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## Minerals Need Assessment Sensitivity Paper

Herefordshire Minerals and Waste  
Local Plan

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## 1. Introduction

### 1.1 Background and Purpose of the Report

- 1.1.1 Work commenced on preparation of Herefordshire Minerals and Waste Local Plan (the 'MWLP') in 2016, with the publication draft MWLP made available for public consultation in Spring 2021.
- 1.1.2 Four iterations of the Minerals Need Assessment (MNA) have been prepared:
- MNA 2017, dated February 2017 – minerals data from years 2014 and 2015, and WNA 2017
  - MNA 2018, dated November 2018 – minerals data from years 2017 and 2018, and WNA 2018
  - MNA 2019, dated March 2020 – minerals data from years 2018 and 2019, and WNA 2019
  - MNA 2021, dated May 2022 – minerals data from years 2019 and 2020, and WNA 2021.
- 1.1.3 All of the MNA recognise that demand for aggregates can be estimated in a number of different ways, with those most commonly used being:
- Gross Value Added forecasts;
  - population projections;
  - household or housing projections; and
  - Core Strategy infrastructure requirements.
- 1.1.4 These have been used as appropriate throughout the MNA.
- 1.1.5 In preparing the MNA 2021, new evidence was realised that made it appropriate to reconsider the assumptions that have been used to forecast aggregates demand when based on household/housing projections.
- 1.1.6 This paper has been prepared to test the sensitivity of those calculations using the most up to date information as presented within the MNA 2021.

### 1.2 Nature of this Report

- 1.2.1 It was considered important to update the MNA 2021 with the most recent information, but to keep that updated assessment consistent with the approach used in the previous MNAs. Consequently, the MNA 2021 has been prepared as a straightforward update, using the most recent data available.
- 1.2.2 This report has been prepared as a sensitivity analysis to the MNA. It considers only the forecast demand for aggregates when calculated on the basis of household/housing projections and in terms of the amount of aggregate required for each dwelling.

## 2. Sensitivity Calculations of Household/Housing Projections

### 2.1 Introduction

- 2.1.1 The forecasts based on household/housing projections use a series of assumptions for the amount of aggregate used in the constructing of a dwelling to project the demand forward to 2041, using an assumed amount of aggregate per household.
- 2.1.2 Two different sources were used to determine the number of households. The MNA 2017 and MNA 2018 both simply used the housing trajectory from the adopted Herefordshire Core Strategy. The MNA 2019 was prepared both to consider updates to the available data and to take account of the extended end date of the MWLP to 2041. Because of the extended timeframe, the housing trajectory in the Core Strategy (which plans for years up to 2030/31) now covers less than half of the timeframe of the MWLP. Consequently, the housing trajectory was considered to be of limited value in predicting demand for the purposes of the MWLP. Instead, the ONS housing projections were used as an alternative prediction of housing growth in the MNA 2019 and again in the MNA 2021.
- 2.1.3 In all MNA, the household projection forecast used the following assumptions to calculate future demand:
- 60 tonnes of aggregates are used to construct the average dwelling, from Planning4Minerals<sup>1</sup> and the BGS website<sup>2</sup>;
  - the need can be as high as 400 tonnes of aggregates used when associated infrastructure is taken into account, from the BGS website<sup>2</sup> and 2008 BGS report<sup>3</sup>;
  - construction accounts for 15% of total aggregate demand, from CPA 2014<sup>4</sup>.
- 2.1.4 The forecast of demand based on household projections consequently uses the planned yearly increase in the number of dwellings and multiplies this by 400 (the higher estimate) to calculate the demand for aggregate for the construction of dwellings and associated infrastructure. This figure is then multiplied by 6.66 to account for the additional 85% of aggregates for uses other than construction (see Table 4.5 of the MNA 2021).
- 2.1.5 In preparing the MNA 2021, sources for the assumptions used in the MNA were checked, to confirm they remain valid. This review indicated that the approach used to forecast aggregate demand on the basis of household/housing projections should be re-examined, principally in relation to:
- the assumption that construction only accounts for 15% of total aggregate demand; and
  - the tonnage of aggregate needed to construct a typical home.

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<sup>1</sup> Planning4Minerals: A Guide on Aggregates, published by the Quarry Products Association, the British Marine Aggregate Producers Association, the BGS and Entec UK Ltd, 2006

<sup>2</sup> BGS website <https://www2.bgs.ac.uk/mineralsuk/mineralsyou/whydo.html>

<sup>3</sup> The Need for Indigenous Aggregates Production in England, BGS, 2008  
[http://nora.nerc.ac.uk/id/eprint/3711/1/Aggregates\\_-\\_Final\\_Report\\_June\\_2008.pdf](http://nora.nerc.ac.uk/id/eprint/3711/1/Aggregates_-_Final_Report_June_2008.pdf)

<sup>4</sup> Construction Products Association Press Release 14 April 2014

## Construction as 15% of total aggregate demand

- 2.1.6 CPA 2014, a press release published in April of that year, suggests that construction accounts for 15% of total aggregate demand.
- 2.1.7 It was this press release that prompted the approach within the MNA to uplift the calculated household projections assumption of 400 tonnes per house by 6.66 to generate a total (100%) aggregate demand using this assumption.
- 2.1.8 CPA 2014 could not be found in the evidence review for MNA 2021; it appears to have been withdrawn from the CPA website.
- 2.1.9 This casts doubt on the information provided in the press release that construction accounts for 15% of demand for aggregates. Planning4Minerals suggests not. It relies upon the European Standard to advise that '*Aggregates are raw materials that are used to make construction products such as lime, mortar, asphalt and concrete, which in turn are used to build our houses, roads, schools, offices, hospitals and other developments within our urban and rural environments. Specifically, aggregates are defined as: "A granular material used in construction. Aggregate may be natural, manufactured or recycled."*' (European Standard BSEN 12620: 2002). [Section 1.4, page 5]. This indicates that construction accounts for 100% of demand for aggregates.
- 2.1.10 Further, a 2010 report<sup>5</sup> prepared for the West Midlands Regional Assembly states that representatives of the Minerals Product Association (MPA) advised that approximately 60% of demand for aggregates for construction is for development associated with meeting future housing/infrastructure targets/needs for the Region, whilst the remaining 40% of demand is for existing redevelopment/refurbishment.
- 2.1.11 It could therefore be assumed that projecting demand on the basis of annual numbers of new dwellings would underestimate the demand by 40%, as this would fail to take account of demand for the refurbishment of existing dwellings.
- 2.1.12 Consequently, it is considered appropriate to consider the forecast demand for aggregate without applying the 6.66 uplift (as per paragraph 2.1.7), but applying a 0.66 uplift to allow for the 40% of demand associated with refurbishment needs (as per paragraph 2.1.10).

## Tonnages required to build a typical home

- 2.1.13 In a recent press release, the MPA published a figure of 200 tonnes of aggregates being required to build a typical home<sup>6</sup>.
- 2.1.14 This halves the European Aggregates Association's figure of up to 400 tonnes<sup>7</sup> (although this is the same tonnage per dwelling assumption as the 2008 BGS report assumption used in the MNA) and is substantially more than the estimate presented in Planning4Minerals, of 60 tonnes.

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<sup>5</sup> Sub-Regional Apportionment of Aggregates Provision in the West Midlands Region 2005 – 2020: Consultation Paper, Land Use Consultants, February 2010

<sup>6</sup> Profile of the UK Mineral Products Industry: 2020 Edition, [https://www.mineralproducts.org/MPA/media/root/Publications/2021/Profile\\_of\\_the\\_UK\\_Mineral\\_Products\\_Industry\\_2020\\_Spread.pdf](https://www.mineralproducts.org/MPA/media/root/Publications/2021/Profile_of_the_UK_Mineral_Products_Industry_2020_Spread.pdf)

<sup>7</sup> <https://uepg.testurl.fr/pages/uses>

2.1.15 Consequently, it is considered appropriate to consider the forecast demand for aggregate based on household/housing projections using this full range of assumed tonnages required.

## 2.2 Sensitivity Calculations

2.2.1 Sensitivity calculations have been completed across both sand and gravel and crushed rock to consider both: a 'flat' 400 tonnes of aggregate per dwelling (i.e. not applying the 6.66 uplift); and the MPA assumption of 200 tonnes of aggregate per dwelling.

2.2.2 The sensitivity analysis has assumed that construction constitutes 100% of total demand for aggregates. It further assumes that new construction accounts for 60% of total demand and therefore uplifts the demand from household projections by two thirds (67%) to take account of refurbishment needs.

2.2.3 These calculations are shown below, presented as an extension to the summary tables taken from the MNA 2021.

2.2.4 The sensitivity analysis, using the updated set of assumptions, significantly reduces the forecast demand for both sand and gravel and crushed rock.

**Table 1 Summary of sand and gravel forecast demand at 2041, assuming current level of import (MNA 2021, Table 4.7)**

| Current level of import Scenario                                     | Demand (tonnes) | Permitted reserve (tonnes) | Landbank    | Tonnage required to maintain 7 year landbank |
|--|-----------------|----------------------------|-------------|--|
| <b>MNA 2021 forecasts</b>  |                 |                            |             |  |
| <b>GVA growth (highest forecast)</b>                                 | 284,000         | 0                          | 0 years     | 4,030,000                                    |
| <b>Population growth, demand at 4.6 tonnes of aggregate per head</b> | 98,000          | 708,000                    | 7.3 years   | 0  |
| <b>ONS household projections</b>                                     | 154,000         | 0                          | 0 years     | 2,353,000                                    |
| <b>Sensitivity test forecasts</b>                                    |                 |                            |             |  |
| <b>400 tonnes per household</b>                                      | 38,000          | 1,710,000                  | 41.4 years  | 0  |
| <b>200 tonnes per household</b>                                      | 19,000          | 2,194,000                  | 106.3 years | 0  |

**Table 2 Summary of sand and gravel forecast demand at 2041, assuming self-sufficiency in sand and gravel production (MNA 2021, Table 4.8)**

| Self sufficient Scenario   | Demand (tonnes) | Permitted reserve (tonnes) | Landbank   | Tonnage required to maintain 7 year landbank |
|--|-----------------|----------------------------|------------|--|
| <b>MNA 2021 forecasts</b>  |                 |                            |            |  |
| <b>GVA growth (highest forecast)</b>                                 | 714,000         | 0                          | 0 years    | 12,816,000                                   |
| <b>Population growth, demand at 4.6 tonnes of aggregate per head</b> | 246,000         | 0                          | 0 years    | 3,935,000                                    |
| <b>ONS household projections</b>                                     | 384,000         | 0                          | 0 years    | 9,901,000                                    |
| <b>Sensitivity test forecasts</b>                                    |                 |                            |            |  |
| <b>400 tonnes per household</b>                                      | 96,000          | 256,000                    | 2.5 years  | 466,000                                      |
| <b>200 tonnes per household</b>                                      | 48,000          | 1,468,000                  | 28.4 years | 0  |

**Table 3 Summary of crushed rock forecast demand at 2041, assuming current level of import and self-sufficiency (MNA 2021, Table 4.9)**

| Scenario   | Demand 2021 2041                  |                           |
|--|-----------------------------------|---------------------------|
|  | Assuming imports at current level | Assuming self sufficiency |
| <b>MNA 2021 forecasts</b>  |                                   |                           |
| <b>Population growth, demand at 4.6 tonnes of aggregate per head</b> | 4,016,000                         | 9,563,000                 |
| <b>ONS household projections</b>                                     | 7,900,000                         | 18,810,000                |
| <b>Sensitivity test forecasts</b>                                    |                                   |                           |
| <b>400 tonnes per head</b>   | 1,975,000                         | 4,703,000                 |
| <b>200 tonnes per head</b>   | 988,000                           | 2,351,000                 |

## 2.3 Conclusion

- 2.3.1 The conclusions of the MNA 2021 are that, regardless of which forecast is used to predict demand for sand and gravel and crushed rock, planning conditions currently exist which require all operational aggregate quarries to cease operation within the lifetime of the MWLP. Further, discussions with minerals planning officers at Herefordshire Council would indicate that the quarry operators are working through the permitted reserves. It is likely that new reserves of both sand and gravel and crushed rock will need to become operational to meet demand before 2041.
- 2.3.2 Although the forecasts from the sensitivity calculations are significantly lower than the forecasts in the MNA 2021, it remains the case that provisions for new reserves or extensions to existing operations will be required in the MWLP.
- 2.3.3 In preparing the MWLP it has been consistently recognised that data in relation to minerals is neither comprehensive nor easy to navigate; there remains much that is unknown or uncertain. However, these sensitivity calculations clearly indicate that the allocations proposed within the MWLP are sufficient, would enable Herefordshire to be self-sufficient (albeit on a tonnage basis) and have flexibility to respond to MASS demands and/or infrastructure demands such as HS2.



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