

Minerals Local Plan Background Document

Worcestershire Local Aggregates Assessment

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1. Executive Summary

- 1.1. The National Planning Policy Framework requires Minerals Planning Authorities to plan for a steady and adequate supply of aggregates by preparing a Local Aggregate Assessment (LAA).
- 1.2. The LAA is an assessment of the demand for and supply of aggregates in the County. It is required to be updated annually. It will inform the Minerals Local Plan and will be a material consideration in the determination of planning applications.
- 1.3. The LAA is required to:
 - forecast the demand for aggregates based on average 10 years sales data and other relevant supply information.
 - analyse supply options through the consideration of current planning permissions and Minerals Local Plan allocations; and
 - assess the balance between demand and supply.

It must then conclude whether there is a shortage or a surplus of supply of aggregates. If there is a shortage of supply it must identify how this is being addressed.

Demand forecast

- 1.4. The LAA for Worcestershire uses a phased approach to forecasting demand.
 - **Up to and including 2016:** The Council will continue to follow the agreement between West Midlands Mineral Planning Authorities and industry regarding the provision to be made by each authority.
This agreement does not extend beyond 2016.
 - **Beyond 2016:** Annual provision requirements will be calculated from a rolling average of annual sales levels in Worcestershire in the last 10 years.

<u>Up to and including 2016</u>	-----2016-----	<u>Beyond 2016</u>
Required provision per annum:		Rolling average of annual sales in the last 10 years.
Sand and gravel: 0.871 million tonnes		<u>Indicative</u> current 10 year average:
Crushed rock: 0.163 million tonnes		Sand and gravel: 0.764 million tonnes
		Crushed rock: 0.118 million tonnes

Analysis of supply

- 1.5. The analysis of supply uses the demand forecast to assess the “landbank” for minerals in the County. In aggregate planning, the term “landbank” is used to refer to the stock of reserves of minerals with planning permission for extraction within a particular area; it can be used as a tool to assess how long supply can be maintained for based on forecasted level of demand. It is expressed in years:
- 1.6. The current landbank for sand and gravel is **4.49 years** and for crushed rock the last publicly available landbank figure was **3.31 years**.¹
- 1.7. The Local Aggregate Assessment assumes that supply from recycled and secondary aggregates, marine aggregates and imports will remain unchanged.

Assessment of the balance between demand and supply

- 1.8. The National Planning Policy Framework requires mineral planning authorities to maintain a minimum landbank of 7 years for sand and gravel and a minimum landbank of 10 years for crushed rock. This will be used to determine whether there is a shortage or surplus of supply.
- 1.9. There is currently a shortage of supply for both sand and gravel and crushed rock in Worcestershire.

Action to address the shortage in supply

- 1.10. The ability to increase the landbank in Worcestershire depends on the industry coming forward with proposals. No permissions for crushed rock workings have been refused by the Council in the last 10 years and there has been no known interest in opening a new crushed rock quarry in the county in over 20 years. 6 out of 8 applications for sand and gravel working were permitted by the Council in the last 5 years and the two refused applications were later permitted on appeal, even so these have not been sufficient however to stem the decline in the landbank. Two further applications for sand and gravel working, at Strensham and Holdfast, are currently undetermined. If these applications were to be permitted they would have a combined supply of 0.833 million tonnes which equates to almost 1 years supply based on current apportionment levels.
- 1.11. The lack of recent interest in crushed rock in Worcestershire could be due to the quality of resources in the County, however it is possible that the absence of Preferred Areas for hard rock in the current Minerals Local Plan could be a contributing factor. There are also limited numbers of

¹ Sales data will not be published where there are less than 3 operational sites in an area. The last time there were three operating quarries producing crushed rock producing quarries in Worcestershire was 2003.

Preferred Areas remaining in the current Minerals Local Plan for sand and gravel.

- 1.12. Preparation of a new Minerals Local Plan is currently underway. During the development of this plan alternative approaches will be considered with a view to enabling the appropriate supply of aggregates in the County.

Contents

1. Executive Summary	2
Demand forecast	2
Analysis of supply	3
Assessment of the balance between demand and supply	3
Action to address the shortage in supply	3
2. Introduction	7
3. Aggregate working in Worcestershire	9
Supply of primary aggregates	10
Sand and gravel	10
Crushed Rock	12
Secondary and Recycled Aggregates	13
Secondary aggregates	13
Recycled aggregates	14
Imports and exports of aggregates	15
Marine-dredged aggregates	16
4. Method Statement	18
Historical context	18
Reasons for change	18
Method for forecasting demand in Worcestershire	19
Secondary and recycled aggregates	20
Method for analysing adequacy of supply in Worcestershire	21
5. Forecast of demand and analysis of supply for sand and gravel	21
Demand forecast	21
Up to and including 2016	21
Beyond 2016	21
Analysis of Supply	22
Assessment of the balance between demand and supply	23
Action to address the shortfall in supply	23
6. Forecast of demand and analysis of supply for crushed rock	25
Demand forecast	25
Up to and including 2016	25
Beyond 2016	25
Analysis of supply	26
Assessment of the balance between demand and supply	27
Action to address the shortfall in supply	27
8. Conclusions	28

Capability of supply and competition issues	28
9. Appendices	30
Appendix 1: Compliance with NPPF	30

2. Introduction

2.1. "Minerals are essential to support sustainable economic growth and our quality of life. It is therefore important that there is sufficient supply of material to provide the infrastructure, buildings, energy and goods that the country needs. However, since 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." (NPPF paragraph 142)

2.2. The National Planning Policy Framework requires Minerals Planning Authorities to plan for a steady and adequate supply of aggregates by preparing an annual Local Aggregate Assessment (LAA).

2.3. This is the first Local Aggregate Assessment for Worcestershire. It has been developed with regard to:

- The requirements of the *National Planning Policy Framework*
- The *Guidance on the Managed Aggregate Supply System*²
- The responses received to the consultation document *The Draft Local Aggregates Assessment for Worcestershire 2012*³ which was published for consultation in Autumn 2012.

2.4. The Local Aggregate Assessment is required to:

- forecast the demand for aggregates based on average 10 years sales data and other relevant supply information.
- analyse supply options through the consideration of current planning permissions and Minerals Local Plan allocations; and
- assess the balance assessment of the balance between demand and supply.

It must then conclude whether there is a shortage or a surplus of supply of aggregates. If there is a shortage of supply it must identify how this is being addressed.

2.5. It will be used to identify the level of provision that should be made for aggregates in the Minerals Local Plan and will be a material consideration in the determination of planning applications.

2.6. It is structured into five main sections:

Section 3: Sets out the context for aggregate supply in Worcestershire to give a basic understanding of aggregate working in the county and trends over recent years.

Section 4: is a method statement which outlines how demand forecasts will be made and how supply will be analysed.

² *Guidance on the Managed Aggregate Supply System* Department for Communities and Local Government (October 2012)

³ October 2012 – January 2013

Section 5: applies this method to sand and gravel, forecasting demand, assessing supply and establishing whether there is a shortage or surplus.

Section 6: does the same for crushed rock.

- 2.7. A separate report has been prepared to set out how the Council will approach the issue of the steady and adequate supply of industrial and energy minerals.

Next steps

- 2.8. The Local Aggregate Assessment will be updated annually through the Minerals and Waste Local Development Scheme Annual Monitoring Report (AMR) published by the Council in December each year. The current and previous AMRs are available on www.worcestershire.gov.uk/AMR. If you would like to be notified when new AMRs are published please contact minerals@worcestershire.gov.uk providing your e-mail address.
- 2.9. This is the council's first Local Aggregate Assessment. It will be updated through the Annual Monitoring report. It will be also be reviewed as other Mineral Planning Authorities in the West Midlands Aggregates Working Party develop and adopt their own Local Aggregate Assessments. Any issues arising will be discussed in line with the *Duty to Cooperate*.

3. Aggregate working in Worcestershire

3.1. The following primary aggregates are found in Worcestershire:

Sand and Gravel

- **Solid Deposits** mainly found in the north-east of the County in the Kidderminster Formation, which yield coarse sand and gravel with a high gravel content capable of producing high grade concreting aggregate. Elsewhere in the formation, where the pebbly horizons are absent, building or soft sands are present. The Wildmoor Formation contains sources of moulding sand used in the foundry industry.
- **River Terrace Deposits** are most widespread in the Severn and Avon Valleys.
- **Glacial Deposits** are found in association with boulder clay in the north-east of the County and to the north-west of Evesham around the Lenches.

Solid, river terrace and glacial deposits will be considered collectively under the term “sand and gravel” in the rest of this report.

Crushed Rock

- **Silurian Limestone** present in the Abberley/ Suckley/ Malvern/ Ledbury range of Hills,
- **Oolitic Limestone** present in a small area in the extreme south-east of the County and on Bredon Hill
- **Cambrian Quartzite** which forms the central axis of the Lickey Hills
- **Igneous and Metamorphic Rocks** which occur in the Malvern Hills
- **Other sources of rock** exist in the County such as Old Red Sandstone and Jurassic limestone but do not have the necessary properties of composition, strength, durability and porosity to be considered as sources of aggregate at present.

Siurian limestone, oolitic limestone, cambrian quartzite, igneous and metamorphic rocks will be considered collectively under the term “crushed rock” in the rest of this report.

3.2. Recycled and secondary aggregates also have an important role to play in the supply of aggregates:

- **Secondary aggregates** is a term often used to describe mineral that is produced as a by-product of other mining or quarrying activities or as a by-product of an industrial process, There are currently no industrial processes in Worcestershire which are known to produce secondary aggregates.
- **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 involves the processing of waste materials to remove unwanted or inappropriate material such as fines, wood, plastic and

metal. It will usually include crushing and screening. The recycled aggregate is then re-used, usually for a less demanding application.

Recycled aggregates and how they should be managed are considered in the Waste Core Strategy for Worcestershire⁴.

Supply of primary aggregates

- 3.3. Sales data is commonly used when considering the supply of aggregates. This can have weaknesses as sales will vary depending on both supply and demand factors in the market, however it is considered to be the best indicator of the state of the market. It is also national policy to use average sales to derive minimum annual provision requirements for mineral planning authorities.
- 3.4. This section considers sand and gravel and crushed rock separately. In each case sales trends in Worcestershire and the West Midlands are outlined, followed by an assessment of minimum annual provision requirements and an analysis of the stock of reserves of minerals with planning permission.

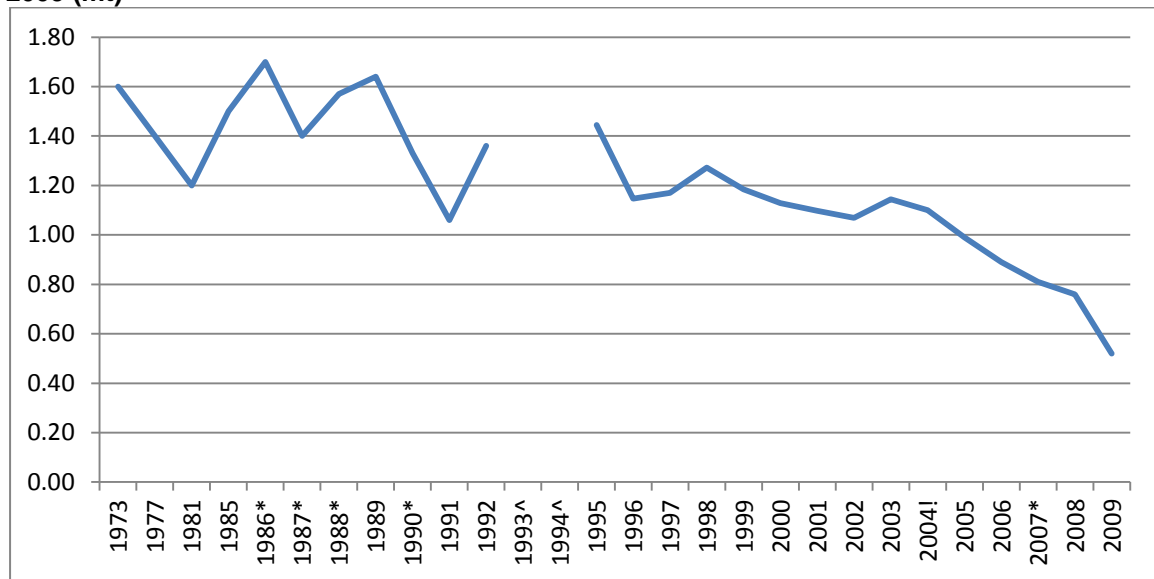
Sand and gravel

Sales context

- 3.5. Figure 3.1 shows the levels of sand and gravel sales in Herefordshire and Worcestershire from 1973 to 2010. During much of this period Hereford and Worcester County Council existed as a single minerals planning authority, with the data collated for the entire area. However in 1998 Herefordshire and Worcestershire were split and Table 3.1 gives detail of sales in Worcestershire alone in the last 10 years (the most recent data available is for 2010).
- 3.6. It is clear that there has been a gradual decline in sales over the last 20 years when considering both data for Herefordshire and Worcestershire combined and that for Worcestershire alone. This gradual decline was followed by a sharp drop in sales following the economic crisis in 2008. This differs from the trends across the West Midlands as a whole where sales remained fairly constant for the 10 years preceding the economic crisis in 2008 and then fell sharply, with only a small recovery in 2010 (shown in Figure 3.2).

⁴ The Waste Core Strategy for Worcestershire was adopted in November 2012. The relevant documents are available to view on www.worcestershire.gov.uk/wcs.

Figure 3.1 Historic sand and gravel sales: Herefordshire and Worcestershire 1973 – 2009 (mt)



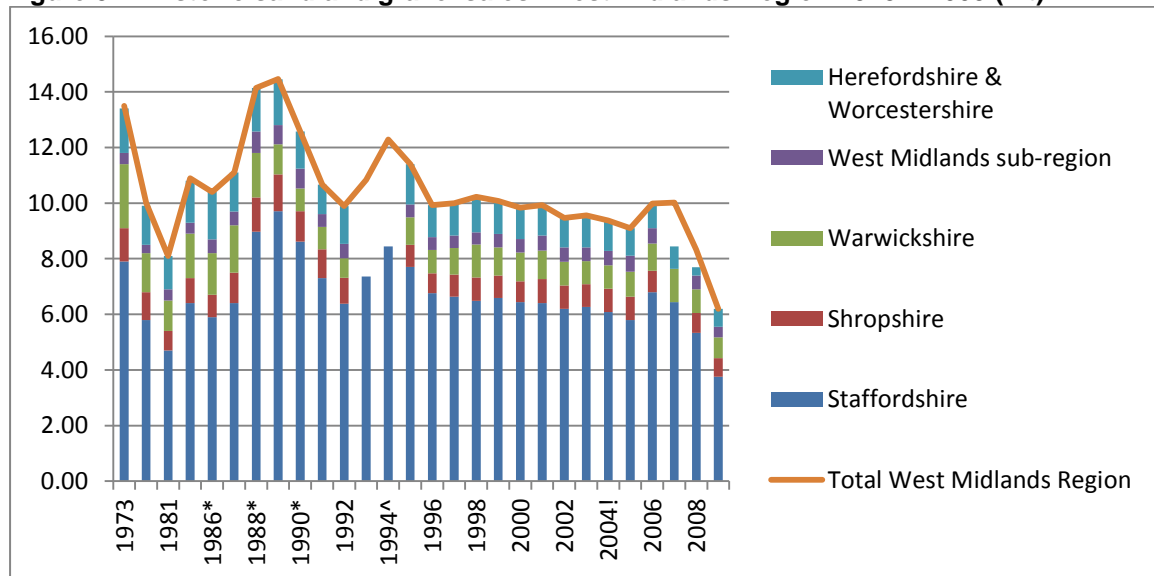
Source: West Midlands Regional Aggregate Working Party Annual Reports
 * Figures derived from Office of National Statistics not West Midlands Regional Aggregates Working Party
 ! Data includes estimates due to difficulties in data collection and error in reports for total regional sales.
 ^ Missing data (Not available in RAWP report)

Table 3.1 Historic sand and gravel sales: Worcestershire 2000 – 2010 (mt)

	2000	2001	2002	2003	2004 (est)	2005	2006	2007	2008	2009	2010
Worcestershire	0.84	0.84	0.83	0.89	0.85	0.75	0.7	0.81	0.76	0.52	0.62

Source: West Midlands Regional Aggregate Working Party Annual Reports

Figure 3.2. Historic sand and gravel sales: West Midlands Region 1973 – 2009 (mt)



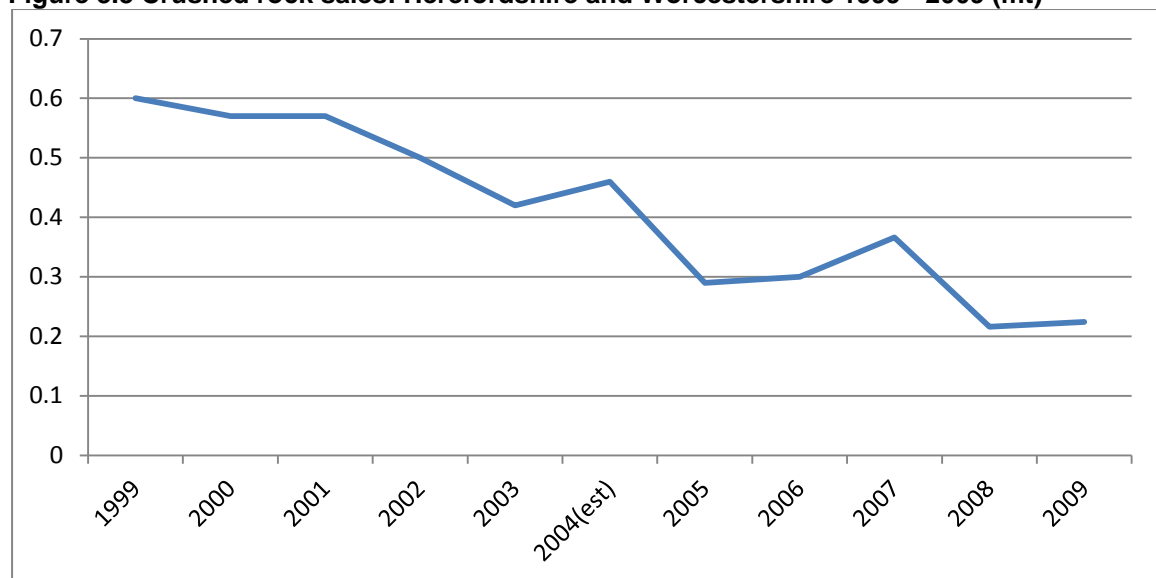
Source: West Midlands Regional Aggregate Working Party Annual Reports
 * Figures derived from Office of National Statistics not West Midlands Regional Aggregates Working Party
 ! Data includes estimates due to difficulties in data collection and error in reports for total regional sales.
 ^ Missing data

Crushed Rock

Sales Context

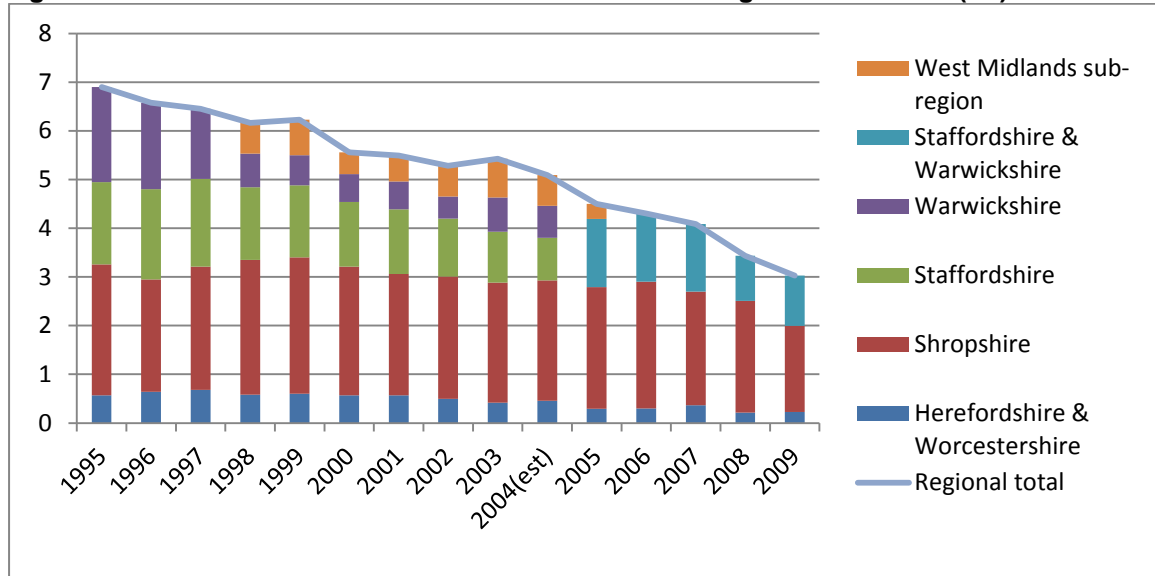
- 3.7. Sales data for crushed rock production is not available for Worcestershire due to the long standing confidentially arrangements agreed between the industry and government to protect operators' commercial interests. This means that sales data will not be released or published where there are less than 3 operational sites in an area. The last time there were three operating quarries producing crushed rock in Worcestershire was 2003 and since then crushed rock sales data for Worcestershire has been combined with that for Herefordshire. The same situation applies for Staffordshire and Warwickshire and their figures are now combined.
- 3.8. Figure 3.3 shows that the combined figures for crushed rock sales in Herefordshire and Worcestershire have declined in the past 10 years. This trend is true of all sub-regions within the West Midlands (see Figure 3.4).
- 3.9. The most recent data available is for 2010, however officers are aware that the only currently permitted crushed rock site in Worcestershire ceased operation in March/April 2012 and is currently being restored. There are therefore currently no operational crushed rock quarries in Worcestershire.
- 3.10. In the West Midlands Region as a whole crushed rock sales have halved in the last 15 years, with a decline in sales in all sub-regions except Shropshire (see Figure 3.4).

Figure 3.3 Crushed rock sales: Herefordshire and Worcestershire 1999 - 2009 (mt)



Source: West Midlands Regional Aggregate Working Party Annual Reports

Figure 3.4. Historic crushed rock sales: West Midlands Region 1995 – 2009 (mt)



Source: West Midlands Regional Aggregate Working Party Annual Reports

Secondary and Recycled Aggregates

3.11. It is estimated that about 28% of national aggregate provision is from recycled and secondary aggregates⁵ and they play an increasingly important role in supply.

Secondary aggregates

3.12. The term "secondary aggregate" is often used to describe mineral that is produced as a by product of or ancillary activity to the primary product. They are usually defined as:

- aggregates obtained as a by product of other quarrying and mining operations, such as china clay waste, (used in some areas as mortar and concreting sand) slate or colliery waste, (widely used as bulk fill); or
- aggregates obtained as a by product of other industrial processes, such as blast furnace/steel slag (wide uses, including being ground as a cementitious material), power station ash (used as a cement substitute), incinerator ash or spent foundry sand.

3.13. There are currently no industrial processes in Worcestershire which are known to produce secondary aggregates.

3.14. There is potential for some provision of secondary aggregates in the future, with an Energy from Waste Plant recently being granted planning

⁵ Minerals Product Association response to "Competition Commission investigation into the markets for the supply of aggregates, cement and ready-mix concrete in GB" May 2012
http://www.competition-commission.org.uk/assets/competitioncommission/docs/2012/aggregates-cement-and-ready-mix-concrete/statement_of_issues_mpa_third_party_submission.pdf

permission at Hartlebury. This plant is predicted to produce 40,000 tonnes per annum of incinerator bottom ash, which is capable of use as secondary aggregate.

Recycled aggregates

- 3.15. 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 involves the processing of waste materials to remove unwanted or inappropriate material such as fines, wood, plastic and metal. It will usually include crushing and screening. The recycled aggregate is then re-used, usually for a less demanding application.
- 3.16. A significant amount of recycled aggregate is produced in the county from the management of construction and demolition waste (C&D waste). In order to ensure that adequate provision was made in the Waste Core Strategy for the recycling of construction and demolition waste in Worcestershire, background work was undertaken to estimate how much waste was produced.
- 3.17. There are no reliable assessments of C&D arisings or set approaches for making estimates about waste arisings or projecting waste growth for C&D waste, nationally or locally. The Waste Core Strategy background document: *Arisings and Capacity* considered several alternative approaches. A "preferred methodology" was developed based on the method used in RSS Phase 2 Future Capacity Requirements Study (WMRA) and this formed the evidence base for the Waste Core Strategy.
- 3.18. In summary, this method uses a development index to disaggregate estimates of regional C&D arisings into a county-level figure. The method assumes that development will initially be concentrated on previously developed (brownfield) land and that such sites will generate considerable volumes of C&D waste. It assumes that over time more new development will take place on greenfield sites and that this will result in wastes produced from redevelopment decreasing. This approach has been subject to examination for the Phase 2 Review of the West Midlands RSS and the Worcestershire Waste Core Strategy and was considered sound on both occasions..
- 3.19. The projected arisings of C&D waste in Worcestershire based on this approach are set out in Table 3.2.

Table 3.2 Projected Arisings of Commercial and Industrial Waste (Worcestershire Waste Core Strategy)

	2010	2015	2020	2025	2030
Projected arisings of C&D waste	510,555	419,520	419,520	419,520	419,520

- 3.20. The Waste Core Strategy is based on a target that a minimum of 75% of this material could be diverted from landfill and the Strategy identifies the

need for additional capacity to recycle C&D waste of 105,000 tpa in Worcestershire over the period to 2025/26 to meet this.

- 3.21. This is not a cap on recycling capacity, but gives an indication of proportion of C&D waste which it is realistic to anticipate being recycled. Based on these figures it is likely that the availability of secondary aggregates would be 314,640 - 419,520 tonnes per annum between 2015/6 and 2035/36, depending on whether 75% or 100% of C&D waste is recycled.
- 3.22. The *Phase 2 Future Capacity Requirements Study* identifies that much, if not all of this capacity could be provided by mobile plant in Worcestershire. The Waste Core Strategy nonetheless makes provision for at least 25% of that capacity to be met from static sites and the land requirement in the Strategy reflects this.
- 3.23. Static C&D recycling facilities in Worcestershire currently have the capacity to manage about 122,000 tonnes per annum of inert waste. Mobile plants are also known to operate in the county and appear to process significant volumes of material. However it is not possible to assess the tonnage processed or the proportion of this which is used as aggregates at present, particularly as this type of material is often re-used on-site.

Imports and exports of aggregates

- 3.24. The best source of information about imports and exports is the *Aggregate minerals survey for England and Wales*. This survey is undertaken about every 4 years and one aspect that it considers is the movement of material. It sets out clear information relating to the inter-regional flow of aggregates. These patterns of movement are illustrated on Figure 3.5 and Figure 3.6.

Figure 3.5. Sand and gravel inter-regional flows, 2009

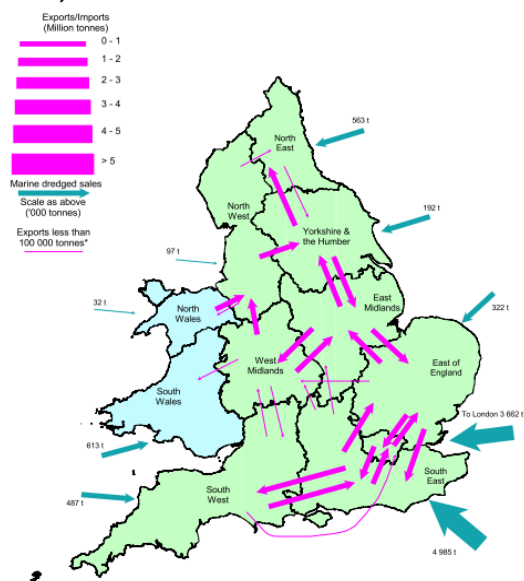
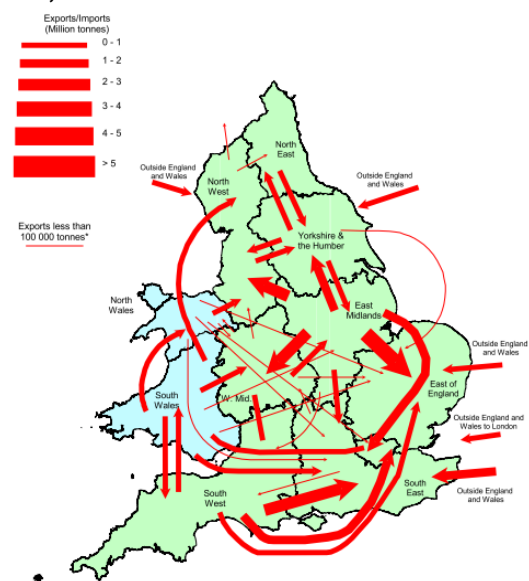


Figure 3.6. Crushed rock inter-regional flows, 2009



Source: "Collation of the results of the 2009 aggregate minerals survey for England and Wales" Communities and Local Government (October 2011)

3.25. The data which is available for Worcestershire in the *Aggregate minerals survey for England and Wales (2009)* is presented in Table 3.3 and Table 3.4, whilst Table 3.5 sets out a basic analysis of this data and shows that although Worcestershire was an overall net importer of aggregate in 2009, Worcestershire was also a net exporter of sand and gravel during this period.

Table 3.3 Exports: Sales of primary aggregates from Worcestershire by principal destination sub-region in 2009

Destination	Land-won sand and gravel	MPA %	Crushed rock	MPA %
Worcestershire	114,000	52%	0	-
West Midlands	59,000	27%	0	-
Elsewhere	45,000	21%	0	-
Total	218,000	-	0	-

Source: "Collation of the results of the 2009 aggregate minerals survey for England and Wales" Communities and Local Government (October 2011) p82

Table 3.4 Imports: Sales of primary aggregates to Worcestershire in 2009

	Land-won sand and gravel	Marine sand and gravel	Total sand and gravel	Crushed Rock	Total primary aggregates
Worcestershire	45,000	13,000	58,000	192,000	250,000

Source: "Collation of the results of the 2009 aggregate minerals survey for England and Wales" Communities and Local Government (October 2011) p95

Table 3.5 Balance of aggregate exports and imports in Worcestershire 2009

	Exports	Imports	Balance
Sand and Gravel	104,000	58,000	Net exporter
Crushed rock	-	192,000	Net importer
Total Primary aggregates	104,000	250,000	Net importer

Source: Based on data in "Collation of the results of the 2009 aggregate minerals survey for England and Wales" Communities and Local Government (October 2011)

3.26. It is not possible to assess how much of this material is imported into Worcestershire from outside of England.

3.27. The *National and Regional guidelines* assume that for the West Midlands as a whole 23mt of primary aggregate will be imported from outside the region. However the most recent figures (Aggregate Minerals Survey 2009) relating to the imports and exports from Wales show that the West Midlands was a net exporter of sand and gravel to Wales, and whilst there were some imports of Crushed Rock from Wales into the West Midlands cross boundary movements with the East Midlands were greater. This gives an indication of the variation in imports and exports over time.

Marine-dredged aggregates

3.28. Sand and gravel deposits occur in many offshore areas around Britain. Most dredging takes place in coastal waters less than 25 km offshore and in water depths of between 18 m and 35 m. Marine aggregates can have special qualities which meet particular specifications.

- 3.29. Worcestershire is an inland county and as such has no marine resources.
- 3.30. Table 3.5 above shows imports of marine sand and gravel in Worcestershire of 13,000 tonnes. Taking into account both land-won and marine sand and gravel, the figures in the Aggregate Minerals Survey 2009 indicate that Worcestershire is a net exporter of sand and gravel.

4. Method Statement

Historical context

- 4.1. In the past the contribution that Worcestershire needed to make to ensure an adequate and steady supply of aggregate minerals was set out in a *sub-regional apportionment*.
- 4.2. The National Government sets out regional apportionments. The regional apportionment was based on projected national demand distributed by region according to the ability of the region to supply aggregates. The West Midlands Regional Apportionment was then divided by the West Midlands Regional Assembly into a sub-regional apportionment based on patterns of past sales. These have been agreed up until 2016.
- 4.3. The sub-regional apportionment is currently set out in the West Midlands Regional Spatial Strategy (RSS), however the system for agreeing sub-regional apportionment existed prior to the RSS forming part of the statutory development plan. Adoption of the sub-regional apportionment prior to the RSS was supported by council resolution.

Reasons for change

- 4.4. This system has existed largely unchanged since the 1970s, however there are several reasons why a new approach needs to be developed:
 - **A sub-regional apportionment has been agreed across the West Midlands to 2016, but agreement does not extend beyond this period.**

The government has expressed its intention to revoke the RSS. Regional planning bodies (including the West Midlands Regional Assembly) have also been abolished, so sub-regional apportionment will not be updated through regional planning policy.

It would be possible for a sub-regional apportionment to be developed by the West Midlands Aggregate Working Party (AWP) and be supported by council resolution of the member Mineral Planning Authorities, as was the case before the RSS. However the future of the West Midlands AWP is currently unclear as the government has required the management of the AWP to be tendered for, and at present there is no chair or secretariat for this group. Without the regional assembly and other regional structures of governance, relationships and agreements may take time to become established and any agreement looks unlikely before the end of 2016.

- **The National Planning Policy Framework (NPPF) and associated guidance places the onus on Mineral Planning Authorities to make demand forecasts through the Local Aggregate Assessment.**

This requires Mineral Planning Authorities to consider the advice of Aggregate working parties but gives flexibility to consider local circumstances.

- 4.5. A method for identifying provision requirements for Worcestershire has therefore had to be developed.

Method for forecasting demand in Worcestershire

- 4.6. In Autumn 2012 the Council published *The Draft Local Aggregates Assessment for Worcestershire 2012*⁶ for consultation. This document set out 5 alternative methods for calculating provision requirements (or forecasting demand). Each of these alternatives was assessed in the document and it was concluded that the requirements for Worcestershire should be based on a range, between the highest and lowest of the alternative options.
- 4.7. The Council has now re-appraised this approach, taking into account:
- The publication of Department for Communities and Local Government "Guidance on the Managed Aggregate Supply System" in October 2012. This provided greater clarity on the methods which should be used in Local Aggregate Assessments.
 - The consultation responses received to *The Draft Local Aggregates Assessment for Worcestershire 2012*⁷. The response did not support the use of a range and asserted that this was likely to create uncertainty.
- 4.8. Following a detailed consideration of the new guidance and the consultation responses received, a phased approach to calculating provision requirements has been developed.
- 4.9. Compliance with the National Planning Policy Framework (NPPF) has been a key consideration in developing this approach. Appendix 1 sets out the Councils justification for this approach against the main requirements in the NPPF.
- 4.10. The following method will form the basis for this and subsequent Local Aggregate Assessments for Worcestershire:

⁶ October 2012 – January 2013

⁷ October 2012 – January 2013

Local Aggregate Assessment method for forecasting primary aggregate demand in Worcestershire

- **Up to and including 2016:** The Council will continue to follow the agreement between West Midlands Mineral Planning Authorities regarding the provision to be made by each authority.

This agreement does not extend beyond 2016.

- **Beyond 2016:** Annual provision requirements will be calculated from a rolling average of annual sales levels in Worcestershire in the last 10 years.

- 4.11. Beyond 2016, the rolling 10 years annual sales average will be compared to the *National and Regional Guidelines for Aggregate Provision in England 2005-2020*.
- 4.12. As the regional apportionment does not vary between 2005 – 2020, the current sub-regional apportionment will be considered for monitoring purposes. Where there is any significant divergence between the sub-regional apportionment and the rolling 10 years annual sales average, the contributing factors will be assessed. This will allow for a 'sense-check' during the first few years of using the new methodology.

Secondary and recycled aggregates

- 4.13. The demand for secondary and recycled aggregates also needs to be taken into account.
- 4.14. Up to and including 2016 the sub-regional apportionment is derived from a projected national demand distributed by region according to the ability of the region to supply aggregates. This projected demand for primary aggregates has been calculated taking into account the contribution of secondary and recycled aggregates to supply, and assumes that approximately 27% of supply will be from alternatives to land-won or marine aggregates. To consider secondary and recycled aggregates further when using this method would risk double counting.
- 4.15. With regard to demand projection beyond 2016, the Waste Core Strategy estimates of C&D waste recycling will be used as the forecast for demand for recycled aggregates (see above). These forecasts predict that levels of C&D waste recycled will be approximately 383,000 tpa up to 2015 and approximately 315,000 tpa beyond 2015.
- 4.16. It is assumed that levels of sales of primary aggregates already reflect the supply contribution made by secondary and recycled aggregates. Although there is a small variation in the projected supply of secondary aggregates in the short-term levels are projected to remain constant from 2015 onwards.

4.17. There are no known sources of secondary aggregates in the County.

Method for analysing adequacy of supply in Worcestershire

4.18. In aggregate planning, the term “landbank” is used to refer to the stock of reserves of minerals with planning permission for extraction within a particular area; it can be used as a tool to assess if an adequate and steady supply of aggregates can be maintained and for how long.

4.19. The length of the landbank for a particular mineral is calculated by:

$$\frac{\text{Total permitted tonnage}}{\text{Annual provision requirements}} = \text{Landbank in years}$$

4.20. Where the landbank does not meet minimum requirements set out in the NPPF it will be considered that there is a shortage of supply of aggregates in the County. Where this is the case, the action proposed to address this shortage will be outlined.

4.21. This approach will ensure that Worcestershire is "open for business" and that if the local economy recovers; the council will actively seek to enable the provision of adequate aggregate supply.

5. Forecast of demand and analysis of supply for sand and gravel

Demand forecast

5.1. The demand forecast represents the minimum annual provision which should be made for sand and gravel in Worcestershire. It will be used to assess the adequacy of supply and will inform the Minerals Local Plan. It will also be a material consideration in the determination of planning applications.

Up to and including 2016

5.2. The annual sub-regional apportionment for sand and gravel in Worcestershire is **0.871** million tonnes.

Beyond 2016

5.3. As the demand forecast will be based on a rolling 10 year average of sales data it is not possible to develop a static figure for provision beyond 2016. It is however useful to consider the current 10 years sales average to give an indication of the level of provision requirement that is likely.

5.4. There is a lag on data availability, with the most recently available data being for 2010. The 10 year sales averages for 2009 and 2010 respectively are set out in Table 5.1 below.

Table 5.1 Sand and gravel sales average 2000-2009

Year	Sand and Gravel sales (Worcestershire)	
	2000-2009	2001-2010
2000	0.839 mt	-
2001	0.836 mt	0.836 mt
2002	0.833 mt	0.833 mt
2003	0.89 mt	0.89 mt
2004(est)	0.85 mt	0.85 mt
2005	0.75 mt	0.75 mt
2006	0.7 mt	0.7 mt
2007	0.81 mt	0.81 mt
2008	0.758 mt	0.758 mt
2009	0.524 mt	0.524 mt
2010	-	0.618 mt
Average	0.779 mt	0.764 mt

- 5.5. As you would expect, although there is some variation between annual sales levels, there is no significant variation in the 10-year averages from year to year. It is therefore possible to say with some certainty that unless there is a significant increase in sales to similar level to those seen in the 1990s, provision requirements beyond 2016 are likely to be at a lower level than the provision requirements up to and including 2016.
- 5.6. Whilst being notable the difference between the apportionment up to and including 2016 and the average sales data is less than 15% and is not considered to be a matter for concern.

Analysis of Supply

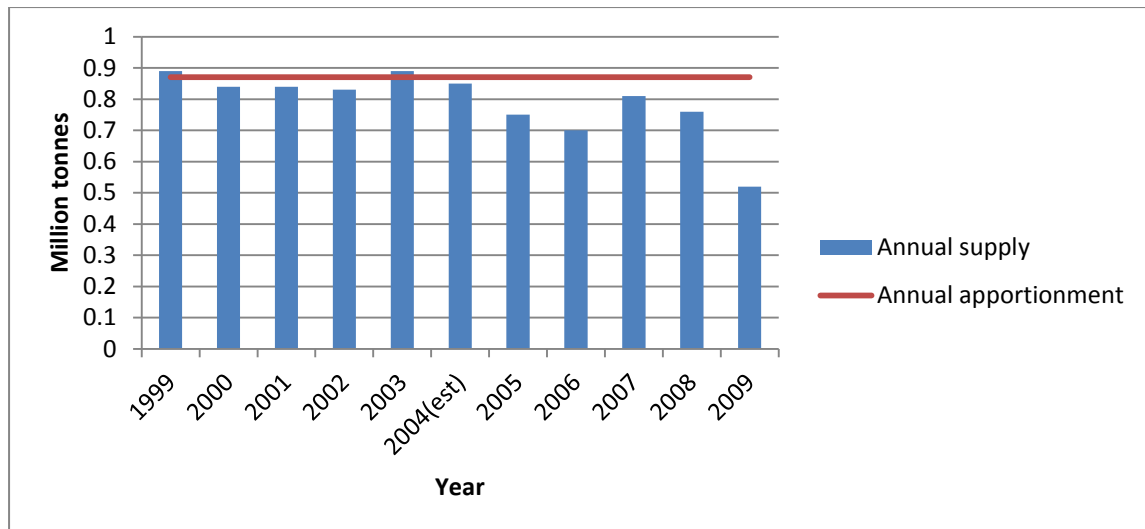
- 5.7. Table 5.2 shows the trend in the landbank for sand and gravel in Worcestershire in years based on the provision requirement of 0.871 million tonnes. Figure 5.1 shows the level of sand and gravel sales in Worcestershire in comparison to the annual apportionment of 0.871 million tonnes.

Table 5.2 Sand and gravel landbank: Worcestershire 2004-2010 (years)

	2004	2005	2006	2007	2008	2009	2010
Permitted reserves		4.3 mt	3.6 mt	4.1 mt	3.021 mt	5.152 mt	4.490 mt
Landbank (years)	6.4	4.9	4.1	4.7	3.65	4.19	4.49

Source: West Midlands Regional Aggregate Working Party Annual Reports

Figure 5.1. Sand and gravel sales and apportionment: Worcestershire 1999 – 2009 (mt)



- 5.8. Two further permissions for sand and gravel working in the County have been granted since 2009, with a combined supply of approximately 1.829 million tonnes. This equates to 2.1 years supply based on the current apportionment. This indicates that the landbank in the County is increasing, however this will not be clear until more up-to-date RAWP figures are published which take into account both new permissions and reserves which have been worked.

Assessment of the balance between demand and supply

- 5.9. The National Planning Policy Framework⁸ sets out that Mineral Planning Authorities should "make provision for the maintenance of landbanks of at least 7 years for sand and gravel" and that "longer periods may be appropriate to take account" of other matters. It is clear that the landbank in Worcestershire is below this based on both the sub-regional apportionment and annual provision requirements based on sales.
- 5.10. Based on this assessment there is a shortage of supply of sand and gravel in the County.

Action to address the shortfall in supply

- 5.11. The ability to increase the landbank is dependent on the industry coming forward with applications for planning permission. In Worcestershire 6 out of 8 applications for minerals development were permitted by the Council in the last 5 years and the two refused applications were later permitted on appeal. Even so, these have not been sufficient however to stem the decline in the landbank. Two further applications, at Strensham and Holdfast are currently undetermined. If these applications were to be permitted they would have a combined supply of 0.833 million tonnes which equates to almost 1 years supply based on current apportionment levels.

⁸ Paragraph 145

- 5.12. There has been limited interest in working sand and gravel in the County in recent years, however this may be due to the limited number of Preferred Areas remaining in the current Minerals Local Plan. A new Minerals Local Plan is currently being prepared and will seek to enable appropriate minerals development.

6. Forecast of demand and analysis of supply for crushed rock

Demand forecast

- 6.1. The demand forecast represents the minimum annual provision which should be made for crushed rock in Worcestershire. It will be used to assess the adequacy of supply and will inform the Minerals Local Plan. It will also be a material consideration in the determination of planning applications.

Up to and including 2016

- 6.2. The annual sub-regional apportionment for crushed rock in Worcestershire is **0.163** million tonnes.

Beyond 2016

- 6.3. As the demand forecast will be based on a rolling 10 year average of sales data it is not possible to develop a static figure for provision beyond 2016. It is however useful to consider the current 10 years sales average to give an indication of the level of provision requirement that is likely.
- 6.4. In Worcestershire this is more complicated for crushed rock than it is for sand and gravel. Sales data for crushed rock production is not available for Worcestershire due to the long standing confidentially arrangements agreed between the industry and government to protect operators' commercial interests, which mean that sales data will not be released or published where there are less than 3 operational sites in an area.
- 6.5. The last time there were three operating quarries producing crushed rock in Worcestershire was 2003. Since then crushed rock sales data for Worcestershire has been combined with that for Herefordshire.
- 6.6. It is however known that between 1999 and 2001 about a third of crushed rock sales in the two counties were from Worcestershire and two-thirds from Herefordshire (RAWP Annual Report 2009). Average sales will therefore be calculated based on the assumption that one third of the combined crushed sales from Herefordshire and Worcestershire can be attributed to Worcestershire. If more accurate sales data becomes available or it is known that there are no crushed rock workings in the county this information will be used instead.
- 6.7. To try to clarify this situation, officers intend to contact operators in Herefordshire and Worcestershire to request that they allow publication of this RAWP data separately for each county. The council has also contacted the Office for National Statistics and had gained agreement that the AMRI⁹ 2012 survey would include separate details for Herefordshire and Worcestershire, rather than combining them as has been the case in the past. The published AMRI 2012 survey gives details of

⁹ Annual Minerals Raised Inquiry survey prepared by the Office for National Statistics.

Worcestershire, however there are no figures included for Herefordshire. At this stage it is therefore not clear whether the data is for Worcestershire alone, or whether it still includes Herefordshire's figures.

- 6.8. The 10-year sales averages for 2009 and 2010 respectively are set out in Table 6.1 below. The left hand column for each year shows the combined sales figures and the right-hand column shows the estimated sales figures for Worcestershire, based on the assumption that these account for a third of the total.

Table 6.1 Crushed rock sales average 2000-2010

Year	Crush rock sales			
	Herefordshire and Worcestershire	Worcestershire derived	Herefordshire and Worcestershire	Worcestershire derived
	2000-2009	2000-2009	2001-2010	2001-2010
2000	0.57	0.19	-	-
2001	0.57	0.19	0.57	0.19
2002	0.5	0.167	0.5	0.167
2003	0.42	0.14	0.42	0.14
2004(est)	0.46	0.153	0.46	0.153
2005	0.29	0.097	0.29	0.097
2006	0.3	0.1	0.3	0.1
2007	0.366	0.122	0.366	0.122
2008	0.216	0.072	0.216	0.072
2009	0.224	0.075	0.224	0.075
2010	-	-	0.2	0.667
Average	-	0.131	-	0.118

- 6.9. As you would expect, although there is some variation between annual sales levels, there is no significant variation in the 10-year averages from year to year. It is therefore possible to say with some certainty that unless there is a significant increase in sales to similar level to those seen in the 1990s and early 2000s, demand forecasts beyond 2016 are likely to be at a lower level than the provision requirements up to and including 2016. There have been no permissions for, and no known interest in, working crushed rock in Worcestershire in recent years so any increase in sales in the near future is considered unlikely.
- 6.10. There is a notable difference between the apportionment figures up to and including 2016 and the current 10 years sales average, with the sales average being over 30% less than the apportionment. This needs to be carefully monitored, however it is considered appropriate to continue to use the apportionment up to 2016 as this is based on a robust data set.

Analysis of supply

- 6.11. The current sub-regional apportionment for Worcestershire is 0.163 mt per annum. However with limited sales data it is difficult to assess whether Worcestershire has been meeting this apportionment.
- 6.12. The most recently published landbank figure for crushed rock in Worcestershire was **3.31** years in 2003. Later data cannot be published for the county due to the confidentiality of this information.

Assessment of the balance between demand and supply

- 6.13. The National Planning Policy Framework requires that Mineral Planning Authorities maintain landbanks of at least 10 years for crushed rock. The landbank in 2003 was only a third of this and since then only one application for crushed rock has been permitted¹⁰. That permission was to deepen an existing quarry to release approximately 100,000 tonnes of reserves of limestone. The site has now been fully worked and is currently being restored. This means that there are no other permitted crushed rock reserves in Worcestershire, and that Worcestershire's landbank for crushed rock in April 2013 was therefore 0 years.

Action to address the shortfall in supply

- 6.14. The ability to increase the landbank in Worcestershire depends on the industry coming forward with applications for planning permission. No permissions for crushed rock workings have been refused by the Council in the last 10 years and there has been no know interest in opening a new crushed rock in the county in the last 20 years.
- 6.15. This could be due to the quality of resources in the county, however it is possible that the absence of Preferred Areas for hard rock in the current Minerals Local Plan could be a contributing factor. Preparation of a new Minerals Local Plan is currently underway. During the development of this plan alternative approaches will be considered with a view to enabling the appropriate working of crushed rock in the county.

¹⁰ October 2008: Fish Hill Quarry, Broadway.

8. Conclusions

Demand forecast

- 8.1. The annual sub-regional apportionment will be followed up to and including 2016:
 - Sand and gravel: **0.871** million tonnes
 - Crushed rock: **0.163** million tonnes
- 8.2. Beyond 2016, provision will be based on the average of the past 10-years sales. This figure will be updated annually in the Annual Monitoring Report. Current indications show that this is likely to be at a lower level than the sub-regional apportionment.

Analysis of supply

- 8.3. The current landbank for sand and gravel is **4.49 years** and for crushed rock the last publicly available landbank figure was **3.31 years**.¹¹
- 8.4. The Local Aggregate Assessment assumes that supply from recycled and secondary aggregates, marine aggregates and imports will remain unchanged.

Assessment of the balance between demand and supply

- 8.5. The National Planning Policy Framework requires mineral planning authorities to maintain a minimum landbank of 7 years for sand and gravel and a minimum landbank of 10 years for crushed rock. This will be used to determine whether there is a shortage or surplus of supply.
- 8.6. There is currently a shortage of supply for both sand and gravel and crushed rock in Worcestershire.

Action to address the shortage in supply

- 8.7. Preparation of a new Minerals Local Plan is underway with a view to enabling the appropriate working of sand and gravel and crushed rock in the county.

Capability of supply and competition issues

- 8.8. The council is aware of the need to ensure that free competition within the market is not frustrated. This report indicates the minimum levels of

¹¹ Sales data will not be published where there are less than 3 operational sites in an area. The last time there were three operating quarries producing crushed rock producing quarries in Worcestershire was 2003.

provision that will be required to enable an adequate and steady supply of aggregates.

- 8.9. Preparation of a new Minerals Local Plan is currently underway. Regard will be had to ensuring the adequate competition can be maintained. This will take into account the number of productive units, the phasing of supply and any other relevant issues that are highlighted through consultation.

9. Appendices

Appendix 1: Compliance with NPPF

Local Aggregate Assessments should be based on:

- 10 years sales data;
- other relevant local information; and
- an assessment of all supply options (including marine dredged, secondary and recycled sources)

Up to and including 2016

- 9.1. In the West Midlands the sub-regional apportionment is derived from the regional apportionment set out in the *National and Regional Guidelines for Aggregate Provision in England 2005-2020*. These guidelines identify national need and make regional provision taking into account past production trends, projections about future need, and all supply options including provision of secondary and recycled aggregate and anticipated levels of imports and exports.
- 9.2. The economic demand forecasting used is often considered to be overly complex, too difficult to understand and has been unreliable in the past¹², however it is a generally robust approach which takes into account many of the factors highlighted by the NPPF including the assessment of all supply options and past sales data.
- 9.3. The method for developing the regional supply figures into a sub-regional level is based on the proportion of regional sales accounted for by each sub-region/minerals planning authority.
- 9.4. *Neither the National Guidelines nor the method for sub-regional apportionment specifically consider the last 10 years sales data, however they are based on sales trends and consider all supply options. The method is therefore considered to be broadly compliant with the principles of NPPF.*

Beyond 2016

- 9.5. The proposed method will identify a requirement derived primarily from a rolling average of 10 years sales data.
- 9.6. In the absence of relevant data it is assumed likely that the contribution of secondary and recycled aggregates in the county will remain constant and that current levels of secondary and recycled aggregate use are therefore already reflected in the sales data for primary aggregates.

¹² British Geological Survey (2008) *Managing Aggregate Supply in England: A review of current system and future options* page 1-2

- 9.7. There is not considered to be enough relevant data to enable an assessment of other supply options as information on imports and exports of aggregates in the county is limited and any published information is currently combined with Herefordshire. The same is true of information relating to the use of marine aggregates in the County.
- 9.8. Using average sales over the last 10 years has limitations as these figures reflect historic trends and levels of extraction, rather than anticipated future demands. Future need will inevitably be influenced by the state of the economy, the availability and use of secondary and recycled aggregates and the ability to supply. This will ultimately be the dominant factor in Worcestershire as issues such as the limited hard rock resources and quality of sand and gravel reserves in the county will have an impact on the activities that operators wish to bring forward. However without a robust framework for agreeing sub-regional apportionments this is considered to be the strongest alternative. This approach is also considered to be broadly in compliance with the principles of the NPPF.

The advice of the Aggregate Working Party should be taken into account when preparing Local Aggregate Assessments

Up to and including 2016

- 9.9. The sub-regional apportionment was development by the West Midlands Aggregate Working Party (AWP) and adopted by the West Midlands Regional Assembly.
- 9.10. *The method is considered to be compliant with the principles of the NPPF.*

Beyond 2016

- 9.11. Worcestershire County Council has found the West Midlands AWP to be an effective forum to consider the apportionment of supply in the past and would like to pursue options for co-operation with other authorities through the AWP mechanism in the future. However the future of the West Midlands AWP is currently unclear. At present there is no chair or secretariat for this group.
- 9.12. It is therefore necessary for the council to progress the preparation of the Local Aggregate Assessment in the absence of the AWP, in order to avoid uncertainty regarding future levels of provision of aggregates in the county.
- 9.13. It is likely that without the Regional Assembly and other regional structures of governance, relationships and agreements may take time to become established. However the council would be open to considering the AWP's advice on the Local Aggregate Assessment if the opportunity arose in the future.
- 9.14. *The method is considered to be as compliant with this principle of NPPF as is practicable at this stage.*

The published National and Sub National Guidelines on future provision should be used as a guideline when planning for the future demand for and supply of aggregates

Up to and including 2016

- 9.15. The *National and Regional Guidelines for Aggregate Provision in England 2005-2020* form the starting point for the sub-regional apportionment.
- 9.16. *The method is considered to be compliant with this principle of the NPPF.*

Beyond 2016

- 9.17. The rolling 10 years annual sales average will be compared to the *National and Regional Guidelines for Aggregate Provision in England 2005-2020* until 2020. The regional apportionment does not vary over this period, so the current sub-regional apportionment will be considered for monitoring purposes. Any significant divergence between the two figures will be considered to identify the contributing factors. It is likely that there will be a significant difference in the case of crushed rock due to the quality of the material in the county.
- 9.18. *The method is considered to be as compliant with this principle of NPPF as is practicable at this stage.*

Mineral Planning Authorities should use landbanks of aggregate minerals as an indicator of the security of supply, making provision for the maintenance of landbanks of at least 7 years for sand and gravel and at least 10 years for crushed rock

Up to and including 2016

- 9.19. The Local Aggregate Assessment will monitor this annually, using the sub-regional apportionment to calculate the landbank. This may not be possible for crushed rock where data is limited.
- 9.20. *The method is considered to be compliant with this principle of NPPF.*

Beyond 2016

- 9.21. The Local Aggregate Assessment will monitor this annually, using the rolling 10 years sales average to calculate the landbank. This may not be possible for crushed rock where data is limited.
- 9.22. *The method is considered to be compliant with this principle of NPPF.*