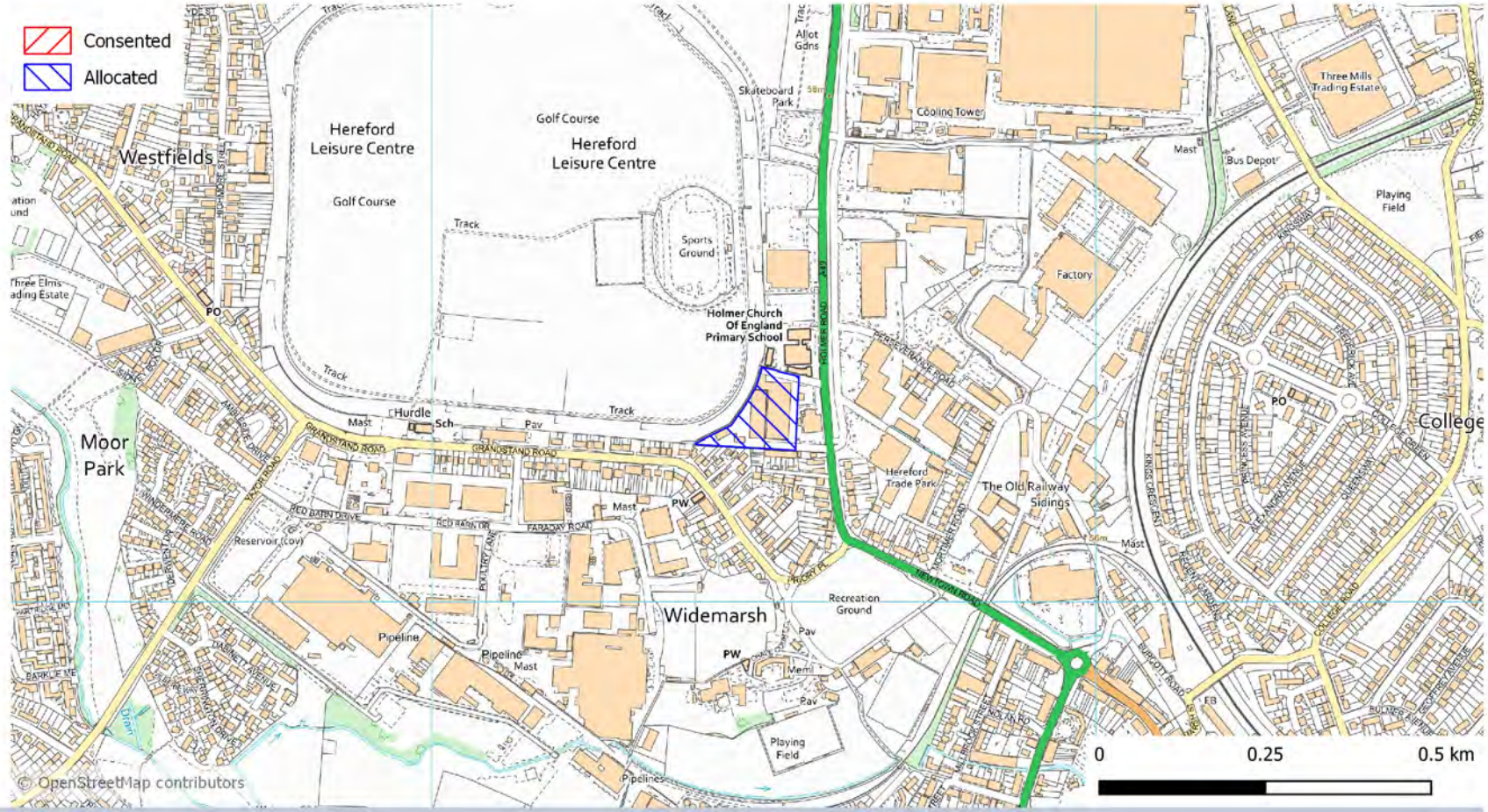
Key Development Criteria:

Heritage assets: Need to demonstrate the level of effect on heritage asset(s) and their setting(s), particularly listed buildings in the vicinity of the site.
Landscaping: Site design should deliver a net gain in biodiversity, providing enhancement for priority habitats, and incorporate key features of the landscape character.
River Wye SAC: An Appropriate Assessment is required to demonstrate the likely significant effect(s) on the SAC. Development should demonstrate nutrient neutrality or betterment.
Sensitive properties: Need to demonstrate the level of effect on the amenity, health & safety and environment of nearby sensitive properties (housing and schools).
Yazor Brook: Need to demonstrate the level of effect on water quality and hydrology of the Yazor Brook.

Herefordshire Council
Allocated Sites

Holmer Road
Policy: W5(2)

Consented Area:	0 ha
Allocated Area:	1.03 ha
Easting:	350501
Northing:	241281

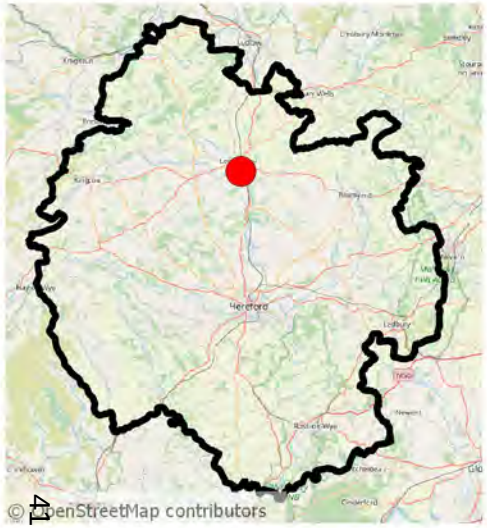


Key Development Criteria:

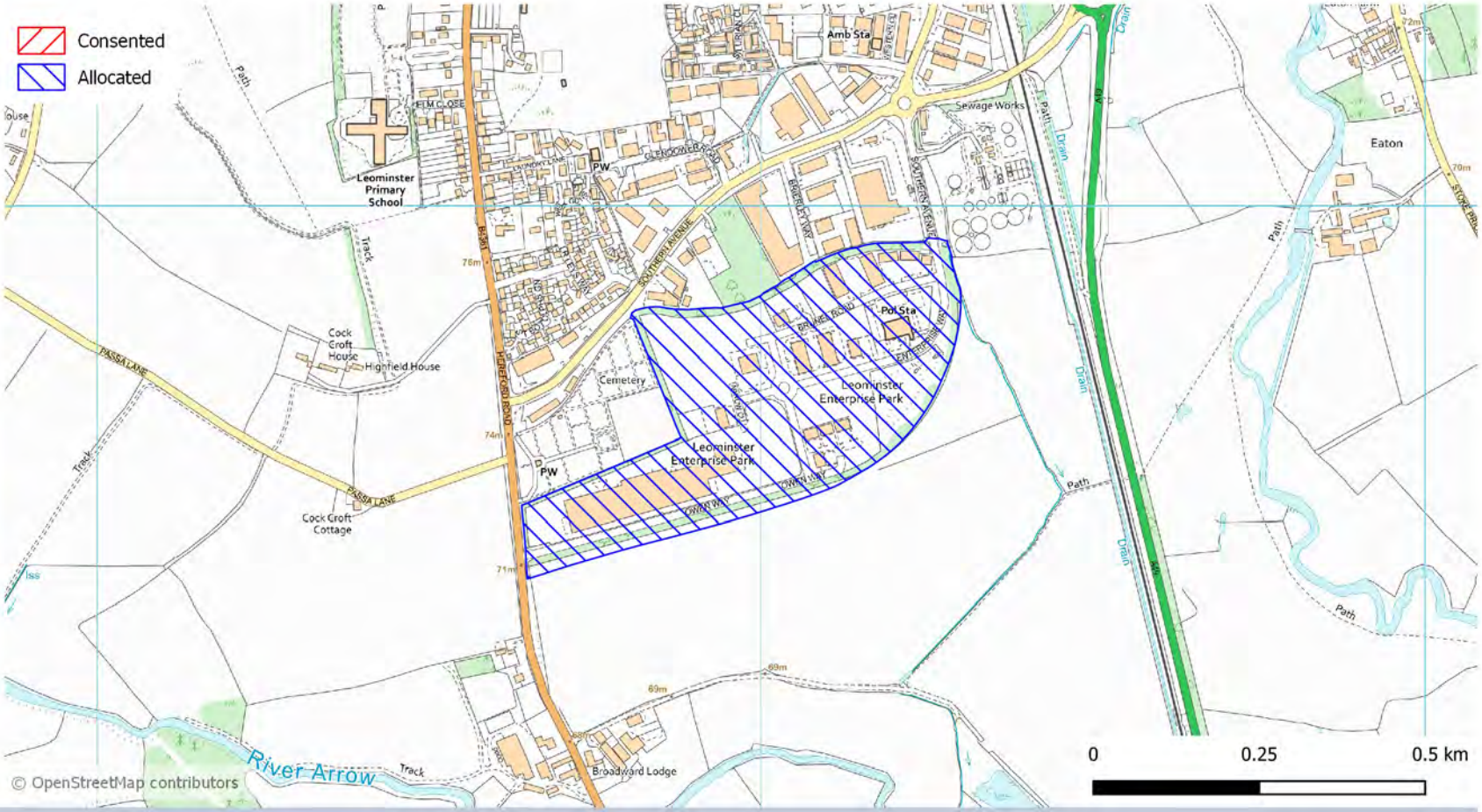
Flood Risk: Need to demonstrate that: the site will be safe in the event of a flood; risk is not increased on site or elsewhere; and where possible, flood risk is decreased.
Hereford AQMA: Need to demonstrate the level of effect on air quality, particularly within the Hereford AQMA.
Landscaping: Site design should deliver a net gain in biodiversity, providing enhancement for priority bird species, and incorporate key features of the landscape character.
River Wye SAC: An Appropriate Assessment is required to demonstrate the likely significant effect(s) on the SAC. Development should demonstrate nutrient neutrality or betterment.
Road network: Need to demonstrate the level of effect on the local road network in the vicinity of the site.
Sensitive properties: Need to demonstrate the level of effect on the amenity, health & safety and environment of nearby sensitive properties (housing and schools).

Herefordshire Council
Allocated Sites

Leominster Enterprise Park
Policy: W5(2)



Consented Area:	**0 ha**
Allocated Area:	**16.86 ha**
Easting:	**350011**
Northing:	**257707**



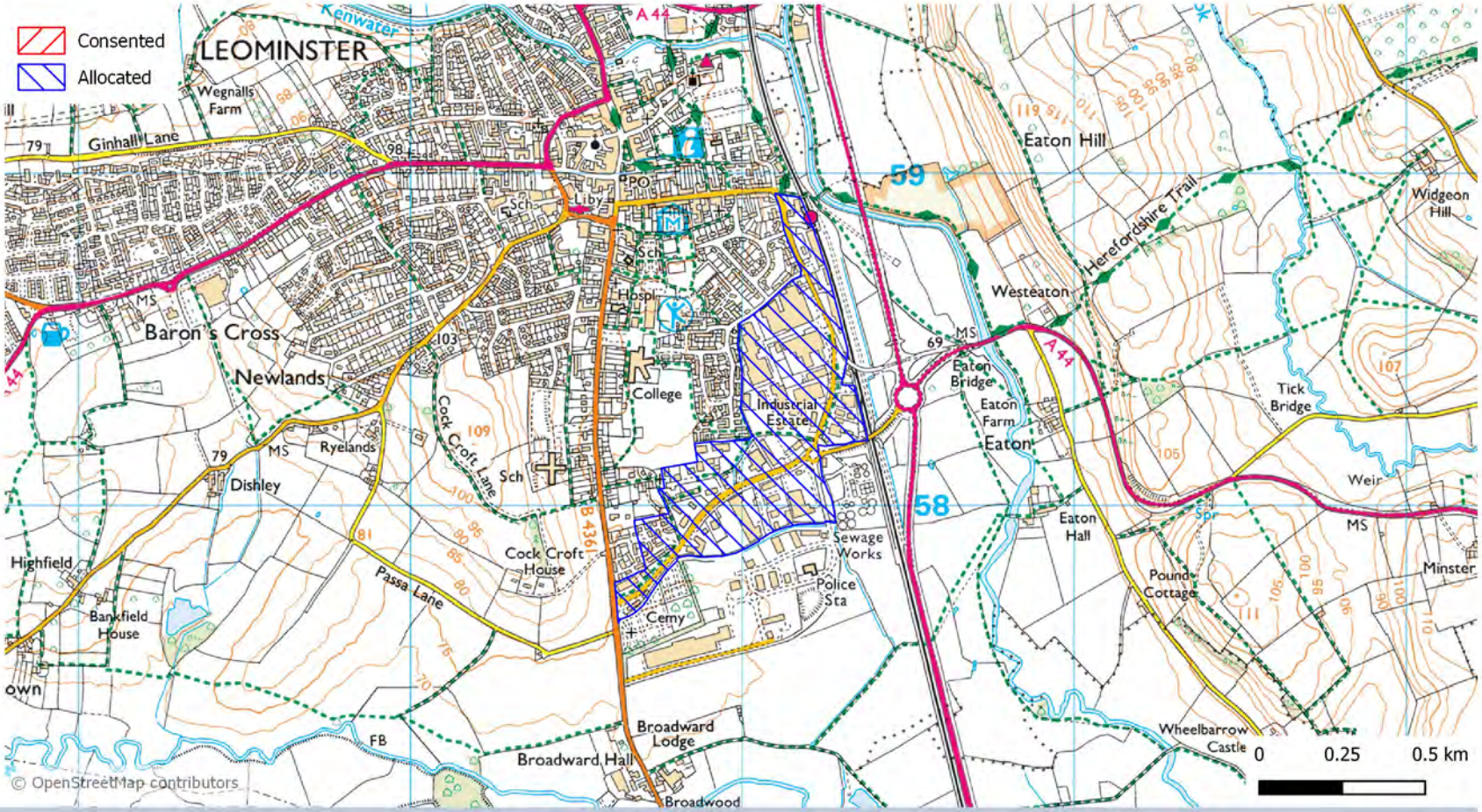
Key Development Criteria:

Archaeology: Need to demonstrate the potential for archaeological remains to be present on the site, through desk-based assessment and/or field evaluation as appropriate. Mitigation will include recording, protection or recovery of any assets.
Flood Risk: Need to demonstrate that: the site will be safe in the event of a flood; risk is not increased on site or elsewhere; and where possible, flood risk is decreased.
Heritage assets: Need to demonstrate the level of effect on heritage asset(s) and their setting(s), particularly listed buildings in the vicinity of the site.
Landscape: The site is set at a lower level than surrounding land but occupies a position on the southern boundary of Leominster. Need to demonstrate the level of effect on the surrounding landscape. Site design should deliver a net gain in biodiversity, providing enhancement for priority bird species, and incorporate key features of the landscape character.
River Lugg: Need to demonstrate the level of effect on water quality and hydrology of the River Lugg.
River Lugg SSSI: Need to demonstrate the level of effect on the key features of this designation.
River Wye SAC: An Appropriate Assessment is required to demonstrate the likely significant effect(s) on the SAC. Development should demonstrate nutrient neutrality or betterment.
Sensitive properties: Need to demonstrate the level of effect on the amenity, health & safety and environment of nearby sensitive properties (schools, cemetery and associated place of worship).
Source Protection Zone 3: Need to demonstrate how any pathways for contamination will be identified and avoided.

Herefordshire Council
Allocated Sites

Southern Avenue
Policy: W5(2)

Consented Area:	0 ha
Allocated Area:	33.63 ha
Easting:	350062
Northing:	258226

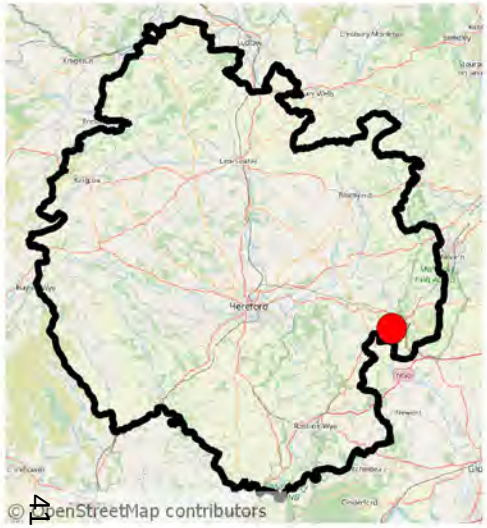


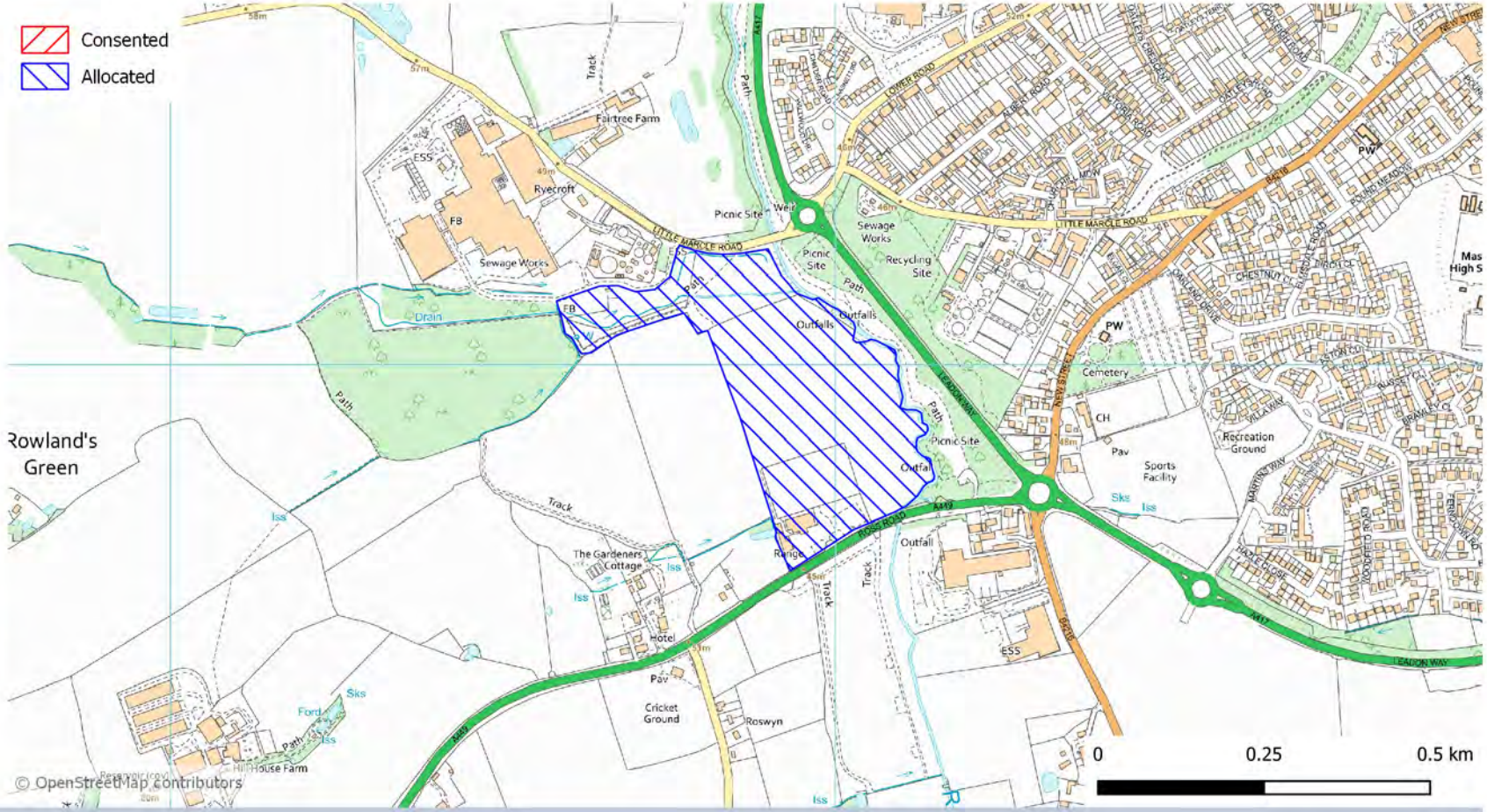
Key Development Criteria:

Archaeology: Need to demonstrate the potential for archaeological remains to be present on the site, through desk-based assessment and/or field evaluation as appropriate. Mitigation will include recording, protection or recovery of any assets.
Flood Risk: Need to demonstrate that: the site will be safe in the event of a flood; risk is not increased on site or elsewhere; and where possible, flood risk is decreased.
Heritage assets: Need to demonstrate the level of effect on heritage asset(s) and their setting(s), particularly listed buildings in the vicinity of the site.
Landscape: The site is set at a lower level than surrounding land but occupies a position on the southern boundary of Leominster. Need to demonstrate the level of effect on the surrounding landscape. Site design should deliver a net gain in biodiversity, providing enhancement for priority bird species, and incorporate key features of the landscape character.
River Lugg: Need to demonstrate the level of effect on water quality and hydrology of the River Lugg.
River Lugg SSSI: Need to demonstrate the level of effect on the key features of this designation.
River Wye SAC: An Appropriate Assessment is required to demonstrate the likely significant effect(s) on the SAC. Development should demonstrate nutrient neutrality or betterment.
Sensitive properties: Need to demonstrate the level of effect on the amenity, health & safety and environment of nearby sensitive properties (schools, cemetery and associated place of worship).
Source Protection Zones 1 and 2: Need to demonstrate how any pathways for contamination will be identified and avoided.

Herefordshire Council
Allocated Sites

Land between Little Marcle Road and Ross Road
Policy: W5(2)





Consented Area:	**0 ha**
Allocated Area:	**11.22 ha**
Easting:	**369924**
Northing:	**236960**

Key Development Criteria:

Archaeology: Need to demonstrate the potential for archaeological remains to be present on the site, through desk-based assessment and/or field evaluation as appropriate. Mitigation will include recording, protection or recovery of any assets.

Flood Risk: Need to demonstrate that: the site will be safe in the event of a flood; risk is not increased on site or elsewhere; and where possible, flood risk is decreased.

Heritage assets: Need to demonstrate the level of effect on heritage asset(s) and their setting(s), particularly listed buildings in the vicinity of the site.

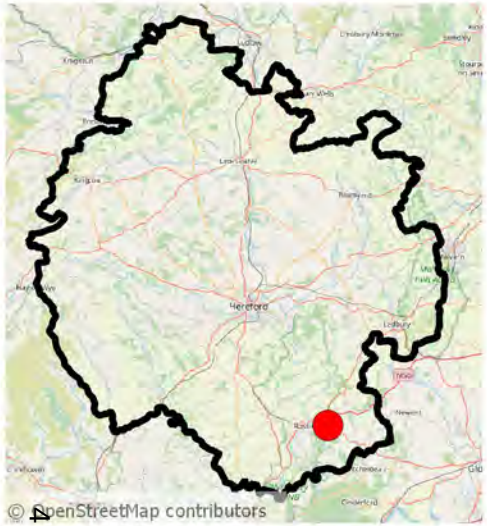
Landscape: The site is set at a lower level than surrounding land but occupies a position on the south western boundary of Ledbury. Need to demonstrate the level of effect on the surrounding landscape. Site design should deliver a net gain in biodiversity, providing enhancement for priority bird species, and incorporate key features of the landscape character.

River Leadon: Need to demonstrate the level of effect on water quality and hydrology of the River Leadon.

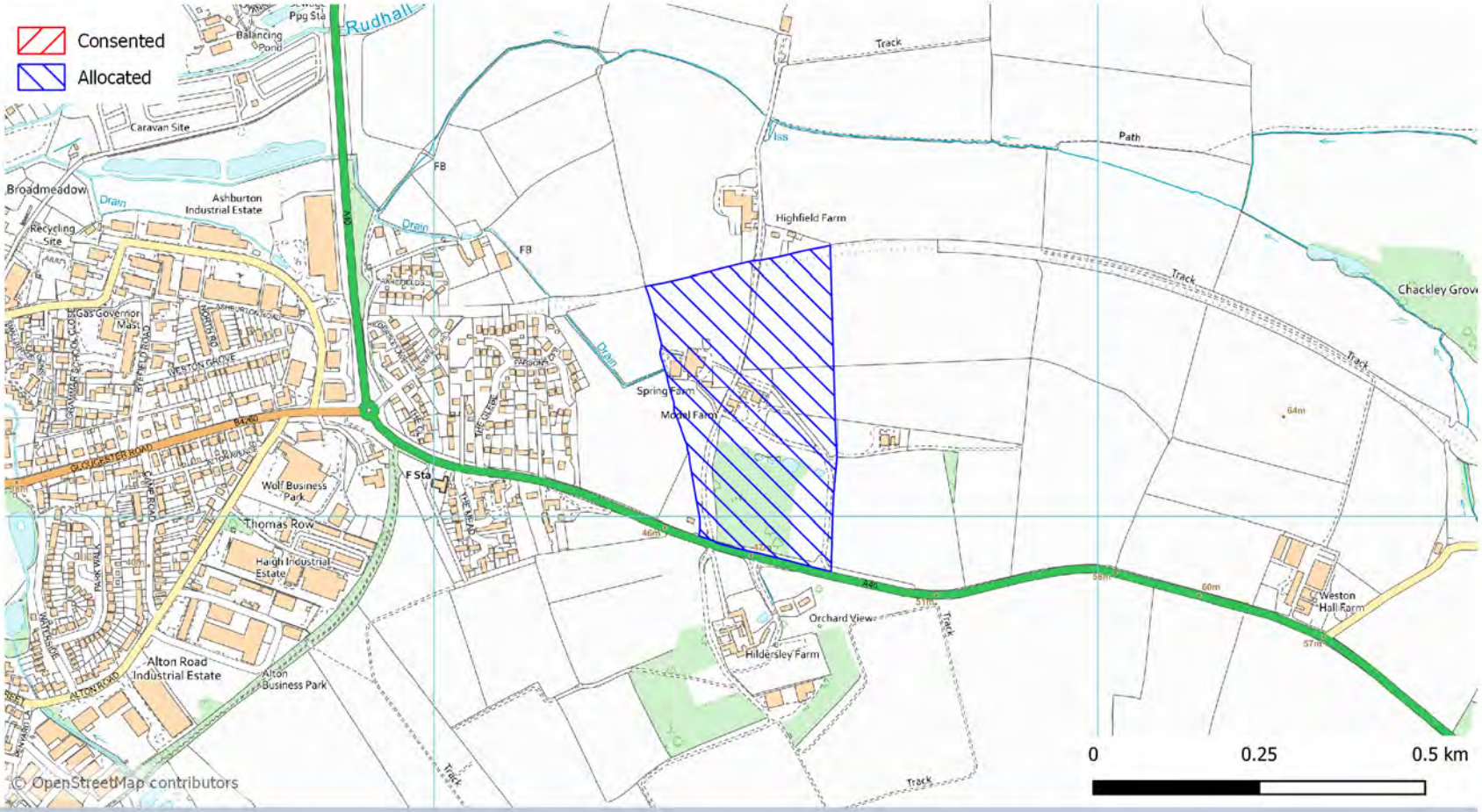
Sensitive properties: Need to demonstrate the level of effect on the amenity, health & safety and environment of nearby sensitive properties (housing, hotel and picnic site).

Herefordshire Council
Allocated Sites

Model Farm
Policy: W5(2)



Consented Area:	**0 ha**
Allocated Area:	**10.4 ha**
Easting:	**361487**
Northing:	**224175**

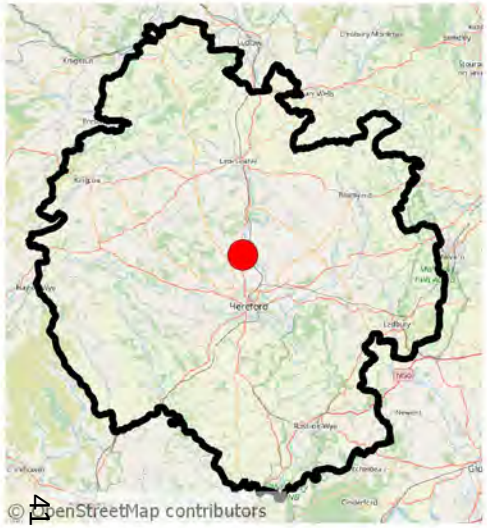


Key Development Criteria:

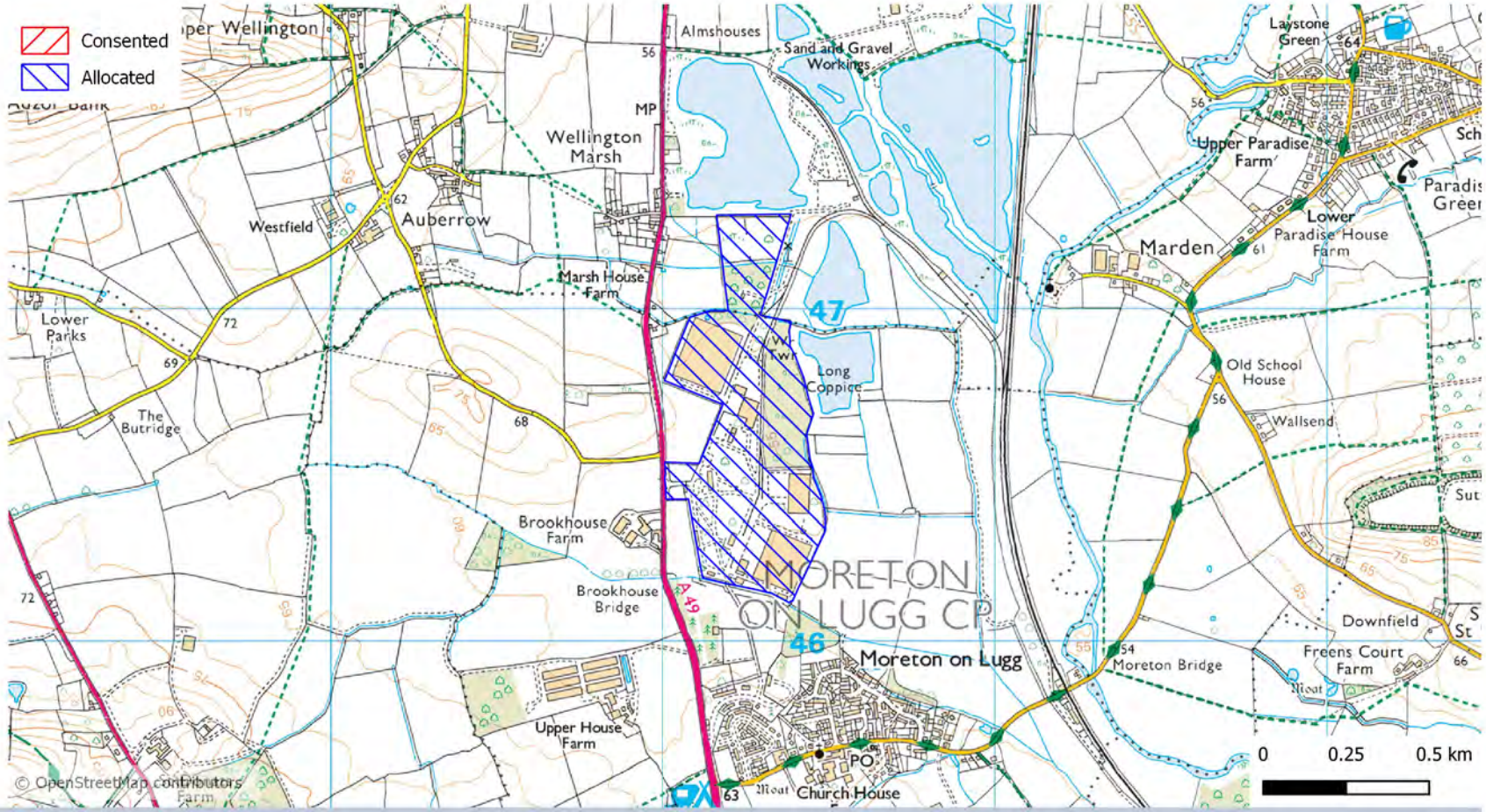
Archaeology: Need to demonstrate the potential for archaeological remains to be present on the site, through desk-based assessment and/or field evaluation as appropriate. Mitigation will include recording, protection or recovery of any assets.
Heritage assets: Need to demonstrate the level of effect on heritage asset(s) and their setting(s), particularly listed buildings in the vicinity of the site.
Landscape: The site is set at a lower level than surrounding land but occupies a position on the eastern side of Ross-on-Wye. Need to demonstrate the level of effect on the surrounding landscape. Site design should deliver a net gain in biodiversity, providing enhancement for priority bird species, and incorporate key features of the landscape character.
River Wye SAC: An Appropriate Assessment is required to demonstrate the likely significant effect(s) on the SAC. Development should demonstrate nutrient neutrality or betterment.
Wye Valley AONB: Need to demonstrate the level of effect on the AONB.
Source Protection Zone 2: Need to demonstrate how any pathways for contamination will be identified and avoided.

Herefordshire Council
Allocated Sites

Moreton Business Park
Policy: W5(2)



Consented Area:	**0 ha**
Allocated Area:	**34.21 ha**
Easting:	**350261**
Northing:	**246645**



Key Development Criteria:

Archaeology: Need to demonstrate the potential for archaeological remains to be present on the site, through desk-based assessment and/or field evaluation as appropriate. Mitigation will include recording, protection or recovery of any assets.
Ancient Woodland: Need to demonstrate the level of effect on the ancient woodland, leaving a buffer adequate to protect the designation.
Flood Risk: Need to demonstrate that: the site will be safe in the event of a flood; risk is not increased on site or elsewhere; and where possible, flood risk is decreased.
Heritage assets: Need to demonstrate the level of effect on heritage asset(s) and their setting(s), particularly listed buildings and Sutton Walls Fort.
Landscape: The site is set at a lower level than surrounding land but occupies a rural position. Need to demonstrate the level of effect on the surrounding landscape. Site design should deliver a net gain in biodiversity, providing enhancement for priority habitats, and incorporate key features of the landscape character.
Rail: Need to demonstrate the potential to use the rail network for the transport of materials or that the proposal does not prevent future use of the rail infrastructure available within the site.
River Wye SAC: An Appropriate Assessment is required to demonstrate the likely significant effect(s) on the SAC. Development should demonstrate nutrient neutrality or betterment.
Wellington Brook and Moreton Brook: Need to demonstrate the level of effect on water quality and hydrology of these watercourses.
Wellington Marsh LWS: Need to demonstrate the level of effect on the key features of this designation.

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Policy W5(3)

Herefordshire Minerals and Waste Local Plan

March 2020
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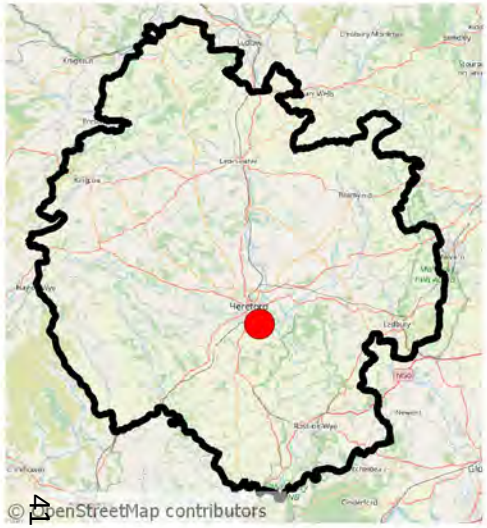
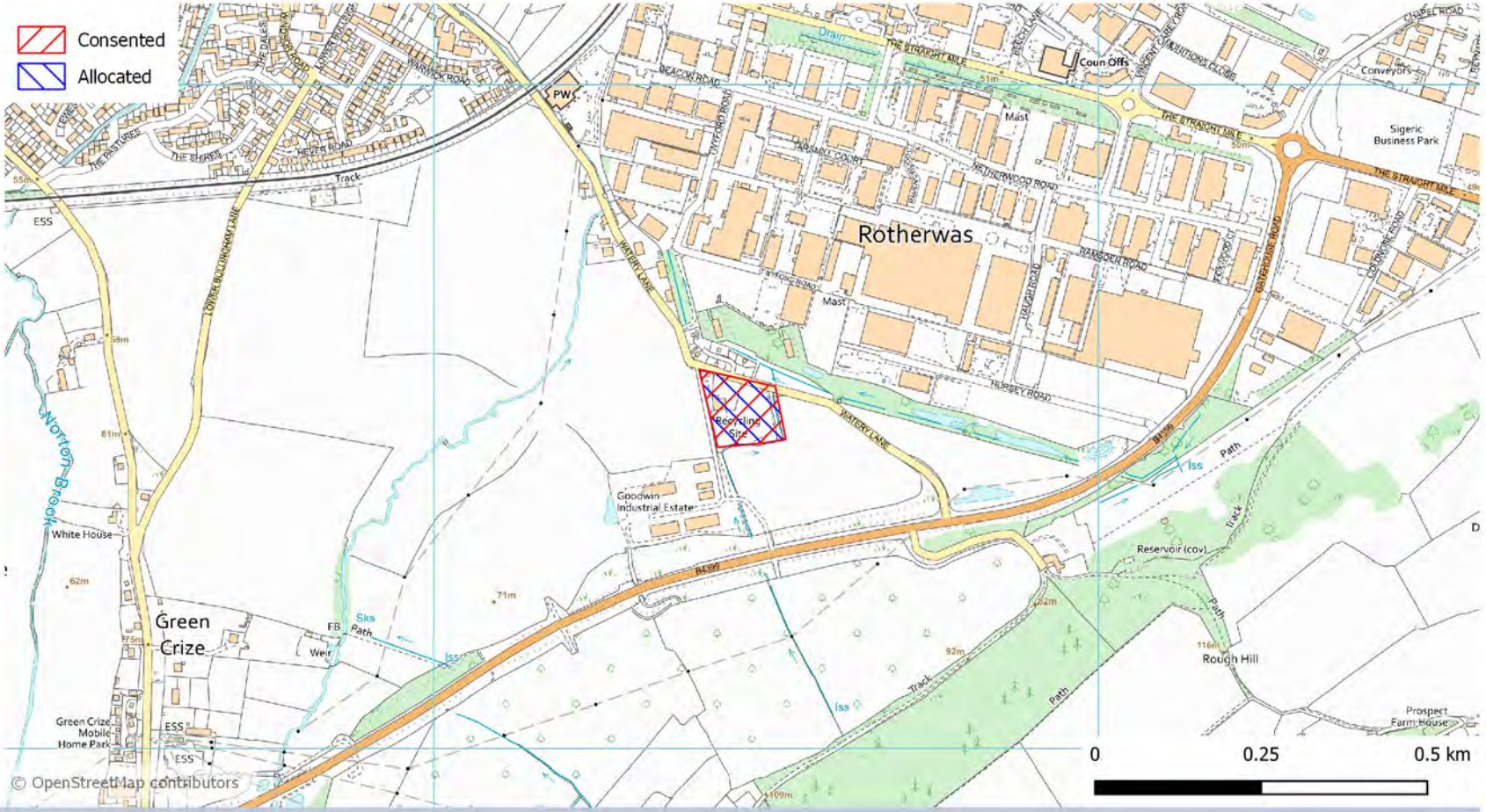
Herefordshire Council
Allocated Sites

Former City Spares Site
Policy: W5(3)





Consented Area:	**1.06 ha**
Allocated Area:	**1.06 ha**
Easting:	**352464**
Northing:	**237510**

Key Development Criteria:

Archaeology: Need to demonstrate the potential for archaeological remains to be present on the site, through desk-based assessment and/or field evaluation as appropriate. Mitigation will include recording, protection or recovery of any assets.

Contaminated land: Recognising the site as a former car breakers' yard, there is a high potential for contaminated land. The site is located within a drinking water protected area. Need to demonstrate how any contamination on site will be identified and remediated, particularly with reference to protection of drinking water.

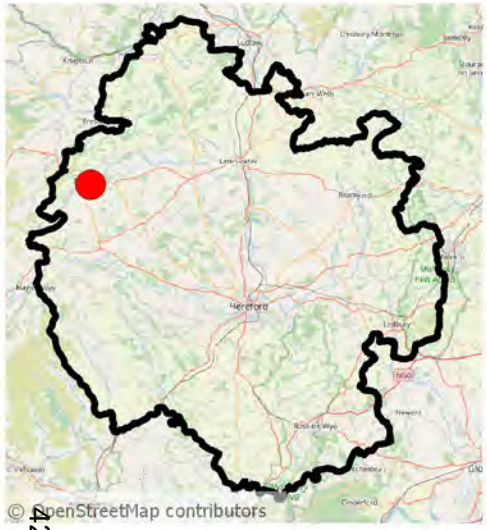
Landscape: The site is set at a lower level than surrounding land but occupies a position on the southern boundary of Hereford. Need to demonstrate the level of effect on the surrounding landscape. Site design should deliver a net gain in biodiversity, providing enhancement for priority bird species, and incorporate key features of the landscape character.

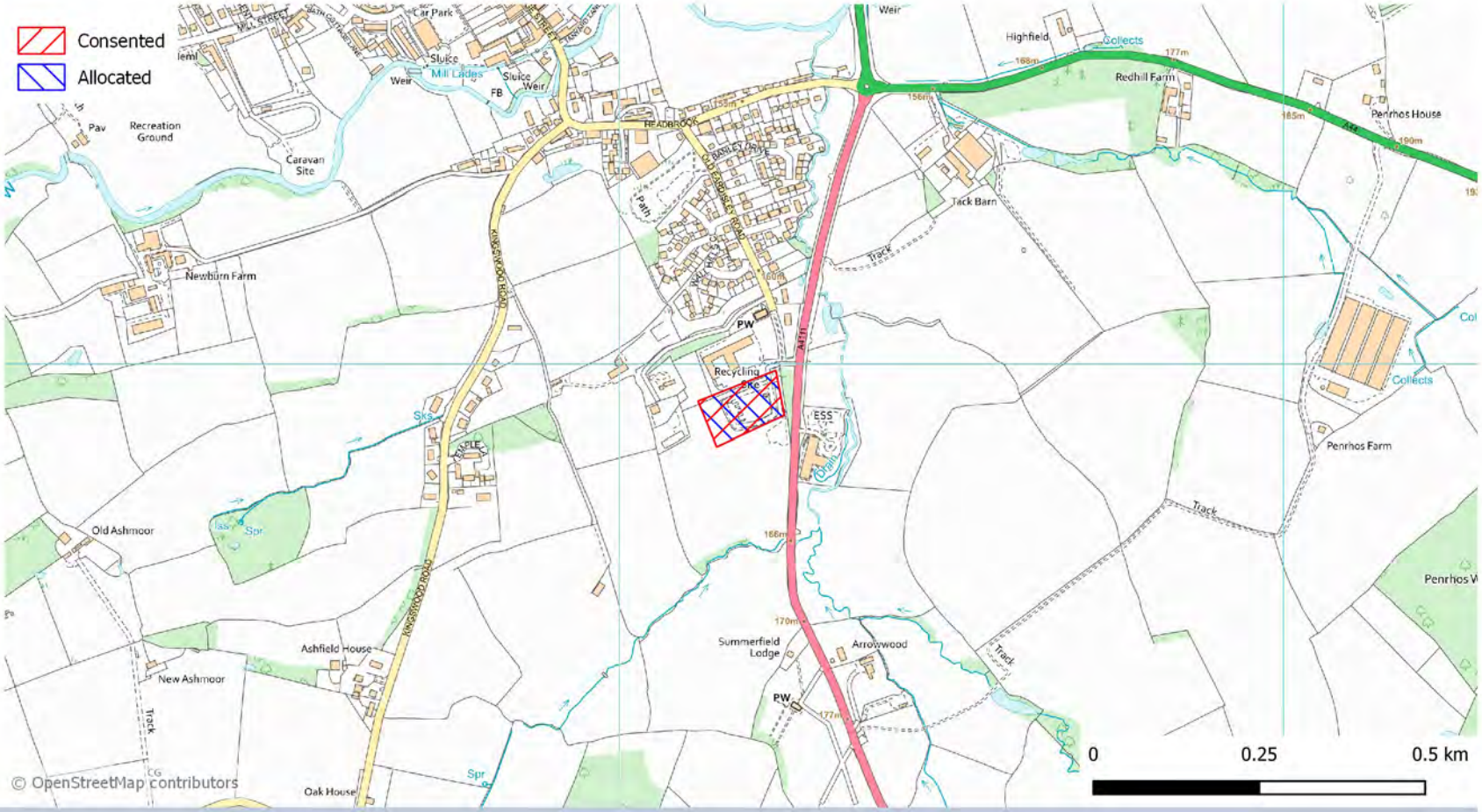
River Wye SAC: An Appropriate Assessment is required to demonstrate the likely significant effect(s) on the SAC. Development should demonstrate nutrient neutrality or betterment.

Veteran tree: Need to demonstrate level of effect on ancient black poplar located to the north of the site.

Herefordshire Council Allocated Sites

Kington Household Waste and Recycling Centre
Policy: W5(3)





Consented Area:	**0.85 ha**
Allocated Area:	**0.85 ha**
Easting:	**330186**
Northing:	**255934**

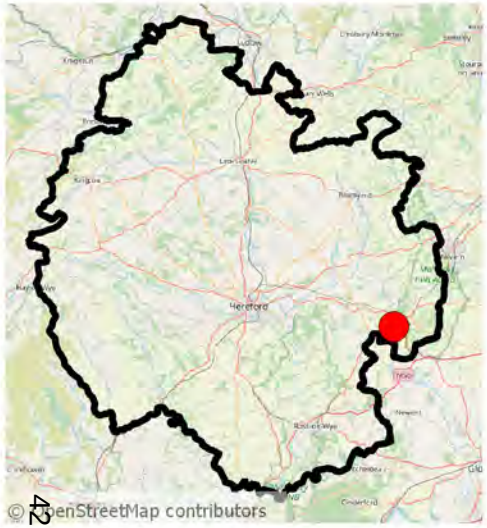
Key Development Criteria:

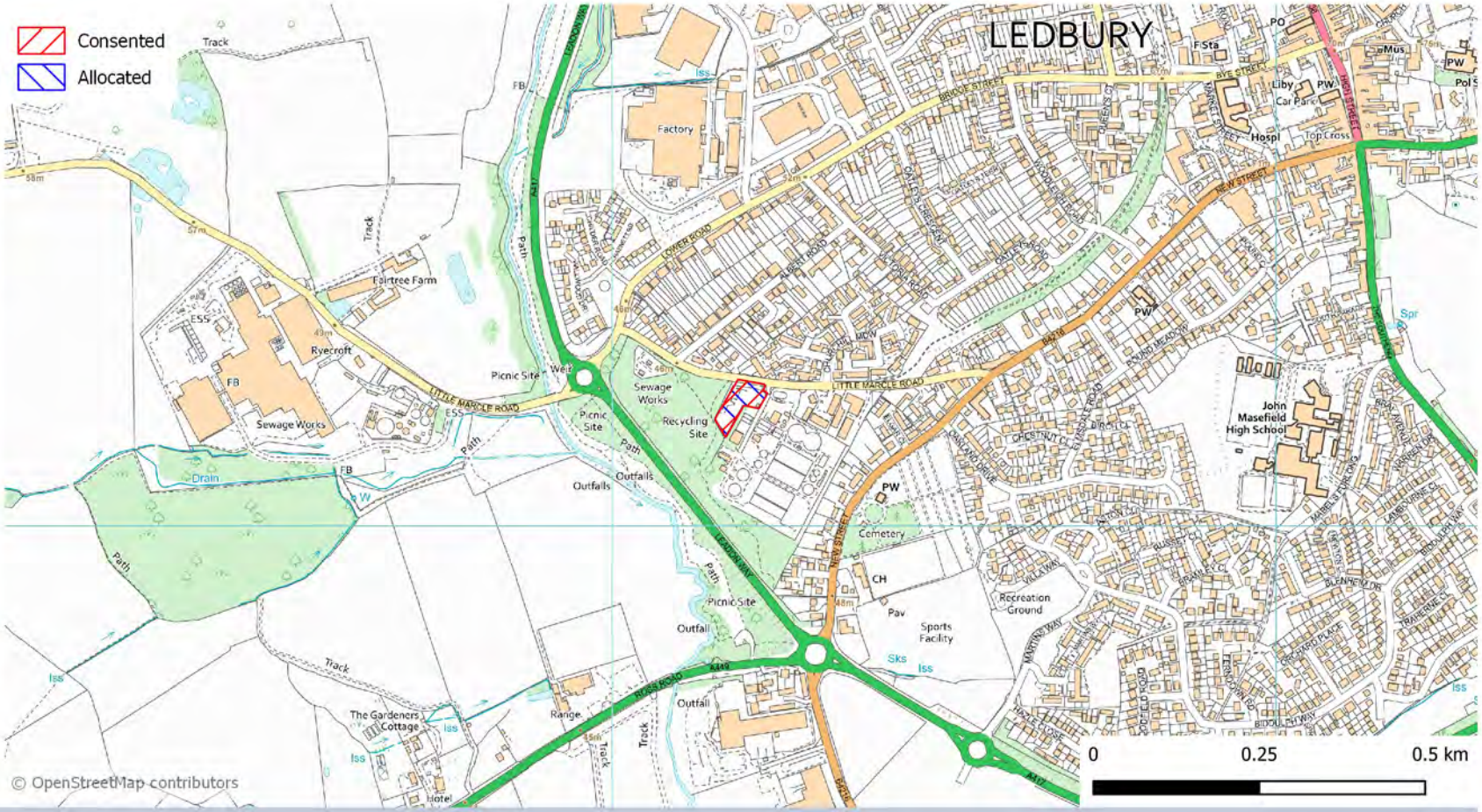
Landscape: The site is set at a lower level than surrounding land but occupies a position on the southern boundary of Kington. Need to demonstrate the level of effect on the surrounding landscape. Site design should deliver a net gain in biodiversity, providing enhancement for priority bird species, and incorporate key features of the landscape character.

River Wye SAC: Development should demonstrate nutrient neutrality or betterment.

Herefordshire Council Allocated Sites

Ledbury Household Waste and Recycling Centre
Policy: W5(3)





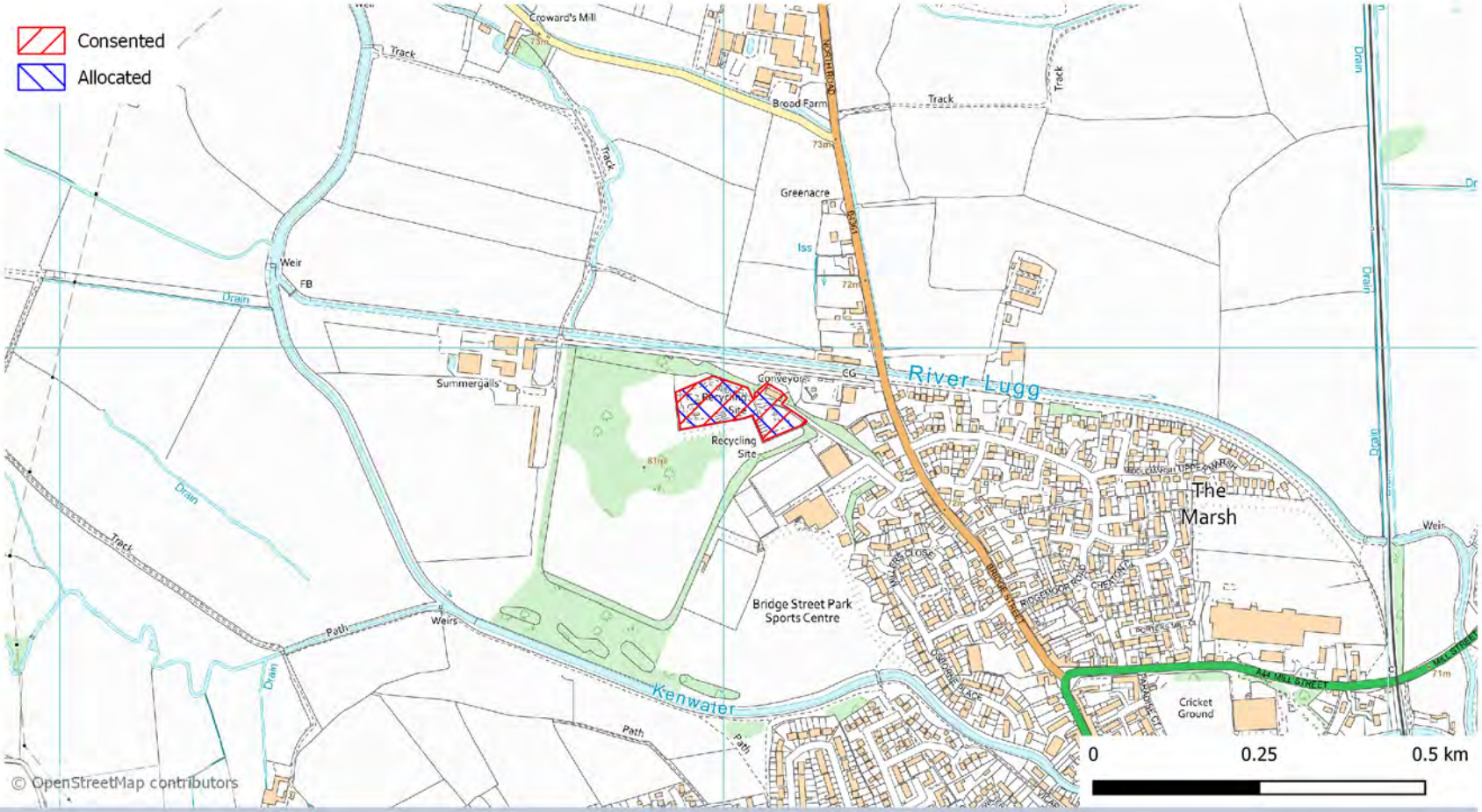
Consented Area:	0.3 ha
Allocated Area:	0.3 ha
Easting:	370192
Northing:	237186

Key Development Criteria:

Landscaping: Site design should deliver a net gain in biodiversity, providing enhancement for priority bird species, and incorporate key features of the landscape character.
River Leadon: Need to demonstrate the level of effect on water quality and hydrology of the River Leadon.

Herefordshire Council Allocated Sites

Leominster Household Waste Site and Household Waste Recovery Centre
Policy: W5(3)



Consented Area:	**1.08 ha**
Allocated Area:	**1.08 ha**
Easting:	**349016**
Northing:	**259912**

Key Development Criteria:

Heritage assets: Need to demonstrate the level of effect on heritage asset(s) and their setting(s).
Landscaping: Site design should deliver a net gain in biodiversity, providing enhancement for priority bird species, and incorporate key features of the landscape character.
River Lugg: Need to demonstrate the level of effect on water quality and hydrology of the River Lugg.
River Lugg SSSI: Need to demonstrate the level of effect on the key features of this designation.
River Wye SAC: An Appropriate Assessment is required to demonstrate the likely significant effect(s) on the SAC. Development should demonstrate nutrient neutrality or betterment.

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Policy W6

Herefordshire Minerals and Waste Local Plan

March 2020
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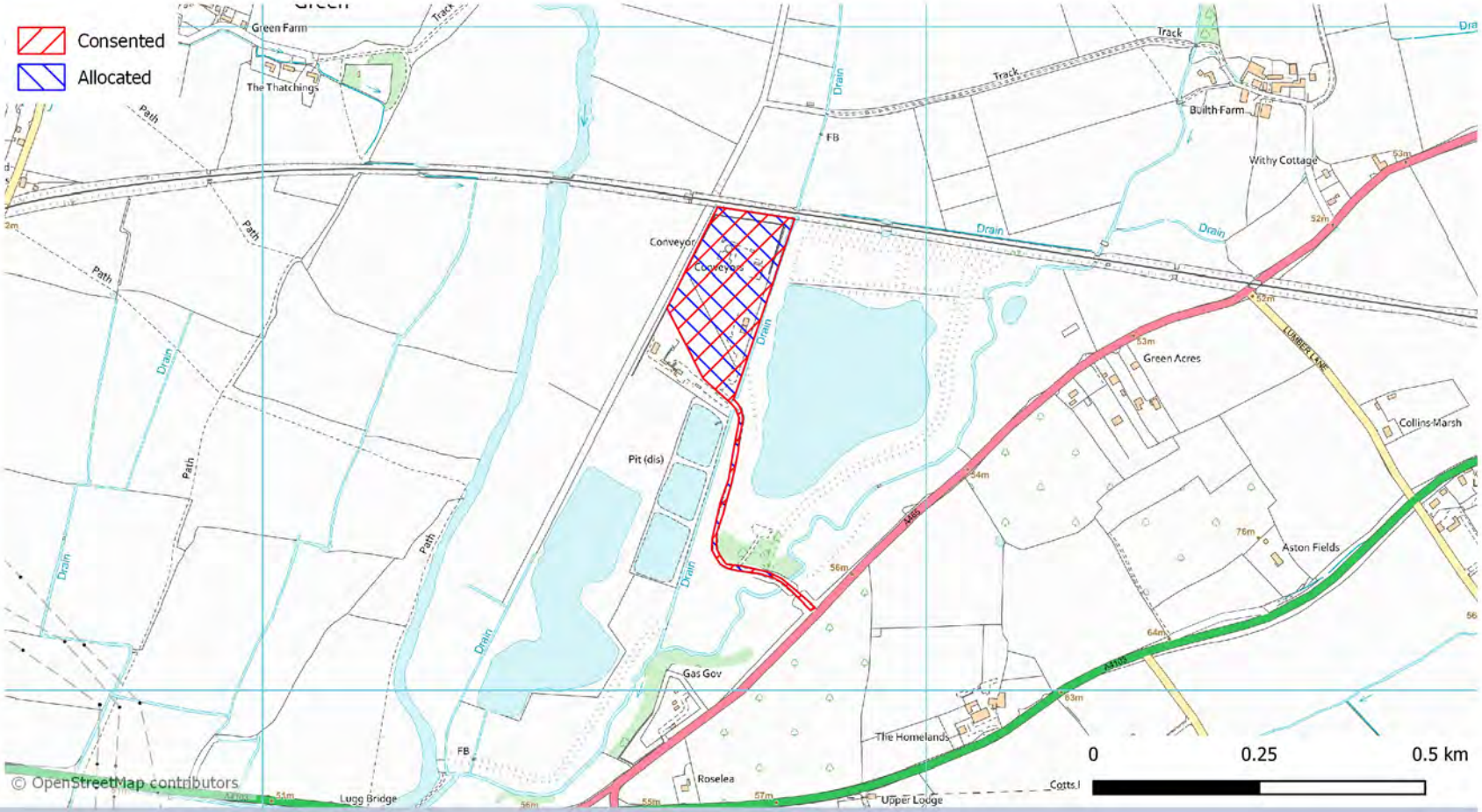
Herefordshire Council
Allocated Sites

Former Lugg Bridge Quarry
Policy: W6(1,a)



Consented Area:	**3.39 ha**
Allocated Area:	**3.39 ha**
Easting:	**353701**
Northing:	**242600**

Key Development Criteria:

Archaeology: Need to demonstrate the potential for archaeological remains to be present on the site, through desk-based assessment and/or field evaluation as appropriate. Mitigation will include recording, protection or recovery of any assets.

Flood Risk: Need to demonstrate that: the site will be safe in the event of a flood; risk is not increased on site or elsewhere; and where possible, flood risk is decreased. Flood alleviation should be considered in designing site reclamation.

Green infrastructure: Operation and reclamation phases should deliver priorities of the Herefordshire Green Infrastructure Strategy, in particular those associated with District Strategy Corridor 2, District Enhancement Zone 2 and Hereford Fringe Zone 1. Site design should deliver a net gain in biodiversity, providing enhancement for priority bird species, and incorporate key features of the landscape character.

Little Lugg River: Need to demonstrate the level of effect on water quality and hydrology of the Little Lugg River.

River Lugg SSSI: Need to demonstrate the level of effect on the key features of this designation.

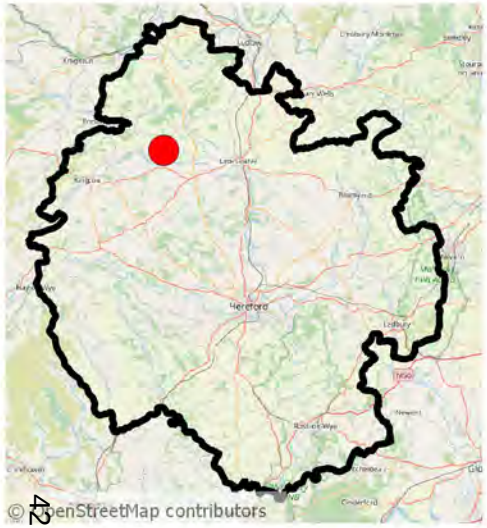
River Wye SAC: An Appropriate Assessment is required to demonstrate the likely significant effect(s) on the SAC. Development should demonstrate nutrient neutrality or betterment.

Site reclamation: Due to the site having a mineral working history and rural location it is required to be reclaimed at the earliest opportunity should current operations cease (as consented under references: 131870/N, dated 22.07.2013; 151184, dated 10.11.2015; and 162032, dated 02.12.2016.

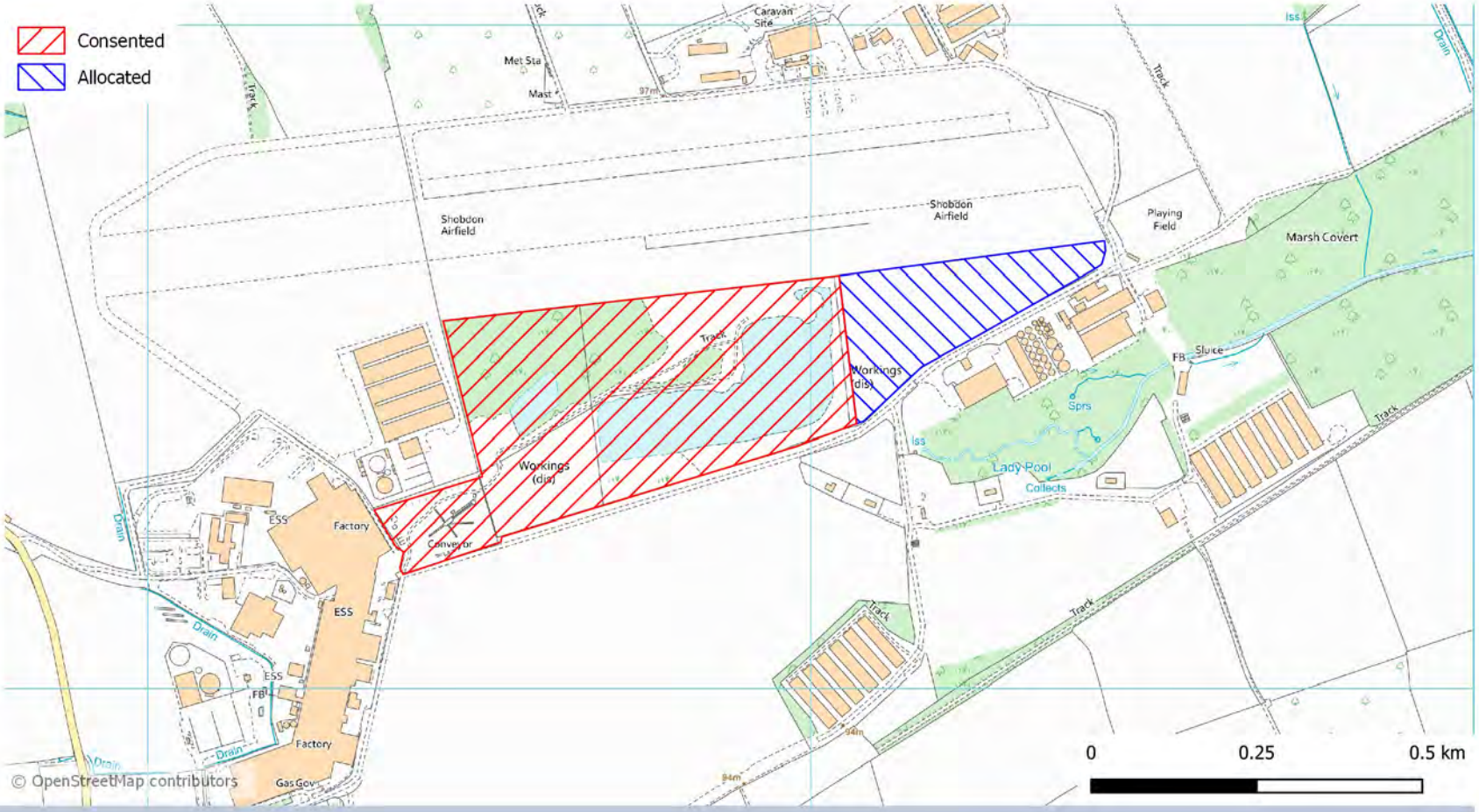
Utilities: Utility infrastructure (gas) that cross the site may require diversion or a non-working buffer to enable the site to be worked.

Herefordshire Council
Allocated Sites

Shobdon Quarry
Policy: W6(2)



Consented Area:	**18.13 ha**
Allocated Area:	**4.81 ha**
Easting:	**339824**
Northing:	**260459**



Key Development Criteria:

Archaeology: Need to demonstrate the potential for archaeological remains to be present on the site, through desk-based assessment and/or field evaluation as appropriate. Mitigation will include recording, protection or recovery of any assets.

Flood Risk: Need to demonstrate that: the site will be safe in the event of a flood; risk is not increased on site or elsewhere; and where possible, flood risk is decreased. Flood alleviation should be considered in designing site reclamation.

Geodiversity: Need to demonstrate the level of effect on geodiversity and incorporate mitigation measures as appropriate. Mitigation will include recording, protection or recovery of any assets.

Green infrastructure and reclamation: Operation and reclamation phases should deliver priorities of the Herefordshire Green Infrastructure Strategy, in particular those associated with District Enhancement Zone 2. Site design should deliver a net gain in biodiversity, providing enhancement for priority bird species, and incorporate key features of the landscape character.

Ground water: Glaciofluvial sand and gravel deposits represent a secondary aquifer in hydraulic continuity with watercourses. Need to demonstrate the potential risks to the water environment.

Housing: Need to demonstrate the level of effect on residential amenity at nearby properties.

Pinsley Brook: Need to demonstrate the level of effect on water quality and hydrology in Pinsley Brook.

Phased working: Need to demonstrate optimum phasing of the allocated area, including how existing infrastructure will be used (to include at least site access and processing equipment) and reclamation at the earliest opportunity. A proliferation of ancillary infrastructure will not be permitted.

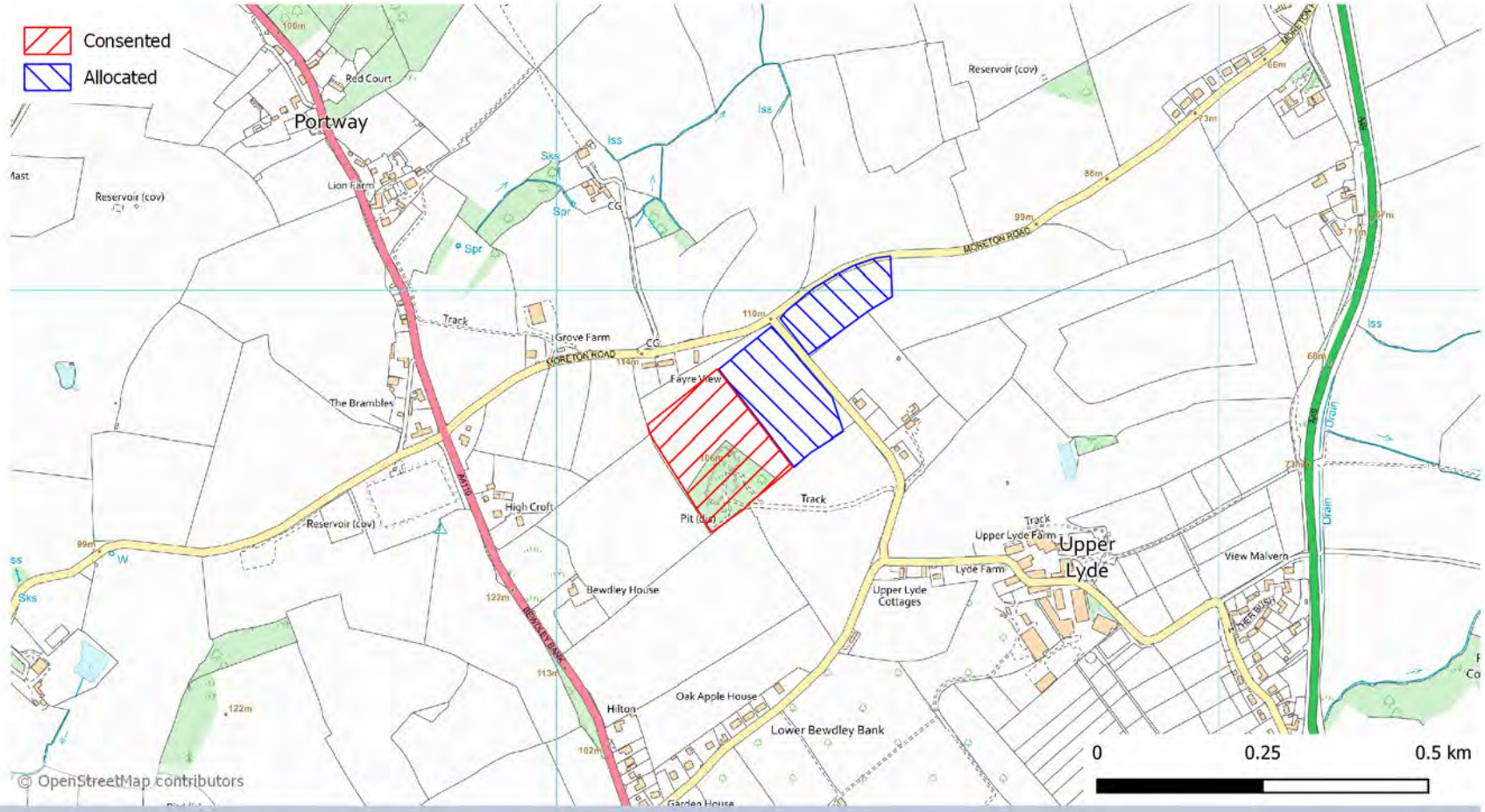
River Wye SAC: Development should demonstrate nutrient neutrality or betterment.

Shobdon Airfield: Need to demonstrate the level of effect on the current and likely future operations of Shobdon Airfield.

Herefordshire Council
Allocated Sites

Upper Lyde Quarry
Policy: W6(2)

Consented Area:	2.79 ha
Allocated Area:	3.21 ha
Easting:	349282
Northing:	244805



Key Development Criteria:

Archaeology: Need to demonstrate the potential for archaeological remains to be present on the site, through desk-based assessment and/or field evaluation as appropriate. Mitigation will include recording, protection or recovery of any assets.

Geodiversity: Need to demonstrate the level of effect on geodiversity and incorporate avoidance, mitigation and monitoring measures as appropriate. Mitigation will include recording, protection or recovery of any assets.

Green infrastructure and reclamation: Operation and reclamation phases should deliver priorities of the Herefordshire Green Infrastructure Strategy, in particular those associated with District Strategy Corridor 2 and Hereford Fringe Zone 4. Site design should deliver a net gain in biodiversity, providing enhancement for priority bird species, and incorporate key features of the landscape character.

Ground water: Glaciofluvial sand and gravel deposits represent a secondary aquifer in hydraulic continuity with watercourses. Need to demonstrate the potential risks to the water environment.

Housing: Need to demonstrate the level of effect on residential amenity at nearby properties.

Phased working: Need to demonstrate optimum phasing of the allocated area, including how existing infrastructure will be used (to include at least site access and processing equipment) and reclamation at the earliest opportunity. A proliferation of ancillary infrastructure will not be permitted.

River Lugg: Need to demonstrate the level of effect on water quality and hydrology of these watercourses.

River Lugg SSSI: Need to demonstrate the level of effect on the key features of this designation.

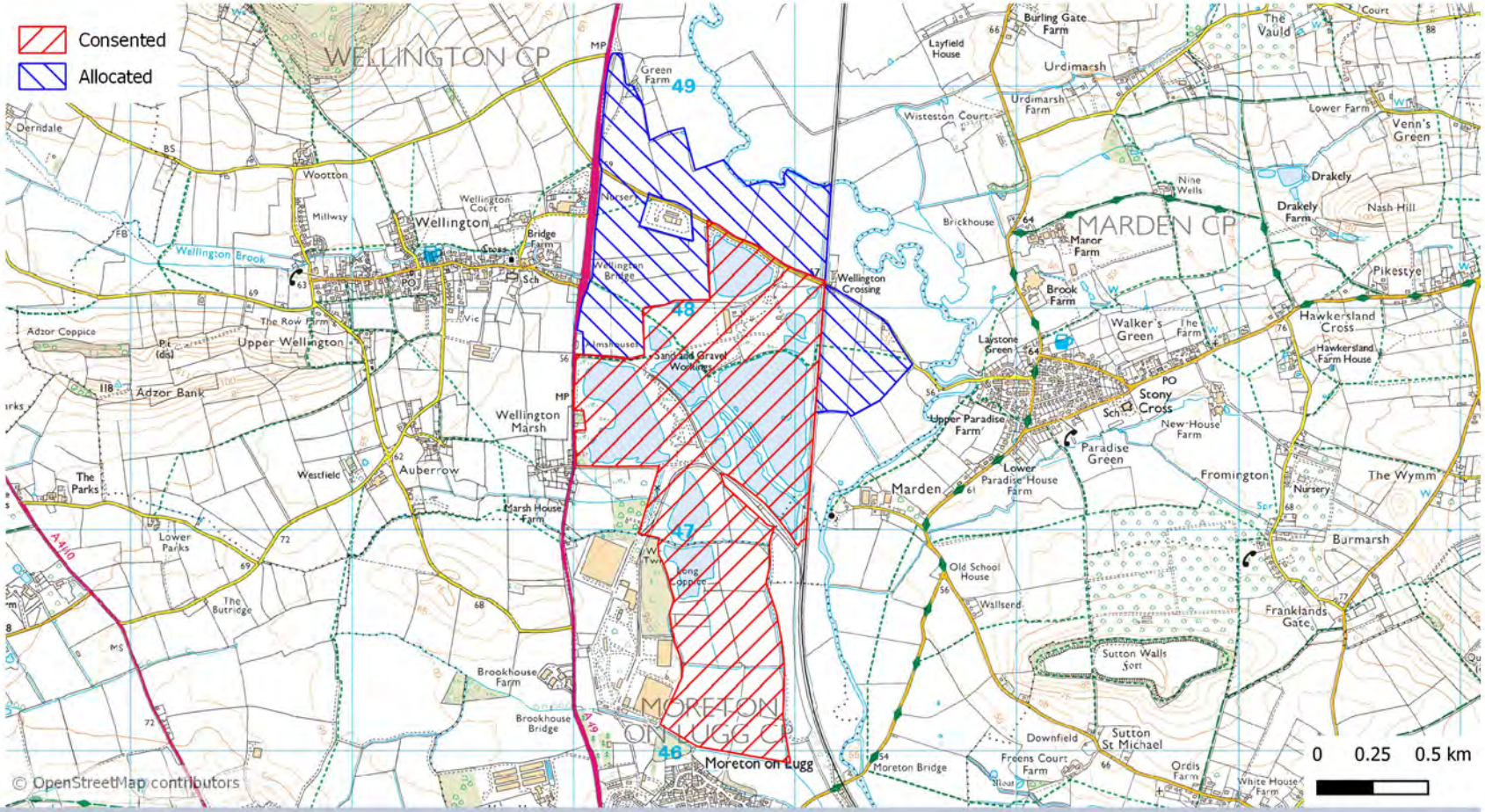
River Wye SAC: An Appropriate Assessment is required to demonstrate the likely significant effect(s) on the SAC. Development should demonstrate nutrient neutrality or betterment.

Road network: Highways England identifies the site as located near to the strategic road network. Need to demonstrate the level of effect on the local road network in the vicinity of the site.

Herefordshire Council Allocated Sites

Wellington Quarry
Policy: W6(2)

Consented Area:	**152.88 ha**
Allocated Area:	**80.83 ha**
Easting:	**350685**
Northing:	**247580**



Key Development Criteria:

Archaeology and geodiversity: Need to demonstrate the potential for archaeological remains or geological features to be present on the site, through desk-based assessment and/or field evaluation as appropriate. Mitigation will include recording, protection or recovery of any assets.

Flood Risk: Need to demonstrate that: the site will be safe in the event of a flood; risk is not increased on site or elsewhere; and where possible, flood risk is decreased. Flood alleviation should be considered in designing site reclamation.

Footpath: Wellington footpaths 23, 23A and 34 cross the site and may require diversion or a non-working buffer such that the amenity value and connectivity of the footpaths are maintained.

Green infrastructure: Operation and reclamation phases should deliver priorities of the Herefordshire Green Infrastructure Strategy, in particular those associated with District Strategy Corridor 1 and District Enhancement Zone 3. Site design should deliver a net gain in biodiversity, providing enhancement for priority habitats, and incorporate key features of the landscape character.

Ground water: Glaciofluvial sand and gravel deposits represent a secondary aquifer in hydraulic continuity with watercourses. Need to demonstrate the potential risks to the water environment.

Heritage assets: Need to demonstrate the level of effect on heritage asset(s) and their setting(s), particularly listed buildings and Sutton Walls Fort.

Marches Line: A non-working buffer may be required such that railway safety is maintained.

Phased working: Need to demonstrate optimum phasing of the allocated area, including how existing infrastructure will be used (to include at least site access and processing equipment) and reclamation at the earliest opportunity. A proliferation of ancillary infrastructure will not be permitted.

River Lugg and Wellington Brook: Need to demonstrate the level of effect on water quality and hydrology of these watercourses.

River Lugg LWS and SSSI: Need to demonstrate the level of effect on the key features of this designation.

River Wye SAC: An Appropriate Assessment is required to demonstrate the likely significant effect(s) on the SAC. Development should demonstrate nutrient neutrality or betterment.

Road network: Highways England identifies this site as located near to the strategic road network. Need to demonstrate the level of effect on the A49 and that vehicles can access and leave the site, to and from the public highway, safely.

Sensitive properties: Need to demonstrate the level of effect on the amenity, health & safety and environment of nearby sensitive properties (school and housing).

Utilities: Utility infrastructure (high pressure gas, water mains and foul sewer) that cross the site may require diversion or a non-working buffer to enable the site to be worked.

ID	Name	Mineral	Status	Postcode	Easting	Northing
1	Stretton Sugwas Quarry (Hereford Quarry)	Sand and gravel	Closed	HR4 7QD	345219	242316
2	Lugg Bridge Quarry	Sand and gravel	Closed	HR1 3LZ	353707	242449
3	Upper Lyde Quarry	Sand and gravel	Active	HR4 8AF	349825	245797
4	Shobdon Quarry	Sand and gravel	Inactive	HR6 9LA	339108	260210
5	Wellington Quarry	Sand and gravel	Active	HR4 8BY	350903	248046
6	St Donat's Quarry	Sand and gravel	Restored	HR4 8NQ	348633	245735
7	Leinthall Quarry	Limestone	Active	HR6 9TR	344269	267761
8	Loxter Ashbed Quarry	Limestone	Restored	HR8 1NU	371316	240720
9	Nash Scar Quarry	Limestone	Mothballed	LD8 2LE	330603	262517
10	Perton Quarry	Limestone	Active	HR1 4ED	358649	239931
11	Brakes Farm Delve	Sandstone	Abandoned	SY8 2LF	344262	275100
12	Callow Delve	Sandstone	Active	NP25 5RL	350923	217065
13	Black Hill Delve (formerly Coed Major Delve)	Sandstone	Active	HR2 0PX	327157	237279
14	High House Delve	Sandstone	Closed	HR2 0ND	330882	230872
15	Hunters Post Delve	Sandstone	Closed	NP25 5RW	349257	217402
16	Llandraw Delve	Sandstone	Active	HR2 0PW	330056	234227
17	Pennsylvani Delves	Sandstone	Active	HR2 0PU	328399	238849
18	Sunnybank Delve	Sandstone	Active	HR2 0LA	329480	238127
19	Tybubach Delve	Sandstone	Closed	HR2 0PJ	330454	232312
20	Westonhill Wood Delves	Sandstone	Active	HR3 6DE	331442	245082
21	Howle Hill Quarry	Coal	Restored	HR9 5SH	360341	220426

Herefordshire Minerals and Waste Local Plan

Figure 3
Minerals Sites, 2020

Legend

Minerals Facilities

Type

- Coal
- Limestone
- Sand and gravel
- Sandstone

Status

- Active
- Restored
- Uncertain
- Inactive/Closed
- Herefordshire County Boundary

N

0 5 10 15

Kilometres

SCALE 1:250,000 @ A3

DATE 12/03/2020

hendeca

ID	SiteName	SitePC
1	Eastside Recycling Facility	HR2 6NS
2	Quickskip (Hereford) Transfer Station	HR2 6JT
4	Marlbrook Farm	HR6 0PE
5	Leominster Household Waste Site & Transfer Station	HR6 8EA
6	Rotherwas Household Waste Site, Transfer Station & M R F	HR2 6LD
7	Ledbury H W S	HR8 2DP
8	Ross On Wye Household Waste Site	HR9 7AQ
9	Bromyard Household Waste Site	HR7 4QT
10	Kington Household Recycling Centre	HR5 3HB
11	H C D Limited	HR4 8DZ
12	Land Adjacent To Unit 3	HR2 6JT
13	Lugg Bridge Quarry	HR1 3LZ
14	Kingspan Insulation Ltd	HR6 9LA
15	Quickskip Hereford Limited	HR2 6LD
17	Eastside Recycling Facility	HR2 6NS
20	P & T Moore Vehicle Dismantlers	HR6 0LR
21	Streamhall Garage	HR7 4QT
23	Former E M R Facility	HR4 9LW
24	Cobhall Cottage	HR9 9BW
25	Yaidon Farm	HR5 3LH
26	Much Fawley Farm	HR1 4SP
27	S T L Energy Ltd	HR1 4JU
28	Hereford Liquid Waste Treatment Centre	HR1 1TG
31	Two Hoots Farm A D Plant	HR7 4RZ
32	Bowley Court	HR6 0PL
33	Penllan A D	HR2 0SU
34	Herefordshire Biogas	HR6 9LA
35	The Biogas Facility	HR6 9LB
36	Trevase Farm A D	HR2 8ND
37	Eardisley Park Farm Facility	HR3 6NT
38	The Leen Digester	HR6 9HN
41	R Edwards & Co (Staunton) Limited	HR6 9HR
42	Heath Farm	SY7 0QB
43	The Farm Biogas Facility	HR9 6NB

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Herefordshire Minerals and Waste Local Plan

Figure 4
Waste Facilitiies, 2020

Legend

Waste Facility Type

- Anaerobic Digestion (Farm Waste)
- Biological Treatment
- CA Site
- Non-Haz Waste Transfer
- Non-Haz Waste Transfer / Treatment
- Physical Treatment
- Car Breaker
- Metal Recycling
- Haz Waste Transfer
- Material Recycling Facility
- Herefordshire County Boundary

N

0 5 10 15

Kilometres

SCALE 1:250,000 @ A3

DATE 03/12/2020

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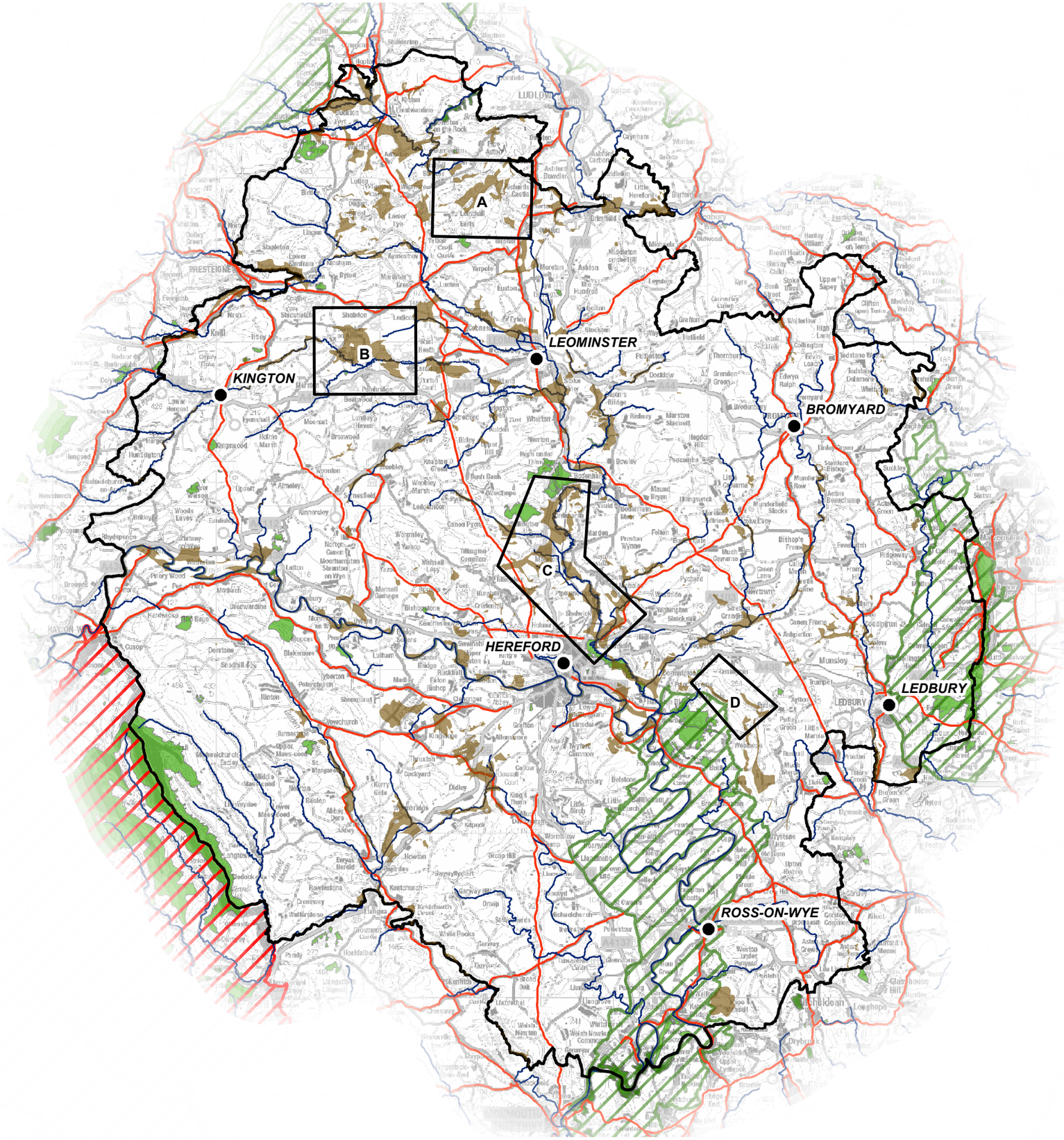


Herefordshire Minerals and Waste Local Plan

Figure 6
Key Diagram

- Brecon Beacons National Park
- AONB
- Natura2000 Sites
- UK Ecological Designations
- Preferred Areas of Search
- Areas of reserve
- Major Rivers
- Major Roads

N

0 5 10 15

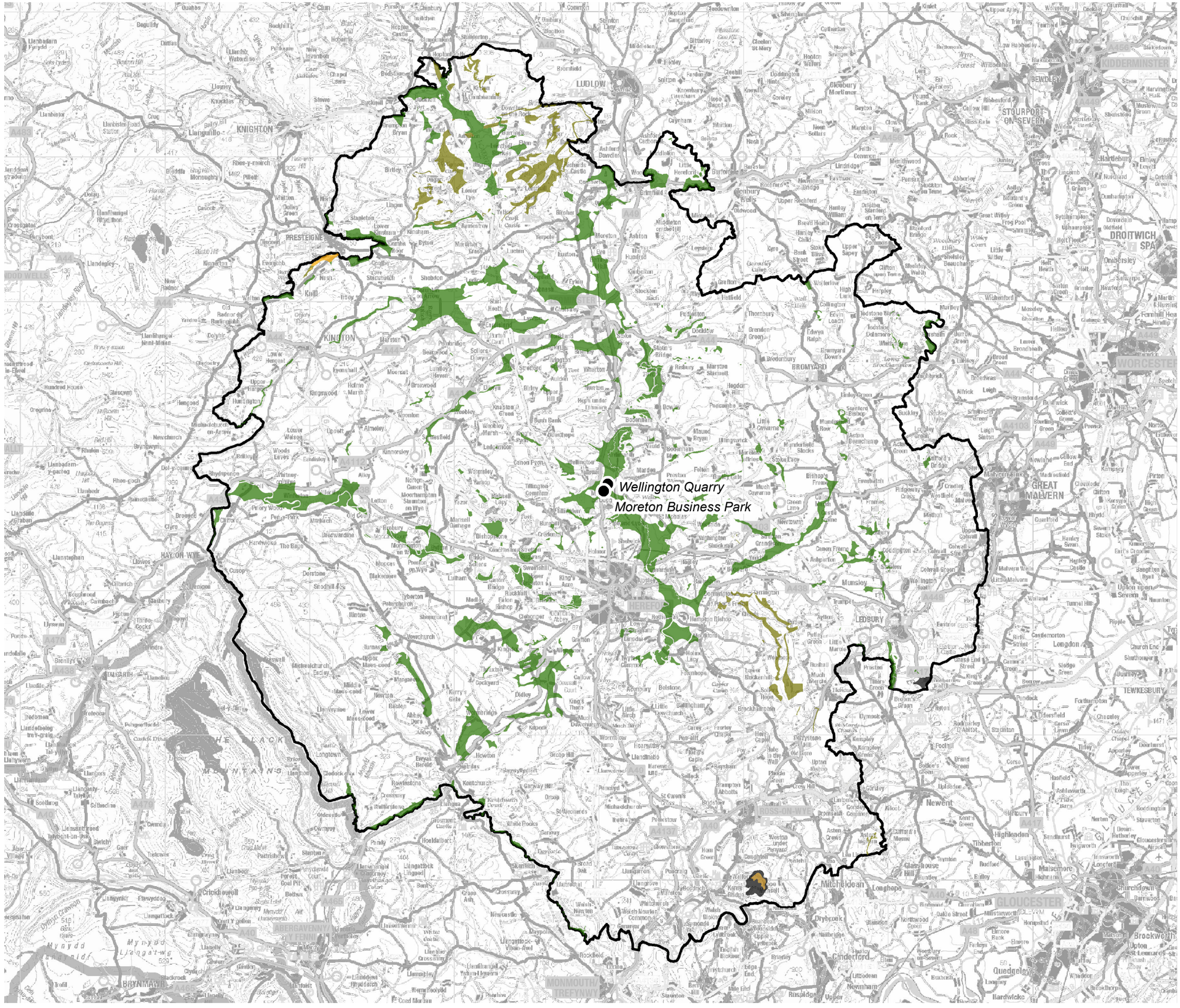
Kilometres

SCALE
1:260,000 @ A3

DATE
23/03/2018

hendeca

Figure 7
Minerals Safeguarded Areas including Rail Heads



Mineral Reserves

- Brick clay
- Coal
- Limestone (including dolomite)
- Sandstone: Pre-Cambrian, Ordovician, Silurian Greywacke
- Superficial sand/gravel
- Rail Heads

N

0 5 10 15

Kilometres

SCALE
1:260,000 @ A3

DATE
23/03/2018

hendeca

Publication draft Herefordshire Minerals & Waste Local Plan Overview

About the Minerals and Waste Local Plan

1. The publication draft of the Herefordshire Minerals and Waste Local Plan (MWLP) sets out the council's preferred strategy for meeting the county's minerals and waste needs until 2041. It is supported by a comprehensive and up to date evidence base and has undergone extensive consultation. Its main purpose is to provide guidance to developers, local communities and other interested parties on where and when minerals and waste development may be expected over the plan period, as well as how it will be managed to reduce adverse impacts and maximise benefits.

2. The MWLP has been produced taking into account of national policies in the National Planning Policy Framework and Planning Practice Guidance, whilst also ensuring close co-operation with neighbouring and regional local authorities on cross-boundary issues. Regard has also been given to other plans and strategies produced by the council and other organisations.

3. The MWLP has been subject to independent assessment:
   - ✓ Sustainability Appraisal, which assessed the social, economic and environmental impacts of the MWLP throughout the development of the document;
   - ✓ Habitats Regulations Assessment, which assessed any impacts on European sites; and
   - ✓ Strategic Flood Risk Assessment (SFRA), to assess flood risk in the plan area, and the risks to and from surrounding areas as a result of minerals and waste development.

4. The publication draft MWLP is the final stage of consultation. Following a statutory 6-week period of public consultation, during which representations can be made on legal compliance with relevant legislation and matters of soundness (as set out in the National Planning Policy Framework), the plan will be submitted, along with any proposed changes and other submission documents, for examination by an independent planning inspector.

5. When adopted, the MWLP will be another element in the Herefordshire Local Plan and will sit alongside the Core Strategy, which sets the overall strategic planning framework for the county. It will form a statutory 'development plan document' and the council will use it, alongside the Core Strategy, as the starting point for making decisions on planning applications for minerals and waste activities.

Minerals in Herefordshire: Overview

6. Mineral resources in Herefordshire are relatively limited in range, primarily consisting of aggregates for use in construction and a small amount of building stone. Aggregates comprise sand and gravel; crushed rock (limestone); and secondary or recycled material gained from quarry and waste operations.

7. Herefordshire provides for 40% to 50% of its own sand and gravel demand and 20% to 30% of its crushed rock demand. The latter may be due to the particular quality of the limestone, which is quite soft and not suitable for roadbuilding. The most significant

import of sand and gravel is from Staffordshire (30% to 40%) and of crushed rock is from Powys (40% to 50%).

8. Although there is a railhead at Moreton-on-Lugg, which is used to transport sand and gravel from Wellington Quarry to the south east of England, the mineral travelling by rail freight through the county is mainly crushed rock from quarries located in Wales. Otherwise, minerals travel by road as there is no other transport mode available.

9. Concrete batching plant, concrete block making plant and coating plant operate on working quarries and industrial estates around Herefordshire.

Issues and Challenges for Minerals

a. ensuring continuity of minerals supply to meet the social and economic needs of the county up to 2041;
b. maximising the use of alternative sources of supply of minerals, such as secondary and recycled aggregate, to reduce demand from primary land-won minerals;
c. maintaining the required landbanks for sand and gravel and crushed rock but, as far as practicable, providing for these outside the AONBs;
d. continuing to provide a supply of building stone for the repair and maintenance of Herefordshire's traditional buildings and for new built development;
e. addressing the potential positive and negative impacts of exploiting unconventional hydrocarbon resources such as shale gas as well as planning for conventional forms of energy minerals;
f. safeguarding important mineral resources and infrastructure from sterilisation by other uses in order to meet local and regional needs by current and future generations;
g. ensuring there are sufficient safeguards in place to minimise the impacts of minerals extraction on communities, the environment and other important assets;
h. providing for a range of enhancements, including ecological services and biodiversity, particularly through reclamation of workings; and
i. developing an appropriate locational strategy for minerals supply reflecting, where practicable, the likely levels of economic and housing growth and future requirements for minerals.

Waste in Herefordshire: Overview

10. Waste is generated from a wide range of domestic, commercial and industrial activities. The main types are:

a. Local Authority Collected Waste (LACW), which includes household waste and other wastes collected by local authorities;
b. Commercial and industrial (C&I) waste; this includes waste from businesses and manufacturing companies;
c. Construction, demolition and excavation (CD&E) waste; these wastes can be produced through a wide range of building projects, from home renovation to major redevelopments;
d. Hazardous waste; waste is generally considered hazardous if it is harmful to humans or the environment, particularly if it is toxic, corrosive or an irritant, e.g. asbestos, brake fluid or printer toner.
e. Agricultural waste includes both natural (such as animal manure, animal bedding and crop waste) and non-natural (such as plastic wrapping or bottles).

f. Low level radioactive waste (non-nuclear), such as is used in research laboratories; and
g. Wastewater, which is used water from any combination of domestic, industrial, commercial or agricultural activities, e.g. surface run-off or storm water, and any sewer inflow or sewer infiltration. In Herefordshire, this waste stream is managed by Dwr Cymru/Welsh Water and Severn Trent Water.

11. Evidence shows that around 80% of waste managed in facilities operating in Herefordshire was generated within the county. These facilities (including transfer, re-use and recycling) also receive waste from other authorities, principally those in Wales, the West Midlands and Gloucestershire.

12. The concentrated areas of population in Hereford and the market towns are the largest producers of waste, and this is generally reflected in the pattern of waste management facilities in the county.

13. There are a number anaerobic digestion and biological treatment facilities dispersed around the county, reflecting the strong agricultural sector.

14. There are no residual waste management facilities in Herefordshire, such as energy from waste plant or landfill sites.

15. Herefordshire has historically worked with Worcestershire County Council to manage the authorities' LACW and this collaboration resulted in the production of a Joint Waste Management Strategy and joint procurement of strategic waste management capacity (Envirosort and EnviRecover). These facilities are located in Worcestershire, the arrangement means that long-term capacity is available to manage Herefordshire's LACW.

16. Wastes are exported from Herefordshire, predominantly for materials recovery, energy recovery and disposal to landfill. The most significant of these movements is to the Vale of Glamorgan and Cardiff. This indicates a need for more residual waste management capacity in Herefordshire.

Issues and Challenges for Waste

a. enabling a circular economy to develop within Herefordshire and considering opportunities to co-locate waste management facilities with complementary uses;
b. promoting the management of waste further up the waste hierarchy i.e. reducing the amount going to landfill and encouraging the re-use, recycling, composting and recovery of waste, as well as supporting an overall reduction in the generation of waste;
c. developing an appropriate locational strategy for new waste management facilities, reflecting, where practicable, the likely levels of economic and housing growth and future requirements;
d. supporting the delivery of the additional waste management capacity expected to be required, taking account of cross-boundary movements, where relevant;
e. incorporating flexibility to reflect uncertainties resulting from waste data limitations and evolving technologies and practice; and
f. ensuring there are sufficient safeguards in place to minimise the local impacts of waste management on communities, the environment and other important assets.

General Issues and Challenges for Minerals and Waste

a. establishing policies that are appropriate across the diverse characteristics of the plan area;
b. developing an appropriate approach to the protection and enhancement of the plan area's important landscapes, and natural heritage assets;
c. ensuring minerals and waste development contributes to and supports economic growth, both within the plan area and nationally, including the employment opportunities that they provide;
d. seeking to reduce carbon emissions, particularly in relation to the transportation of minerals and waste; and providing opportunities to assist in adapting to the effects of climate change, such as reducing flood risk and enhancing habitat connectivity;
e. considering accessibility to major transportation networks and sustainable transport infrastructure, recognising the constraints on opportunities for the movement of minerals or waste;
f. recognising the potential for mutually beneficial links between minerals and waste activities, such as utilising specific waste streams in the sustainable reclamation of mineral workings; and
g. ensuring an element of flexibility and adaptive management is built into the MWLP.

How the MWLP addresses the issues and challenges

17. The MWLP sets out an overarching ambitious and aspiration 'Vision' for sustainable minerals and waste development in the county and set of 'Objectives' is listed; developed with reference to those contained in the Core Strategy, national policy, local priorities and responses from consultation exercises.

18. A set of strategic policies and general principles is set out, which are to be read alongside relevant Core Strategy policies. These relate to:
    a. sustainable development
    b. movement and transportation
    c. environmental quality and local distinctiveness
    d. landscape and townscape
    e. biodiversity and geodiversity
    f. green infrastructure
    g. historic environment and heritage assets
    h. addressing climate change
    i. resource management
    j. access to open space and recreation from minerals and waste development
    k. sustainable design and energy efficiency (including aviation safety, dust, land instability, noise, odour, utilities, vibration, and visual intrusion)
    l. renewable and low carbon energy generation
    m. sustainable water management and water resources
    n. transportation within sites
    o. reclamation of sites

Minerals Policies

19. The overarching 'Spatial Strategy' for minerals development (with the understanding that minerals extraction can only take place where the mineral occurs) is based on a review of the underlying geology and the natural and built environment of Herefordshire.

20. *Sand and gravel workings* - to be focussed within the large expanse of reserve that wraps around the northern and eastern sides of the county and at Shobdon to the north west of Hereford ('preferred areas'). Specific sites for future extraction are allocated adjacent or near to existing permitted sites at Upper Lyde, Shobdon and Wellington. Only where the preferred locations cannot be demonstrated to fulfil a reasonable level of demand, will proposals for sand and gravel extraction outside of these areas be permitted.

21. *Crushed rock workings* – recognising the advantages of working an areas efficiently, specific sites for future extraction are allocated adjacent or near to existing permitted sites. Reserves at Leinthall and Perton are identified. In addition, the MWLP identifies preferred areas for limestone working to the north of the county and to the east of Hereford. Only where the preferred locations cannot be demonstrated to fulfil a reasonable level of demand will proposals for limestone extraction outside of these areas be permitted.

22. *Building Stone* – primarily sandstone is extracted from small quarries called delves, generally by hand, with just one or two workers on site. They are backfilled with the soils, overburden and mineral wastes, thus minimising their impact. There are six delves currently permitted and active, all of which could be suitable to gain permission for an extension of time to enable extraction to be completed. Three of these sites would also be suitable, in principle, for a lateral extension or deepening of workings: Black Hill Delve, Llandraw Delve and Westonhill Wood Delves.

23. New sites may be appropriate where: the building stone is important to ensure the preservation of local distinctiveness; the workings are small-scale; and the proposal is limited to the production of non-aggregate materials (e.g. building stone, dimension stone and roof tiles). Key development criteria are set out, which should be addressed within any proposals.

24. *Key Development Criteria* – in addition to the policy framework in the MWLP, the allocated sites are accompanied by 'key development criteria' that present particular issues to be comprehensively addressed in association with any development proposal.

25. *Borrow pits* – often required in the course of large-scale civil engineering construction projects. A policy is set out which subjects these to the same environmental considerations as other mineral workings and such sites will be conditioned to ensure that their reclamation is achieved as part of the main construction project, and that their aftercare and after-use are properly controlled.

26. *Safeguarding* - being a finite resource, it is important that reserves of minerals are appropriately safeguarded to avoid sterilisation from non-minerals forms of development. A specific policy is in place to ensure that such development is appropriately controlled.

Waste Policies

27. The waste strategy is to plan for sustainable waste management in Herefordshire, which would deliver: a reduction in the amount of waste generated; an increase in the amount of waste re-used, recycled or reused to recover energy; and a decrease in the amount of waste disposed to landfill.

28. Through the Core Strategy, Herefordshire has a number of strategic employment sites. These have good potential to deliver the circular economy, where engineering, creative industry, manufacturing, waste and research sectors can combine resources to enable

material (including wastes) to be kept at their highest value for as long as possible. Such businesses could produce electricity, heat and phosphorous for beneficial use. This could enable national and local priorities on climate change to be realised.

29. The policy priority is to provide a positive framework for the delivery of additional waste management capacity, addressing all levels of the waste hierarchy, except non-hazardous disposal, but making development opportunities for residual waste treatment facilities particularly attractive.

30. In accordance with national waste policy, and recognising the importance of waste infrastructure, the MWLP incorporates the principle that the applicant of a new (non-waste) development should ensure that the intended project does not unreasonable restrict an existing waste business.

31. The MWLP sets out specific waste policies, relating to:

    a. solid waste management requirements – setting out tonnages for the different waste streams as a guide, to enable monitoring over time;
    b. agricultural waste – the aim of this policy is to reduce phosphate release into the River Wye Special Area of Conservation;
    c. wastewater management;
    d. preferred locations for solid waste treatment facilities – focussing the majority of such development on existing industrial areas in Hereford and the market towns;
    e. preferred locations for construction, demolition and excavation waste management facilities – the existing waste recovery facility at the former Lugg Bridge Quarry is the preferred location for additional capacity, followed by industrial areas in urban areas, and lastly active mineral workings. Inert wastes may be sustainably disposed of in quarries at Shobdon, Upper Lyde or Wellington; and
    f. waste management operations – this policy related to a wide range of waste treatment facilities and recognises the beneficial role that sustainable materials recovery and waste recovery have to play.

32. The MWLP's final sections relate to the delivery, implementation, and monitoring of the policies it has set out.

1. Responses to Herefordshire MWLP since General Scrutiny Committee

Introduction

1. Since the General Scrutiny Committee was held (on 28 September 2020) the Minerals and Waste Local Plan (MWLP) making team has received 3 responses:
    - Habitats Regulations Assessment, by consultants LUC, received 12 November 2020 (HRA 2020);
    - Sustainability Appraisal (incorporating Strategic Environmental Assessment) by consultants LUC, received 12 November 2020 (SA 2020); and
    - Informal, without prejudice comment from Natural England (NE), by emails dated 13 and 17 November.
2. In this report KDC has been used as the abbreviation for key development criteria, the site specific areas of focus that are assigned to each of the allocated sites.

Habitats Regulations Assessment

3. Chapter 5 of the HRA 2020 presents a series of recommendations for the P'Draft MWLP, which can be summarised as:
    - amending the KDC for Wellington Quarry to require detailed protected species surveys for Otter to determine site specific mitigation and protection measures;
    - requiring project-level/site specific HRA and targeted ecological survey for proposals located in preferred area C;
    - adding specific reference to requiring Ecological Mitigation Plans; and
    - adding reference to the potential for dust to cause adverse ecological impacts to sensitive sites and noting that this might be a reason to prompt a dust assessment.
4. All of the recommendations made in the HRA 2020 have been incorporated in the MWLP.

Sustainability Appraisal (incorporating Strategic Environmental Assessment)

5. Chapter 7 of the SA 2020 presents a series of recommendations for the P'Draft MWLP, which can be summarised as:
    - amending the KDC for Leinthall and Perton Quarries to require consideration of the level of effect on residential amenity;
    - cross-checking the KDC with the findings of the SA 2020 for historic environment;
    - updating all KDC to reflect the key recommendations of the SFRA Level 2;
    - updating the MWLP and KDC to reflect the key recommendations of the HRA 2020;
    - cross-checking the KDC with the findings of the SA 2020 for water environment;
    - cross-checking the KDC with the findings of the SA 2020 for biodiversity and geodiversity;

- updating supporting text in section 5 of the MWLP to refer to SPZ and designated waterbodies.

6. All of these recommendations have been incorporated in the MWLP.

7. The process of undertaking the Sustainability Appraisal and preparing the MWLP is iterative, and consequently the SA report is yet to be finalised. This is because there are two recommendations made within the SA 2020 that remain under discussion to determine if they are still required:

    - Amending the KDC for Shobdon, Upper Lyde and Wellington Quarries to require demonstration that lighting will be kept to the minimum required to ensure safe working conditions on site.
        - LUC had not fully appreciated that this KDC was informed by the dark skies analysis and is not intended to be applied to all sites.
    - Amending the KDC for all sites to require consideration of the level of effect on the road network and that sites can be accessed safely.
        - LUC had not fully appreciated that this is a standard development management requirement already addressed through policy of the Core Strategy and supplemented as appropriate within the MWLP.

Comment from Natural England

8. An officer from Natural England provided without prejudice and informal review of the Preparing the Publication Draft Plan Report, focussing only section 3 'Phosphates in the River Wye SAC'.

9. Her comments were relayed to Herefordshire Council in two separate emails. The comments relate only to section 3 of the Report and require no change to the MWLP.

10. The Preparing the Publication Draft Plan Report has been amended to reflect the edits proposed.

2. Table of changes made to Herefordshire MWLP since General Scrutiny Committee

11. This table has been prepared to report all the changes that have been made to the Publication Draft Herefordshire Minerals and Waste Local Plan since its consideration at General Scrutiny Committee.

12. The amended text is shown in bold text, with new text underlined (**for example**) and deleted text crossed through (~~**for example**~~).

13. The table provides only those whole sentences within which a change has been made. There may be additional text either side of the sentence, but if it is not reported it has not been changed.

Event driving change	Consequent change(s) made	
	Reference	Amended text/description of the change made
General Scrutiny Committee	Paragraph 4.3.1	Consequently, waste development will be focussed at Hereford **and the market towns, Bromyard, Kington, Ledbury**, Leominster ~~**and the market towns**~~ **Ross-on-Wye**.
28 September 2020	Paragraph 5.2.6	Early consultation will enable good design throughout the life of the site to be enhanced, especially for larger scale proposals. It is expected that developers will consult[26] with local communities and other stakeholders on proposals for mineral **and waste** development before the planning application is submitted.
	Including new footnote 26	**The Statement of Community Involvement provides details of basic expectations.**
	Paragraph 5.5.13	Car boot and jumble sales are probably the most common and well known form of ~~**waste reuse,**~~ **reusing unwanted goods.**
	Policy SP2/2	Development that affects a right of way or existing open space will only be ~~**permitted**~~ **supported** where it is demonstrated that:
	Policy SP4	Development that requires reclamation will only be ~~**permitted**~~ **supported** where it is demonstrated that the proposal incorporates measures for safe working and satisfactory reclamation, including its delivery, at the earliest opportunity, and phasing where appropriate, to a beneficial after-use of the required standard.
	Policy M2/1	Within the minerals safeguarding areas, non-minerals development will only be ~~**permitted**~~ **supported** in the following circumstances:
	Policy M3/2	In order of preference, sand and gravel extraction shall be ~~**permitted**~~ **supported** at the following locations:

	Policy M3/3	Only where it is demonstrated to be necessary to maintain an adequate landbank or there is a shortfall in production capacity available at the Specific Sites or Preferred Areas of Search, will sand and gravel extraction will be ~~**permitted**~~ **supported** in any other area of reserve.
	Policy M4/2	In order of preference, crushed rock extraction shall be ~~**permitted**~~ **supported** at the following locations:
	Policy M4/3	Only where it is demonstrated to be necessary in order to maintain an adequate landbank or there is a shortfall in production capacity available at the Specific Sites or Preferred Areas of Search, will limestone extraction be ~~**permitted**~~ **supported** in any other area of reserve
	Policy M5/1	In order to maintain an adequate supply of sandstone to preserve local distinctiveness within Herefordshire, proposals will be ~~**permitted**~~ **supported** for: a. the extension of time for completion of extraction at ~~**permitted**~~ **consented** sandstone extraction sites; **b.** the lateral extension and/or deepening of workings at the following ~~**permitted**~~ **consented** sandstone extraction sites, subject to the key development criteria set out at Appendix A:
	Policy M5/2	The working of sandstone at the above locations will be ~~**permitted**~~ **supported** where:
	Policy M6	Proposals for the development of borrow pits will be ~~**permitted**~~ **supported** where:
	Policy W3/1	Planning permission for livestock units on agricultural holdings will be ~~**permitted**~~ **supported** where it is demonstrated through a waste management method statement that:
	Policy W3/2	Anaerobic digestion will be ~~**permitted**~~ **supported** where its use is primarily intended to manage natural wastes generated on the agricultural unit within which it is located.
	Policy W7/1	Facilities for the reuse, recycling or recovery of materials shall be ~~**permitted**~~ **supported** where it is demonstrated that the proposed development will enable delivery of the waste hierarchy and/or make a positive contribution to achieving the circular economy in Herefordshire.
	Policy W7/2	Facilities for the recovery of energy shall only be ~~**permitted**~~ **supported** where it is demonstrated:
	Policy W7/3	Proposals for new landfill or landraising facilities or extensions to existing facilities shall be ~~**permitted**~~ **supported** where it is demonstrated that the proposed development will enable delivery of the waste hierarchy and the proposal incorporates measures for safe working and satisfactory reclamation, particularly in accordance with policy SP4.
	Table 3	All references to '**permitted**', amended to **consented**

Cabinet Feeder Meeting	Paragraph 1.2.3	**As appropriate at the time to ensure COVID19 guidance is fulfilled, p~~P~~**aper copies of the documents will be available to view at the Herefordshire Customer Service Centre, Blueschool House, Blueschool Street, Hereford, HR1 2LX and at the following libraries:
12 November 2020	Paragraph 1.2.4	Please check the council's website for details of library opening hours **and document availability**.
	Paragraph 1.2.7	The closing date for representations is 1700 hours on DATE 202**~~0~~1** SUGGEST IT IS A SUNDAY?.
	Paragraph 2.4.10	The updated need assessments were finalised in November 2018 and accompanied the consultation on th**e** Draft MWLP.
	New paragraph 3.3.11	**In 2019, this legislative framework was extended by the UK wide target to bring all greenhouse gas emissions to net zero by 2050. Net zero means any emissions would be balanced by schemes to offset an equivalent amount of greenhouse gases from the atmosphere, such as planting trees or using technology like carbon capture and storage.[12]**
	Including new footnote 12	**https://www.gov.uk/government/news/uk-becomes-first-major-economy-to-pass-net-zero-emissions-law**
	Former paragraph 3.3.11 became 3.3.12	~~**Similarly the**~~ **T**he Government's 25 Year Environment Plan[13] (2018) presents policy relevant to both minerals and waste development as it sets out the priority actions intended to '*help the natural world regain and retain good health*.'
	New paragraph 3.3.25	**Herefordshire Council's third Carbon Management Plan is titled 'Pathway to Carbon Neutral Carbon Management Plan 2020/21-2025/26'. It sets out the council's targets and achievements towards being carbon neutral by 2030. In addition, a new countywide Climate Emergency Steering Group was set up in 2019 to work collaboratively to develop an action plan to get Herefordshire to net zero carbon by 2030. The group includes representatives from environment, business and community sectors including Herefordshire Wildlife Trust, Hereford Green Network, Extinction Rebellion and Herefordshire Council.**
	Paragraph 3.3.32 (formerly 3.3.31)	**This document will undergo review and updates through the lifetime of the MWLP.**
	Paragraph 5.5.9	Examples of waste prevention include **designing and** buying goods without packaging, **using/**purchasing only the materials/services required and subsequently disposing of less waste.

	Policy W3/3	**All development proposals will be required to** ~~**Demonstration of**~~ demonstrate the approach undertaken within that unit ~~**that**~~ contributes to achieving nutrient neutrality, or betterment, within the River Wye SAC ~~**will be required with all development proposals.**~~
HRA and SA/SEA Reports	Paragraph 2.4.18	Habitats Regulations Assessment (HRA) has been used to assess the emerging MWLP to assess whether there would be likely significant effects on sites of international importance for wildlife (European ~~**designated**~~ sites).
12 November 2020	Paragraph 5.4.10	A management strategy associated with a minerals or waste **development should include an Ecological Mitigation Plan appropriate to the development proposed. The Ecological Mitigation Plan should specify working methods, timings and buffers** ~~**may include a buffer**~~ within the development site to protect vulnerable features**, including European sites**.
	Paragraph 5.7.6	**Dust can also cause adverse ecological impacts to sensitive sites.**
	Paragraph 5.7.7	A dust assessment will be required where fugitive dust emissions are likely to cause a nuisance **or significant adverse ecological impact**; atmospheric dispersion modelling may be required to determine whether there is a risk of health effects due to dust emissions.
	New paragraph 5.9.2	**The Environment Agency has defined Source Protection Zones for groundwater sources such as wells, boreholes and springs used for public drinking water supply. These zones show the risk of contamination from any activities that might cause pollution in the area; in short, the closer the activity, the greater the risk. Environment Agency mapping shows the three main zones (inner, outer and total catchment) and a fourth zone of special interest, which is occasionally applied.**
	Paragraph 6.2.9	**There is no key development criteria for the preferred areas of search; they are too extensive. However, this does not mean that development proposals within these areas will not be subject to the same level of scrutiny. Not least the Habitats Regulations Assessment undertaken of this plan recommends that any development proposal located within Area C should be accompanied by project level Habitats Regulation Assessment and targeted ecological surveys.**
	Appendix A – Wellington Quarry KDC	**Otter: Detail protected species survey required to determine any site-specific mitigation and protection measures**

	Appendix A – Leinthall Quarry KDC	**Sensitive properties: Need to demonstrate the level of effect on the amenity, health & safety and environment of nearby sensitive properties (housing)**
	Appendix A – Perton Quarry KDC	**Sensitive properties: Need to demonstrate the level of effect on the amenity, health & safety and environment of nearby sensitive properties (housing)**
Natural England, informal email responses	No changes made to the MWLP. The only changes made were clarifications/updates to the Preparing the Publication Draft Plan Report.	
13 and 17 November 2020		
Updated Figure 1 received	Figure 1	Updated
18 November 2020		

Notes

HRA = Habitats Regulations Assessment

SA/SEA = Sustainability Appraisal/ Strategic Environmental Assessment

KDC = Key Development Criteria

Date: 30 November 2020

1. Table of changes made to Herefordshire MWLP on request of Cabinet

1. This table has been prepared to report the changes that have been made to the Publication Draft Herefordshire Minerals and Waste Local Plan following its discussion at Cabinet, held on 1 December 2020.
2. The amended text is shown in bold text, with new text underlined (**for example**) and deleted text crossed through (**~~for example~~**).
3. The table provides only those whole sentences within which a change has been made. There may be additional text either side of the sentence, but if it is not reported it has not been changed.

Consequent change(s) made	
Reference	**Amended text/description of the change made**
Paragraph 3.1.9	There are currently eleven **~~permitted~~** **consented** mineral workings in Herefordshire that could be worked during the plan period:
Paragraph 3.1.18	However, whilst there is a range of waste management facilities (including transfer, re-use and recycling) **~~permitted~~** **consented** in Herefordshire that address a variety of wastes, there are no residual waste management facilities, such as energy from waste plant or landfill sites.
Paragraph 3.1.21	The waste facilities **~~permitted~~** **consented** in Herefordshire in 2019 are all shown on Figure 4.
Paragraph 3.3.7	In National Parks and Areas of Outstanding Natural Beauty, many minerals and waste developments would be classed as 'major development' and should not be **~~permitted~~** **granted consent** except in exceptional circumstances, as defined by a series of considerations known as the 'major development test'.
Paragraph 3.3.25	**In March 2019 Herefordshire Council unanimously declared recognition of the climate emergency. In September 2019 the ~~C~~council formally committed to becoming a net zero carbon council by 2030, and ~~to~~ working with strategic partners, residents and local organisations to help the county as a whole achieve carbon neutrality by 2030.** Herefordshire Council's third Carbon Management Plan is titled 'Pathway to Carbon Neutral Carbon Management Plan 2020/21-2025/26'. It sets out the council's targets and achievements towards being carbon neutral by 2030. In addition, **~~a new countywide Climate Emergency Steering Group was set up in 2019 to work collaboratively to develop an action plan to get Herefordshire to net zero carbon~~** **the council has since early 2019 been working in partnership with a group of stakeholders from environment, business and community sectors on an action plan to help Herefordshire achieve carbon neutrality** by 2030.

	~~**The group includes representatives from environment, business and community sectors including Herefordshire Wildlife Trust, Hereford Green Network, Extinction Rebellion and Herefordshire Council.**~~
Paragraph 5.5.15	Any application for major development, **as** defined ~~**as residential development of 10 units or more or 0.5ha or more, and all other development of 1ha or more**~~ **in the Town and Country Planning (Development Management Procedure) (England) Order 2015 (as may be amended)** will be required to be accompanied by a Resource Audit.
Paragraph 5.5.17	Such documents are expected to have an increasing role demonstrating how new development is delivered and managed in a sustainable manner~~;~~ explicitly setting out**:** how the use of raw materials will be minimised~~;~~**:** how waste created can be reused, with priority given to the reuse of materials on site~~;~~**; how the development will contribute to achieving local and national carbon reduction targets;** and how the long term management of the development will contribute to delivering the circular economy. Smaller applications, accompanied by Design and Access Statements, should include commentary on waste prevention and management measures. **All** ~~**development proposals**~~ **submitted applications should make reference to the national and local zero-carbon plans in place at the time in order to inform best practice measures that can be incorporated into the proposed development.**
Policy SP1/2	~~**the provision**~~ **requiring submission** of a Resource Audit that identifies the quantum required and approach to sourcing construction materials, the amount and type of waste that is expected to be produced by the development and end of life considerations for the development materials.
Policy SP1/2 new sub-point h, with necessary updates made to bullet list.	**embodied carbon and lifecycle carbon costs for the materials used in the development.**
Paragraph 5.11.6	Reclamation schemes should take into account the location and context of the site, including the implications of other significant ~~**permitted**~~ **consented** or proposed development in the area and the range of environmental and other assets and infrastructure that may be affected, including any important interactions between those assets and infrastructure.
Policy M1/d	restricting the extraction of hydrocarbons to within either the Surface Coal Resource areas or PEDL block SO51a (as appropriate to the mineral) and requiring compelling reasons to demonstrate that the use of any hydrocarbon is

	necessary, acceptable and provides national, local or community benefits which clearly outweigh the likely impacts, including the greenhouse gas emissions associated with both the extraction and use of hydrocarbons **~~for energy~~**;
Paragraph 6.1.12	Figure 7 presents the Minerals Safeguarding Areas for Herefordshire, incorporating: areas of reserve indicated by the British Geological Survey data; surface coal resource areas from the Coal Authority; currently **~~permitted~~ consented** quarries and their associated infrastructure; the operating rail head at Moreton-on-Lugg; and the disused railhead at Moreton Business Park.
Paragraph 6.1.15	Policy M2 applies to all minerals resources, regardless of whether they have **gained the necessary planning permission to be worked.** **~~been permitted to be extracted.~~**
Paragraph 6.2.4	Therefore, regardless of which forecast most closely represents the real outcome for sand and gravel over the lifetime of the Draft MWLP, there will be a need for additional reserves of sand and gravel to be **~~permitted~~ consented** to meet demand from 2027 onwards.
Paragraph 6.2.6	Recognising the advantages of working an area efficiently, specific sites for future sand and gravel extraction are allocated adjacent or near to existing **~~permitted~~** sites **with planning permission to be worked**.
Paragraph 6.2.13	There may remain a need for additional reserves of crushed rock to be **~~permitted~~ consented** to meet demand from 2027 onwards.
Paragraph 6.2.15	Recognising the advantages of working an area efficiently, specific sites for future crushed rock extraction are allocated adjacent or near to existing **~~permitted~~** sites **with planning permission to be worked**.
Paragraph 6.3.4	There are six building stone delves currently **~~permitted~~ consented** and active, all of which would be suitable in principle to gain an extension of time to enable extraction to be completed.
Policy W1/1, 2 & 3	1. **~~permitting~~ supporting** development that enables delivery of the circular economy; 2. **~~permitting the~~ supporting** infrastructure necessary to recover phosphorus for beneficial purposes; 3. **~~permitting~~ supporting** waste treatment development that effectively diverts waste from landfill;
Paragraph 7.2.1	The three most prevalent solid wastes received at **~~permitted~~ consented** facilities in Herefordshire are: municipal at around 45% (principally waste from households); construction and demolition wastes, at around 30%; and agriculture and processing wastes, at around 20%.

New last sentence at paragraph 7.2.11	**Policy W3 ~~is~~ does not ~~intended to~~ support the development of anaerobic digestion facilities intended to be fed on crops grown for that purpose (commonly referred to as energy crops and often ~~involving~~using maize/corn).**
Paragraph 7.2.27	**~~The approach may have already been implemented and should be accompanied by demonstration of its achievements, or it may be proposed alongside the proposed development. Where an approach has already been implemented and further approaches are available to the unit, these should be proposed.~~**
Policy W3/2	Anaerobic digestion will be supported where its use is **~~primarily~~** intended to manage natural wastes generated **primarily** on the agricultural unit within which it is located.
Policy W3/3	All development proposals will be required to demonstrate **~~the approach undertaken within that unit contributes to achieving~~** nutrient neutrality, or betterment, within the River Wye SAC.

Notes

HRA = Habitats Regulations Assessment

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Date: 03 December 2020