Buckinghamshire County Council

Local Aggregate Assessment 2015

October 2015

Contents

1. Executive Summary

1.1. This is the third Local Aggregate Assessment (LAA) produced for Buckinghamshire since the publication of the National Planning Policy Framework (NPPF) in 2012. This LAA considers aggregate supply and consumption during 2014, from all known sources. Paragraph 145 of the NPPF introduced a requirement for Minerals Planning Authorities (MPAs) to produce a LAA each year. The LAA is intended to outline the sources of supply of and demand for aggregates within Buckinghamshire, make an assessment as to whether there is a shortage or surplus of supply, and how any shortages will be addressed.

1.2. Buckinghamshire is a landlocked area, and produces sand and gravel predominantly in the south of the county. Sales of sand and gravel in Buckinghamshire have been declining generally during the past ten years. Crushed rock aggregate is imported from Leicestershire, Somerset, and the West Country. It is believed that flows of sand and gravel into the north of the County take place from adjacent Mineral Planning Authority areas, including Milton Keynes, Northamptonshire, Bedford Borough, Central Bedfordshire, and Hertfordshire. In addition, Buckinghamshire is well connected to other sand and gravel producing areas, within the south-east, east of England, and east midlands former regions, such that the County is effectively part of a much larger sand and gravel aggregate producing area.

1.3. The level of permitted reserves of sand and gravel at 31st December 2014 were sufficient for 11.8 years based on the rolling average of the past ten years sales. The rolling average of the past ten year's sales is the method of calculating the landbank, since it is based on the guidance contained in the NPPF.

1.4. Although the data concerning production of recycled aggregates is generally poor, a significant source of secondary aggregates will commence supplying in 2016, since the Energy from Waste (EfW) incinerator in construction at Calvert will begin supplying Incinerator Bottom Ash by then.

1.5. Three large construction projects are likely to commence in the next few years. These include the construction of the HS2 rail line, the East West Rail line, and a scheme for the widening of the M4 between junctions 3 and 12, over some 32 miles, is likely to commence in 2016. It cannot be known with certainty that these projects will source materials from quarries in Buckinghamshire as opposed to other neighbouring Counties.

1.6. Nearly all of the Preferred Areas for sand and gravel extraction identified in the Buckinghamshire Minerals and Waste Local Plan adopted in 2006 have been developed. In order to maintain a supply of aggregates from the most environmentally acceptable locations, a Replacement Minerals and Waste Local Plan (RMWLP) is being developed, with the purpose of creating new positive policies and identifying land which is suitable in principle for supplying aggregates over the next 15 years.

2. Introduction

The purpose of the Local Aggregate Assessment

2.1 Buckinghamshire County Council (BCC), as a Minerals Planning Authority (MPA), is required under the National Planning Policy Framework (NPPF)[1] to prepare an annual Local Aggregate Assessment (LAA). The LAA provides an annual evaluation of aggregate supply and demand in the County, and examines a rolling average of the previous ten years sales data, other relevant local information, in order to develop an assessment of all supply options. Based on this data, the LAA considers whether BCC can meet its obligation to plan for the steady and adequate supply of aggregates, with existing reserves.

2.2 BCC adopted its Minerals and Waste Core Strategy (MWCS) in November 2012, which contained strategic policies for the provision of aggregate minerals in Buckinghamshire. The County Council published a new Minerals and Waste Local Development Scheme in 2014 which expressed the intention to amalgamate the previously intended Minerals Local Plan, and a Waste Local Plan, and to create a "Replacement Minerals and Waste Local Plan" (RMWLP). The County Council undertook its first consultation for the RMWLP in early spring 2015. The RMWLP will identify "Preferred Areas" for future minerals extraction, so as to ensure adequate supply of aggregate minerals throughout the plan period.

2.3 Following the adoption of the MWCS in November 2012, the LAA for 2014 will be the third annual LAA produced by BCC. In future, the Council intends to include the LAA as an Appendix to the Monitoring Reports published during each year. The LAA will help to fulfil the obligation expressed in the NPPF that the County Council keep the demand and supply of aggregates under regular review.

2.4 This LAA uses the most recently available information, in order to monitor and review aggregate supply and demand, during the period January to December 2014, and to provide the most recent information available in relation to the

[1] National Planning Policy Framework, Paragraph 145, DCLG 2012

County's permitted reserves of aggregate minerals. The LAA will be important in informing the preparation of the RMWLP.

Background

2.5 Aggregates are a crucial group of raw materials for the construction industry, and used in the construction of housing, commercial spaces, and offices, as well as in the construction and maintenance of infrastructure. They are essential to deliver growth and regeneration. This group of materials includes both minerals extracted from the ground (primary aggregates), as well as alternative aggregates (both recycled, and secondary aggregates).

2.6 Minerals are a finite resource, and can only be worked where they are found. It is the role of Minerals Planning Authorities (MPAs) to maintain the long-term conservation of mineral resources, while at the same time maintaining an adequate national and local supply. In the case of sand and gravel, MPAs are required to maintain a "Landbank" of reserves sufficient for at least 7 years of supply, and at least 10 years for crushed rock. (Buckinghamshire has no permitted reserves of crushed rock.) The "landbank" is defined as the sum in tonnes of all permitted reserves for which valid planning permissions are extant. This includes current non-working sites, but excludes dormant sites and inactive sites, for which a review is required before operations can commence or resume.

2.7 Buckinghamshire is not a producer of crushed rock, and imports all the crushed rock required for the county's needs. Since the County is not a producer of crushed rock it is not required to identify a "landbank" of rock which could produce crushed rock. Therefore this report will not include sales and reserve data for crushed rock.

The Managed Aggregate Supply System

2.8 In England, the supply of primary aggregate to meet national needs is based upon the Managed Aggregate Supply System (MASS). The system seeks to ensure a continuous and steady supply of aggregates. This has previously involved the publication of national and regional guidelines for aggregates provision in England, based on forecasts of mineral provision. A key change occurred in 2012 with the publication of the NPPF. The NPPF amended the MASS, by decentralising more power to MPAs to determine the appropriate

level of aggregate minerals extraction for their area. The key tool for this management is the requirement for MPAs to produce an annual LAA[2].

> *"Minerals Planning Authorities should plan for a steady and adequate supply of aggregates by: preparing an annual Local Aggregate Assessment, either individually or jointly by agreement with another or other minerals planning authorities, based in a rolling average of ten years sales data and other relevant local information, and an assessment of all supply options (including marine dredged, secondary and recycled sources)."*

2.9 The Planning Practice Guidance[3] (NPPG) has been published on the DCLG website, alongside the NPPF, which states that the LAA should forecast the demand for aggregate based on a ten year rolling average, an analysis of the aggregate supply options for the MPA, including the "landbank", capacity, and mineral allocations.

Preparation of the Local Aggregate Assessment

2.10 In compiling this LAA, data has been sourced from the National Aggregate Monitoring Survey that is undertaken every four years by the British Geological Survey. The survey collects information relating to capacity, sales, and permitted reserves, from site operators of wharves and rail depots, secondary and recycled aggregate sites facilities, and mineral extraction sites.

2.11 In addition, data sources include the expanded Aggregates Monitoring Surveys for 2014, 2009 (AM 2009) and 2005 (AM 2005), as well as Buckinghamshire County Council Annual Monitoring Reports (AMRs), and other studies undertaken in support of the MWCS.

3. Supply and Demand – National and Regional Context

3.1 The National Aggregate Minerals Survey takes place at four yearly intervals. However at the time of drafting this LAA, the 2014 Aggregate Monitoring Survey was the most current available. These surveys are collated by the British Geological Survey (BGS), and provide an in-depth understanding of regional and national sales, consumption and the transportation and movement of aggregates between MPAs and regions. The most recent of these surveys was published in 2009 (NAMS 2009)[3].

[2] National Planning Policy Framework, Paragraph 145, DCLG 2012
[3] Collation of the Results of the 2009 Aggregate Minerals Survey for England and Wales, DCLG October 2011

3.2 The report from 2009 reported that the total sales of primary aggregate in England and Wales were 119.1million tonnes (mt), with 106.3mt in England and 12.8mt in Wales. Primary aggregate sales in England and Wales comprised 31.4% (37.1mt) land-won sand and gravel and 9.2% (11.0mt) marine dredged sand and gravel, with crushed rock making up the remaining 59.4% (70.7mt).

3.3 Total sales of primary aggregate in England and Wales declined by about 32% between 2005 (172.7mt) and 2009 (119.1mt) with sand and gravel showing the largest fall of 36% from 58.2mt in 2005 to 37.1mt in 2009. Almost all regions showed a fall in total primary aggregate sales between 2005 and 2009. AM 2005 also reported an overall reduction in sales of primary aggregate in England and Wales between 2001 and 2005[4].

3.4 For land-won sand and gravel, the East of England former region recorded the highest proportion of sales in England, equating to 26% (9.67mt). The South East recorded sales of 6.0mt land-won sand and gravel, equating to 16.2% of total land-won sand and gravel sales in England. Buckinghamshire accounted for 12% (0.71mt) of the South East's share of sales, which means that Buckinghamshire accounted for 1.9% of total land-won sand and gravel sales in England in 2009.

3.5 The South East was the biggest producer of marine dredged sand and gravel recording 50% (4.99mt) of total sales in England. Of the crushed rock sales, the East Midlands recorded the highest sales equating to 36% (21.4mt) of total sales in England. The South East, by comparison, recorded sales of 1.9mt contributing permitted hard rock reserves, just 3.2% of total sales in England. No sales of crushed rock were recorded in the county during the LAA period.

3.6 The South East region was also the biggest exporter of sand and gravel (including marine dredged), and was among the main importing regions for crushed rock.

3.7 The South East Aggregates Monitoring Report 2013 (AM 2013) reports on collated sales data for the South East Region, as at 31st December 2013. This reports that sand and gravel sales within the region declined to 5.4mt, which is 100,000 tonnes less than 2012[5]. It also notes that sales in the last 5 years have averaged 5.8mt which is a fall of 35% compared to 2004-2008 show in table 1.

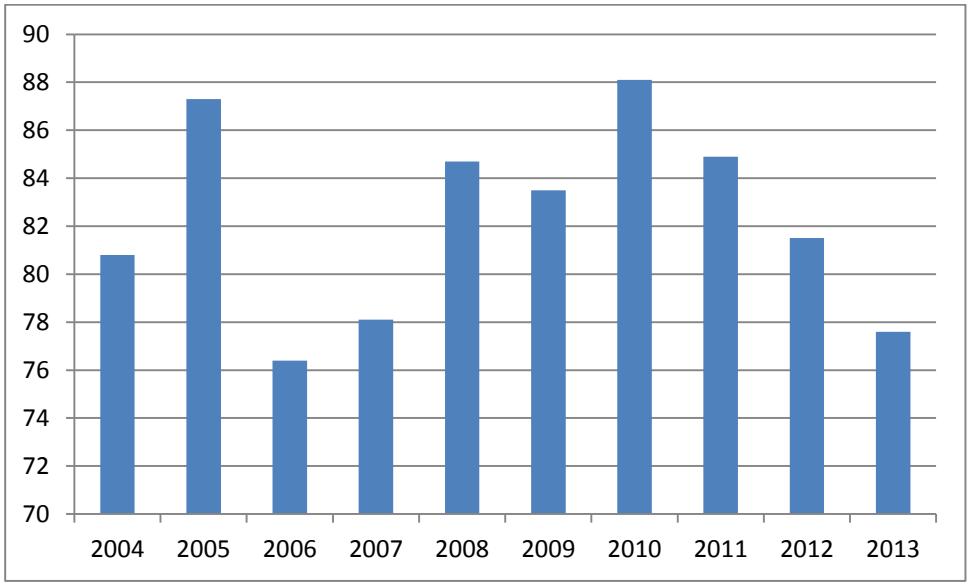
[4] Collation of the Results of the 2005 Aggregate Minerals Survey for England and Wales, DCLG May 2007
[5] South East Aggregates Monitoring Report 2013, SEEAWP, August 2014

Table 1: Sales of Sand and Gravel (000 tonnes) and percentage change 2004-2013 for the SEEAWP area.

Year	Sales of All Sand and Gravel	Percentage Change on previous year
2004	10,405	-2%
2005	9,713	-6%
2006	8,804	-9%
2007	8,502	-3%
2008	7,229	-14%
2009	6,007	-18%
2010	6,180	3%
2011	5,824	-6%
2012	5,514	-5%
2013	5,399	-2%
Percentage Change 2004-2014		-48%

Source: Data taken from South East Aggregate Monitoring Report 2013, SEEAWP 2013

Figure 1: Reserves of Sand and Gravel (million tonnes) in the South East Region 2004-2013



Source: Data taken from South East Aggregate Monitoring Report 2013, SEEAWP 2013

4. Aggregates in Buckinghamshire

Geology

4.1 The most significant of mineral resources in Buckinghamshire are the sand and gravels of the Thames Valley, located in the south of the county. The thickest materials lying closest to the surface, and containing the lowest proportion of non-usable material are the most favoured, and the most economically viable materials for extraction in the county. Since the early 1990's, the main type of mineral production in Buckinghamshire has been the working of sand and gravel.

4.2 The MWCS identifies a Minerals Safeguarding Area in the south of the county, to safeguard the known economically viable sand and gravel deposits against sterilisation through non-mineral development. In addition, a study by the BGS has identified an area of glacio-fluvial sand and gravel in the north of the County[6]. Stating that:

> *"the deposits occur as irregular sheets or bodies within and above the till. The thickness of the deposits is highly variable and rarely exceeds 5m in eastern parts of Buckinghamshire except within channels. However, thicker deposits occur in north-western parts where deposits can reach 18m or more"*

Currently there is insufficient detailed information to be certain of the viability of these deposits. Until such time as further investigation of the deposits has been undertaken, this area is identified in the MWCS as an "Area of Search". This area of sand and gravel is classified as superficial deposits, and is shown separately on a Buckinghamshire Geology Map, figure 3.

4.3 A small area of the Woburn Sands Formation occurs in east Buckinghamshire where it forms the most westerly part of an extensive outcrop that extends north-eastwards through Bedfordshire and into Cambridgeshire. Although the Woburn Sands are an important source of both construction and silica sands in Central Bedfordshire, the deposits in Buckinghamshire are thinner, and there are indications that it would make a less attractive source of construction sand[7]. Although there is a single dormant site that has planning permission for the extraction of sand in this area, there are currently no active workings of the Woburn Sands in the County.

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[6] Mineral Resource Information in Support of National, Regional and Local Planning Buckinghamshire and Milton Keynes, BGS 2003 paragraph 2.1.1

[7] Mineral Resource Information in Support of National, Regional and Local Planning Buckinghamshire and Milton Keynes, BGS 2003

4.4 The County has chalk located in the southern half of the county, which lies in a north-east south-west direction. The White Chalk sub-group that is found in this region can be up to 131m thick and has layers of flint found within it. Chalk quarries have previously been worked for agricultural lime, and the flint obtained for a localised building material and low grade aggregate, and can be found in a number of locations across South Buckinghamshire. However there is now only one chalk quarry at Ivinghoe/Pitstone and this is presently inactive. The county also has a vein of Grey Chalk, running south of a line approximately from Princes Risborough in the South-West, to north of Drayton Beauchamp, in the North-East. This mineral has a lower purity than White Chalk, with a lower $CaCO_3$ content, and is mixed with calcareous mudstone. With its high lime to clay ratio it makes it an ideal raw material for cement. No form of chalk is at present worked in the County as an aggregate mineral, and is only mentioned here by way of context.

4.5 The County has had a large permitted reserve of clay, resulting in the County historically having a large brick industry. Presently there is single operational brickwork's at Bellingdon which uses ‘clay with flints’ to produce traditional Chiltern bricks. In addition, Calvert was one of the biggest bricks works in the UK but no longer produces bricks. The northern half of the County includes the ‘Peterborough Member’ of Oxford Clay, which is up to 26m thick and is made up of mainly greenish grey mudstone and between 5%-7% organic material.

4.6 Limestone in the County is a highly limited resource in occurrence, that can be only be found in the north-west of the County. There is presently no permitted active or inactive Limestone extraction sites within Buckinghamshire, although in the past Limestone has been won.

4.7 Buckinghamshire does not have any significant hard rock resources, and is not a producer of crushed rock. All crushed rock consumed within the County is imported, and the County is reliant upon the ability of the exporting areas to be able to continue to supply this material. This ability to rely upon supply of crushed rock from other MPAs will need to be verified in an ongoing basis by “Duty to cooperate” engagement with them.

The Geology of Buckinghamshire

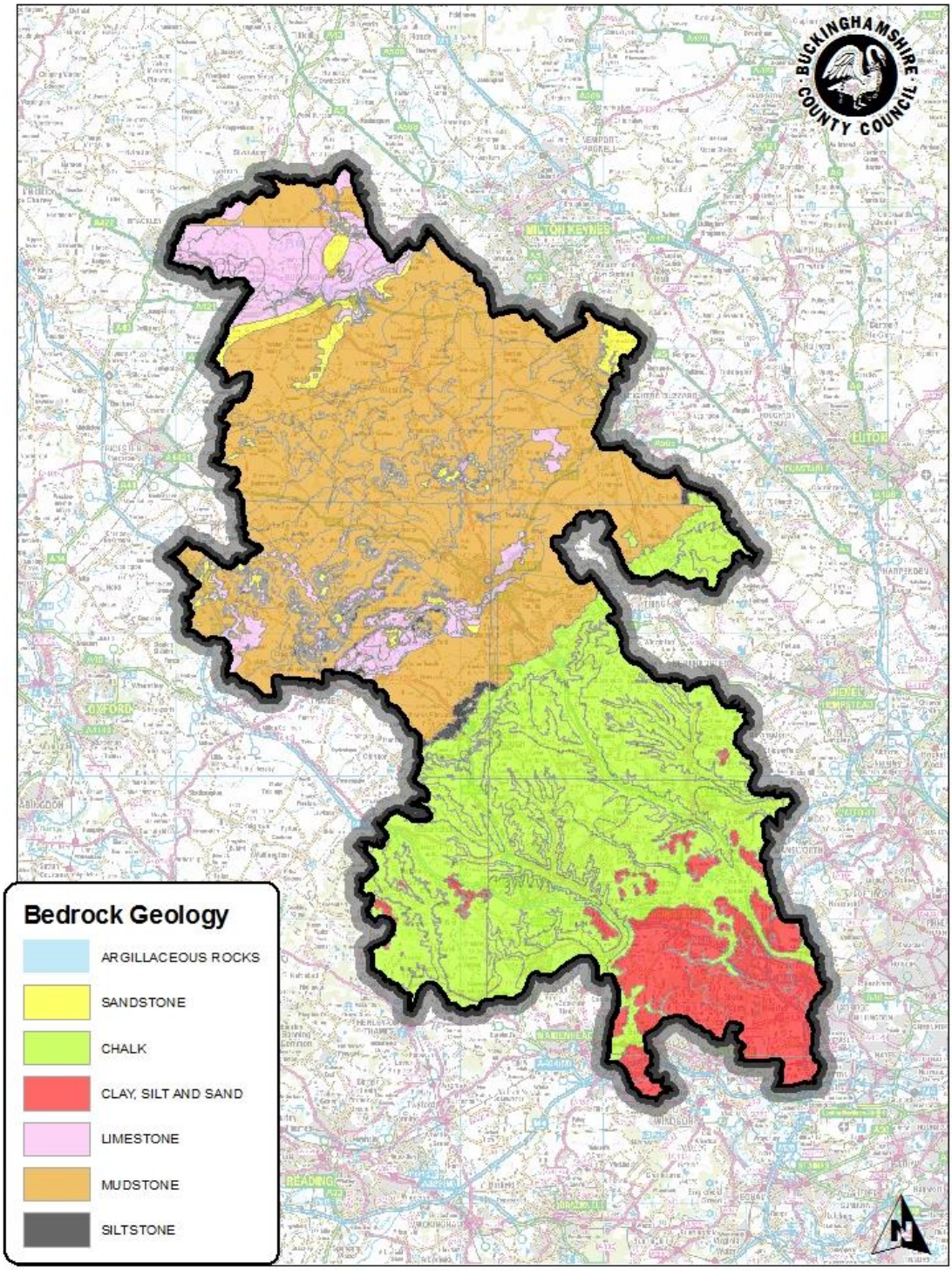


Figure 2: Geological Map of Buckinghamshire showing Bedrock

The Geology of Buckinghamshire

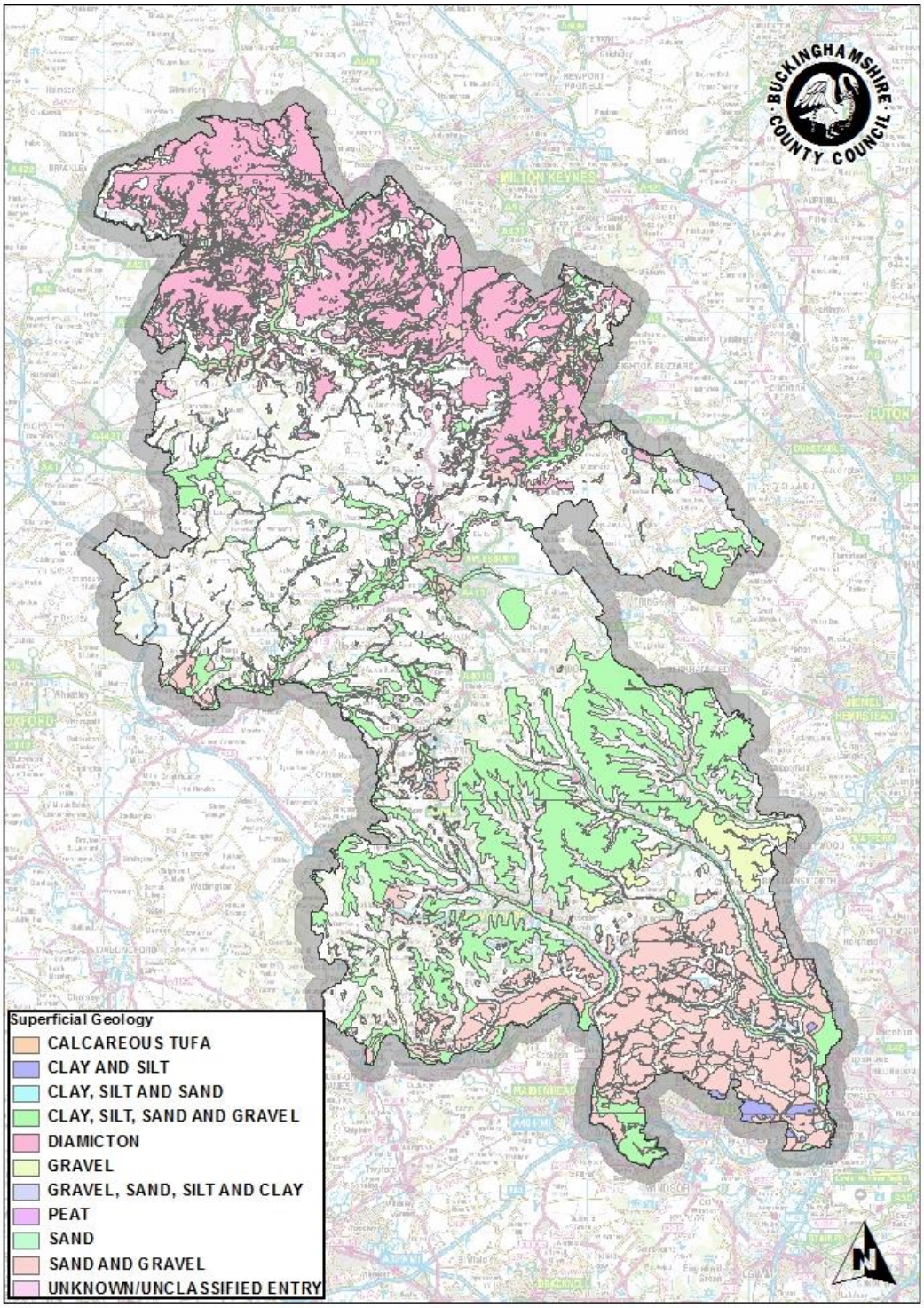


Figure 3:

Figure 3: Geological Map of Buckinghamshire showing Superficial Deposits of Geology

Primary Aggregate

4.8 During 2014, there were 6 sites in Buckinghamshire actively producing sand and gravel, with a further 3 sites holding valid planning permissions for mineral extraction which had not yet been implemented, or which had temporarily ceased production. Sites with planning permission for mineral extraction are shown in Table 2.

Table 2: Active and Inactive Sand and Gravel Extraction Sites in Buckinghamshire during 2014

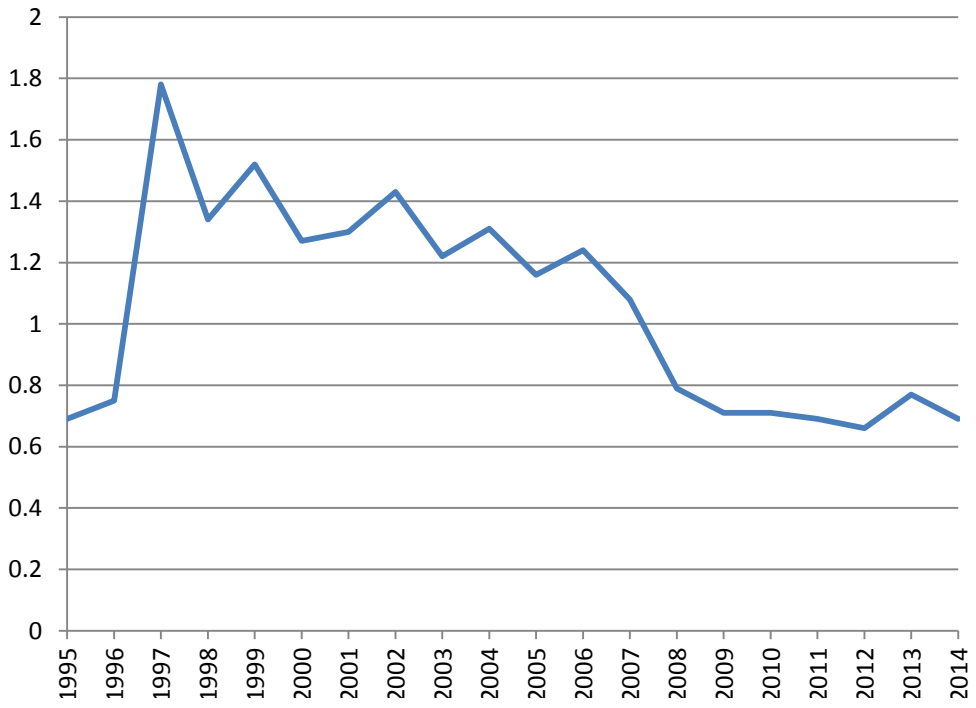
Active Sites	
Springfield Farm, Beaconsfield	Springfield Farm Ltd
Park Lodge Quarry, Iver Heath	Brett Aggregates
All Souls Farm, Wexham	Tarmac Southern
New Denham Quarry, Denham	Summerleaze Ltd
Berry Hill Farm, Taplow	Summerleaze Ltd
Harleyford Marina	Harleyford Aggregates
Inactive Sites	
Beechwood Nurseries, East Burnham	Summerleaze Ltd
Denham Park Farm, Denham	Harleyford Aggregates
George Green	Brett Aggregates

Sales

4.9 Sales of sand and gravel in Buckinghamshire between 1995 -2014 are shown in figure 4, demonstrating that during this 20 year period, Buckinghamshire's annual production of aggregates has been variable. In 1997, production increased by 1 million tonnes to 1.78mt due to contributions from two major civil engineering projects in the south of the county[8]. Since this peak in 1997, production had fluctuated but ultimately been declining with sales of sand and gravel in Buckinghamshire.

[8] Minerals and Waste Core Strategy Topic Paper 6: Minerals, Buckinghamshire County Council, August 2011

Figure 4: Sand and Gravel (million tonnes) in Buckinghamshire, 1995-2014



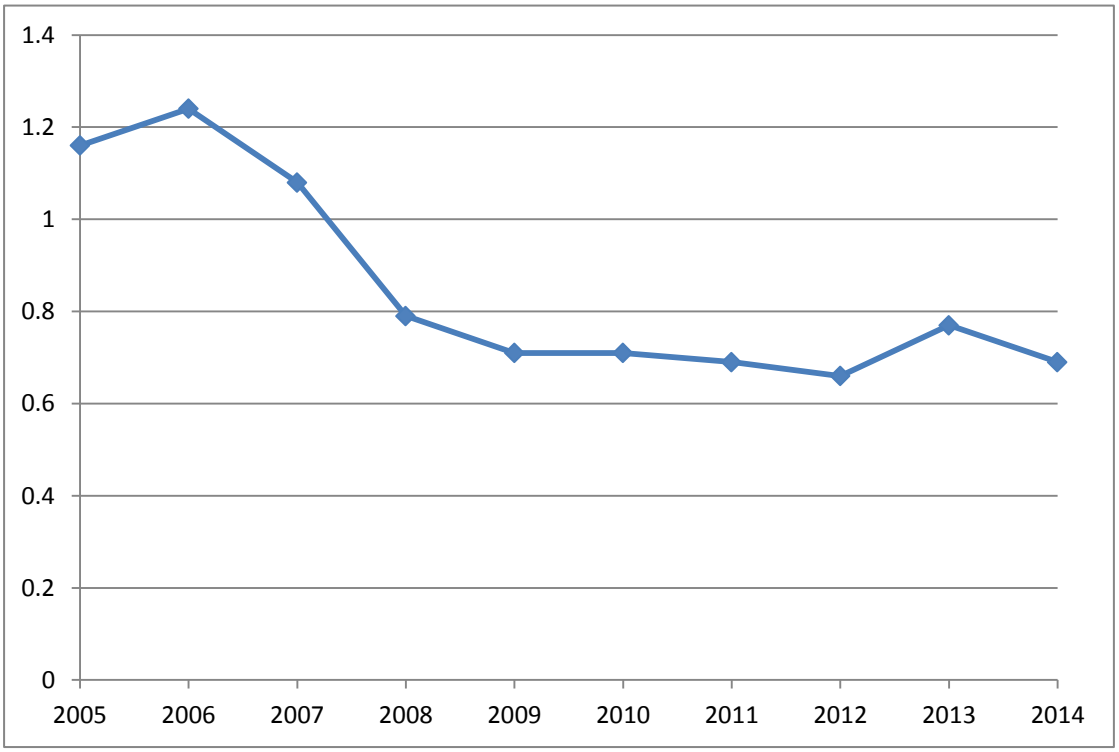
4.10 The total sales, figures 5, for the most recent ten years (2005-2014) sales of sand and gravel in Buckinghamshire are shown in Table 3. In addition to the ten year average provided in line with the approach detailed in the NPPF[9], the average of the most recent three years (2012-2014) sales data is given for comparison purposes. The NPPG encourages MPAs to look at the most recent three year sales in particular, as part of their assessment of relevant local information to identify the general trend of demand as part of the consideration of whether it might be appropriate to increase supply[10].

Table 3: Sand and Gravel Sales in Buckinghamshire 2005-2014 (million tonnes)

Year	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**10yr Average (2005-2014)**	**3yr Average (2012-2014)**
Sales	1.16	1.24	1.08	0.79	0.71	0.71	0.69	0.66	0.77	0.69	0.85	0.70

[9] National Planning Policy Framework, Paragraph 145, DCLG 2012
[10] National Planning Practice Guidance, DCLG 2012, revised 6th March 2014

Figure 5: Sales of Sand and Gravel in Buckinghamshire (million tonnes) 2005-2014



4.11 These sales figures demonstrate, for Buckinghamshire, an overall decline in sales of primary aggregate over the ten year period 2005-2014 by approximately 40%.

Reserves

4.12 Table 4 shows the amount of permitted sand and gravel reserves within the county over the past 5 years. These derived from the minerals returns submitted annually by minerals operators as part of the annual Aggregate Monitoring Survey. Information relating to permitted reserves may vary year on year, since mineral site operators may carry out site surveys and consequently revise the estimates of minerals reserves at their individual sites.

Table 4: Permitted Reserves of Sand and Gravel in Buckinghamshire (2010-2014)

Year	**2010**	**2011**	**2012**	**2013**	**2014**
Permitted Reserve	10,917,400	10,429,000	10,049,244	9,143,356	10,074,537

4.13 As of 31st December 2014 estimated permitted reserves of sand and gravel in Buckinghamshire totalled approximately 10.07mt. This includes planning

permissions granted for new quarries at George Green, near Slough, with reserves of 900,000 tonnes and Denham Park Farm, near Denham, with reserves of 1,700,000.

Imports and Exports

4.14 AM 2009 indicated that the end destination for the highest proportion (0.42mt) of sand and gravel sold in Buckinghamshire was within the sub-region Buckinghamshire and Milton Keynes (59%), with 25% (0.18mt) exported to other destinations in the South East. The destination of the remaining 15% (0.11mt) is not known, other than it being outside of the South East region. The main destinations for land-won sand and gravel exported from the South East region as a whole were London (58%), the South West (24%) and the East of England (9%).

4.15 AM 2009 collates data for Buckinghamshire and Milton Keynes as one "sub-region", and indicates that as a sub-region, sales of sand and gravel in Buckinghamshire and Milton Keynes in 2009 were 925,000 tonnes of which 404,000 tonnes were exported aggregate as shown in Table 4. This demonstrates that the sub-region is a net exporter of sand and gravel. Of the 0.92million tonnes per annum (mtpa) total primary aggregate consumed within the sub-region, 26% comprised imported sand and gravel and 17% (0.16mtpa) comprised imported crushed rock[11].

Table 5: Primary Aggregates Imports to and Exports from Buckinghamshire and Milton Keynes 2009 (tonnes)

	Imports in Buckinghamshire and Milton Keynes	Exports from Buckinghamshire and Milton Keynes	Balance
Sand and Gravel	242,000	404,000	-162,000
Crushed Rock	160,000	Not Applicable	+160,000
Total	402,000	404,000	-2,000

4.16 Buckinghamshire imports both sand and gravel from Northamptonshire, Oxfordshire, Hertfordshire, and Central Bedfordshire; and crushed rock from Leicestershire, Somerset, and the former Avon. In addition, there are exports of sand and gravel, which according to the last available information (AM 2009) were nearly equal.

[11] Collation of the Results of the 2009 Aggregate Minerals Survey for England and Wales, DCLG October 2011

4.17 Buckinghamshire has only one rail aggregate depot, and data concerning its sales cannot be published as a standalone figure in order for it be confidential. The way in which data is allowed to be published is if the data from the depot has to be amalgamated into groups. Note that this situation is the same for other MPAs, and that in the South East Aggregate Monitoring Report, 2013, data on rail served aggregates depots for Buckinghamshire has been amalgamated with Milton Keynes and Oxfordshire. These are; Thorney Mill Road in Buckinghamshire, Full Goods Yard in Milton Keynes, and Appleford Sidings, Oxford Road and Hennef Way in Oxfordshire.

Table 6: Sales of Aggregate at South East England Rail Depots (000 tonnes) 2005-2013

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Berks and Hants	1,762	1,737	1,935	1,369	1,094	1,054	1,215	1,222	1,090
Buckinghamshire, Milton Keynes and Oxfordshire	790	791	887	733	447	729	659	552	762
Kent and Medway	575	572	594	581	414	356	446	313	465
Surrey and West Sussex	557	557	669	657	621	888	949	1,000	1,192
Total	3,685	3,657	4,085	3,340	2,576	3,027	3,269	3,087	3,509

Source: Data taken from South East Aggregate Monitoring Report 2013, SEEAWP 2013

Secondary and Recycled Aggregates

4.18 Government guidance[12] requires the LAA to consider all aggregate supply options, which include secondary and recycled aggregate. Secondary aggregates are often materials from industrial by-products, an example of which is 'incinerator bottom ash' (IBA) from the Energy from Waste (EfW) treatment process. This can be used in, or form parts of, construction materials, such as for building foundations, or roads. There are currently no known sources of secondary aggregates within Buckinghamshire. However, during 2012, planning permission was granted for an EfW facility at the Calvert landfill site in the north of the county, which includes an IBA treatment facility.

[12] National Planning Practice Guidance, DCLG 2012, revised 6th March 2014

4.19 Currently, at the time of drafting, it is anticipated that the EfW facility will become operational in early 2016. It is expected to thermally manage up to 300,000 tonnes of residual household collected waste per annum, and produce 22MW of electricity. It is expected that 25% of its waste input will be exported from the site as secondary aggregate.

4.20 Recycled aggregates are materials that are recovered from construction, demolition, and excavation activities, primarily at construction sites, and some of which can be reprocessed into other suitable building materials. An increase in the use of recycled aggregates in construction is consistent with their sustainable management, and is in line with the Waste Hierarchy. Baseline[13] information gathered in 2007/08 indicated that Buckinghamshire had an existing capacity of 422,000 tonnes for recycling construction and demolition waste, and that an additional 280,000 tonnes capacity would be required by 2020.

4.21 Most of the known aggregate recycling in Buckinghamshire takes place at temporary facilities, often located at sand and gravel quarries, although a number of sites also benefit from permanent planning permissions. The difficulties in gathering information relating to the movements of construction and demolition waste, and the production of recycled aggregate, are widely acknowledged by other Minerals and Waste Planning Authorities. In Buckinghamshire, information relating to facilities which manage secondary and recycled aggregates consists largely of data sourced through the annual monitoring survey. As reported in AM 2012[14], response rates to the survey for secondary and recycled aggregates are low, and that the data was incomplete and must be treated with caution.

4.22 Minerals returns for 2013 indicated that there were six active recycled aggregates sites producing approximately 166,435 tonnes of recycled aggregate in 2013, and 3 inactive sites, within Buckinghamshire. It also indicates that there are 150,200 tonnes of existing capacity for the production of recycled aggregate. The returns for 2012 indicated that there were ten active sites in Buckinghamshire which produced approximately 72,500 tonnes of recycled aggregate. The ten active sites and three inactive sites had a capacity 909,000.

4.23 Given the difference between the two years sets of data, and the problems with the collection of reliable data concerning recycled aggregates, more information about existing construction and demolition waste recycling capacity needs to be gathered. It is concluded that it is not realistic at present to seek to generate

[13] Minerals and Waste Core Strategy Topic Paper 5: Waste, Buckinghamshire County Council, August 2011
[14] South East Aggregates Monitoring Report 2011, SEEAWP 2013

any long term trends in their production within Buckinghamshire. More and better survey data is clearly needed with regards to recycled aggregates.

5. Aggregate Supply, Demand and Local Considerations

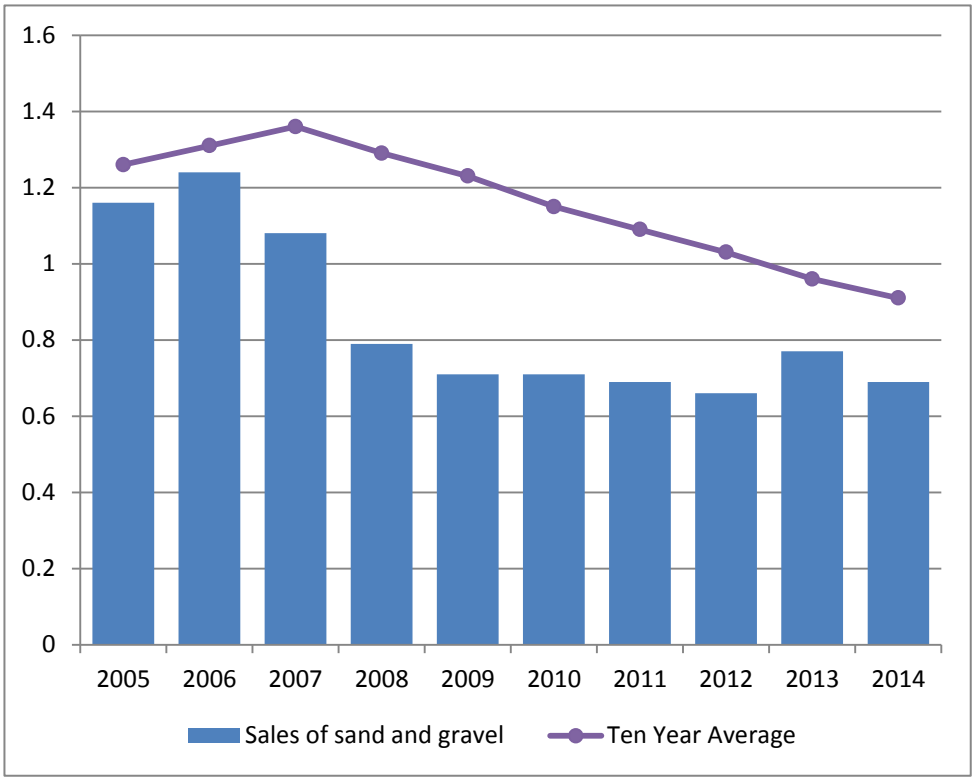
5.1 The MWCS used an annual supply requirement of 1.09mtpa based on a ten year average of sales data for the period 2001-2010. However the MWCS acknowledged that the appropriate level of annual supply may require revision, dependant on the findings of the LAA. Policy CS4 refers to *"…prevalent agreed local annual supply requirement for Buckinghamshire"*. According to the NPPF, the LAA is intended to provide important information to enable MPAs to plan for a steady and adequate supply of aggregates, and specifically to inform the preparation of a Minerals Local Plan.

> '*The NPPF at paragraph 145 states: preparing an annual Local Aggregate Assessment, either individually or jointly by agreement with another or other mineral planning authorities, based on a rolling average of 10 years sales data and other relevant local information, and an assessment of all supply options (including marine dredged secondary and recycled sources);*

Since the adoption of the MWCS new data is now available which identifies a different sales trend. The rolling average now reflects a different period from 2005 to 2014, and this shows a significantly higher landbank figure. It will be the annually produced LAAs which will be used by the County as the key determining factor in identifying its landbank for sand and gravel aggregates, and to determine when it would be prudent to commence work on identifying new allocations for sand and gravel working.

5.2 Figure 6 shows the sales data for sand and gravel in Buckinghamshire for the most recent ten year period 2005-2014 against the ten year average sales data.

Figure 6: Comparison of past sand and gravel production with ten year average (million tonnes) 2005-2014



5.3 Use of sales data over the most recent ten year period is considered to be a balanced indicator of required provision, since it includes intervals of relatively high and low economic activity, and therefore evens out the relative peaks and troughs. However, in accordance with the NPPF, MPAs are also required to give consideration to any "local factors" that could affect aggregate supply and demand.

Economic Downturn

5.4 Table 7 shows the existing sand and gravel sites in Buckinghamshire which will continue to contribute towards production of aggregates in the county, and the time limit for completion of final restoration, as given in the current planning permission for each site. Recently, a number of planning applications for extending the operational lifetime of existing sites have been submitted to the Council, predominantly citing the continuing economic downturn and consequent reduction in output from sites as the main reason for needing additional time to complete extraction and restoration.

Table 7: Completion Dates for Sand and Gravel Sites in Buckinghamshire

Site	End Date on Planning Permission	Restrictions
All Souls Farm Quarry, Slough	30/06/2013	No more than 60 vehicle movements per day
Harleyford Marina, Marlow	27/09/2014	No more than 30 vehicle movements per day
Berry Hill Farm, Taplow	01/10/2015	No more than 100 vehicle movements per day
Park Lodge Quarry, Iver	31/12/2015	No more than 146 vehicle movements per day
Beechwood Nurseries, East Burnham	*31/12/2020*	*No more than 100,000 tonnes per annum*
New Denham Quarry, Denham	23/06/2021	No more than 296 vehicle movements per day
Springfield Farm Quarry, Beaconsfield	30/09/2029	No more than 250,000 tonnes per annum
Denham Park Farm, Denham Green	31/08/2031	No more than 124 vehicle movements per day Monday to Friday. No more than 60 vehicle movements per day on Saturday
George Green, Slough	31/12/2031	No more than 146 vehicle movements per day Monday to Friday. No more than 72 vehicle movements per day on Saturday

Sites in italics are inactive site; site with planning permission but are not extracting during this time.

Output restrictions

5.5 It is also noted that among the permitted sand and gravel quarries in the county, the quarries shown in Table 7 were subject to planning conditions or legal agreements which restrict the maximum tonnage of mineral that can be exported from a site on an annual basis during this monitoring period. Such restrictions effectively limit the productivity at these sites, and consequently the contribution that they can make towards the annual supply requirement.

5.6 It should be noted that operational sand and gravel sites are predominantly in the south of the County. In addition, there are believed to be considerable cross border flows from neighbouring MPAs - Milton Keynes, Northamptonshire, and

Central Bedfordshire in the north, Hertfordshire to the east, Oxfordshire to the west, and West Berkshire, Windsor and Maidenhead, and Slough, to the south. Given how well connected the County is with neighbouring MPAs in respect of the production and distribution of aggregates, then any restrictions on production do not constrain the potential to supply the market areas which consume aggregates. Effectively, Buckinghamshire is part of a wider market region in respect of both the production and consumption of sand and gravel aggregates. It is therefore reasonable to view the 10 year sales trend as an appropriate method of monitoring.

6. Future Provision of Sand and Gravel

6.1 In order to ensure the future provision of sand and gravel in Buckinghamshire the forthcoming RMWLP will include the allocation of 'Preferred Areas' for mineral extraction. This will focus mineral development to where it will cause the least harm overall, and achieve wider sustainability and environmental objectives. Policy CS5 of the MWCS sets out the criteria that will be used to assess preferred areas for sand and gravel extraction. Further information on local environmental constraints and the proposed appraised process for the identification of preferred areas can be found in topic papers 6 and 7, submitted in support of the MWCS.

6.2 However it is possible that planning applications for minerals extraction may come forward prior to adoption of the RMWLP In this instance, proposals will be tested against the "Saved" policies in the Buckinghamshire Minerals and Waste Local Plan 2004-2016; as well as policy CS4, and the criteria for selection of Preferred Areas set out in Policy CS5 of the MWCS.

6.3 In order to ensure a steady and adequate supply of primary aggregate, MPAs are required to ensure that there is a stock of mineral planning permissions which will satisfy the annual supply requirement for at least seven years in the case of sand and gravel[15]. Policy CS4 of the MWCS states that:

> *"Adequate and steady provision will be made to maintain a landbank of sand and gravel equivalent to at least 7-years' worth of supply over the period to 2026, based on the prevalent agreed local annual supply requirement for Buckinghamshire."*

6.4 According to the NPPF calculation of the sand and gravel supply requirement is based primarily upon the ten year average of sales data for the preceding ten

[15] National Planning Framework, DCLG 2012

year period, which would at this point be using the period 2005 – 2014. Data for this period identifies average sales of 0.85mtpa[16]. If this level of requirement is adopted in the LAA, then it would equate to a minimum requirement of 5.95mt[17], in order to provide for a landbank sufficient for 7 years production. Based on this supply requirement, the current landbank would equate to 11.8 years supply.

6.5 Table 8 sets out calculations for the sand and gravel landbank based on different apportionment rates used include:

- the most recent ten year average of sales data based on the period 2005 – 2014
- the average of the last three years sales data

Table 8: Sand and Gravel Landbank in Buckinghamshire as of 31/12/2014

Permitted reserves (mt) at 31/12/2014	10.07	
Rolling average of ten years sales data 2005 – 2014 (mtpa)	0.85	11.8 Years Supply
Average of three years sales data (mtpa)	0.70	14.39 Years Supply

Adjustments for Local considerations

6.6 In 2014, all four District Councils in the County have begun to make provision for housing, by beginning work on the preparation of new Local Plans. Table 7 examines housing completions in the County and by District over the previous ten years. Figure 7 compares the number of housing completions in the County to the Sand and Gravel sales for the past ten years. While nationally there may be a relationship between housing completions and sand and gravel sales, there is no obvious correlation between housing completions and sand and gravel sales within Buckinghamshire, throughout the preceding ten years. While housing completions within Buckinghamshire have varied over time, the sales of sand and gravel have steadily been declining. However, during the period 2004-2006 there does appear to be some correlation between the two. It would be prudent to continue to re-examine trends in sand and gravel sales and housing completions, again in future years.

[16] mtpa = million tonnes per annum
[17] mt = million tonnes

Figure 7: Comparison of the past ten years Housing Completions and sales of Sand and Gravel (000 tonnes) within Buckinghamshire.

6.7 The largest major infrastructure project in the County that is likely to take place in the next few years is the High Speed 2 rail link. This is intended to provide a high speed rail link between London, Birmingham, and Manchester. However it is unlikely to commence construction until 2017. In addition, there are considerable uncertainties concerning its likely demand for construction materials. It is not possible to estimate the likely requirements of the HS2 project for locally arising construction materials, given the close proximity of other aggregate producing Mineral Planning Authorities to the line of the HS2 project. There is also scope for the reuse of surplus excavation waste arising from the HS2 scheme for use in engineering works in the future, which could substitute for quarried materials. In addition, there is the East West Rail (EWR) project which began works in 2014. Its requirement for aggregate is believed to be much less than that of HS2, and indications are that it may not be sourced entirely, or at all, from within Buckinghamshire. It will be a commercial decision as to where its contractor's source construction materials at the time of any construction works take place. There is also a scheme proposed for the widening of the M4 between junctions 3 and 12. This is also likely to consume large volumes of aggregates between 2016 and 2022, but likely quantities are not publically available. Other sources of significant demand for aggregate

include the Western Rail Access to Heathrow, Crossrail (in London), the A421, the Eastern Link Road, and various flood mitigation schemes.

6.8 Table 9 illustrates the housing completion numbers for Buckinghamshire's Districts from 2004-2014. However it should be acknowledged that there is an expectation of a significant increase in housebuilding in Buckinghamshire in the next 25 years, and this is likely to lead to an increase in demand for aggregates. Table 10 illustrates projected reserves of sand and gravel based on each of the apportionment options shown in table 6. This indicates that the earliest that the landbank would fall below the 5.95mt of the 10 year rolling average requirement for a 7 year landbank (based on the year average of sales) would be 2019, and the earliest it would fall below a 4.9mt requirement (based on the 3 year average of sales) would be 2022. The expectation for the level of future demand for aggregates is therefore highly mixed, with significant demand anticipated from infrastructure schemes and housing growth, yet sales are continuing sales to be low and the levels of reserves remain high. Against this uncertainty then the RMWLP will ensure the future supply of aggregates in the County is continued.

Table 9: Housing Completions across Buckinghamshire Districts 2004 – 2014

	2004/ 2005	**2005/ 2006**	**2006/ 2007**	**2007/ 2008**	**2008/ 2009**	**2009/ 2010**	**2010/ 2011**	**2011/ 2012**	**2012/ 2013**	**2013/ 2014**	
Aylesbury Vale	667	643	616	822	744	795	755	1103	934	990	**8,069**
Wycombe	214	300	607	611	625	304	575	514	223	Not Available	**3,973**
Chiltern	207	216	215	178	89	74	80	177	309	135	**1,680**
South Bucks	171	133	195	378	194	109	82	128	226	142	**1,758**
County Total	**1,259**	**1,292**	**1,633**	**1,989**	**1,652**	**1,282**	**1,492**	**1,922**	**1,692**	**1,267**	**15,480**

Source – District Councils Annual Monitoring Reports, data taken for April - March each year

Table 10: Remaining Permitted Reserves to 2028 against Annual Production Rates of 0.85mtpa and 0.70mtpa

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Remaining Reserves assuming 0.85mtpa average of the past ten years sales data	10.07	9.22	8.37	7.52	6.67	5.82	4.97	4.12	3.27	2.42	1.57	0.72	0	0	0
Remaining Reserves assuming 0.70mtpa average of the past three years sales data	10.07	9.37	8.67	7.97	7.27	6.57	5.87	5.17	4.47	3.77	3.07	2.37	1.67	0.97	0.27

7 Conclusion

7.1 In reviewing the supply situation for Buckinghamshire, it is apparent that there is no obvious relationship between sand and gravel sales in the County and housing completions. In addition, there are strong elements of the supply of sand and gravels both to, and from, neighbouring MPAs. In the north of the county, there are cross boundary movements from several adjacent MPAs in two different Aggregate Working Party (AWP) areas (East Midlands, and East of England); while in the south there are exchanges with Oxfordshire, the unitary MPAs in the former Berkshire County with the SEEAWP area, and Hertfordshire in the East of England AWP area. Therefore Buckinghamshire cannot be viewed in isolation as an aggregates producing area, since there are substantial two way flows of aggregates with adjacent aggregates producing areas.

7.2 Considering the ten year sales trend of sand and gravel from within Buckinghamshire the County has a landbank sufficient for 11.8 years at 31/12/2014. However this will decline over time, and only part of one of the 'Preferred Areas' identified in the Buckinghamshire Minerals and Waste Local Plan adopted in 2006 remains without planning permission, and unworked. It is prudent therefore to identify suitable areas for future sand and gravel extraction, as part of the RMWLP. The RMWLP will also revisit existing 'Saved' policies, and seek to bring forward replacement policies.

7.3 The forthcoming RMWLP will allocate new 'Preferred Areas' for sand and gravel working in the county for a 15 year period, to 2033. However, this new Plan will need to be reviewed regularly throughout its life, to monitor the adequacy of its policy and site provisions. It is acknowledged that future LAA's may identify the need to identify more site allocations.