



Lancashire

Minerals & Waste

Local Plan

Joint Lancashire Local Aggregate Assessment

November 2019

(with 2018 data)

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This document has been prepared jointly by Lancashire County Council, Blackpool Council and Blackburn with Darwen Borough Council.

Further details of the local plan, and to download this and other documents, please visit our website www.lancashire.gov.uk/mwdf. Or contact:

- Lancashire County Council, PO Box 100, County Hall, Preston, PR1 0LD
- Telephone: 01772 534294
- Email: lmwf@lancashire.gov.uk



Ratified by the North West Aggregate Working Party in October 2019

Executive Summary									
	Sales (Mt)	Av (10yr) Sales ¹ (Mt)	Av (3yr) Sales (Mt)	Trend ²	LAA Rate ³ (Mt)	Permitted Reserves ⁴ (Mt)	Landbank (Yr) ⁵	Capacity (Mt/Yr) ⁶	Comments
Land won sand and gravel	0.5	0.43	0.50	↔	0.50	5.9	12		Runshaw, which represents over half of the permitted reserves, has yet to start working. Number of quarries set to reduce during the forecast period. Sales are unchanged.
Limestone	2.6	1.92	2.36	↑	2.36	52.68	22		Number of quarries set to reduce during the forecast period. Sales increased on the previous year, and are returning to prerecession levels.
Gritstone	0.99	0.94	1.18	↔	1.18	75.38	64		Approximately 70% of the permitted reserve is held in Whitworth Quarry Sales have increased on the previous year.

¹ Average of 10 years sales data

² Change relative to previous years

³ The Av (10yr) Sales or Av (3yr) Sales used to inform the projections of demand. As set out in the NPPF, Av (10yr) Sales is the default, but consideration must be had to the Av (3yr) Sales, and other relevant local information including economic projections and growth aspirations within the Joint Plan area, and in neighbouring areas that constitute a market for aggregates produced in the Joint Plan area. The consideration of the other relevant local information used to come to this determination is set out in the body of this LAA.

⁴ Quantity of minerals with planning permission for extraction

⁵ Permitted reserve divided by LAA rate

⁶ A measure of the productive capacity of the permitted quarries (considering planning restrictions on vehicle movements or tonnages worked, and working methods/equipment used).

1. Introduction

The Joint Lancashire Minerals and Waste Plan covers the administrative areas of Lancashire County Council, Blackburn with Darwen Borough Council and Blackpool Council (the Joint Authorities). The Joint Plan consists of an adopted Core Strategy (2009) and an adopted Site Allocation and Development Management Policies Local Plan (2013).

This local aggregate assessment is prepared in response to section 13(1) of the Town and Country Planning (Local Plan) (England) Regulations 2012, and the National Planning Policy Framework (the NPPF). It accords with the guidance on local aggregate assessments contained in the National Planning Practice Guidance, and expanded upon by the Planning Officers Society/Minerals Products Association's Practice Guide. In accordance with section 17(6) of the Regulations it will inform the monitoring and review of the Minerals and Waste Local Plan.

This report contains information on the past 10 years data for aggregate sales, up to activity in 2018 (which is the most recent information available), provided through the work of the North West Aggregate Working Party. The information includes estimates by the Council, as several operators failed to complete monitoring returns (this estimate is based on the last recorded submission from the operator).

The Local Aggregate Assessment seeks to identify objectively assessed need, a requirement (at paragraph 11) of the NPPF. The acceptability of meeting the objectively assessed need will be determined through the plan making process. The 10 year average of sales is presented alongside the North West Aggregate Working Party sub-regional apportionments, and the 3 year average of sales.

1.1 Making comments on the assessment

If you have any comments or information on the assessment please send them, with your name and address, to the address below:

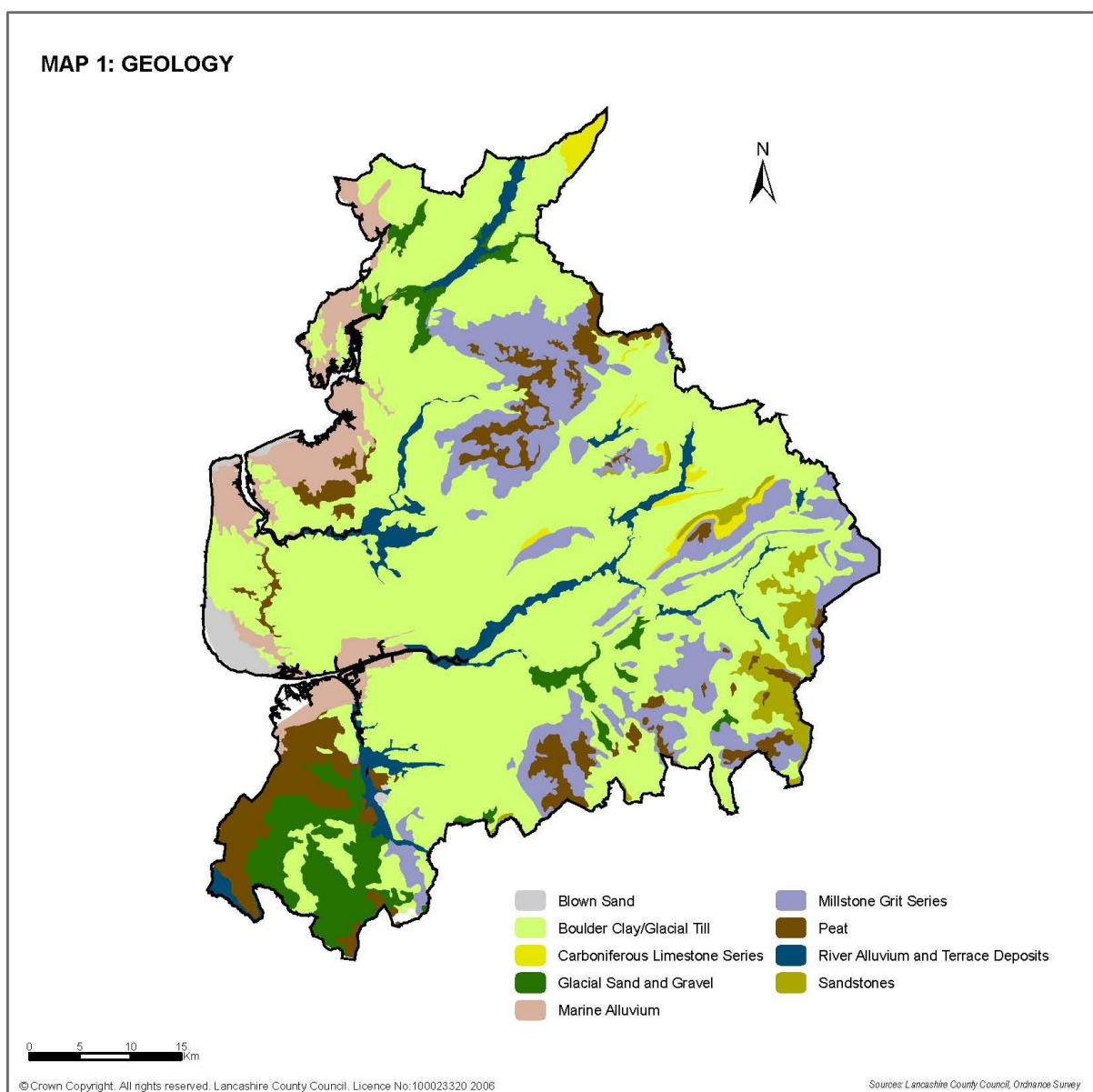
Planning Team
Lancashire County Council
PO Box 100
County Hall
PRESTON
PR1 0LD

- Or by email at: lmwf@lancashire.gov.uk

2. Lancashire's Geology

The surface geology of Lancashire, Blackpool and Blackburn with Darwen (the Plan area) is dominated by Triassic sandstones in the west and Carboniferous sandstones in the east, with small areas of limestone in the north, and significant areas of glacial till. It contains extensive mineral resources (natural concentrations of rocks that are, or may become, of potential interest for economic extraction). They are significant in the region given the extent of urbanisation in Merseyside and Manchester, and the limited availability of hard rock in the south of the North West, and limestone throughout the North West.

The minerals are described below, together with their uses. Permitted minerals sites are described in Appendix 1.



Sand and Gravel

In the Plan area, sand and gravel for aggregate use has usually been obtained from two distinct types of deposit: glacial sands and fluvial/fluvioglacial sand and gravel.

Glacial deposits occur in lowland areas and are often covered with a variable thickness of clay. The variability of these parameters makes glacial deposits difficult to locate, access and work. They yield soft building sands, asphalt sands and fine concrete sands after processing.

Fluvial and fluvioglacial deposits are associated with major rivers or former glacial drainage channels respectively. They yield high quality sand but variable quality gravel.

In addition to these sources, beach sand is extracted at St. Anne's Foreshore.

Limestone

Carboniferous limestone outcrops suitable for extraction are limited in the area, with quarrying operations confined to two locations in the north; a compact area east of Carnforth, and a complex of quarries east of Clitheroe. The limestone extracted is used as aggregate, though two quarries also provide feedstock for the cement works in Clitheroe.

Gritstone

The gritstone worked in the Plan area occurs in carboniferous rocks of either the Millstone Grit Series, or the Lower Coal Measures, comprising alternate beds of mudstone, shales and gritstones. They occur over a wide area mainly in east Lancashire.

Gritstone is extracted for use as both aggregates and dimension stone; output comprises mostly dry road stone and construction fill. Production in the area has historically shown considerable fluctuation.

Whether a rock is used for building stone depends on a number of factors or technical considerations such as the thickness of the gritstone deposit, the extent of the folding and faulting, and the aesthetic or technical qualities of the mineral. Building stone is used in various applications: to maintain vernacular styles in new buildings, architectural cladding, and the restoration of old buildings. The latter consumes the smallest amount of building stone but requires a specific stone, often from a specific quarry.

Shale

Shales are extracted in the area in conjunction with landfill operations for engineering works, as waste products from other quarrying activities, or in dedicated quarries, and are used as low-grade constructional fill.

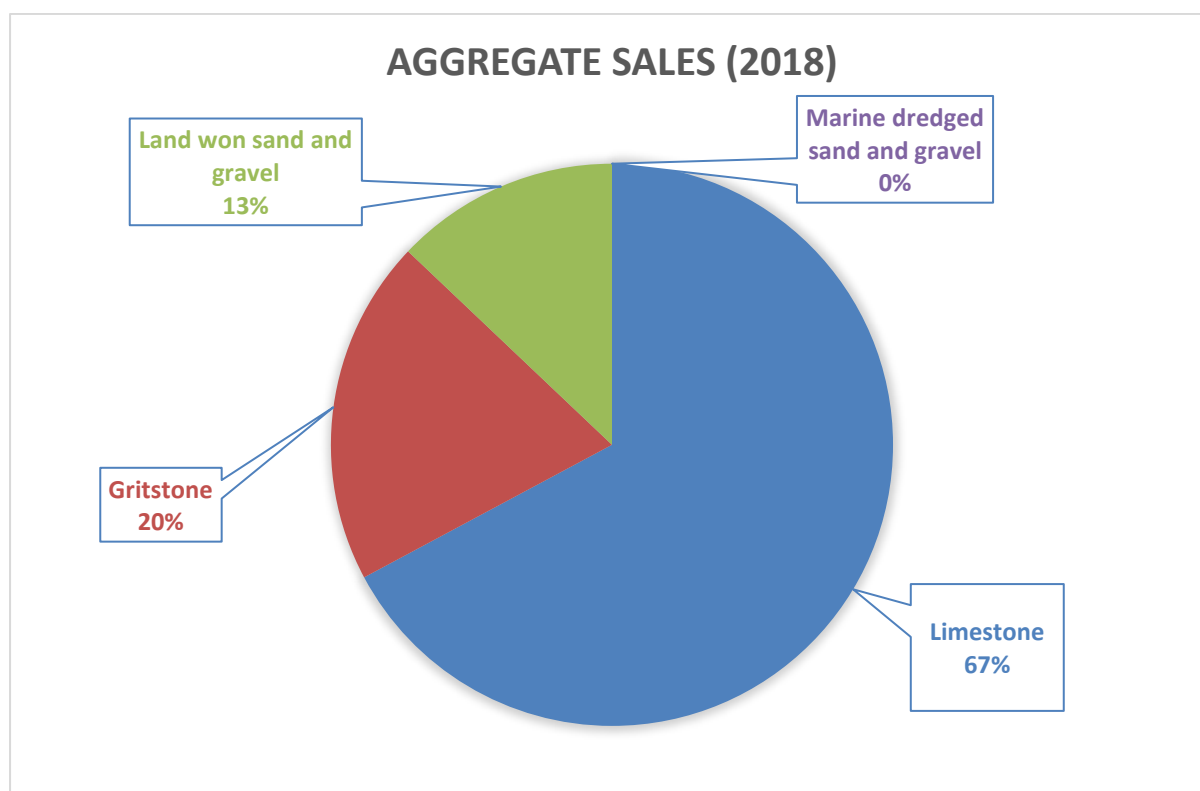
3. Sales of Aggregates

This document sets out information on the sales of aggregates, as well as assumptions on future demand, to inform the monitoring and review of the Local Plan, as part of the Managed Aggregate Supply System. It sets out methods of:

- Identifying forecast demand
- Assessing the adequacy of supply
- Assessing the supply options
- Meeting the forecast demand

This is broken down by mineral type:

- Sand and gravel
- Limestone
- Gritstone (Gritstone)



Because of the significant differences in the physical characteristics and use of limestone and gritstone, and the different characteristics of the landbanks, it is considered appropriate that they should continue to be treated separately rather than as a combined crushed rock landbank.

The average of 10 years sales data is presented alongside the average of 3 years sales data; the NAWWP Sub-regional apportionment (2011) is also presented. These should be considered alongside the economic trends and projections.

The forecast of demand is made over a 15 year period.

Information is used from the North West Aggregate Working Party monitoring survey returns (2018 sales data); this is the most recent source of information on aggregate reserves and sales.

This version of the Local Aggregate Assessment replaces any previous versions.

4. Sand and Gravel

4.1 Assessment of Demand for Sand and Gravel



Total sales are presented in the figure to the left.

Tarmac ceased using Heysham port to land marine dredged sand and gravel in 2008.

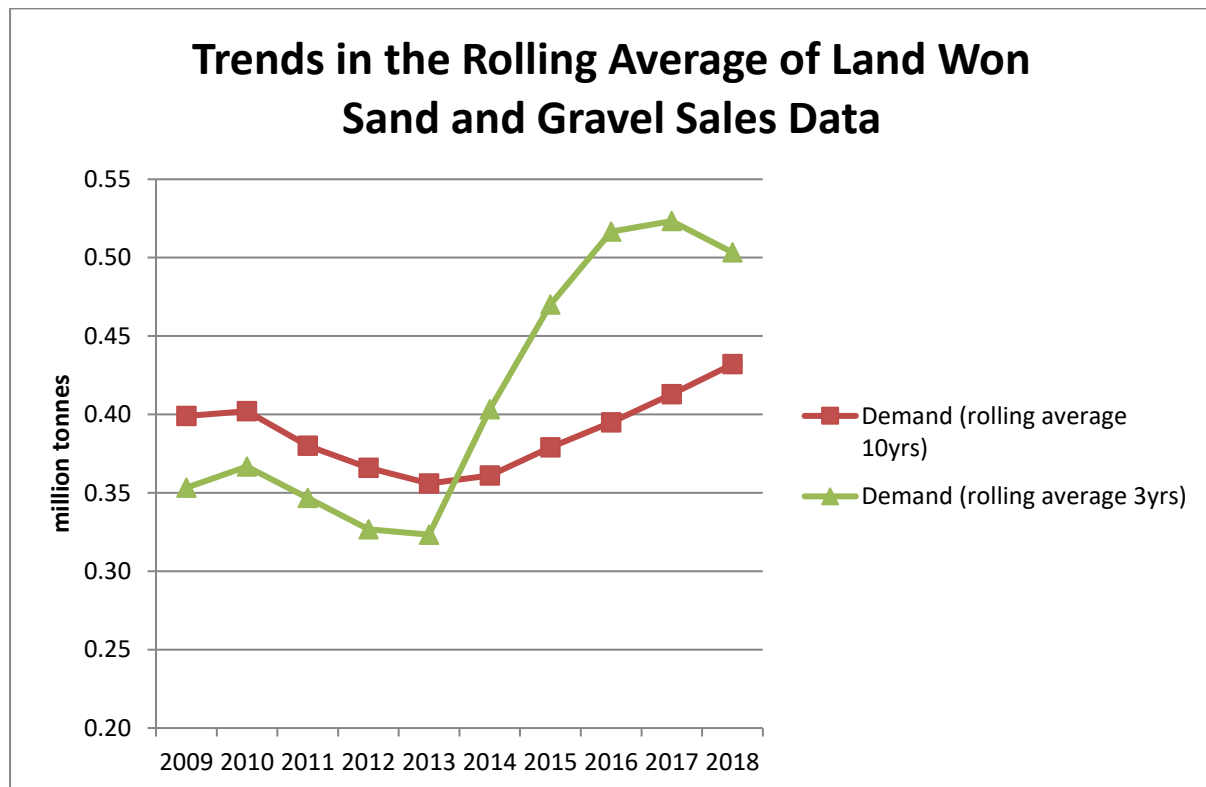
The 10 year average of sales of land won sand and gravel is 0.43 million tonnes per year.

The 3 year average of sales of land won sand and gravel is 0.5mt.

Sales (mt)

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Sand and Gravel	0.34	0.33	0.31	0.42	0.37	0.25	0.37	0.36	0.49	0.56	0.5	0.51	0.5
Marine Dredged	0.13	0.12	0.01	0	0	0	0	0	0	0	0	0	0
Total Sand and Gravel	0.47	0.45	0.32	0.42	0.37	0.25	0.37	0.36	0.49	0.56	0.5	0.51	0.5

Due to a lack of information in operator returns this cannot be broken down into the different types of sand and gravel aggregates.



Forecasts of demand, projected over a 15 year period, are presented in the table below: these projections are based on the average of 3 years and 10 years sales data for land won sand and gravel, the Core Strategy apportionment, and the forecast demand set out in the National and Sub-National Guidelines (2005-2020), which were converted into an apportionment by the North West Regional Aggregate Working Party in 2011.

In addition, other relevant local information is considered at appendix 2 and 3. These indicate that economic activity can be expected to increase during the forecast demand period, though this is subject to significant uncertainty. It shows there is a degree of correlation between past housing completions, and total aggregate sales; a correlation coefficient of +0.78 indicated a not insignificant correlation. Future housing projections could therefore be used to infer an indication of future demand for aggregates. In the case of sand and gravel this provides a figure of 0.68 million tonnes per year using local plan forecasts and 0.48 million tonnes per year using the new standard methodology⁷.

There are some gritstone quarries that produce fines as a by-product of their crushing and screening operations. Whilst they replace sand and gravel in some

⁷ See appendix 2 for more information

markets, they do not come from a defined supply or have a continuous historic record and so will not be considered in the supply landbank calculations.

Land won sand and gravel (mt)	Basis for forecast demand	Forecast demand (over 15 year demand period)
Average of 10 years land won sales data (2018)	0.43	6.45
Average of 3 years sales data (2018)	0.5	7.5
Core Strategy Apportionment (2006)	0.5	7.5
NWRAWP Sub Regional Apportionment (2011)	0.44	6.6
Housing Delivery/Forecast Inferred Demand using Local Plan Forecast (2018)	0.68	10.2
Housing Delivery/Forecast Inferred Demand using Std Methodology(2018)	0.48	7.2

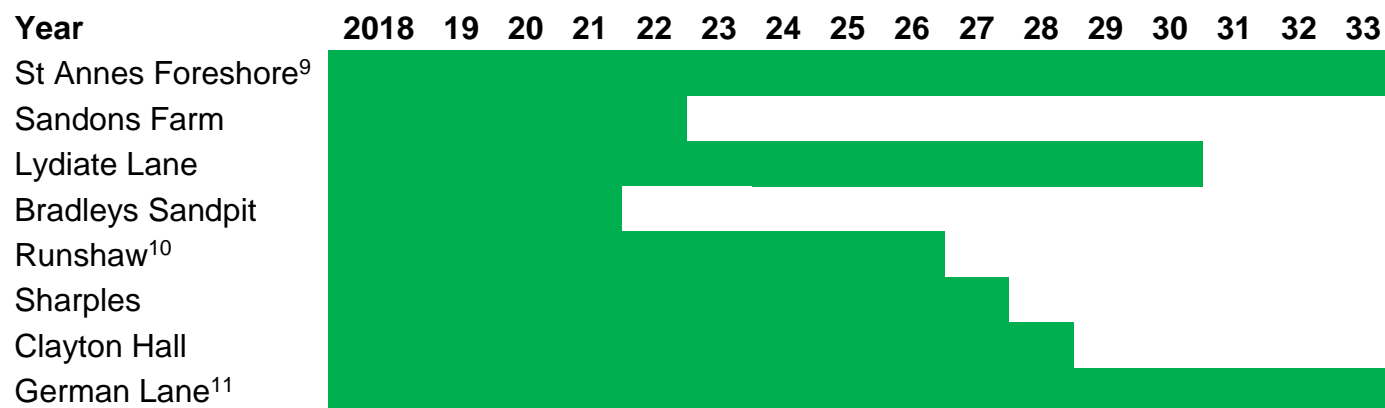
These projections will be considered further in section 4.4, within the context of supply options.

4.2 Assessing the adequacy of sand and gravel supply

In 2018 there were 5.9 million tonnes of sand and gravel reserves with planning permission. These permitted reserves are held in 7 quarries, though in 2018 German Lane was inactive and Runshaw had not started extraction⁸, although its permission has been implemented.

Based on the 10 year average of sales at 2018 the permitted reserves of 5.9mt are expected to last 14 years, and the landbank of at least 7 years is expected to begin to be eroded in 2025 (12 years if using the 3 year average, bringing this down to 2023). However, in order to ensure the continued steady and adequate supply of aggregate to market we must also consider the permitted quarries' ability to meet the forecast annualised demand. The figure below describes when the current planning permissions expire.

It is possible that some of these will not be worked out before the expiry of their permission. If this is the case, in the event that their permitted life is not extended the permitted reserve and landbank will need to be revised. Also, in 2018 over half of the permitted reserve was held in one quarry (Runshaw Quarry) that was not yet extracting.



⁸ This continues to be the case in April 2019

⁹ End date of planning permission 2049.

¹⁰ Inactive

¹¹ Inactive

4.3 Assessment of supply options

This chapter will present information on the alternative supply options available to meet the forecast demand identified in the previous chapter.

Other aggregates

Shale may be used to replace sand and gravel in some applications such as fill. There is some scope for substitution in concreting applications from washed crushed sandstone. These alternatives are also available in different locations separate from the main sand and gravel producing areas within the Plan area. They represent a moderate contribution to supply, notwithstanding the potential limitations on their uses.

Recycled Aggregates

Recycled aggregate sales are not recorded through the AWP or CLG monitoring process. Consequently it falls outside of the forecast demand calculated in the previous chapter. Nationally it is estimated that around 29% of total aggregate use is met through recycled and secondary aggregates (MPA, 2019). It is assumed that inert construction and demolition waste will continue to be produced, and will continue to be recycled – at least at the existing levels – throughout the plan period.

Because of this, and the current uncertainties around the quantities of inert waste and recycled aggregate produced, we are not proposing to amend the forecast demand, either up or down, to reflect the contribution that recycled aggregates could make; we are assuming that the currently unrecorded contribution they make will continue to be made through the plan period; this will be reflected by, but not included in, the forecast demand.

Secondary Aggregates

There is minimal secondary aggregate production in the plan area, and it is not considered to be a significant option for contributing towards meeting the forecast demand for aggregates.

Marine Dredged Sand and Gravel

Landings of marine dredged sand and gravel in the plan area ceased in 2008. There is no indication that this will start again. Currently demand is being met by land based sources and where required via imports from landing points in neighbouring authorities and it is expected that this will continue for the duration of this plan period. There is existing consented marine aggregate reserve within the Northwest region to supply volumes in excess of historic landing levels for the Lancashire market. Additional marine aggregate reserves are likely to be developed in the region to allow further capacity to supply via forthcoming tender rounds operated by The Crown Estate.

Imports and Exports

Aggregate movements in 2014¹² (the most recently available information on movements) are described in the figure and table below. In 2014 the Plan area was a net exporter of sand and gravel, as it was in 2009.

	Sand and Gravel (000 t)	Marine sand and gravel (000 t)	Total sand and gravel (000 t)
Total sales	509 ¹³	0	509
Exports to rest of NW	190		190
- as % of sales	37		37
Exports to unknown	132		132
- as % of sales	26		26
Imports	183	49	232
- as % of sales	36	4	46
Net exports	139	-49	-42

It is assumed that the movements identified above will continue (subject to the growth discussed in Appendix 3, and a longer term concern, UK wide, around sand and gravel supply which may affect demand from neighbouring areas such as West Yorkshire, particularly those with limited indigenous resources, and result in increased exports beyond the forecast period). However, if the quarries providing for this supply were to cease production it could result in an increase in demand in the Plan area, and thus is likely affect the rate of consumption of permitted reserves at the quarries identified above.

Current exports are included in the forecast of demand; current imports will be reflected in neighbouring mineral planning authorities' sales data. Should the industry be unable to maintain these outputs then these assumptions, and the forecast demand, may need to be revisited.

To assist in this the imports described above, whilst only representing a snapshot in time, can be used to assist in forecasting demand. Imports in 2014 were approximately 46% of the sand and gravel sale figure, including marine dredged sand. Until more recent information is available this 46% figure can be used to estimate the amount of aggregate imported into the plan area. In 2018 this 46%

¹² BGS/CLG. Collation of the Results of the 2014 Aggregate Minerals Survey for England and Wales. 2016

¹³ This figure differs from the figure recorded in 4.1, probably due to the different number of respondents to the different surveys.

would be 230,000 tonnes (annual sales in 2018 was 0.5mt, 46% of which is 230,000 tonnes).

Similarly, exports at 37% would represent 185,000 tonnes.

This matter will be addressed through the duty to cooperate, should neighbouring authorities, or those from wider afield, have a quantified shortfall in supply.

4.4 Meeting forecast demand for sand and gravel

The forecast demand and the permitted reserves are compared in the tables below, presenting information over a 15 year time horizon, for a variety of scenarios.

This indicates there is insufficient minerals available through the supply options identified above to meet estimated need during a 15 year time horizon for any of the scenarios. It is also apparent that the landbank will be reduced to below that prescribed as a minimum by national policy towards the end of the demand period for all scenarios.

Forecast demand period of 15 years (2018-2033)	Sub-regional forecast (mt)	10 year average land won sales forecast (mt)	3 year average land won sales forecast (mt)	Housing Delivery- Forecast Inferred Demand using local plan forecast (mt)	Housing Delivery- Forecast Inferred Demand using Std methodology (mt)
Demand	0.44	0.43	0.50	0.68	0.48

Forecast demand	6.6	6.5	7.6	10.2	7.2
Permitted reserves	5.9	5.9	5.9	5.9	5.9
Shortfall in supply	-0.7	-0.6	-1.7	-4.3	-1.3
Surplus in supply	-	-	-	-	-
Surplus in supply represents a landbank of x years	-	-	-	-	-

- In addition to the 10 year and 3 year average of sales, any other relevant local information should be considered; this is discussed further in Appendix 2 and 3.
 - The housing delivery forecasts fulfil this function.
- Exports are estimated to represent approximately 37% of sales. Imports, including marine dredged aggregates, are estimated to represent approximately an additional 46% of sales. We are estimated to be a slight net importer and the scenarios above should be viewed in that context.
- There is also a need to consider the permitted reserves ability to meet the forecast demand.
 - As can be seen from the figure in section 4.2 the number of quarries will be considerably reduced as we move through the forecast demand period. This is likely to affect the rate at which the remaining quarries

are worked out, to affect the availability of aggregates should the remaining quarries be unable to increase production to compensate, and significantly to affect the availability of supplies to local markets as each quarry closes.

- Further to this, half of the landbank currently rests in one quarry, which is currently (correct at April 2019) inactive. Whilst there is no suggestion that Runshaw Quarry will not be brought into operation, there is a risk associated with the reliance on the output of one quarry in meeting forecast demand later in the forecast period.

Conclusion

This assessment of the balance between supply and demand, together with a consideration of the economic circumstances, indicates that there is a projected shortfall.

There are also significant movements of sand and gravel both ways across the plan areas boundary; the balance represents a slight net import (though this is based on figures collected every 4 years, lastly in 2014). These movements are likely to be influenced by economic activity and growth projections set out in those areas; and at this time this has not been incorporated into the above assessment. If growth in these areas is above that forecast in the plan areas district housing projections then the correlation between aggregate sales and housing completions may be affected, and the forecast demand may be an underestimate.

Likewise if imports are constrained by a reduced supply in neighbouring areas this may affect demand within the plan area.

These will be monitored and attempts will be made to quantify them through the duty to cooperate and the operation of the North West Aggregate Working Party.

At this stage, it is prudent to address these through the review of the Minerals and Waste Local Plan.

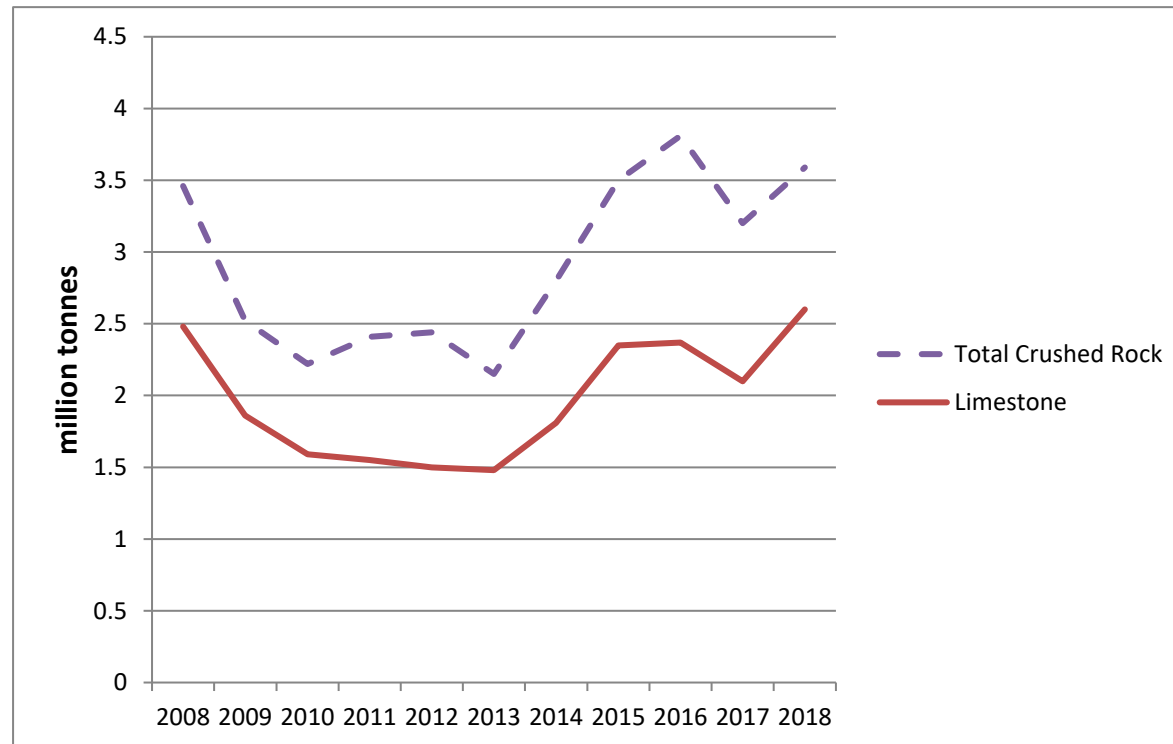
This review could consider a range of figures to inform objectively assessed need (based around the 10 year average of sales, and the Housing Delivery-Forecast Inferred Demand). Given the uncertainties described above any policy should be drafted to provide for flexibility, and should be drafted so as to ensure consideration of the up to date information presented in the most recent LAA at the time of considering any development proposal.

Given the consistent recent increases in sales and the average of 3 year sales data, and the predicted demand for materials arising from the Plan areas growth aspirations (both in housing, road building and economic development) the LAA provision rate, to be used when estimating the landbank of permitted reserves, is the 3 year average.

An assessment of the environmental constraints, and its capacity to accommodate this demand, will be carried out as part of the environmental assessment of the Local Plan review.

5. Crushed Rock - Limestone

5.1 Assessment of Demand for Limestone



Total sales (see figure left) show an increase on the previous year, and is around pre-recession levels.

The rolling 10 year average of sales was 1.92 million tonnes (mt).

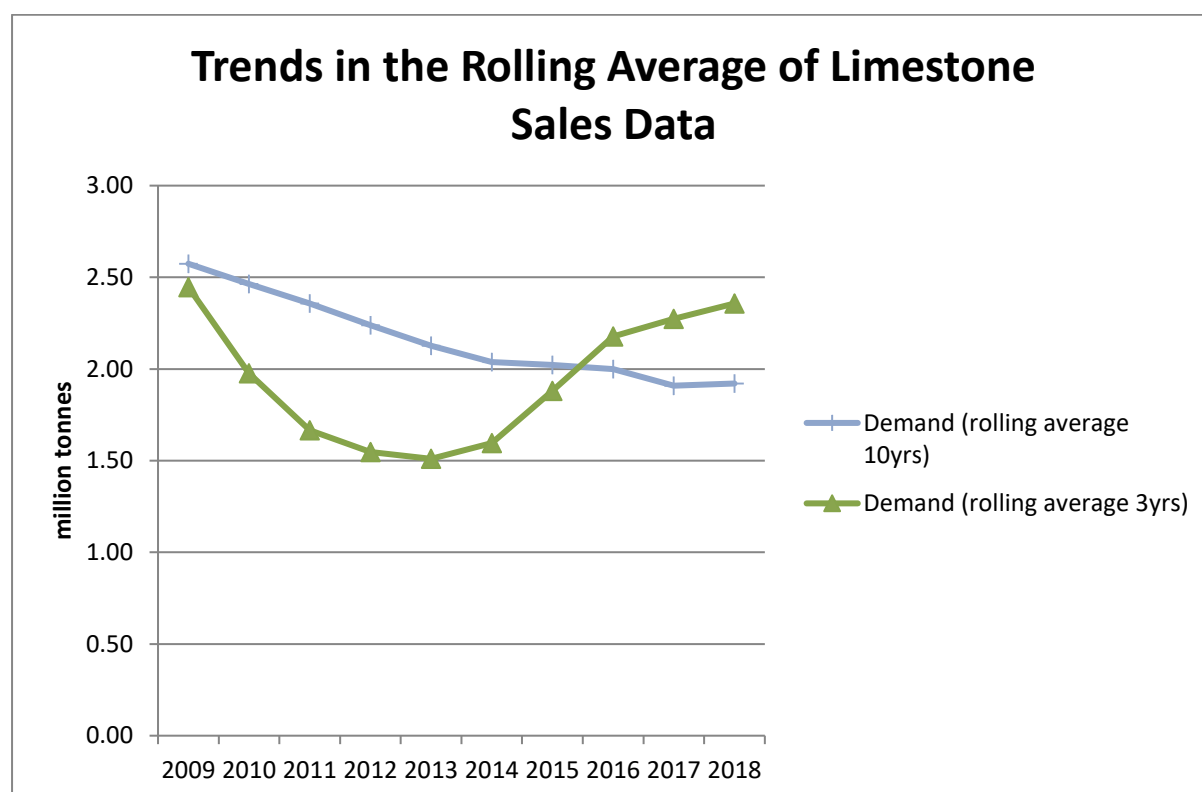
The 3 year average was 2.36mt.

Sales (mt)

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Limestone	2.6	3	2.48	1.86	1.59	1.55	1.5	1.48	1.81	2.35	2.37	2.1	2.6
Total Crushed Rock	3.6	4.26	3.78	2.52	2.22	2.41	2.44	2.15	2.8 ¹⁴	3.5 ¹²	3.81 ¹²	3.2	3.59

¹⁴ Altered from previous reported figure due to error in entering return figure

As can be seen in the figure below, the 10 year average of sales is levelling off from its decline, and the 3 year average continues to rise, though at a much slower rate. This may indicate a more stable economic environment.



Forecasts of demand, based on the figures described above projected over a 15 year period, are presented in the table below: the average of 3 years and 10 years sales data for limestone is presented, alongside the Core Strategy apportionment, and the forecast demand set out in the National and Sub National Guidelines (2001-2016) which were converted into an apportionment by the North West Regional Aggregate Working Party in 2011.

In addition, other relevant local information is considered at appendix 2 and 3. These indicate that economic activity can be expected to increase during the forecast demand period, though this is subject to significant uncertainty. It shows there is a degree of correlation between past housing completions, and total aggregate sales; a correlation coefficient of +0.78 indicated a not insignificant correlation. Future housing projections could therefore be used to infer an indication of future demand for aggregates. In the case of limestone this provides a figure of 3.5 million tonnes per year using local plan forecasts and 2.47 million tonnes per year using the new standard methodology¹⁵.

¹⁵ See appendix 2 for more information

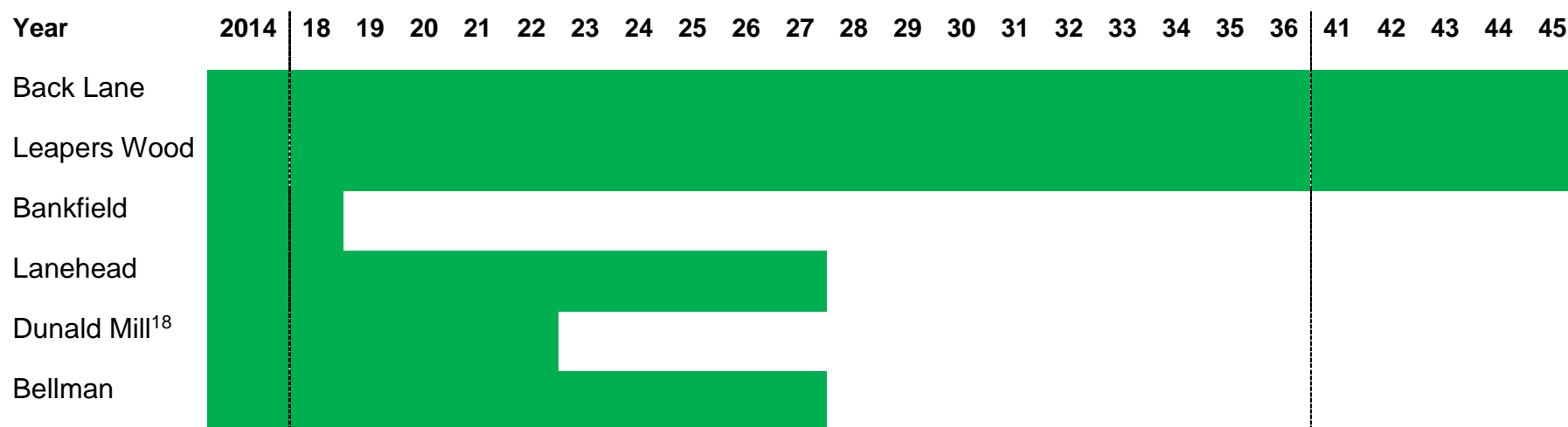
Limestone (mt)	Basis for forecast demand	Forecast demand (over 15 year demand period)
Average of 10 years land won sales data (2018)	1.92	28.8
Average of 3 years sales data (2018)	2.36	34.4
Core Strategy Apportionment (2006)	2.75	41.25
NWRAWP Sub Regional Apportionment (2011)	2.54	38.1
Housing Delivery/Forecast Inferred Demand using Local Plan Forecast (2018)	3.5	52.5
Housing Delivery/Forecast Inferred Demand using Std Methodology(2018)	2.47	37.1

These projections will be considered further in section 5.4, within the context of supply options.

5.2 Assessing the adequacy of limestone supply

In 2018 there were 52.68 million tonnes of limestone reserves with planning permission. These permitted reserves are held in 6 quarries. Based on the 10 year average of sales the permitted reserves represents a landbank of 27 years, and the landbank of at least 10 years is expected to begin to be eroded in 2035 (24 years if using the 3 year average, bringing this down to 2032).

However, in order to ensure the continued steady and adequate provision of aggregate to market we must also consider the permitted quarries' ability to meet the forecast annualised demand. The figure below describes when the current planning permissions expire. Dunald Mill continues to be mothballed¹⁶. The number of quarries currently permitted will reduce in 2019¹⁷, 2023, and 2028. It is possible that a number of these will not be worked out before the expiry of their permission. If this is the case, in the event that their permitted life is not extended the permitted reserve and landbank will need to be revised. In addition it is estimated that Leapers Wood quarry is likely to be worked out before the end of its planning permission.



¹⁶ Correct at April 2018

¹⁷ Planning application 2018/0060 to vary the end date to 2033 was pending determination at April 2019

¹⁸ Inactive

5.3 Analysis of supply options

This chapter will present information on the supply options available to meet the forecast demand identified in the previous chapter.

Other aggregates

Shale, gritstone and sand and gravel may be used to replace limestone in some applications such as construction fill. There are limited opportunities for substitution for its use as an aggregate in roadstone and concrete. As such their contribution is not significant.

Recycled Aggregates

Recycled aggregate sales are not recorded through the AWP or CLG monitoring process. Consequently it falls outside of the forecast demand calculated in the previous chapter. Nationally it is estimated that around 29% of total aggregate use is met through recycled and secondary aggregates (MPA, 2019). It is assumed that inert construction and demolition waste will continue to be produced, and will continue to be recycled – at least at the existing levels – throughout the plan period.

Because of this, and the current uncertainties around the quantities of inert waste and recycled aggregate produced, we are not proposing to amend the forecast demand, either up or down, to reflect the contribution that recycled aggregates could make; we are assuming that the currently unrecorded contribution they make will continue to be made through the plan period.

Secondary Aggregates

There is minimal secondary aggregate production in the plan area, and it is not considered to be a significant option for contributing towards meeting the forecast demand.

Imports and Exports

Aggregate movements for crushed rock in 2014 (the most recently available information on movements) are described in the figure and table below. Information is not available for the split between limestone and gritstone. In 2014 the Plan area was a net importer of crushed rock, in 2009 it was a net exporter.

	Crushed rock (‘000 t)
Total sales	2820
Exports to rest of NW	771
- as % of sales	27
Exports to other	21
- as % of sales	0
Imports	1298
- as % of sales	46
Net imports	506

It is assumed that the movements identified above will continue. However, if particular quarries in neighbouring authorities were to cease production it could have an impact on the market in the Plan area, and affect the rate of consumption of permitted reserves at particular quarries. This is particularly relevant when considering national and local aspirations to limit mineral working in national parks, and the effect this could have on supply when extant planning permissions in the Lake District, Peak District and Yorkshire Dales reach the end of their operational or conditioned life span. 2042 in particular is a date many planning permissions will cease and there can be a relatively high degree of certainty that supply will be affected both in the Plan area and its current market area (this could include changes to the extent of the market area if businesses in areas such as West Yorkshire, which currently source a large proportion of the aggregates used from the Yorkshire Dales National Park, find the quarries in Lancashire to be an economic alternative market).

Current exports are included in the forecast of demand; current imports will be reflected in neighbouring mineral planning authorities' average of 10 years sales data. Should the industry be unable to maintain these outputs then these assumptions, and the forecast demand, may need to be revisited. This matter will be addressed through the duty to cooperate, should neighbouring authorities, or those from wider afield, have a quantified shortfall in supply.

To assist in this the imports described above, whilst only representing a snapshot in time, can be used to assist in forecasting demand. Imports of crushed rock in 2014 were approximately 46% of the crushed rock sale figure. There is no information on

the proportion of imports made up of limestone or gritstone; for the purposes of this, and in the absence of any other information, the 46% will be applied equally to limestone and gritstone. In 2018 this 46% would be 1.2 million tonnes (annual sales in 2018 was 2.6mt, 46% of which is 1.2 million tonnes).

Similarly, exports at 27% would represent 702,000 tonnes.

This matter will be addressed through the duty to cooperate, should neighbouring authorities, or those from wider afield, have a quantified shortfall in supply.

5.4 Meeting forecast demand for limestone

The forecast demand and the permitted reserves are compared in the tables below. This indicates there are sufficient minerals available through the supply options identified above to meet estimated need during a 15 year time horizon.

It is apparent that the landbank will be reduced to below that prescribed by national policy towards the end of the monitoring period under all of the scenarios.

Forecast demand period of 15 years (2018-2033)	Sub-regional forecast (mt)	10 year average sales forecast (mt)	3 year average sales forecast (mt)	Housing Delivery- Forecast Inferred Demand using local plan forecast (mt)	Housing Delivery- Forecast Inferred Demand using Std methodology (mt)
Demand	2.54	1.92	2.36	3.5	2.47

Forecast demand	38.1	28.8	35.4	52.5	37.1
Permitted reserves	52.68	52.68	52.68	52.68	52.68
Shortfall in supply during forecast demand period	-	-	-	-	-
Surplus in supply during forecast demand period	14.6	23.9	17.3	0.2	15.6
Surplus represents a landbank of X years	5.7	12.4	7.4	-	6.3

- In addition to the 10 year and 3 year average, any other relevant local information should be considered; this is discussed further in Appendix 2 and 3.
 - The housing delivery forecasts fulfil this function.
- Exports of crushed rock are estimated to represent approximately 27% of sales. Imports are estimated to represent approximately an additional 46% of sales. We are estimated to be a net importer and the scenarios above should be viewed in that context.
- There is also a need to consider the permitted reserves ability to meet the forecast demand.
 - As can be seen from the figure in section 4.1 the number of quarries reduces during the monitoring period. This is likely to affect the rate at which the remaining quarries are worked out, to affect the availability of aggregates should the remaining quarries be unable to increase production to compensate, and to affect the availability of supplies to local markets.
 - It is also apparent that the landbank period will be reduced to below that prescribed by national policy towards the end of the monitoring period for all of the scenarios during the 15 year period. If Leapers Wood quarry is exhausted sooner (as is suggested in anecdotal reports of increased sales, beginning to be reflected in the monitoring data) then this is likely to bring this forwards.

Conclusion

This assessment of the balance between supply and demand, together with a consideration of the economic and local circumstances, indicates that there is potential for a shortfall towards the end of the forecast demand period.

There are also significant movements of crushed rock both ways across the plan areas boundary; the balance represents a slight net import (though this is based on figures collected every 4 years, lastly in 2014). These movements are likely to be influenced by economic activity and growth projections set out in those areas; and at this time this has not been incorporated into the above assessment. If growth in these areas is above that forecast in the plan areas district housing projections then the correlation between aggregate sales and housing completions may be affected, and the forecast demand may be an underestimate.

Likewise if imports are constrained by a reduced supply in neighbouring areas this may affect demand within the plan area.

These will be monitored and attempts will be made to quantify them through the duty to cooperate and the operation of the North West Aggregate Working Party.

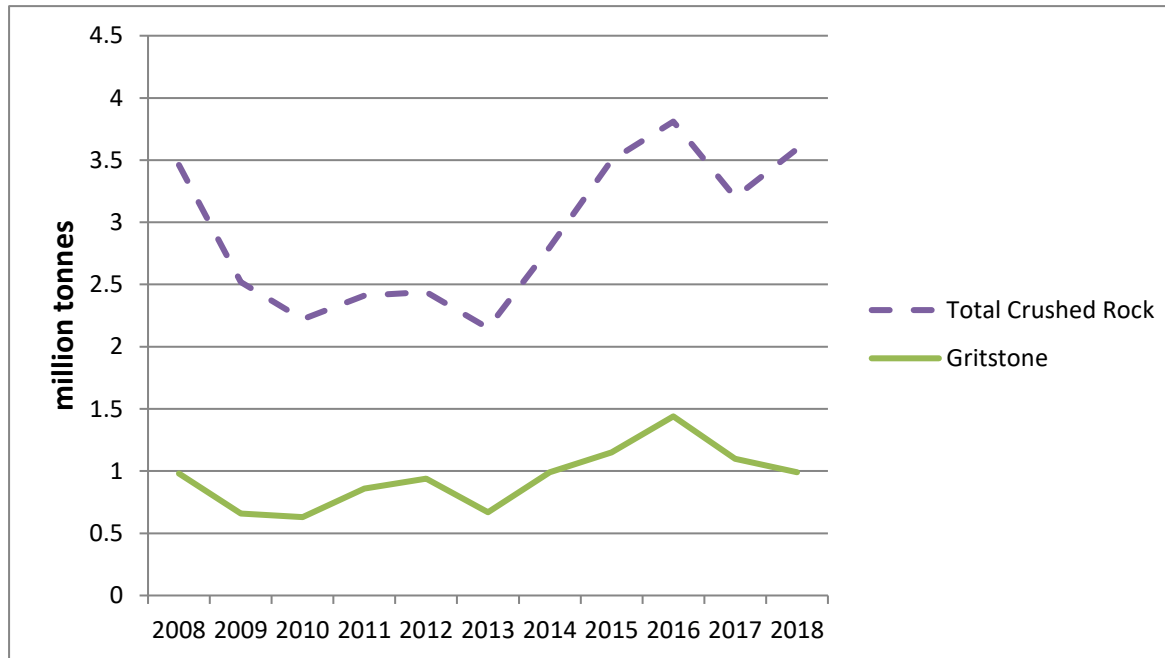
At this stage, given the relatively long term nature of the potential supply issue, it is prudent to address these through the review of the Minerals and Waste Local Plan.

This review could consider a range of figures to inform objectively assessed need (based around the 10 year average of sales, and the Housing Delivery-Forecast Inferred Demand). Given the uncertainties described above any policy should be drafted to provide for flexibility, and should be drafted so as to ensure consideration of the up to date information presented in the most recent LAA at the time of considering any development proposal.

Given the consistent recent increases in sales and the average of 3 year sales data, and the predicted demand for materials arising from the Plan areas growth aspirations (both in housing, road building and economic development) the LAA provision rate, to be used when estimating the landbank of permitted reserves, is the 3 year average.

6. Crushed Rock - Gritstone

6.1 Assessment of Demand for Gritstone



Sales (see figure left) have fluctuated during the monitoring period. In 2018 sales were 1.24 million tonnes (mt).

The 10 year average of sales is 0.94mt in 2018.

The 3 year average is higher, at 1.18mt.

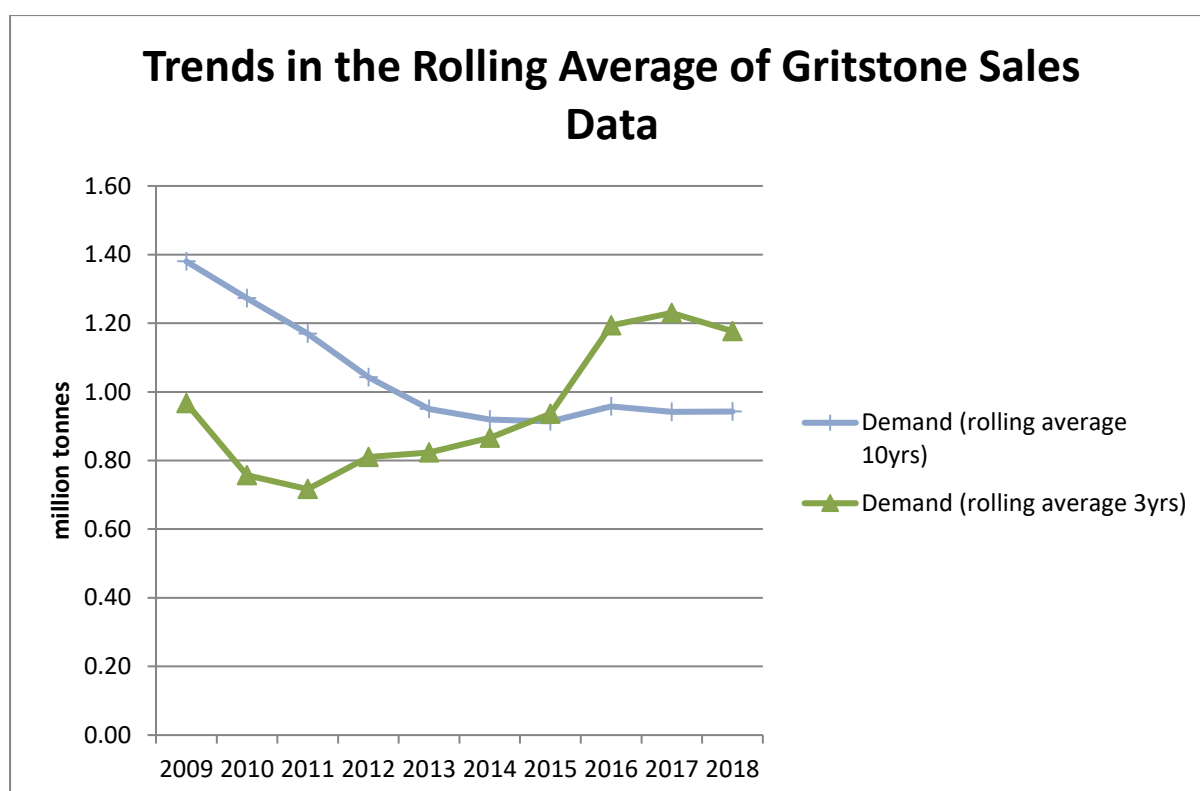
These figures include the sales of gritstone fines from building stone quarries.

Sales (mt)

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Gritstone	1	1.26	0.98	0.66	0.63	0.86	0.94	0.67	0.99 ¹⁹	1.15	1.44 ¹⁶	1.1	0.99
Total Crushed Rock	3.6	4.26	3.78	2.52	2.22	2.41	2.44	2.15	2.8	3.5	3.81	3.2	3.59

¹⁹ Altered from previous reported figure due to error in entering

The trends in sales may indicate a more stable economic environment.



Forecasts of demand, based on the figures described above projected over a 15 year period, are presented in the table below: the average of 3 years and 10 years sales data for gritstone is presented, alongside the Core Strategy apportionment, and the forecast demand set out in the National and Sub National Guidelines (2001-2016) which were converted into an apportionment by the North West Regional Aggregate Working Party in 2011.

In addition, other relevant local information is considered at appendix 2, and 3. These indicate that economic activity can be expected to increase during the forecast demand period, though this is subject to significant uncertainty. It shows there is a degree of correlation between past housing completions, and total aggregate sales; a correlation coefficient of +0.78 indicated a not insignificant correlation. Future housing projections could therefore be used to infer an indication of future demand for aggregates. In the case of gritstone this provides a figure of 1.04 million tonnes per year using local plan forecasts and 0.74 million tonnes per year using the new standard methodology²⁰.

²⁰ See appendix 2 for more information

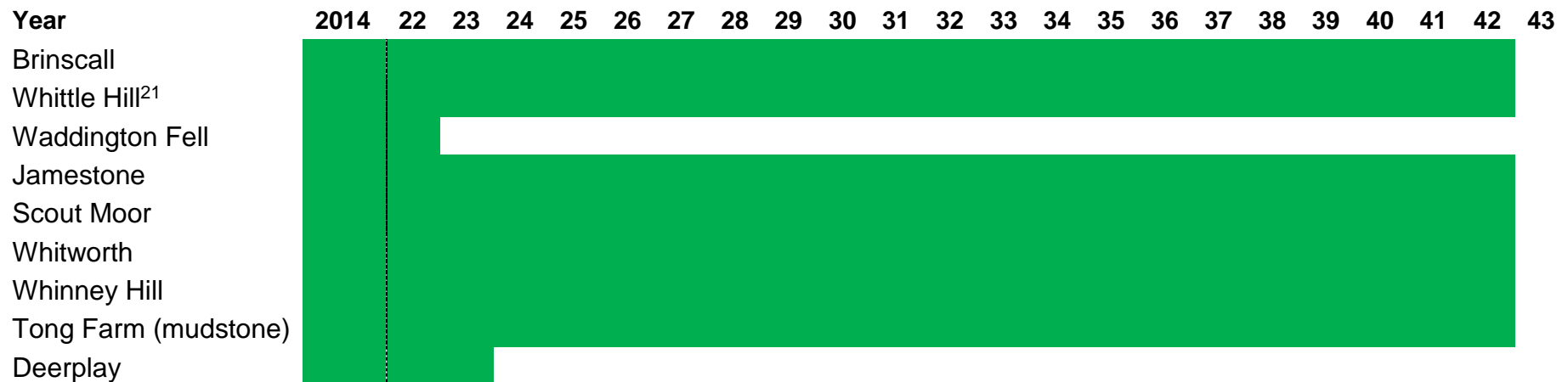
Gritstone (mt)	Basis for forecast demand	Forecast demand (over 15 year demand period)
Average of 10 years land won sales data (2018)	0.94	14.1
Average of 3 years sales data (2018)	1.18	17.7
Core Strategy Apportionment (2006)	1.81	27.2
NWRAWP Sub Regional Apportionment (2011)	1.69	25.4
Housing Delivery/Forecast Inferred Demand using Local Plan Forecast (2018)	1.04	15.6
Housing Delivery/Forecast Inferred Demand using Std Methodology(2018)	0.74	11.1

These projections will be considered further in section 6.4, within the context of supply options.

6.2 Assessing the adequacy of gritstone supply

In 2018 there were 75.38 million tonnes of gritstone reserves with planning permission. Based on the 10 year average of sales these permitted reserves are expected to last 80 years, and the landbank of at least 10 years is expected to begin to be eroded in 2088 (64 years if using the 3 year average, bringing this down to 2072).

However, in order to ensure the continued steady and adequate provision of aggregate to market we must also consider the permitted quarries' ability to meet the forecast annualised demand. The figure below describes when the current planning permissions expire. At 2010 a large proportion of the permitted reserve (52mt, representing approximately 70% of the permitted reserves) were held in Whitworth Quarry (the most recent publicly available information on Whitworth Quarry's permitted reserves).



²¹ Inactive

6.3 Analysis of supply options

This chapter will present information on the supply options available to meet the forecast demand identified in the previous chapter.

Other aggregates

Shale may be used to replace gritstone aggregates in some construction fill applications.

Recycled Aggregates

Recycled aggregate sales are not recorded through the AWP or CLG monitoring process. Consequently it falls outside of the forecast demand calculated in the previous chapter. Nationally it is estimated that around 29% of total aggregate use is met through recycled and secondary aggregates (MPA, 2019). It is assumed that inert construction and demolition waste will continue to be produced, and will continue to be recycled – at least at the existing levels – throughout the plan period.

Because of this, and the current uncertainties around the quantities of inert waste and recycled aggregate produced, we are not proposing to amend the forecast demand, either up or down, to reflect the contribution that recycled aggregates could make; we are assuming that the currently unrecorded contribution they make will continue to be made through the plan period.

Secondary Aggregates

There is minimal secondary aggregate production in the plan area, and it is not considered to be a significant option for contributing towards meeting the forecast demand.

Imports and Exports

Aggregate movements for crushed rock in 2014 (the most recently available information on movements) are described in the figure and table below. Information is not available for the split between limestone and gritstone. In 2014 the Plan area was a net importer of crushed rock (in 2009 it was a net exporter).

	Crushed rock (‘000 t)
Total sales	2820
Exports to rest of NW	771
- as % of sales	27
Exports to other	21
- as % of sales	0
Imports	1298
- as % of sales	46
Net imports	506

It is assumed that the movements identified above will continue. However, if particular quarries in neighbouring authorities were to cease production it could have an impact on the market in the Plan area, and affect the rate of consumption of permitted reserves at particular quarries.

Current exports are included in the forecast of demand; current imports will be reflected in neighbouring mineral planning authorities' average of 10 years sales data. Should the industry be unable to maintain these outputs then these assumptions, and the forecast demand, may need to be revisited. This matter will be addressed through the duty to cooperate, should neighbouring authorities, or those from wider afield, have a quantified shortfall in supply.

To assist in this the imports described above, whilst only representing a snapshot in time, can be used to assist in forecasting demand. Imports of crushed rock in 2014 were approximately 46% of the crushed rock sale figure. There is no information on the proportion of imports made up of limestone or gritstone; for the purposes of this, and in the absence of any other information, the 46% will be applied equally to limestone and gritstone. In 2018 this 46% would be 455,000 tonnes (annual sales in 2018 was 0.99mt, 46% of which is 455,000 tonnes).

Similarly, exports at 27% would represent 267,000 tonnes.

This matter will be addressed through the duty to cooperate, should neighbouring authorities, or those from wider afield, have a quantified shortfall in supply.

6.4 Meeting forecast demand for gritstone

The forecast demand and the permitted reserves are compared in the tables below. This indicates there are sufficient minerals available through the supply options identified above to meet estimated need during a 15 year time horizon for a variety of scenarios. The 3 year average of sales indicate that there is an increase in demand that is masked in the 10 year average scenario due to the sales figures arising from during the recession.

Forecast demand period of 15 years (2018-2033)	Sub-regional forecast (mt)	10 year average sales forecast (mt)	3 year average sales forecast (mt)	Housing Delivery-Forecast Inferred Demand using local plan forecast (mt)	Housing Delivery-Forecast Inferred Demand using Std methodology (mt)
Demand	1.69	0.94	1.18	1.04	0.74

Forecast demand	25.4	14.1	17.7	15.6	11.1
Permitted reserves	75.38	75.38	75.38	75.38	75.38
Shortfall in supply during forecast demand period	-	-	-	-	-
Surplus in supply during forecast demand period	50	61.2	49.1	57.5	86.9
Surplus representing a landbank of X years	29.6	64.9	49.1	57.5	86.9

- In addition to the 10 year and 3 year average, any other relevant local information should be considered; this is discussed further in Appendix 2 and 3.
 - The housing delivery forecasts fulfil this function.
- Exports of crushed rock are estimated to represent approximately 27% of sales. Imports are estimated to represent approximately an additional 46% of

sales. We are estimated to be a net importer and the scenarios above should be viewed in that context.

- There is also a need to consider the permitted reserves ability to meet the forecast demand.
 - The landbank period is sufficient during the monitoring period.
 - Even if we discount half of Whitworths estimated permitted reserve when considering forecast demand, so as to account for its disproportionate size relative to the rest of the landbank, landbanks of gritstone are in excess of 10 years for all of the scenarios.
 - Whilst the permitted reserves are more than sufficient they are unevenly distributed: approximately 70% of the permitted reserve is held at one quarry. Should other quarries in the Plan area become worked out and unable to continue producing aggregates the industry's ability to meet forecast demand at the local market level may be restricted, this may also affect the availability of aggregates should the remaining quarries be unable to increase production to compensate.

Conclusion

This assessment of the balance between supply and demand, together with a consideration of the economic and local circumstances, indicates that there is no shortfall. However, notwithstanding this, there is the possibility of a shortfall in local markets if some quarries are worked out or close.

There are also significant movements of crushed rock both ways across the plan areas boundary; the balance represents a slight net import (though this is based on figures collected every 4 years, lastly in 2014). These movements are likely to be influenced by economic activity and growth projections set out in those areas; and at this time this has not been incorporated into the above assessment. If growth in these areas is above that forecast in the plan areas district housing projections then the correlation between aggregate sales and housing completions may be affected, and the forecast demand may be an underestimate.

Likewise if imports are constrained by a reduced supply in neighbouring areas this may affect demand within the plan area.

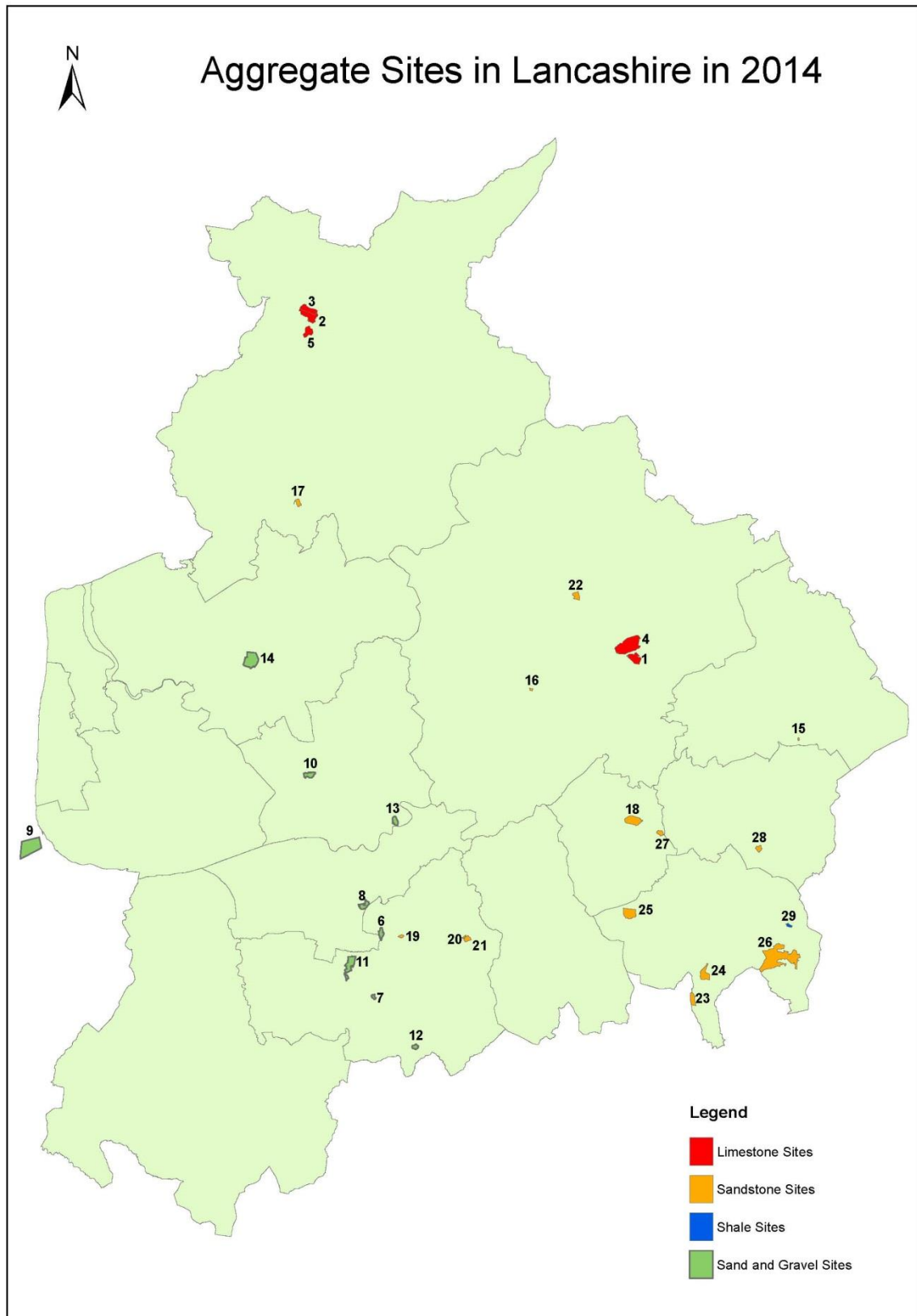
These will be monitored and attempts will be made to quantify them through the duty to cooperate and the operation of the North West Aggregate Working Party.

At this stage it would be prudent to address the issue of local supply and the threat to this through the large proportion of the permitted reserves held in a single quarry, through the ongoing review of the Minerals and Waste Local Plan.

This could include a more flexible criteria based policy to address the specific issue around the large landbank and its potential conflict with the continuation of local supply.

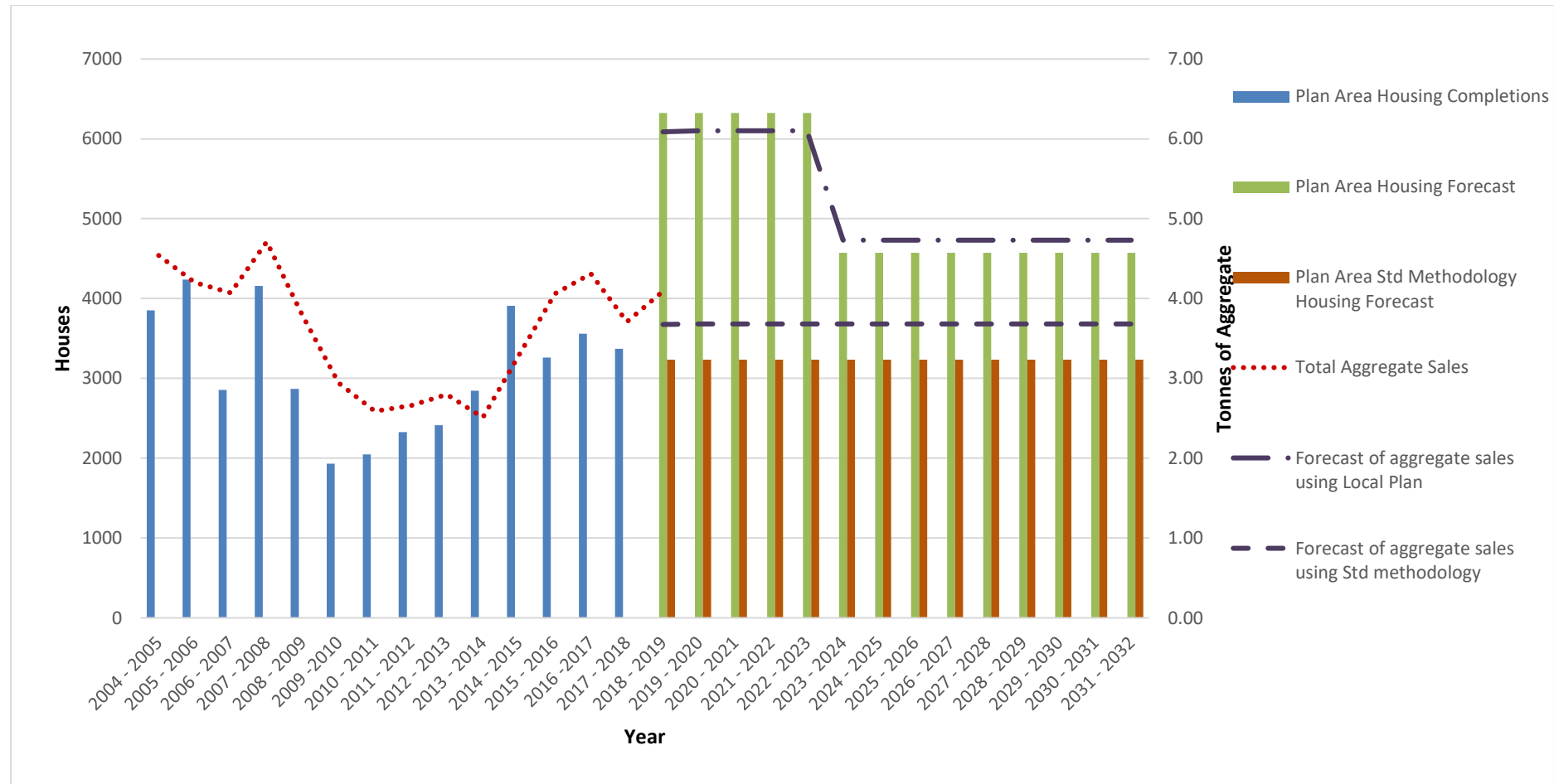
Given the consistent recent increases in sales and the average of 3 year sales data, and the predicted demand for materials arising from the Plan areas growth aspirations (both in housing, road building and economic development) the LAA provision rate, to be used when estimating the landbank of permitted reserves, is the 3 year average.

Appendix 1: Permitted aggregate sites



No.	Site	Status	Mineral	End date	Operator
1	Ribblesdale Cement - Bellman	Active	Limestone	2027	Hanson
2	Back Lane	Active	Limestone	2048	Aggregate Industries
3	Leapers Wood	Active	Limestone	2048	Tarmac
4	Ribblesdale – Bankfield	Active	Limestone	2018	Tarmac
4	Ribblesdale – Lanehead	Active	Limestone	2027	Hanson
5	Dunald Mill	Active	Limestone	2022	Tarmac
6	Clayton Hall	Active	Sand	2028	Neales
7	German Lane	Inactive	Sand	2042	P Casey Enviro
8	Lydiate Lane	Active	Sand	2030	JA Jackson
9	St Annes Foreshore	Active	Sand	2049	William Rainford
10	Bradleys	Active	Sand	2021	JA Jackson
11	Runshaw	Inactive	Sand	2027	Tarmac
12	Sandons Farm	Active	Sand	2022	Chorley Sand
13	Lower Brockholes	Worked out	Sand	-	Hargreaves
14	Sharples	Active	Sand	2028	Hargreaves
15	Catlow	Active	Sandstone	2020	Greens
16	Leeming	Active	Sandstone	2042	Brown Bros
17	Ellel Crag	Inactive	Sandstone	2023	Ellel recycles
18	Whinney Hill	Active	Sandstone	2042	Park Royal
19	Whittle Hill	Inactive	Sandstone	2042	Ruttles
20 & 21	Brinscall	Active	Sandstone	2042	Armstrongs
22	Waddington Fell	Active	Sandstone	2042	Armstrongs
23	Fletcher Bank	Active	Sandstone	2036	Marshalls
24	Scout Moor	Active	Sandstone	2042	Marshalls
25	Jamestone	Active	Sandstone	2042	W Maher and Sons
26	Whitworth	Active	Sandstone	2042	Fairhurst Stone
27	Rakehead	Inactive	Sandstone	2042	Ibstock
28	Deerplay	Inactive	Sandstone	2035	Waste Recycling Group
29	Tong Farm	Active	Shale	2042	J Laycock

Appendix 2: Other Relevant Local Information - Housing delivery and projections



This figure describes the delivery of houses as reported by the Department for Communities and Local Government (blue column) and the projected annual demand for housing as described in district local plan policy, updated where relevant with information on

backdated under delivery and the NPPF buffer set out in the most up to date Housing Land Delivery position statement (green column), and also the housing forecast set out in the standard methodology (red column) which may be more relevant where plans are particularly old.

It illustrates a period of significantly depressed housing completions caused by the global financial crisis, recession and subsequent restrictions on bank lending, relative to a local plan forecast of housebuilding (and also, though not expressed in this graph but linked to housebuilding statistically, other development activities) at much elevated levels.

The figure shows the delivery of housing relative to the sales of aggregate (red line). It can be seen that aggregate sales and housing completions have shown a similar pattern over the last 10 years.

The relationship is statistically significant, with a correlation coefficient of +0.78.

Projection using Local Plan housing targets

In the graph above this has been used in a basic attempt to model future aggregate sales, using the correlation between past housing completions and past aggregate sales, and applying this to the future housing need figure identified in district local plans, used as a proxy for general economic activity and therefore aggregate demand.

This produces an average aggregate sales figure of 5.22 million tonnes per year during the forecast demand period. When divided amongst the aggregate groups, using the proportions of total sales expressed in the chapter 3, this could be made up of a demand for 1.04 million tonnes of gritstone per year, 3.5 million tonnes of limestone per year, and 0.74 million tonnes of sand and gravel per year.

Projection using NPPF standard methodology

The ONS's most recent Subnational Population Projections have been revised down for much of eastern Lancashire when compared to previous projections, but still suggest that much of Lancashire has a projected population growth of an annual average of up to 0.5%, though Blackpool and some East Lancashire districts are projected to shrink by an annual average of up to 0.5%.

More recently the Government's standard housing need methodology has indicated a significant reduction over much of the plan area, relative to the demand expressed in emerging local plans. However, local economic aspirations or industry demand in some or all of the local authority areas within the plan area may mean that the standard housing need methodology figures are adjusted upwards as the site allocations documents or local plans emerge.

Using the figures derived from the new standard methodology produces a figure of 3.68 million tonnes per year during the forecast demand period. When divided amongst the aggregate groups, using the proportions of total sales expressed in the chapter 3, this could be made up of a demand for 0.74 million tonnes of gritstone per year, 2.47 million tonnes of limestone per year, and 0.48 million tonnes of sand and gravel per year.

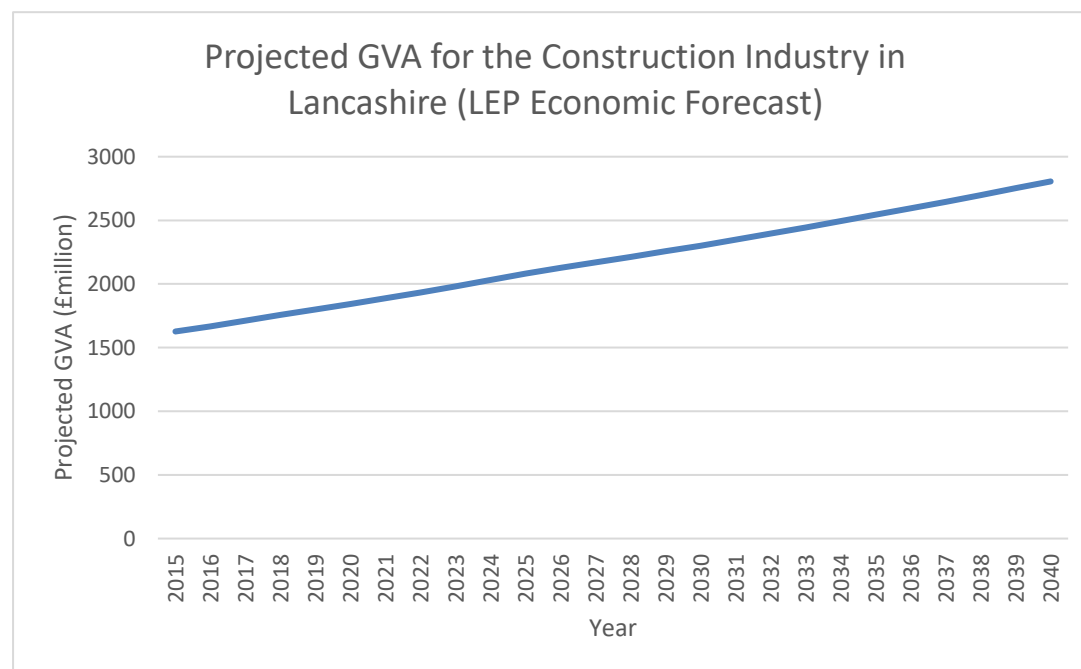
At this stage there is a considerable uncertainty over some of the figures for projected future annualised housing completions, given past rates of under delivery relative to local plan targets in much of the Plan area.

None the less, it is expected that housing completions (and wider economic activity) will increase, and that this could reasonably be assumed to lead to an increase in demand for aggregates. Given the relationship between house building and aggregate demand that could be inferred from the figures, there is also the risk that the use of the 10 year average of aggregate sales data in predicting future demand could result in the inclusion of a recessionary underestimation in the demand prediction, projecting forwards a recessionary trend.

Appendix 3: Other Relevant Local Information - Planned Infrastructure Projects

There is a significant level of investment in Lancashire's transport network through the Lancashire City Deal, enabling the delivery of several items of infrastructure set out in the Central Lancashire Highways and Transport Masterplan, including the Preston Western Distributor, the Broughton Bypass and the East-West Link Road. This in turn will unlock sites for the delivery of housing and commercial developments as part of the Central Lancashire Core Strategy.

Other sites coming forwards through the City Deal and the Lancashire Enterprise Partnership's growth agenda will result in an increased demand for aggregates, such as the Cuerden Strategic Site and the large number of housing developments proposed.



This investment is reflected in the economic projections produced for Lancashire's LEP, which predicts a significant increase in the construction industries GVA in the future (see chart left).

Neighbouring areas are also experiencing similar investments as part of their growth deals, and similar future aspirations for growth such as contained in the Norther Powerhouse aspirations and the Greater Manchester Spatial Framework. The North West Coast Connections project may generate significant demand for aggregates, both directly and through a need for concrete, which could impact on Lancashire.

This should all be taken into account when considering projections of demand, as they represent

a future demand for aggregates that is not necessarily reflected in past supply. However, quantifying the actual demand, and anticipating the duration of the demand, is at this stage uncertain. Instead is prudent to address this issue through the review of the Minerals and Waste Local Plan. This could include using a range of figures to inform objectively assessed need (based around the

10 year average of sales and 3 year average of sales) given the uncertainties described above, which could be interpreted flexibly within the context of the up to date information presented in the most recent LAA at the time of considering any development proposal.

Appendix 4: Historic Aggregate Data

Sales

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Limestone	3.8	3.7	4.3	3.5	2.9	3.0	2.7	2.6	2.7	2.6	2.7	2.6	2.7	2.5
Gritstone	1.6	2.3	2.7	2.8	2.63	2.17	2.1	1.8	1.7	1.9	2.2	1.6	1.3	1.2
Sand and Gravel	0.8	0.8	0.77	0.8	0.8	0.91	0.66	0.48	0.34	0.47	0.5	0.46	0.44	0.38
Marine Dredged Sand and Gravel	-	-	-	-	-	-	-	0.05	0.07	0.18	0.13	0.11	0.1	0.12

Permitted Reserve

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Limestone	102	103.8	93.3	65.9	63.8	63.5	59.4	56.8	54.1	53.9	59.3	57.5	54.7	50.3
Gritstone	73	146.4	151.8	125	112.7	105.7	86	84	73.5	71.1	70.3	68.7	79.8	64.5
Sand and Gravel	7	9.4	9	9.5	9.2	8.6	7.38	7	6.4	4.6	4	3.54	3.24	4.4

Appendix 5: Consultation outcomes

Respondent	Summary of main issue	Response
Aggregate Industries	The LAA refers to St Annes Foreshore as having an end date of 2020, but the planning permission has no end date; and so 2042 should apply by default.	The Foreshore planning permission has no condition setting out an end date, as such s44a of the Town and Country Planning Act 1990 specifies that the development should cease 60 years from the permission being granted, which is 2049. The Foreshore operations are also controlled by a lease issued by Fylde Borough Council, as the defacto land owner; this lease is open ended. The table will be amended.
	Whitworth Quarry is a dimension stone quarry, and aggregate production is marginal as it is not suitable for asphalt or ready mixed concrete.	The LAA reports on sales of aggregates, which Whitworth Quarry contributes towards. The commentary and conclusions already recognise that a large proportion of the gritstone landbank is bound up in Whitworth Quarry, and are sensitive to this.
Cheshire West and Chester	The descriptions 'slight reduction' and 'marked increase' would benefit from more detail.	The descriptions accompany graphs and it is felt that the graphs would be better to speak for themselves. Commentary on fluctuations in year on year figures will be removed where there is also a graph depicting them. Commentary will be restricted to explaining any changes where the reason is known.
	The bar chart shows no bar for German Lane. What is the chart showing?	The table shows planning permission durations for quarries that contribute to the landbank. The purpose of the table is described in the second paragraph above the table. Active/inactive is described at appendix 1. A bar will be added for German Lane. Footnotes will be added for inactive quarries.
	Recycled aggregates states that sales are not recorded	This section of the AWP returns is not filled out by every operator, or filled in consistently. As a result we do not have

	<p>through AWP or CLG monitoring processes. However, AWP forms are provided. Reference to 28% recycled aggregates (MPA 2016) has been superseded by 29% in the 2018 MPA Minerals at a Glance report.</p>	<p>sufficient data to make a meaningful contribution to the LAA, and the most reliable evidence continues to be the national average.</p> <p>The LAA will be updated to reflect the more recent MPA information.</p>
	<p>Imports and exports uses the 2014 national survey information as the latest available. Couldn't the data from the AWP returns be used instead?</p>	<p>This section of the AWP returns is not filled out by every operator, or filled in consistently. As a result we do not have sufficient data to make a meaningful contribution to the LAA, and the most reliable evidence continues to be the national survey information.</p>
	<p>The LAA states that as Lancashire is a net importer the demand scenarios should be viewed in that context; however the demand scenarios are based on sales.</p>	<p>The demand scenarios are based on sales, some of the scenarios are linked to economic growth; this is why the statement is necessary. Sales must not be viewed in isolation; other relevant local information should also be taken into account. Exports could increase in excess of the forecast demand scenarios if growth in neighbouring areas is greater than that forecast within the plan area.</p> <p>In the absence of any information on future growth needs from the areas we export material to it is impossible to quantify any changes likely during the forecast demand period. For the time being it is assumed their growth aspirations are similar to those set out within the plan area.</p>
	<p>The LAA 'meeting forecast demand' sections compare permitted reserves to forecast demand, but not what the landbank is – the NPPF</p>	<p>In 'meeting forecast demand' the forecast demands effects on the landbank are addressed in the bottom row of the table, and the summary commentary.</p>

	identifies the need to maintain a landbank of at least 7 years for sand and gravel.	The landbank as it currently stands for the most recent monitoring period is described in the executive summary at the start of the LAA, and for each mineral type under 'Assessing the adequacy of ... Supply'.
	Within sand and gravel there is some inconsistency between page 6 and page 14 around the commentary around changes to the 3 year average.	<p>The 3 year average is much more sensitive to fluctuations in sales. The drop seen is a result of the large 0.56mt sale in 2016 falling out of the 3 year average period. It is indicative of a stabilisation in sales over the past few years. As set out above commentary on graphs will be removed, to let the image speak for themselves and thus remove any potential for confusion.</p> <p>The reference to the 3 year average of sales in the conclusion is to recognise that it is still higher than the 10 year average of sales, an indicator that the 10 year average is not necessarily an appropriate indicator of future demand. It is not a reference to the year on year changes to the 3 year average; as such there is no inconsistency between page 6 and page 14, they are talking about different things.</p>
Chorley Council	The statement concerning past rates of under delivery for housing is too generic; Chorley has not under delivered during the plan period	The LAA plan area covers an area much wider than Chorley; the table at appendix 2 clearly shows significant under delivery in the plan area when comparing completions with local plan forecasts. However, the sentence will be amended to state "given past rates of under delivery relative to local plan targets <i>in much of the Plan area.</i> "
Crown Estates	Revised text on marine dredged sand and gravel suggested.	Suggested change made: <i>"Landings of marine dredged sand and gravel in the plan area ceased in 2008. There is no indication that this will start again. Currently demand is being met by land based sources and where required via imports from landing points in neighbouring authorities and it is expected that this will continue for the duration of this plan period. There is existing consented marine aggregate reserve within the</i>

		<i>Northwest region to supply volumes in excess of historic landing levels for the Lancashire market. Additional marine aggregate reserves are likely to be developed in the region to allow further capacity to supply via forthcoming tender rounds operated by The Crown Estate."</i>
Rossendale Borough Council	Rossendale Council consider Jamestone Quarry as a potential future employment site beyond our current local plan period 2034+. We would support the conversion of this site to this use once commercial aggregate production ceases.	This comment is not relevant for the LAA.
Cumbria County Council	No comment	
North Yorkshire County Council	No comment	
Northumberland County Council	No comment	
Pendle Borough Council	No comment	
Mineral Products Association	Summary should make reference to the reducing number of quarries for sand and gravel, and limestone.	Noted. Commentary added.
	Several errors in dates noted	Corrected in redraft
	Do housing projections cover both growth aspirations and economic projections? New housing accounts for circa 30% of overall construction market value. Also housing	Completions and sales are both indicators of past activity. Completions are not projected forwards, in the manner of the 10 year average of sales, so they are not a 'lagging indicator'. The historical evidence has shown a reasonable correlation between aggregate sales and housing completions, as set out in the LAA at Appendix 2. In light of this housing is used as a proxy for economic development in general. It is not suggested that

	<p>completions is a lagging indicator.</p> <p>Do the housing projections incorporated in App 2 correlate with the housing projections in adopted local plans?</p>	<p>housing represents the only market for aggregates; the fact that housing accounts for 30% of the overall construction market is not relevant, unless there is significant growth predicted outwith the general housing/local economy – for example a major port development or motorway.</p> <p>As is set out in the LAA at Appendix 2 the housing projections are sourced from adopted local plans. In developing housing projections, local planning authorities are required to factor in the wider economic development ambitions; housing projections are increased if economic development planned for is in excess of the forecasts.</p>
	<p>The chapter on economic value has been deleted not updated.</p>	<p>As discussed and minuted at the NW AWP meeting in July 2018 the economic section has been removed to satisfy the MPA's concerns that it underplays the importance of the minerals industry. As a result it is not in last year's Joint Lancashire LAA 2018, ratified at the November 2018 NW AWP meeting, and is not in this years LAA.</p>
	<p>With reference to the statement on a lack of information in operator returns, the MPA raised the question on last year's report of whether or not these are MPA or BAA members</p>	<p>As stated at the AWP meeting when this was discussed they are not MPA or BAA members.</p>
	<p>As previously mentioned, we are heading for the perfect storm, with the number of sites scheduled to close in the v. near future and the quantity of reserve contained in one site. The landbank of at least 7 years is already being eroded.</p>	<p>The situation is clearly set out in the LAA.</p>

	It will be less than 7 years by 2025 (or 2023)	
	At chapter 4.3, under 'other aggregates' 'some applications' should be changed to 'some limited applications'.	No change.
	At chapter 4.3, under 'recycled aggregates', 'recycled aggregates (MPA, 2018)' should be changed to 'recycled and secondary aggregates (2019)'	Corrected in redraft
	What source of secondary aggregates are there in Lancashire	There are no known significant sources of secondary aggregate in the Plan area. As such the LAA states that it is 'not considered to be a significant option for contributing towards meeting forecast demand'. It is not considered further.
	At chapter 4.3 under 'marine dredged sand and gravel', the amended wording from the first draft is noted. It is important to recognise that current marine licences in the northwest equate to more than 12mt, however, less that 300ktpa is landed. Permitted capacity is not therefore the limitation or constraint.	This is a matter for the NW AWP monitoring report.
	Reference to 'landbank period' in the 'meeting forecast demand...' chapters should be changed to 'landbank'	Corrected in redraft

	At chapter 4.4 and subsequent, 'average' should be changed to 'average sales'	Corrected in redraft
	National policy is clear on large landbanks bound up in a few sites stifling competition.	The situation is clearly set out in the LAA.
	At chapter 4.4 and subsequent: Plain English?? There is a projected shortfall in order to meet growth aspirations.	Corrected in draft. Reference to 'an imbalance in supply and demand' has been revised to reference to 'a shortfall'.
	At chapter 4.4: It would be helpful to have a plain English approach to what is actually being proposed, not what could represent a range of figures. Whilst we support a flexible approach, there are too many variables..... Is the shortfall in supply 1.7mt or 4.3mt	The proposed policy response is a matter for the local plan review. The LAA sets out the evidence to inform the policy.
	At appendix 1: St Annes Foreshore end date needs verifying; is Lower Brockholes now relevant.	St Annes Foreshore end date has been corrected. Lower Brockholes is worked out, but will stay in the appendix as a record for the next couple of years to avoid any confusion over its removal from the LAA.

