JOINT LOCAL AGGREGATE ASSESSMENT

Greater Manchester, Merseyside and Halton, and Warrington

January 2018

(Data for the period up to December 2016)

Prepared on behalf of the 17 Mineral Planning Authorities of:

Greater Manchester (including Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford and Wigan)

Merseyside and Halton (including Knowsley, Liverpool, Sefton, St Helens and Wirral)

Warrington Borough Council

Executive Summary

National Planning Policy Framework requires mineral planning authorities to plan for a steady and adequate supply of aggregates by preparing an annual Local Aggregate Assessment (LAA). The LAA should be 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). The LAA should conclude if there is a shortage or a surplus of supply and, if the former, how this is being addressed.

National Planning Practice Guidance explains that mineral planning authorities should also look at average sales over the last 3 years in particular to identify the general trend of demand as part of the consideration of whether it might be appropriate to increase supply.

The Minerals Planning Authorities of Greater Manchester, Merseyside and Warrington (17 unitary local authorities) have worked together to produce a series of joint LAAs, reflecting their status as a single aggregate apportionment sub-region under MASS. This is the 5th LAA to be produced in that way and covers aggregate supply in the sub-region in the year 2016.

Crushed Rock

There were 6 active crushed rock aggregate quarries in the sub-region during 2016. In total, 0.87 million tonnes of crushed rock was sold from these quarries in 2016, a 10% increase from the previous year. The predicted annual requirement for crushed rock is 0.85 million tonnes (mt)., down 0.47mt on the 2005 – 2020 annual apportionment requirement of 1.32mt, The most recent 3-year average sales being 0.78mt (average 2013-2016) and the 10-year average sales for crushed rock were 0.63mt (rolling average 2007-2016). Sales in 2016 were above both the 10-year and 3-year average sales.

Total reserves of crushed rock were 19.59 million tonnes at the end of 2016. This would provide for a total of 23.1 years of sales based on the average sales over the most recent 10-year period.

Sand and Gravel

The sub-region had 2 quarries active for the sale of sand and gravel during 2016, with one of these quarries, Morley's Hall, selling stockpiled material as it had no permitted reserves left to work. The total sales figure for land-won sand and gravel in the sub-region is confidential due to the limited number of quarries that contribute to the total.

The predicted annual requirement for sand and gravel is 0.30mt, down 0.14mt on the 2005 – 2020 annual apportionment requirement of 0.43mt. The most recent 3-year average sales being 0.27 million tonnes (average 2013-2016) and 10-year average figure for sand and gravel is 0.29mt (rolling average 2007-2016).

With just a single quarry contributing to the sand and gravel reserve figure, this is also a confidential figure. However, this quarry has planning permission until 2022 and the landbank is therefore 5 years. An application to extend the area and operational period at Morley's Hall was submitted in June 2016 and is pending decision. If permitted, this would release approximately 890,000 tonnes of sand.

Marine Aggregate

The sub-region is an important landing point for marine-won sand and gravel from the licensed dredging areas offshore and its wharves also handle significant shipments of crushed rock from quarries elsewhere in the UK. The offshore dredging areas currently operate well within their licensed extraction limits and would be able to increase supply should market growth continue.

Future Provision

Most sites for the production of land-won material are located in Greater Manchester, which has seen one recent site closure and one new consent. However the general trend has been one of declining reserves within the sub-region due in large part to the heavily urban nature of the area and the lack of workable aggregates resources within it.

Although the sub-region remains compliant with its land-bank obligations for crushed rock for the moment, it is likely to become more challenging to maintain this position over time. The land bank for sand and gravel has fallen below 7 years for the first time.

The sub-region imports considerable amounts of aggregate and has an important and developing market in secondary and recycled material that helps to reduce the amounts of primary aggregate required.

Summary Figures for the Period 01/01/16 – 31/12/16									
	2016 Sales (million tonnes)	10-year Average Sales (million tonnes)	3-year Average Sales (million tonnes)	Trend (compared to 2015)	LAA Rate (million tonnes)	Reserve (million tonnes)	Land - bank (years)	Theoretical Production Capacity (million tonnes per annum)	Comments
All Land Won Sand & Gravel	0.25	0.29	0.27.		0.30	c.	5.0		Two quarries contributed to sales in 2016 and one quarry had permitted reserves. The 2016 sales figure is estimated based on information from planning applications to maintain confidentiality. The landbank is based on permitted time remaining at the only quarry which still has permitted reserves.
Crushed Rock	0.87	0.63	0.78		0.85	19.59	23.1		Low quality aggregate serving local markets, reducing need to import this material.
Recycled/Secondary Aggregates - Handled									Total produced – 3.87Mt.[1] Total handled - 4.52Mt.
Marine Sand & Gravel	c.								North West Market Study expected soon.
Rock Imports by Sea									Total imported crushed rock is unknown but 0.65Mt imported from Glensanda in 2016.
Comments	Overall it is expected that the supply of land-won aggregate is likely to decline in future unless new permissions are granted. The reserve of sand and gravel represents a landbank of fewer than 5 years based on the LAA rate. It is anticipated that the demand for aggregates will continue to increase and therefore imports of material from other areas will continue to play a vital role in supporting built development and infrastructure. Given the extent of the urban area and the quality of indigenous aggregates, this situation is unlikely to change in future.								

[1] 'Produced' refers to the quantity of useable material produced from the recycling process, whereas 'Handled' refers to the quantity of material processed within the area, not all of which will be reusable. i.e. The 'handled' material is the raw input material and 'produced' material is the end product.

CONTENTS

1. Introduction

Local Aggregates Assessment Background

1.1. The National Planning Policy Framework (NPPF), published in March 2012, introduced a requirement for Mineral Planning Authorities (MPAs) to plan for a steady and adequate supply of aggregates by preparing an annual Local Aggregate Assessment (LAA). This should be based on a rolling average of 10 years sales data and other relevant local information and an assessment of all of the supply options (including marine dredged, secondary and recycled sources)[1]. The guidelines specify that this can be done either individually or jointly by agreement with another or other mineral planning authorities. National Planning Practice Guidance also states that MPAs should also look at average sales over the last three years in particular to identify the general trend of demand as part of the consideration of whether it might be appropriate to increase supply.

1.2. In May 2017, The Planning Officers Society and Minerals Products Association provided the latest version of the living document, 'Practice Guidance on the Production and use of Local Aggregate Assessments', which seeks not to duplicate the advice in The Planning Practice Guidance (PPG) but to build on it, drawing on practice since LAAs were introduced.

1.3. The PPG advises that an LAA should contain three elements:

- a forecast of demand for aggregates based on both the rolling average of 10 years sales data and other relevant local information;
- an analysis of all aggregate supply options as indicated by landbanks, plan allocations and capacity data; and
- an assessment of the balance between demand and supply.

Production of a Joint LAA

1.4. The Association of Greater Manchester Authorities (AGMA), the Merseyside authorities, including Halton (working through Merseyside Environmental Advisory Service (MEAS)) and the unitary authority of Warrington (known as the 'sub-region') have decided to continue to work together by collaborating in the production of this document, the third of its kind, in order to satisfy the duty to co-operate imposed by Section 110 of the Localism Act and due to established links from previous sub-regional working. Also, the data available for the Greater

[1] Paragraph 145, NPPF

Manchester and Merseyside (including Halton) authorities and Warrington for the production of any LAA is only available at this sub regional level and cannot, for reasons of commercial confidentiality, be disaggregated to an individual authority level.

1.5. This LAA provides an assessment of the demand for and supply of aggregates in the sub-region based on an average of 10 year sales data, 3 year sales data, and other relevant local information, and an assessment of all supply options. The LAA is a factual based monitoring document that will act as an evidence base to assist the individual Mineral Planning Authorities (MPAs) in their policy formulation. A summary of the key messages for individual MPAs can be found in Section 12.

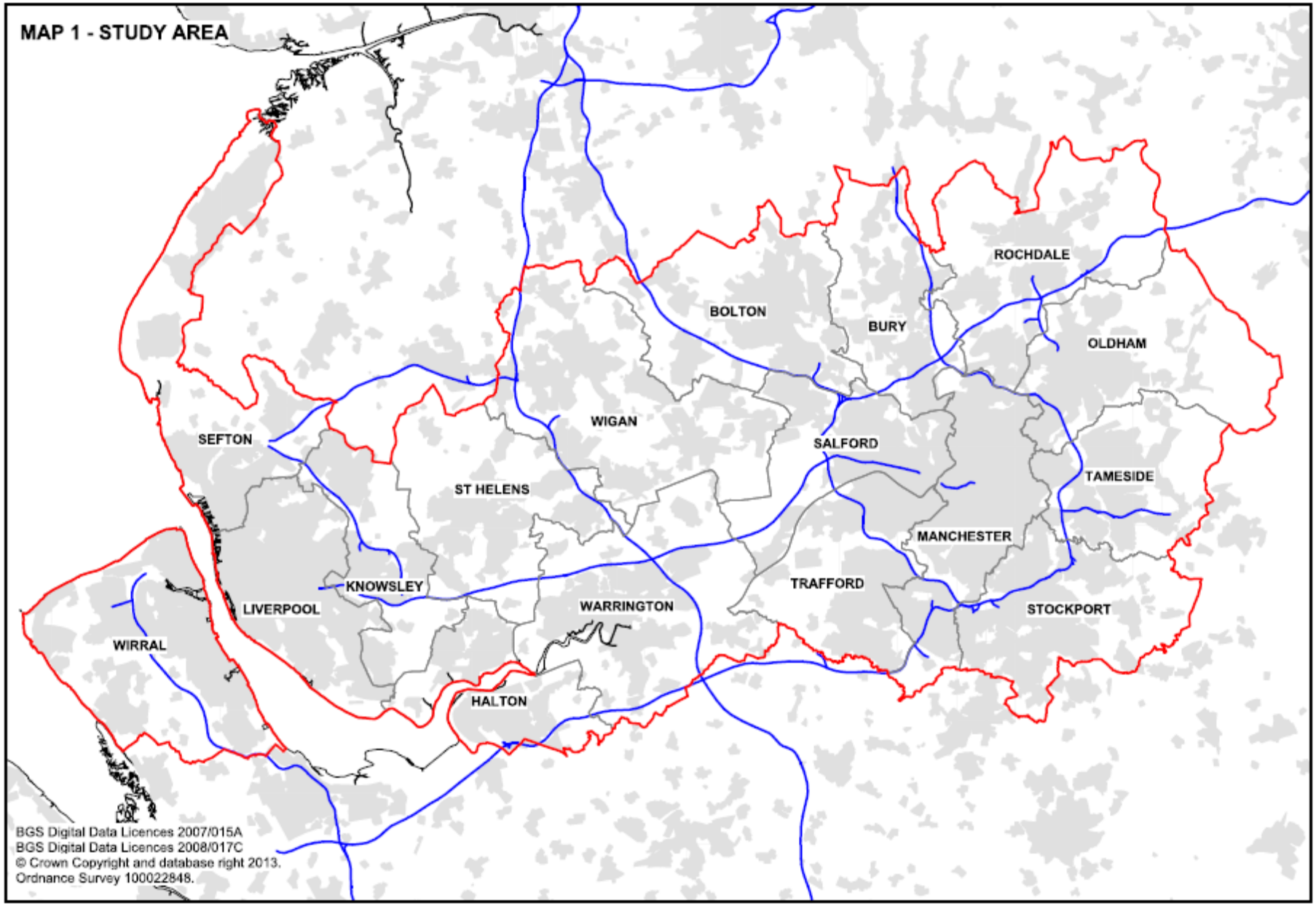
Study Area

1.6. The study area covers the ten Metropolitan Districts of Greater Manchester; the five Metropolitan Districts of Merseyside and the Unitary Authorities of Halton and Warrington. These are detailed on Map 1 below and summary statements of the components of the study area are also provided.

Greater Manchester

1.7. Greater Manchester is the second largest conurbation in the UK with a population of over 2.6 million. Much of the land is urban; however, there are large rural areas, especially in the North which is where mineral working tends to occur. Greater Manchester is bounded by Lancashire, West Yorkshire, Derbyshire, Cheshire and Merseyside and is a major transport hub. The M60 motorway encircles the conurbation, with major road links leading from it. Greater Manchester relies on imports of high specification aggregates from quarries in North Wales, Derbyshire, Lancashire, Cumbria, Staffordshire and Cheshire. Materials are mainly transported by road and, to a lesser extent, rail. Greater Manchester is heavily reliant upon the importation of minerals from the Peak District National Park.

1.8. The natural landscape is very important for biodiversity, and it contains a wide variety of habitats including ancient woodlands, moorlands, mosses, broadleaf woodland, rivers and ponds, and bogs. As a consequence, a number of sites within Greater Manchester have been designated for their biological, cultural, archaeological and heritage importance.


MAP 1 - STUDY AREA
ROCHDALE
BOLTON
BURY
OLDHAM
WIGAN
SEFTON
SALFORD
TAMESIDE
ST HELENS
MANCHESTER
KNOWSLEY
TRAFFORD
LIVERPOOL
WARRINGTON
STOCKPORT
WIRRAL
HALTON
BGS Digital Data Licences 2007/015A
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Ordnance Survey 100022848.

Merseyside and Halton

1.9. Merseyside and Halton is a coastal conurbation strongly influenced by the River Mersey and its estuary. Although highly urbanised with a population of approximately 1.5 million, between 33% and 50% of each of the constituent unitary local authorities is designated Green Belt and contains a high proportion of high quality agricultural land, which remains economically significant. There has been extensive working of minerals in the area in the past, but the limited nature of the remaining resources and presence of significant spatial and environmental constraints has led to a significant decline in the number of working sites and their production in recent years.

1.10. Merseyside and Halton is bounded by Lancashire, Cheshire, Warrington, Greater Manchester and North Wales and has major road links through the M6, M62, M58, M53 and M56. Like Greater Manchester, Merseyside and Halton rely on imports of high specification aggregates from quarries in North Wales, Derbyshire, Lancashire, Cumbria, Staffordshire and Cheshire, as well as those transiting the area's port facilities. Materials are transported by sea, road and rail.

1.11. The Merseyside and Halton economy has a strong maritime focus with significant port facilities through which aggregate minerals are imported and processed for onward transport to the point of use. These include sand and gravel from off-shore dredging in the Irish Sea and crushed rock materials shipped from other land-won sources, notably the Glensanda quarry in the west of Scotland.

1.12. The environment of Merseyside and Halton is highly sensitive and large areas, particularly along the coast and estuaries of the Mersey, Dee and Ribble, have protected status to a very high level due to their value for a range of important habitats and species. The City of Liverpool also contains a World Heritage Site recognising the historic, cultural and architectural value of the maritime quarter of the city centre and docks.

Warrington

1.13. Warrington Borough is the most northerly of the local authorities in the former Cheshire area. It shares boundaries with Halton, Cheshire West and Chester, Cheshire East and the four metropolitan boroughs of St Helens, Wigan, Salford and Trafford. The borough covers some 176 square kilometres and has a population of just over 207,000.

1.14. Warrington lies at the hub of the region's communications network. The M6, M56 and M62 motorways intersect within the borough, providing good access to all parts of the region and beyond. Warrington also lies on the region's main North-South (West Coast Main Line) and East-West (Trans-Pennine) rail routes. Two significant waterways pass through the middle of the borough; the River Mersey, which passes close to the Town Centre and, further south, the Manchester Ship Canal. The Manchester Ship Canal is an important commercial waterway linking the Port of Manchester with the Mersey and also plays a vital role in managing fluvial flood risk along the Mersey, significantly reducing the incidence of flooding from fluvial flows.

1.15. The Mersey Valley Corridor constitutes a wide tract of land (exceeding 2kms in places) extending across the borough from Fiddlers Ferry Power Station in the west, to Hollins Green and the flood plain of the River Bollin in the east. Its value lies in the mix of river valley habitats, notably wetlands, in the context of the Mersey Estuary as a whole - one of the largest estuaries in Europe and supporting internationally important numbers of birds.

1.16. Warrington also has extensive areas of high-grade agricultural land, a varied landscape character, and important areas of nature conservation value, mostly within the relatively narrow gaps of open land separating Warrington from neighbouring towns and smaller settlements within and beyond the borough.

1.17. Due to its largely urban nature, the major transport infrastructure that dissects the borough and the ecological habitat along the Mersey Valley Corridor mineral activity in Warrington is limited and as a consequence the borough relies on imports of aggregates the same as the other areas in the sub-region. Materials are mainly transported by road.

Status of Mineral Planning in the Study Area

Greater Manchester

1.18. The ten Greater Manchester Authorities have worked together to produce a Joint Minerals Plan. The Minerals Plan considers all aspects of Minerals Planning including: aggregate apportionments; identification of Minerals Safeguarding Areas (MSAs); identification and safeguarding of sites for minerals development in the area; ensuring a steady and adequate supply of minerals within the sub-region; identifying and safeguarding sites for the provision of secondary and recycled materials; and development management policies for minerals development. The Minerals Plan sets the planning framework for minerals development in Greater Manchester.

1.19. The Greater Manchester Minerals Plan was found sound in January 2013, following an Examination in Public. It was adopted on 26th April 2013 by all ten authorities and forms part of each District's Local Plan. It is currently not known when a review of the plan will take place as much of the resources of The Greater Manchester Combined Authority (GMCA) are currently directed towards the Greater Manchester Spatial Framework (GMSF).

1.20. The GMCA is working to produce a joint plan to manage the supply of land for jobs and new homes across Greater Manchester. The GMSF will ensure that Greater Manchester has the right land in the right places to deliver the homes and jobs needed up to 2035, along with identifying the new infrastructure (such as roads, rail, Metrolink and utility networks) required to achieve this.

1.21. The GMSF will provide an overarching development plan within which Greater Manchester's ten local planning authorities can identify more detailed sites for jobs and homes in their own area.

1.22. Formal consultation on the first draft of the GMSF ran from 31 October 2016 to 16 January 2017. The draft GMSF contained both strategic and other sites, and responses to the consultation are being considered.

1.23. Planning for minerals across Greater Manchester will continue to be through the Greater Manchester Minerals Plan, with annual monitoring and the Local Aggregate Assessment informing the need or not for a review. The adoption of the GMSF may result in a requirement to undertake an early review of the Minerals Plan.

Merseyside and Halton

1.24. The six authorities are each independently considering minerals matters within their broader Local Plans. There are no plans to produce a common plan or separate Minerals Local Plans within each authority. However, specific policies for minerals planning issues will be included within local plan documents as appropriate and all of the authorities intend to continue to work within the Managed Aggregate Supply System and to participate in the NW Aggregates Working Party. Merseyside and Halton authorities will prepare their plan coverage in full compliance with the requirements of Duty to Co-operate. A summary of progress is shown in the Table below.

MPA	Core Strategy/Local Plan Adopted	Other Local Plan Documents in development
Halton Borough Council	Core Strategy adopted 2012	Preparing Delivery & Allocations Local Plan which will include revised core strategy and minerals policies.
Knowsley MBC	Core Strategy Adopted Dec 2015	
Liverpool City Council	No Local Plan adopted but pre-submission consultation expected early 2018 with submission anticipated Summer 2018	
Sefton MBC	Local Plan adopted April 2017 includes MSAs and comprehensive minerals policy	
St Helens MBC	Core Strategy adopted 2012	Preparing single Local Plan – timings to be confirmed. This will include minerals policies.
Wirral MBC	Currently reviewing development options	

1.25. Plan preparation progress is at different stages for each of the 6 authorities. Halton and St Helens achieved adoption of their Local Plan Core Strategies in 2012, while Knowsley had its Local Plan Core Strategy adopted in December 2015. Sefton adopted its Local Plan in April 2017, and includes a comprehensive minerals policy and identifies minerals safeguarding areas for Shirdley Hill Sands. Wirral are currently undertaking a review of development options that will report in July 2018, with a view to publishing a revised Draft Plan in September 2019. Liverpool is working towards consultation on its comprehensive Local Plan early in 2018, with a view to submission in the Summer 2018.

1.26. Halton is preparing a new plan, the Delivery and Allocations Local Plan (incorporating revised Core Strategy policies), with a Proposed Submission draft expected Autumn 2018. St Helens is also preparing a single document Local Plan, although timings for consultation and submission have yet to be confirmed.

1.27. The Liverpool City Region (LCR) now has a formally constituted Combined Authority and a devolution agreement with Central Government, with an elected LCR mayor appointed in May 2017. The agreement includes development of a Statutory Spatial Framework for the City Region, which will support the delivery of strategic employment and housing development and which future local plans will be in general conformity with. As a strategic planning document setting the agenda for major development schemes, the Spatial Framework will have implications for the aggregates market in the Liverpool City Region and, in due course, future Local Aggregates Assessments will need to take account of it. However, the timetable for the creation and adoption of a Spatial Framework for the LCR envisions that a Spatial Framework will be adopted in 2020.

Warrington

1.28. The Warrington Local Plan Core Strategy (LPCS) was adopted in July 2014. The LPCS contains one policy (MP9) dealing with mineral issues. This indicates that the Council will bring forward a Minerals Local Plan Document that identifies and safeguards preferred sites for mineral extraction; encourages the use of recycled and secondary aggregates; promotes the use of sustainable modes for the transport of minerals and specifies that will be taken into consideration for mineral related development. The intention was that this work would commence immediately upon adoption of the LPCS. However, a successful High Court Challenge resulted in the removal of elements of the housing policies from the Plan and has necessitated a change to the planned programme published in the 2012 Local Development Scheme (LDS). A new work programme is now proposed that will see the preparation of a single Local Plan that will incorporate minerals issues. A revised LDS was published towards the end of 2016 setting out the new work programme that would see a new plan adopted in December 2018 (now likely to be the spring 2019 due to the General Election in Jun 2017).

1.29. The Council have recently undertaken a Regulation 18 consultation on their Preferred Development Option. This outlines that the new Local Plan will identify Mineral Safeguarding Areas (MSAs) for the main mineral resources that are present in the borough, principally sand and gravel and sandstone. It will also seek to safeguard a shallow coal deposit and the clay workings near Rixton. In addition, to safeguarding mineral resources which may be of economic importance, it is proposed to safeguard existing, planned and potential minerals infrastructure such as rail heads, wharfs, concrete batching sites, and permanent facilities for the processing and distribution of substitute, recycled and secondary aggregate material.

1.30. The new Local Plan will also aim to direct minerals development to places where there are opportunities to restore land beneficially, avoiding places with a sensitive natural or built environment or that are close to existing communities. These will be places that are accessible by sustainable modes of transport and close to both the existing highway network and the end user.

2. Geology

Sub Regional Geology

2.1. The oldest rocks in the sub-region are of Carboniferous age and can be found at the far eastern and northern upland fringes of Greater Manchester, where they outcrop. They comprise sequences of mainly coarse grained sandstones and gritstones.

2.2. The upland areas give way to progressively younger rocks to the south and west. At first these are represented by the Carboniferous Pennine Coal Measures. Comprising sequences of mainly coarse grained sandstones and gritstones, these are the oldest rocks in Merseyside where they are found in the northeast, primarily in St Helens. They are found in a thick band across Greater Manchester and at the northwestern tip of Warrington.

2.3. The Pennine Coal Measures give way to progressively younger, Permo-Triassic rocks to the south and west of the sub-region. These cover much of Merseyside and Warrington.

2.4. Extensive areas of the sub-region are covered with superficial drift deposits of Pleistocene to recent age. These are dominated by glacial tills ('boulder clay') laid down by retreating ice sheets at the end of the Devensian cold stage some 10,000 years ago. The tills typically comprise silty clays with subordinate sands and gravels (ranging in size up to large boulders). The latest drift deposits are represented by tidal sands, river terrace sands and gravels, glacio-fluvial and glacio-lacustrine sands and gravels, alluvium and windblown sand, and peat.

Overview of Aggregate Resources in Sub-Region

Sub-regional aggregate resources

The resources are summarised in Table 2-1 below.

Table 2-1: Summary of Sub-Regional Aggregate Mineral Resources

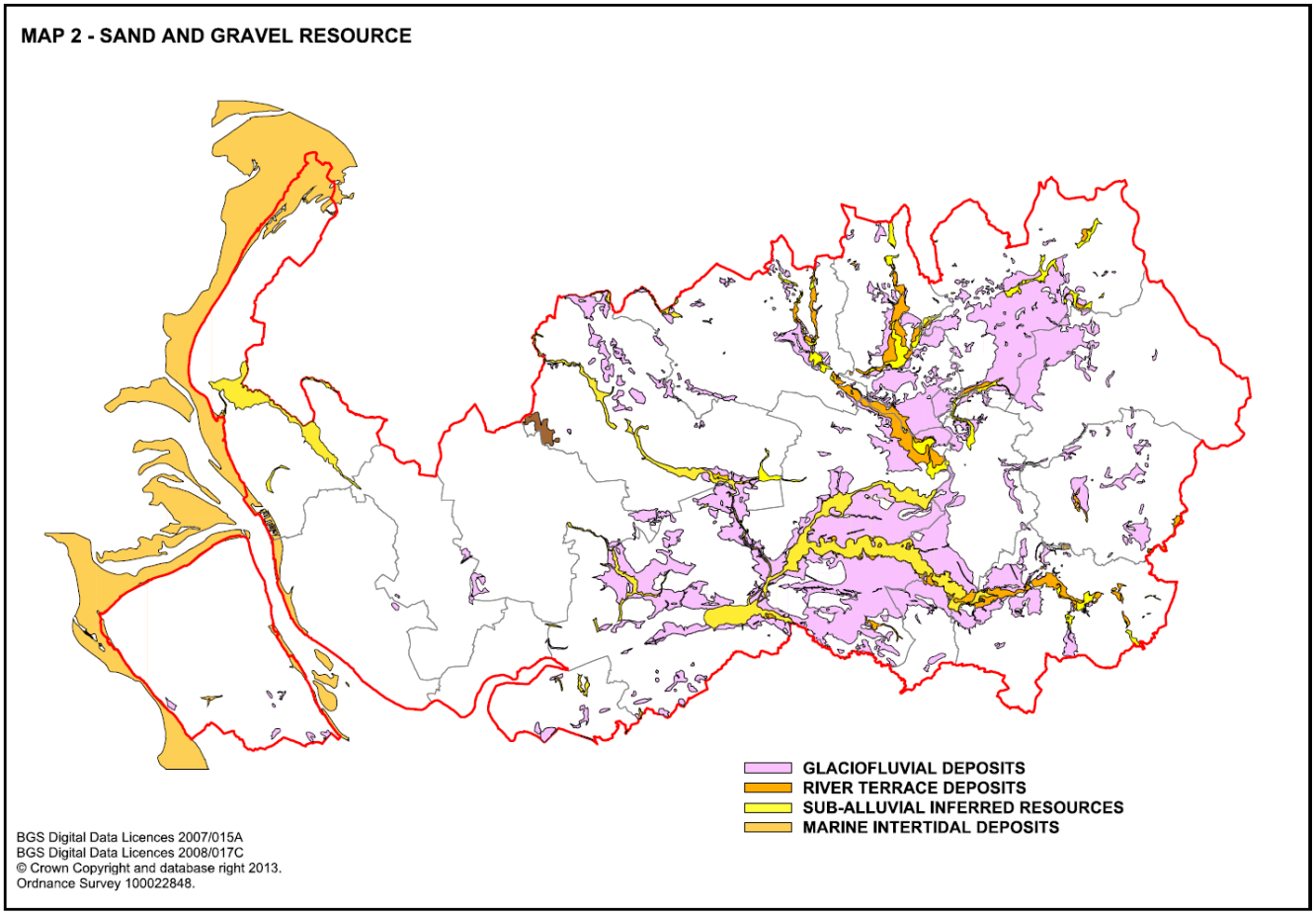
Mineral Resource	Summary of Mineral Resource	Example uses of material
Glaciofluvial sand and gravel	Sands and gravels are derived from the erosion of local bedrock by the action of ice and waste which is then deposited by glacial melt water. Sand and gravel is defined on the basis of particle size rather than composition, although they are usually rich in silica (quartz, quartzine and flint), but other rock types occur.	Domestic uses, e.g. garden
Carboniferous Millstone Grit (sandstone)	Carboniferous sandstones consist of sand-sized particles with minor pebbles, composed dominantly of quartz, but also with some feldspar, some of which are cemented by carbonaceous material and other with Kaolinitic materials. The sandstones are typically buff coloured although locally grey and vary from fine to course grained.	Bulk fill material
Triassic (Sherwood) Sandstone	The Sherwood Sandstone Group, formerly known as the Bunter Sandstone, predominantly comprises sandstone and pebbly sandstone with lesser amounts of conglomerate and minor amounts of mudstone and siltstone. It was deposited between 230 and 260 million years ago in the late Permian and Triassic periods.	Bulk fill material

Sand and gravel resources and current extraction

2.5. Resources of sand and gravel primarily occur within superficial or ‘drift’ deposits of glacial and post glacial origin. These sands and gravels are derived from the erosion of local bedrock in a variety of environments, including glaciofluvial rivers formed from melting ice and also river

terraces formed after the main ice had retreated from the area. **Map 2** shows the distribution of the sand and gravel resource across the sub-region.

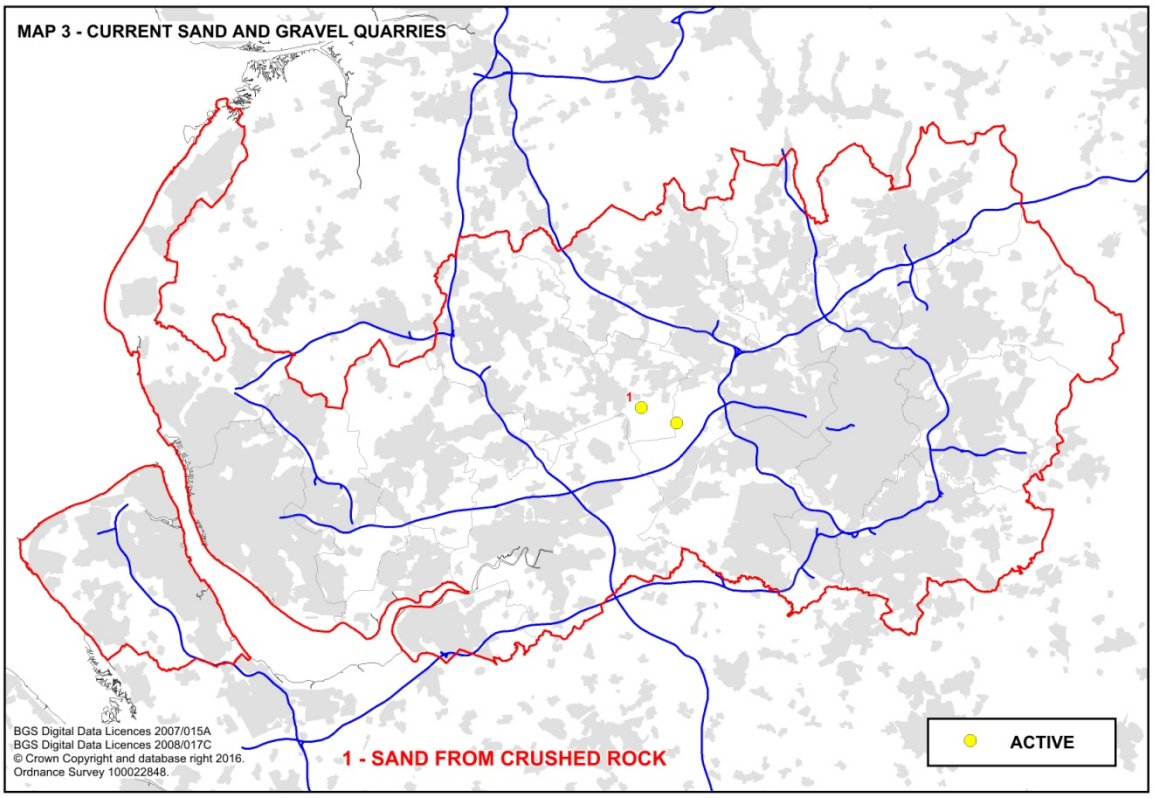
2.6. There is a limited amount of sand and gravel extraction in the sub-region. Sand and gravel has been extracted in the past in Warrington although there are no working quarries at present. Activity in Merseyside is mainly limited to the landing of marine-dredged material at coastal ports such as the Port of Liverpool and Bromborough. Following consultation on the new Local Plan for Sefton, a new safeguarding area is proposed for the alluvial sand and gravel of the Alt floodplain, though this potential resource has not been of recent commercial interest. In Greater Manchester, glacio-fluvial sand and gravel is currently worked at Astley Moss, Salford. **Map 3** shows permitted sand and gravel quarries (active and inactive) in 2015. Morleys Hall Quarry in Wigan produces sand but this is worked from soft sandstone (Triassic sandstones of the Sherwood Sandstone Group) rather than from sand and gravel deposits. Morley's Hall Quarry has no permitted reserves although an application, pending decision, was submitted in June 2016 for the extraction of some 890,000 tonnes of sand.



Crushed rock resources and current extraction

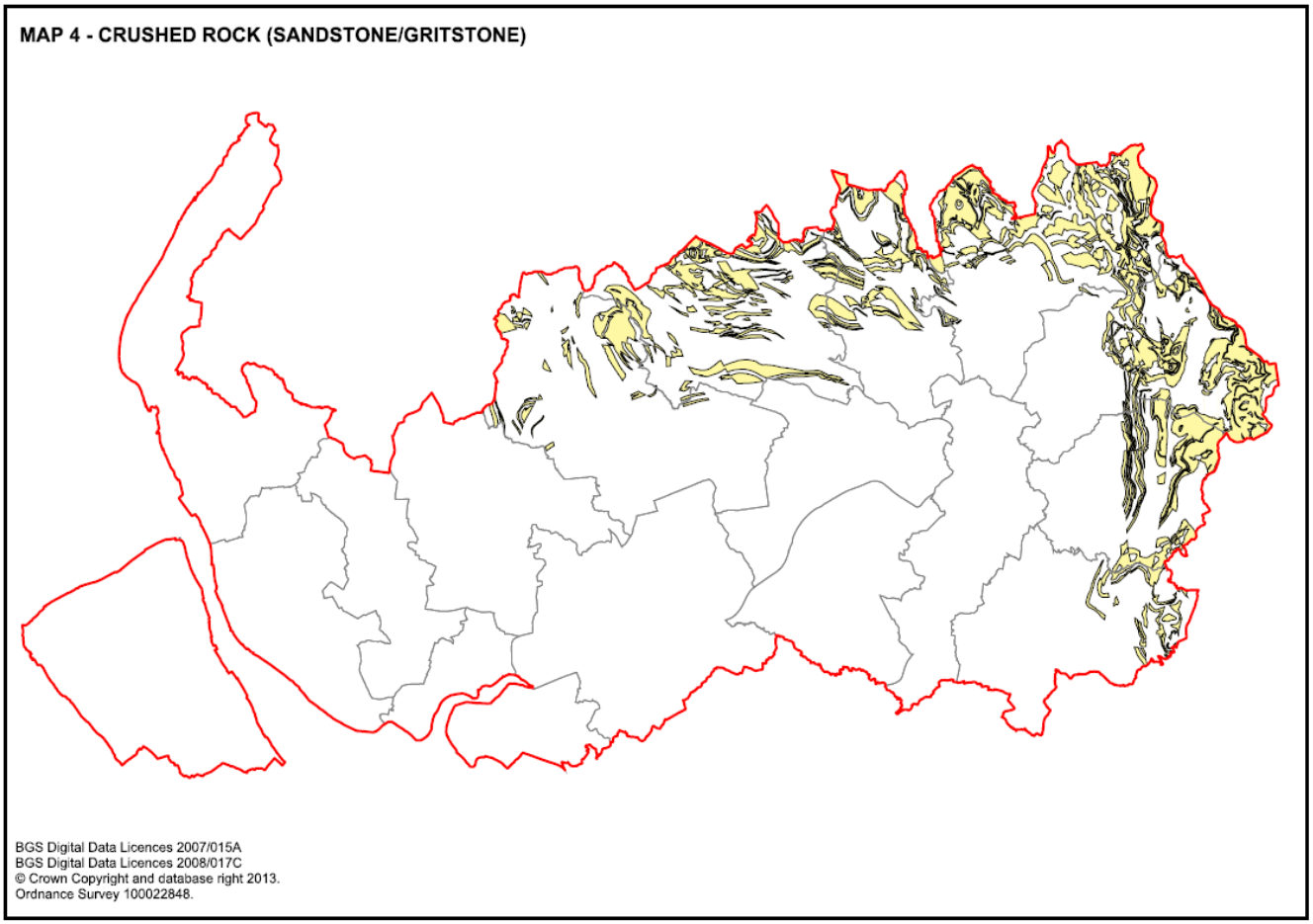
2.7. Crushed rock resources are associated with Carboniferous and Permo-triassic rocks of the area (see Map 4).

2.8. Extraction of crushed rock aggregate in Greater Manchester is confined to a broad strip running north-south along the eastern margin and east-west along the northern margin. There are five crushed rock aggregate quarries in Greater Manchester which are concentrated in the north and east of the sub-region. Four of the five quarries are currently active for the production of aggregates; the other is inactive and did not produce any aggregate during 2016.



2.9. The only aggregate producing quarry in Warrington is operated by Gaskell Brothers Ltd for the extraction of sandstone at Southworth Quarry in Croft Parish. The site produces crushed rock aggregate primarily for bulk fill purposes. Planning permission for this operation is valid until 2025. The site also contains a significant aggregate recycling facility and the quarry void is being backfilled with inert wastes.

2.10. There is one quarry in Merseyside with an active planning consent for production of crushed rock aggregate; Bold Heath in St Helens. This is now active after being inactive for the previous several years because of economic conditions, but has now begun to operate again. It produces low grade crushed sandstone for use as construction fill and should continue to contribute to apportionments for some time into the future. **Map 5** shows crushed rock extraction in the sub-region. British Geological Survey (BGS) explain that isolated mineral workings may occur in areas that are shown as having no mineral resource. This explains why there are crushed rock quarries identified in **Map 5** which do not correspond with the sandstone/gritstone resource identified in **Map 4.**[2].



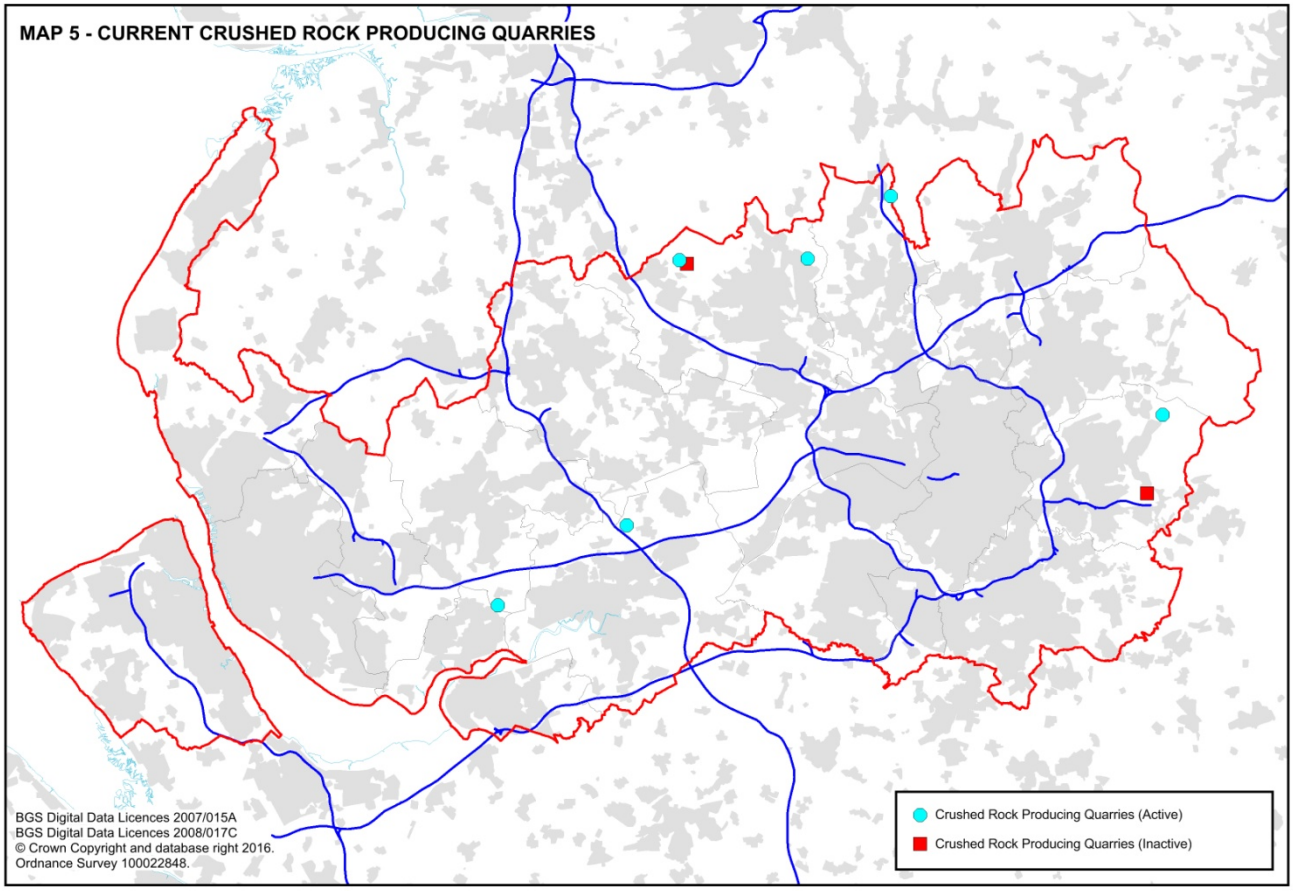
2.11. A list of permitted aggregate quarries in the sub-region is summarised in Table 2-2. The majority of quarries have permitted end-dates within the next ten years.

[2] Source: Mineral Resource Information in Support of National, Regional and Local Planning (Merseyside) BGS 2006

Table 2-2: Permitted Aggregate Quarries in the Sub-Region

Site name	Operator	Grid Ref	Mineral	Status	MPA	Permission End Date
Astley Moss	Breedon Aggregates	SJ 371 500	Sand and gravel	Active	Salford City Council	31.12.2022
Bold Heath Quarry	D Morgan Plc	SJ 530 885	Sandstone	Active	St Helens Council	
Buckton Vale Quarry	W.Maher & Sons Ltd	SD992 016	Sandstone	Active	Tameside Council	31.12.2020
Fletcher Bank Quarry	Marshalls Mono Ltd	SD 804 170	Sandstone	Active	Bury Council	31.12.2036
Harrop Edge Quarry	Chartrange (Quarry Products)	SJ 982 959	Sandstone	Inactive	Tameside Council	
Harwood Quarry	Booth Ventures	SD 747 124	Sandstone	Active	Bolton Council	31.12.2026
Montcliffe Quarry	Armstrongs	SD656 124	Sandstone	Active	Bolton Council	21.02.2021
Morleys Hall Quarry	Casey	SJ 685 990	Sand and gravel	Active	Wigan Council	31.12.2022 Note: no permitted reserves remain.
Offerton Quarry	Offerton sand and gravel	SJ 928 893	Sand and gravel	Closed[3]	Stockport Council	Closed
Pilkington Quarry	Armstrongs	SD 622 121	Sandstone	Inactive	Bolton Council	31.12.2026
Southworth Quarry	Gaskell Bros	SJ 619 940	Sandstone	Active	Warrington	31.12.2025

[3] Active for recycled aggregates.



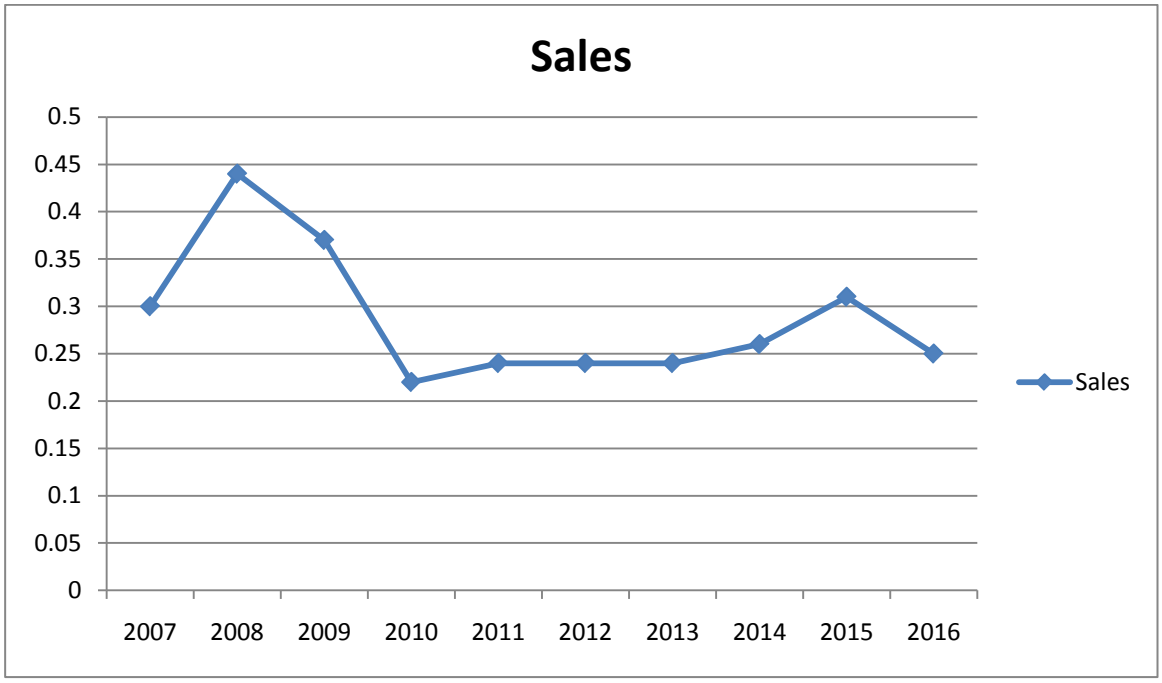
3. Aggregate Sales

Land-won Sand and Gravel - Sales

3.1. Sales of land-won sand and gravel originating in the sub-region from 2007 to 2016 are shown in Table 3-1. In order to maintain the confidentiality at individual quarries it is not possible to provide sales or reserves data for 2016. However, for 2016, a sales figure has been taken from the planning application at Morley's Hall Quarry to establish a 10-year figure.

3.2. Total sales of both land and marine-won aggregate sand and gravel during 2016 were 0.39mt. This is 7% lower than in 2015 when total sand and gravel sales were 0.42mt. The decrease is due to a reduction in the extraction of land-won sand and gravel.

Table 3-1: Land won sand and gravel sales in the sub region between 2007 – 2016 (million tonnes)



3.3. The sales for the most recent 10 year period are set out in Table 3-2.

Table 3-2: Land won sand and gravel sales in the sub region between 2007 – 2016 (million tonnes)

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Sales	0.3	0.44	0.37	0.22	0.24	0.24	0.24	0.26	0.31	0.25[4]

Land-won Sand and Gravel – Landbank

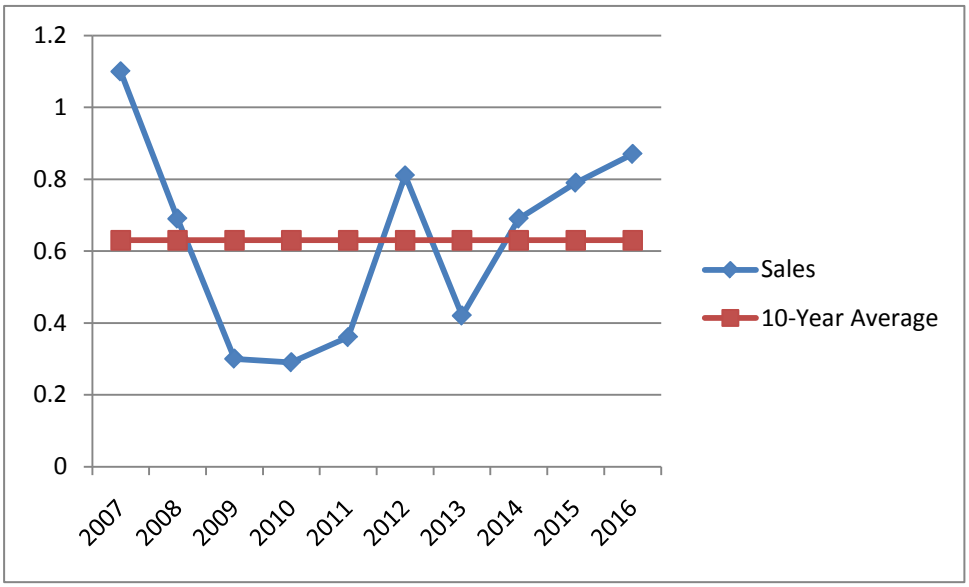
3.4. Reserves of land-won sand and gravel fell in 2016 because one quarry has been identified as closed for primary aggregate extraction, whilst another has been worked out, although an application for an extension of time and area at this quarry is pending. This means that just one quarry, Astley Moss, contributes to the landbank. Planning permission at Astley Moss is due to expire by 31st December 2022. Therefore, unless a new permission is granted, the landbank for sand and gravel in the sub-region is under the minimum of 7 years set out in NPPF. A planning permission for an extension at Morley's Hall is pending and the situation will be monitored closely. The approval of this planning application would add approximately 2 years to the landbank, meeting the minimum 7 year requirement.

[4] Sales figure for 2016 is taken from planning application data to maintain confidentiality.

Crushed rock sales

3.5. Sales of crushed rock originating in the sub-region from 2007 to 2016 are shown in Table 3-3. There was a decline in crushed rock sales of 67% between 2007 and 2011 during a period of recession. There was an upturn in sales in 2012 to 0.81 million tonnes, this dropped temporarily to 0.42 million tonnes in 2013 before gradually rising to 0.7 million tonnes in 2014 and increased further to 0.87 million tonnes in 2016.

Table 3-3: Crushed rock sales in the sub region between 2007 - 2016 (million tonnes)



3.6. The sales for the most recent 10 year period are set out in Table 3-4.

Table 3-4: Crushed rock sales in the sub region between 2007 – 2016 (million tonnes)

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Sales	1.1	0.69	0.30	0.29	0.36	0.81	0.42	0.69	0.79	0.87

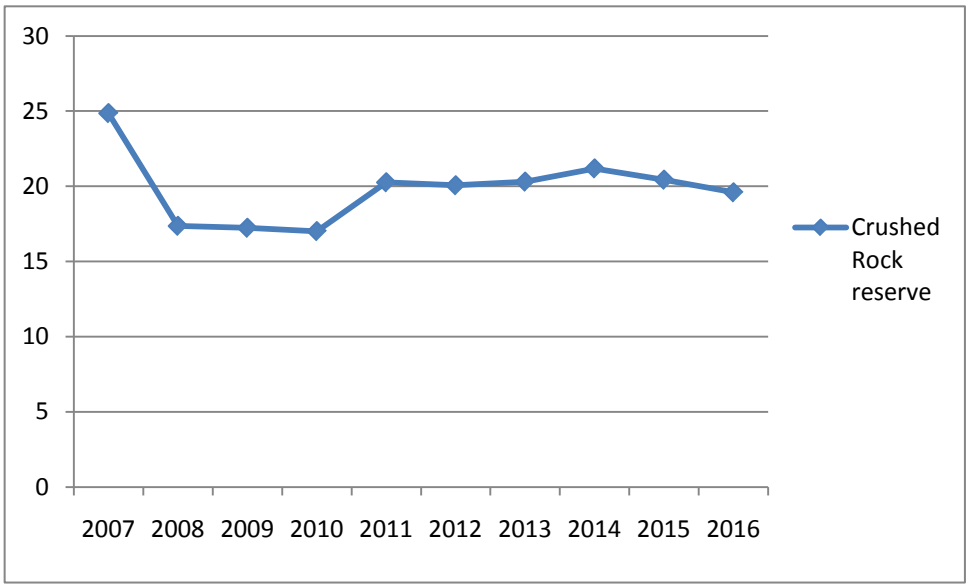
3.7. Average crushed rock sales over the past 10-year rolling period are 0.63 million tonnes, with the average of the latest 3-year period being 0.78 million tonnes.

3.8. Table 3-5 and Graph 3-6 below show aggregate reserves in the sub-region over a ten year period to 2016.

3-1 Crushed Rock Reserves 2007-2016 (Million tonnes)

Monitoring period	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Crushed Rock (sandstone) reserves (million tonnes)	24.86	17.36	17.23	17.01	20.26	20.06	20.3	21.18	20.43	19.59

3-2 Crushed Rock Reserve (million tonnes)



3.9. Permitted reserves at crushed rock quarries in the sub-region were 19.59 at the end of 2016. This is sufficient to provide for 31.1 years based on the average production rate over the previous 10 years. This is above the 10 year minimum landbank required by NPPF.

3.10. However, the permitted end dates of quarries in Table 2-2 show that the majority of active crushed rock sites are due to end within the next 10 years, unless new planning permissions are granted. Although of low quality, the material extracted in the sub-region plays an important local role in reducing vehicle movements of this type of material and this situation should be monitored closely to identify if applications are coming forward.

4. Secondary and Recycled Aggregates

4.1. Recycled Aggregates, which include inert materials such as concrete, stone, brick and other similar materials, are reprocessed materials previously used for construction purposes and which are often taken from the Construction, Demolition and Excavation (CD&E) waste

stream. Secondary aggregates are usually by-products of industrial processes and can include materials such as clay waste, ash and slag.

4.2. The use of secondary and recycled materials not only reduces the requirement for new production of primary aggregate, but also reduces the need for disposal to landfill of CD&E waste materials. The National Planning Policy Framework recognises this and strongly promotes the use of secondary and recycled materials as an alternative to primary aggregate.

4.3. Data on secondary and recycled aggregate production and use is variable and incomplete. This is because, while some sites operate under licence and can be monitored, much recycling and re-use occurs on individual construction sites, is temporary in nature and does not produce data. The Mineral Products Association has published data on the likely contribution that secondary and recycled materials make to the aggregates market, reporting that nationally these materials made up 28% of the market in 2015.

4.4. The use of secondary and recycled aggregate materials is acknowledged to be of some importance to the sub-region, as it is heavily urban in nature and therefore is likely to have production levels significant enough to offset considerably against the apportionment figures. Seeking a means to provide a reliable estimate for secondary and recycled aggregate production will therefore be taken forward as a priority action for future LAAs.

4.5. The locations of CD&E waste management facilities are identified in Map 6. Data on this waste stream is notoriously challenging and local authority licensed sites may not be identified on Map 6 due to limitations with the data. In addition, the quality of the spatial information on Map 6 is varied as site co-ordinates in the EA interrogator do not necessarily match the site address.

4.6. For the reasons outlined above, CD&E and its use for aggregate purposes has been identified by AWP as an area requiring further work. Due to poor responses from industry when surveyed about this waste stream, the Environment Agency's database 'Waste Data Interrogator' provides the best available information. Table 4-1 shows the amount of CD&E waste produced and handled at sites in the sub-region in 2016. The totals in this table will not reflect the true amount of CD&E waste produced and managed in the sub-region because it only shows the waste that moves through licenced sites and does not include waste that is reused on site or disposed of at exempt facilities.

4-1 Construction, Demolition and Excavation Waste Produced and Handled in the Sub-region, 2016 (tonnes)

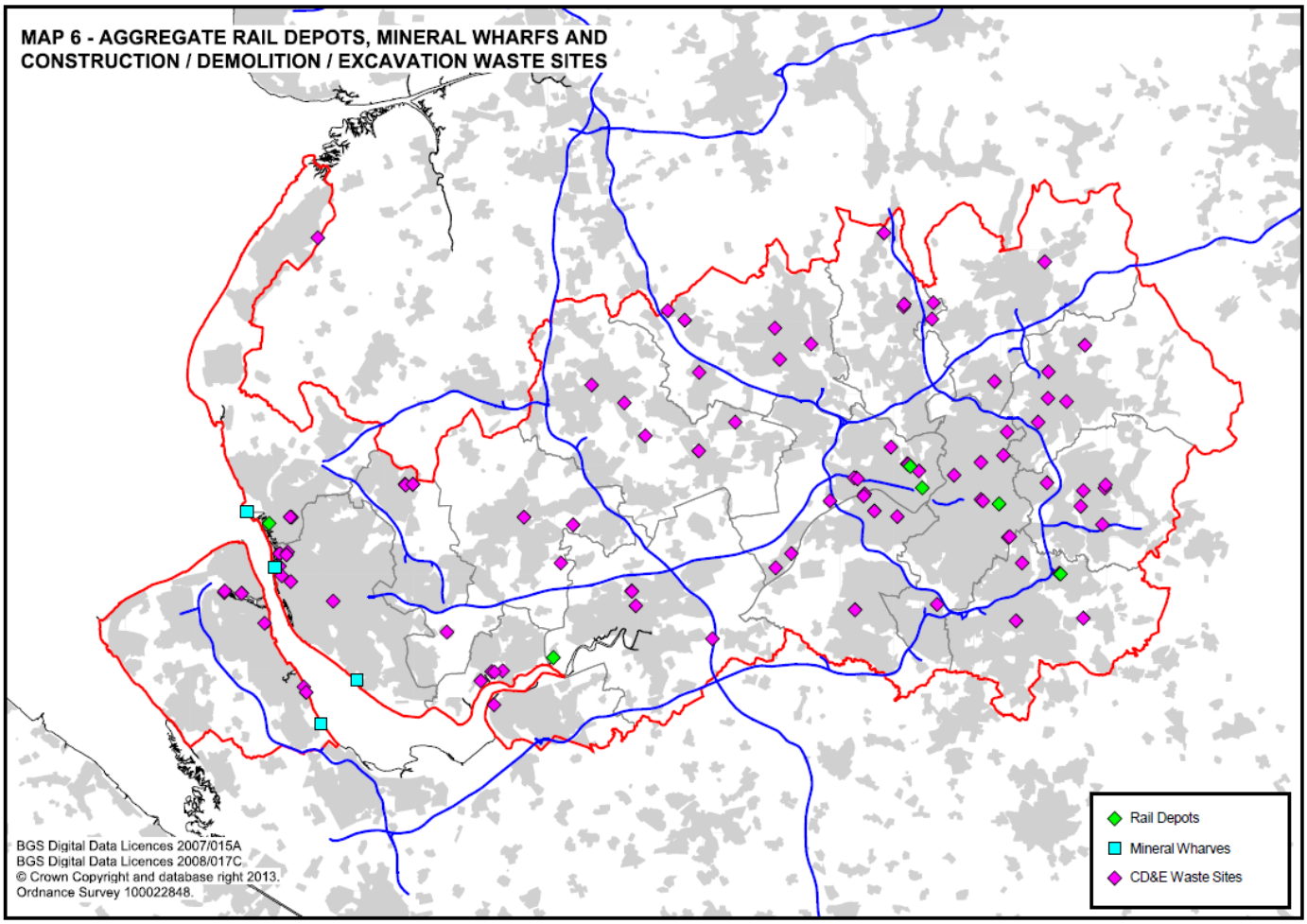
	Produced[5]	Handled
Greater Manchester	2,605,920	2,863,791
Merseyside with Halton	1,163,644	1,330,523
Warrington	100,292	328,981
TOTAL	3,869,856	4,523,295

Source: Environment Agency Waste Data Interrogator 2016

5. Marine Won Aggregates and Wharves

5.1. The apportionment sub-region contains significant marine infrastructure, most notably in the Port of Liverpool, but also other dock facilities at Garston, Bromborough and Eastham and a range of smaller wharf facilities along the Manchester Ship Canal to its terminus in Salford. There are significant primary landings of aggregate materials in the Port of Liverpool and at Garston. Most onward trans-shipment is by road and rail, but from time to time some onward trans-shipment by barge may take place. The Port of Liverpool also handles landings of significant quantities of crushed rock aggregate shipped from the Glensanda quarry in the West of Scotland. Some 0.65mt of igneous rock from the Glensanda Superquarry was landed at Liverpool Wharf in 2016 and used in ready mix concrete. This material is transported by road to Cheshire, Lancashire and is used within the sub-region. Landing of material from Glensanda has not previously been reported in the LAA. Map 6 identifies wharfs in the sub-region where marine-won aggregates are landed.

[5] *'Produced' refers to the quantity of useable material produced from the recycling process, whereas 'Handled' refers to the quantity of material processed within the area, not all of which will be reusable. i.e. The 'handled' material is the raw input material and 'produced' material is the end product.*



5.2. The marine aggregates landed in the sub-region come mainly from the licenced sand and gravel extraction zones in the Irish Sea (86.65km^2 of licenced area in 2015, which represents an increase on the previous year). Crown Estates (published in *The Area Involved - 18th Annual Report,* The Crown Estate and British Marine Aggregate Producers Association, 2016) statistics for 2015 report a figure for permitted removal from North West waters of 1.30mt per annum.

5.3. The comparison given by Crown Estates in *Marine Aggregate Capability and Portfolio 2016* of the 10-year peak extraction (740,000 tonnes) with the 10-year average (420,000 tonnes) and the 3-year average (300,000 tonnes) is indicative both of significant falls in demand for marine aggregate in recent years, but also of significant unused capacity potentially available to the market should demand increase significantly in the future. However, extraction did rise year-on-year from approximately 300,000 tonnes in 2011 to approximately 600,000 tonnes in 2012, the most since 2009. In 2016 215,000 tonnes of marine sand and gravel was delivered to the North West. Over 97% of the primary aggregate was delivered to North West wharves, with Liverpool by far the most significant destination. Crown Estates anticipates 3% annual growth

in demand nationally in the period up to 2030 and the North West offshore licenses seem well placed to accommodate this level of growth.

5.4. In 2016, 260,398 tonnes of marine aggregate was landed at Liverpool wharves, together with 650,000 tonnes of crushed rock aggregate (up from 542,000 in 2014) shipped from land-won sources in Scotland. Both Crown Estates and the wharf operators report that the material landed through wharves in the sub-region has an end-use mainly within the North West.

6. Movement of Aggregates – imports/exports

6.1. Information on imports and exports of aggregates into and out of the sub-region is taken from the 2014 Aggregates Minerals Survey (AMS) undertaken jointly between the Department for Communities and Local Government (DCLG) and the British Geological Survey (BGS). This is the most up-to-date data available on flows of aggregate materials. The data tables express the movement of minerals in percentage ranges, so there are limitations in the precision of the data.

6.2. The AMS reports that the North West as a whole consumed 15,363 thousand tonnes of primary aggregate in 2014, 45% of which originated within the North West and 55% of which was imported into the region. No separate data for the LAA sub-region has been published. Table 6-1: North West Net Imports/Exports (2014) shows net imports and exports into/out of the region in 2014. In summary, the North West region is a net exporter of sand and gravel and a net importer of crushed rock.

Table 6-1: North West Net Imports/Exports (2014)

	Import (000 tonnes)	Export (000 tonnes)	Balance (000 tonnes)
Sand & Gravel (land won and marine)	240	723	-483 (net export)
Crushed Rock	7,740	313	+ 7,427 (net import)

6.3. In order of volume, the North West imported sand and gravel from the following regions in 2014:

- North Wales (140,000)
- West Midlands (70,000)
- Yorkshire and Humber (12,000)
- South East (12,000)
- East Midlands (3,000)

- East of England (1,000)

6.4. In order of volume, the North West imported crushed rock from the following regions in 2014:

- East Midlands (3,831,000)
- North Wales (2,131,000)
- Yorkshire & Humber (836,000)
- Outside England & Wales (400,000)
- West Midlands (357,000)
- South Wales (142,000)
- North East (44,000)

6.5. The previous 2009 survey did not specify where the sub-region imports materials from, whereas the latest 2014 survey has improved on this so it is now possible to indicate where material comes into the sub-region from. Sand and Gravel is mainly imported from other parts of the North West, with Cheshire West and Chester being the largest source (20-30% of consumption), with Cheshire East, Lancashire and Cumbria also significant sources (1-10%). Only Staffordshire reported significant shipments to the sub-region from outside of the North West (1-10%), while very small contributions were also recorded from Lincolnshire and Nottinghamshire (<1%). The sub-region therefore imports significant quantities of sand and gravel from land won sources.

6.6. The reported position with Crushed Rock is more complex. Very significant imports to the sub-region are reported from Derbyshire and the Peak District National Park (20-30%), while Flintshire is also a significant supplier (10-20%), while quantities also come from Cumbria, the Yorkshire Dales and Shropshire (1-10%), with small shipments also recorded from a further 9 mineral planning authority areas. This reflects the need for crushed rock in the sub-region and the lack of local resources to supply it. The sub-region also borders both North Wales and the East Midlands regions, both of which produce crushed rock in relatively convenient locations to facilitate supply into the sub-region.

6.7. Table 6-2 shows sub-regional imports and consumption of primary aggregates in 2014. It shows that the sub-region imported 92% of the crushed rock consumed, either from elsewhere in the North West or beyond. This can be explained by the fact that the quality of crushed rock extracted in the sub-region is of a lower quality than that required for many construction activities and is understood to be mainly used as bulk fill. Therefore, the sub-

region must import the higher quality crushed rock aggregate for use in construction projects as it is not available locally and it is likely that this will continue.

Table 6-2: Sub-regional imports and consumption of primary aggregates in 2014[6]

	Import (000 tonnes)	Consumption (000 tonnes)	Net imports as a % of consumption
Sand & Gravel (including Marine)	214	280	76%
Crushed Rock	3,233	3,465	93%
Total Aggregate	3,447	3,744	92%

6.8. The sub-region imported 76% of sand and gravel consumed in 2009, either from elsewhere in the North West or from beyond the North West, this figure remains the same for 2014. The only sand and gravel quarries in the sub-region are currently found in Greater Manchester. The sub-region imported 92% of crushed rock consumed in 2009, this has risen to 93% for 2014. The data suggests that the sub-region continues to rely on imports to supply the majority of its requirements for sand and gravel and crushed rock.

6.9. A review of the 2016 Derbyshire and Peak District National Park (PDNP) LAA reveals that Derbyshire exported 23% (1,690,722 tonnes) and PDNP export 33% (572,440 tonnes) of the total crushed rock produced in each authority in 2009. The LAA explains that the landbank is large enough to continue to supply other areas during their Plan period to 2031 and that the area is, and is likely to continue to be, an important supplier of aggregate grade crushed rock at a wide geographical scale. However, the PDNP has a policy in its Core Strategy which does not allow for further new quarries or extensions to existing quarries, in order to reduce progressively the amount and proportion of aggregate grade crushed rock that is quarried from within the Park in order to protect the nationally protected landscape.

6.10. In 2014, 856,157 tonnes of stone were sold from the Yorkshire Dales National Park to the North West region which represents 28% of the National Park's total sales for that year. A railhead was commissioned by Tarmac at Arcow Quarry in Ribblesdale in January 2016. At present this is being used for trains taking Dry Rigg stone (also Tarmac) to the Bredbury (Stockport) and Agecroft (Salford) depots and is used for Arcow stone to the same depots from Arcow quarry. The LAA notes that national guidance for non-energy minerals should be

[6] Table 6-1 includes imports from other authorities within the North West as well as any imports from outside the North West. It is therefore not directly comparable with the information in Table 6-2.

provided for from outside National Parks as far as is practical. The LAA explains that whilst there are currently substantial reserves in the National Parks, the availability of new reserves from these locations will be restricted by national policy restrictions. NPPF seeks to reduce reliance on the National Parks as a source of crushed rock aggregate, as far as is practical, and this may increase pressure on supplies of imports to the sub-region over time. However, the LAA explains that *through previous discussions with members of the Aggregate Working Party in preparing the 2005-2020 apportionment figures, it was agreed that quarries in Derbyshire (i.e. those within the county boundary not covered by the National Park) (serving similar markets to those in the National Park which are likely to cease production) would compensate for the majority of the displaced provision from the PDNP. Derbyshire County Council has agreed to continue this approach throughout this Plan period*[7].

6.11. The 2014 survey provides some details of exports from the sub-region. However it is clear that these are limited and local given the quality of material found and the constraints of the urban area. Given this, communication and co-operation with those authorities that import primary aggregates into the sub-region will be important.

6.12. The majority of aggregates are transported into the sub-region by road. However, there are a number of aggregate rail depots in the sub-region and these are shown on Map 6. Indications are that the material imported through Merseyside Wharves is used entirely within the North West. There is a need to safeguard this infrastructure from encroachment from other forms of development.

7. Assessment of Future Supply

7.1. For over 35 years, geographical imbalances in the occurrence of suitable natural aggregate resources and the areas where they are needed have been met through the Managed Aggregate Supply System (MASS). The underpinning concept behind MASS is that Mineral Planning Authorities which have adequate reserves of aggregates make an appropriate contribution to national as well as local supply.

[7] Derbyshire County Council, Derby City Council and The Peak District National Park Authority, Local Aggregate Assessment 2016, p.38

Current Aggregate Apportionment (2005 – 2020)

7.2. Prior to the publication of the National Planning Policy Framework (NPPF) in March 2012, national aggregate policy was set out by the Government in MPS1, which required Mineral Planning Authorities (MPAs) to make provision for the sub-regional apportionment of the National and Regional Guidelines for Aggregate Provision 2005-2020[8], which was most recently updated in June 2009. The key regional guideline figures are reproduced in Table 7-1 along with the national figures for comparison.

Table 7-1: Comparison of National and Regional Apportionment Guidelines for England (2009)

Region	Land-won provision		Assumptions		
	Land-won Sand & Gravel (mT)	Land-won Crushed Rock (mT)	Marine Sand & Gravel (mT)	Alternative Materials (mT)	Net Imports to England (mT)
North West	52	154	15	117	55
England	1028	1492	259	993	136

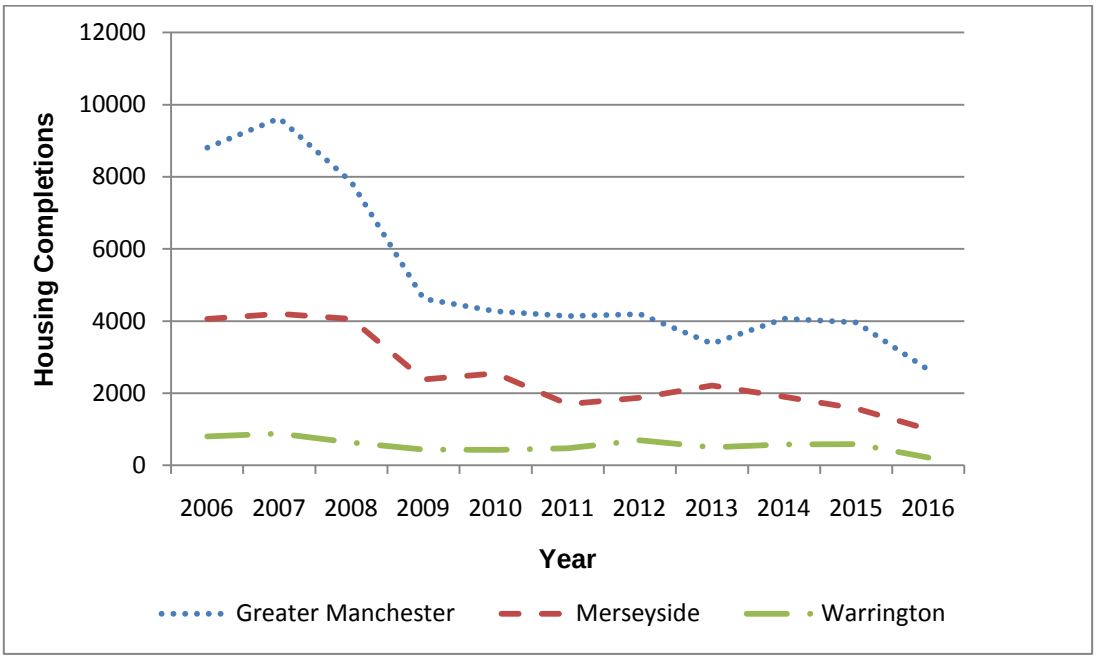
7.3. The regional guidelines were broken down, as far as possible, to mineral planning authority areas (the 'sub-regional apportionment'). For reasons of commercial confidentiality, Greater Manchester, Merseyside, Halton and Warrington were grouped together for the purposes of the sub-regional apportionment. The apportionment prior to the publication of the NPPF was 0.43 million tonnes per annum of land-won sand and gravel and 1.32 million tonnes per annum of crushed rock. The sub-region has not met the apportionment in the previous 10 years and the figure has not been used to identify the guideline figure in this LAA.

7.4. In order to understand the behaviour of the aggregates market across the apportionment area, this LAA uses historic trends in a small number of key economic indicators to illustrate how the recorded trends in aggregate sales reflect wider economic conditions. Employment in the construction sector, housing completions and GVA forecasts have all been used as indicators.

[8] National and regional guidelines for aggregates provision in England 2005-2020 (DCLG, Jun 2009)

7.5. Table 7-2 shows a steep fall in housing completions together with a recent gradual recovery. As a key indicator of construction sector activity, it is not surprising that the recorded trend in aggregate sales broadly reflects the trend in the housing completion statistics.

Table 7-2: Housing Completions



7.6. The 2014 Greater Manchester Forecasting Model produced by Oxford Economics (2014 GMFM) shows that, in the period 2008 - 2014, the construction industry in Greater Manchester declined by 20,500 jobs. It predicts that, over the period 2014 – 2028, this decline will be halted and the construction industry in Greater Manchester will grow by 10,900 jobs. Over the next decade it is predicted that GVA growth will average 1.9% per year in Greater Manchester.

7.7. Figures from the same source produced in 2015 for the Liverpool City Region indicate a similar picture. LCR employment in the construction sector fell by 10% in the period 2008-14 but forecasts show the figure recovering to 5% above 2008 levels by 2028. Over the ten years 2015-2024 total GVA growth in the LCR of 22% is anticipated, while the forecast for the construction sector over the same period is a similar 24%. This is indicative of an expected return to more normal economic conditions with average annual growth a little above 2%.

8. Other Relevant Local Information

8.1. Whilst the 10 year rolling sales average is the starting point for a LAA, LAAs must also be based on “other relevant local information”. Other relevant information should include

consideration of levels of planned construction, including major infrastructure projects, and planned house-building in the MPA area and beyond, to an extent and depth which the mineral planning authority considers relevant. It should be noted that housebuilding can only be used as a partial guide to future demand as aggregates sales reflect much wider demands including refurbishment of the housing stock and infrastructure maintenance. In addition, MPAs should also look at average aggregate sales over the previous three years to identify if there is a general trend of demand that needs to be considered in relation to forthcoming supply in the consideration of whether it might be appropriate to increase supply.

8-1 Population and Household Projections 2014 - 2039

	Population 2014	Population Growth 2014-39	% population growth	Change in households	% Household Growth
Sub-region	4,457,000	480,000	11%	336,000	18%
North West	7,133,000	587,000	8%	442,000	14%
England	54,317,000	8,965,000	18%	5,258,000	23%

Source: ONS 2014-based household projections to 2039 for England, published on 12 July 2016.

8.2. Table 8-1 shows the projected change in population and households from 2014 to 2039. Although overall population and households are predicted to grow at a lower rate than in England as a whole, it is predicted that 82% of the North West's projected population growth over this time period will be within the sub-region.

8.3. The latest Economic Forecast for Greater Manchester was published by the GMCA in September 2017. The key messages from this are set out below, and show that it is expected that the population of Greater Manchester will grow by 207,500 between 2015 and 2035:

- The GMFM-2017 baseline forecast shows GVA growing at 1.7% per annum up to 2035, broadly comparable to the UK average (1.8% per annum).
- Total employment is forecast to grow at 0.5% per annum in GM, slightly faster than the UK average (0.4%), equating to a net increase of 141,000 employees from 2015 to 2035.
- Employment growth is expected to largely be driven by Business, Financial, and Professional Services. Further job losses in Manufacturing are forecast, although increased productivity is expected to result in GVA growth in the sector.

- The baseline forecast suggests that the population will grow by 207,500 between 2015 and 2035, driven mostly by natural increase (birth rates and residents living longer).

- GMFM-2017 is more pessimistic about future growth prospects in both the UK and GM than GMFM-2015. This is driven by slower projected growth in labour productivity, as well as the risks to trade and skills availability emerging from Brexit. These assumptions are in line with those being made by other forecasters.

- As a result of slower growth, GMFM-2017 forecasts that by 2035, total GVA will be £9.2 billion lower, employment 6,000 lower, and population 27,500 lower than in GMFM-2015.

- The number of people living in GM who are in employment – 'resident employment' – is forecast to rise by 117,000 between 2015 and 2035. This is equivalent to growth of 0.4% per year, similar to the average rate of increase in the UK.

8.4. The latest economic forecasts for Warrington were published in the Cheshire and Warrington Strategic Economic Plan (SEP) produced by the Local Enterprise Partnership in July 2017. The SEP sets a target of 31,000 jobs to be created between 2015 and 2040. This equates to an annual rate of 1,240 jobs per annum.

8.5. Similar to the predictions for Greater Manchester, employment growth in Warrington is forecast to largely be driven by business, finance and professional services. In addition, transport and storage employment related jobs are predicted to grow significantly. As with GM further job losses in manufacturing are forecast and there is some uncertainty about short term growth due to the Brexit process.

8.6. The LCR LEP Growth Strategy was published in 2016, some of the key messages are set out below:

- The LCR Economy is worth £28.3 billion GVA with output increasing by 8.4% in the 5 years to 2014;

- It is predicted that over 100,000 additional jobs will be created in the LCR by 2040;

- Employment growth is expected to be driven by a number of sectors including: Advanced Manufacturing, Digital & Creative, Financial and Professional services,

Health and Life Science, Low Carbon Energy, Maritime and Logistics and Visitor Economy;

- The population is predicted to increase by 83,000 to 1.6m by 2040.The LCR Spatial Framework is expected to be in place by 2020.

8.7. The GMSF will plan for new homes and infrastructure across Greater Manchester. The Draft Plan (September 2016) identified a total requirement, until 2035, for 227,200 new homes across Greater Manchester; an annual requirement of 11,360. 55-65% of these will be houses and 40-45% will be apartments. To ensure connectivity across Greater Manchester, a number of improvements to motorways are identified, as well as improved rail and canal links.

8.8. The Mineral Products Association report *Mineral Products Industry at a Glance 2016* suggests that 200 tonnes of aggregate are require to build one house. Based on this, the predicted aggregate requirement for new housing (not including apartments) over the GMSF plan period would be between 27 and 29 million tonnes. Other data sources, such as the European Aggregates Association suggest double this figure, i.e. 400 tonnes per house, so between 54 and 58 million tonnes in total would be required. This does not include aggregates required for other built development and supporting infrastructure. Whilst a proportion of this could come from recycled aggregate, much will require imported virgin material.

8.9. The draft GMSF annual housing requirements are lower in the initial years of the plan, before levelling out at a requirement for 12,300 new homes every year between 2022 and 2035. This is approximately double the gross annual completion rate in 2015/16. Although it is difficult to quantify, it is presumed that a higher level of aggregates will be needed to meet demand. Most of the aggregate required will continue to be imported, and it is anticipated this will be at higher rates than at present.

8.10. The emerging Warrington Local Plan identifies a need for a significant amount of growth over the next 20 years. The Council's Preferred Development Option Regulation 18 Consultation Document (July 2017) identifies a requirement for approximately 24,700 homes and 346ha of employment land over the plan period (2017-2037) along with supporting infrastructure. This housing requirement equates to an annual target of over 1,100 dpa, which is approximately double the net annual completion rate since 2008.

8.11. Given the above referenced predicted increase in the economy of the sub-region over the next decade of circa. 2% per annum, it would seem reasonable to assume that demand for aggregates will also increase at a similar rate.

9. Future Aggregate Supply and Demand

9.1. Annual surveys of aggregate sales and reserves have historically been undertaken by the North West AWP and provide a basis for establishing future supply and demand. There has been a decline in sales of land won sand and gravel and an increase in the sales of crushed rock in the sub-region. This is due to:

- Closure of sand and gravel quarries, which have not been replenished;
- Development of more efficient construction techniques requiring less aggregate;
- Increased use of marine won aggregate and secondary and recycled aggregates.

9.2. Current primary mineral extraction (sand and gravel and crushed rock production) in the sub-region is limited. No sites were submitted by Industry for allocation for future extraction within the Greater Manchester Minerals Plan (adopted in 2013) although Areas of Search have been identified in the Plan. Reasons for this could include the extent of the urban area and the quality of materials found in the sub-region being such that it competes with secondary and recycled materials.

9.3. Given the above, it is likely that imports of primary aggregate material into the sub-region will continue to be important. It is also likely that secondary and recycled aggregates will continue to compete with primary aggregate extracted in the sub-region.

9.4. Forecasting future aggregate market conditions is difficult. Although growth conditions have returned to the sub-region recently, aggregate sales data do not yet fully reflect this, although it is the import of aggregates which will continue to be of most importance to the sub-region. The pre-recessionary peak for sales was reached in 2006 with 1.94mt of recorded aggregate sales, compared with 0.51mt in 2010 and 1.1mt in 2015. However, ambitious local authority housing delivery targets and the potential effects of local devolution will be a factor in the recovery of demand for aggregate. Crown Estates[9], while recognising that a market recovery for marine aggregate is underway, does not expect a return to 2008 peak levels until the early

[9] Marine Aggregate Capability and Portfolio 2013 (The Crown Estate, 2013)

2020s. This suggests that recovery to peak levels is certainly possible, but may take some time. There is expected to be sufficient unused capacity within the aggregates market onshore, and particularly off-shore, to service any increase in demand in the short- to-medium term.

10. A Local Approach to Apportionment Determination

10.1. The demand for aggregates in the sub-region is likely to remain higher than actual land-won aggregate sales figures. The sub-region contains large urban areas including Liverpool, Manchester and Warrington, which restrict the land available for minerals extraction. The geology means that high specification materials for construction and infrastructure projects are not locally available and must be imported.

10.2. In recent years the emphasis in waste management policy on increased recycling has led to rapid growth in the market for substitute aggregate materials and, in particular, facilities for processing construction and demolition waste to produce them. In some circumstances materials from other industrial processes can also be used for this purpose. Unfortunately robust data on the production, distribution or use of alternative aggregates remains difficult to obtain, a position acknowledged by DEFRA in respect of its obligations to report progress against the target set by the Waste Framework Directive to recover 70% of construction and demolition waste by 2020[10]. In the meantime, indications are that the use of alternative aggregate has increased to represent 28% of the market by 2015 (*The Minerals Products Industry at a Glance- 2016 Edition*, Minerals Products Association) and could be expected to continue to rise in the immediate future, driven by policy, regulation and market factors. Although, it should also be noted that secondary aggregates are constrained by availability, quality and specification.

10.3. A number of significant built infrastructure projects and development projects have been identified that are due to commence or have already commenced. These could require substantial amounts of aggregates and include: Port Salford; Liverpool and Wirral Waters; and the Omega employment site in Warrington.

10.4. The Department for Transport (DfT) awarded Warrington Council funding to develop the business case for a potential new road, which would link the A56 Chester Road in Higher Walton with the A57 Sankey Way in Great Sankey (Warrington Western Link). This would be a significant infrastructure project. Following Executive Board approval of the project team's recommendation, the Outline Business Case will be submitted to the DfT at the end of December 2017. The Western Link is now classed an official Council scheme, and the Council will be pursuing various funding routes for its delivery.

[10] Directive 2008/98/EC on waste (Waste Framework Directive)

10.5. Progress is being made with a number of projects related to Liverpool Waters and Wirral Waters, and there are also a number of strategic infrastructure projects in the pipeline across the LCR.

10.6. The recent consultation on the GMSF vision and draft strategic options contains information on objectively assessed housing need. This concludes that the objectively assessed housing need for Greater Manchester over the period 2014-2035 is 217,350 net additional dwellings, which is an average of 10,350 net additional dwellings per annum. The document explains that this level of growth would appear to be quite high historically.

10.7. Given the predicted increase in housing completions, employment, infrastructure projects and the economy in general across the sub-region, it is considered reasonable to apply an 'uplift' to future predicted demand for aggregates, rather than the previous 10 year average sales data. Table 10-2 below identifies a 2% annual uplift in predicted aggregate demand (based upon economic predictions outlined earlier in this report), taking the 3 year rolling sales average as the baseline figure to give a more realistic indicator for recent demand. This has been applied over the next ten years and then an average figure taken as the predicted annual demand.

Table 10-1: Predicted annual demand based upon 2% uplift

	Aggregate	
	Sand and Gravel	**Crushed Rock**
3 year average	0.27Mt	0.78Mt
2017	0.275Mt	0.796Mt
2018	0.281Mt	0.812Mt
2019	0.287Mt	0.828Mt
2020	0.292Mt	0.844Mt
2021	0.298Mt	0.861Mt
2022	0.304Mt	0.878Mt
2023	0.310Mt	0.896Mt
2024	0.316Mt	0.914Mt
2025	0.323Mt	0.932Mt

Predicted annual demand (average)	**0.30Mt**	**0.78Mt**

10.8. The following table (2) sets out the forecast based upon the 2% uplift figure, along with the 3-year and 10-year rolling average of sales . Average sales for sand and gravel are shown to 2015 due to the confidential nature of the 2016 data.

Table 10-2: Forecast based on 10-year supply

	Aggregate	
	Sand and Gravel	**Crushed Rock**
10 year average sales (2007 to 2016)	0.29Mt	0.63Mt
3-Year rolling average of sales	0.27Mt	0.78Mt
Predicted annual demand	**0.30Mt**	**0.85Mt**
Total Requirement (2016 to 2031)	**4.5Mt-**	**12.75Mt**
Permitted reserves as at 31/12/2016	c.	19.59Mt
Landbank as at 31/12/2015	**5Yrs (based on existing planning permission)**	**23.1Yrs**

10.9. The forecast for sand and gravel is 0.30mt, down 0.13mt on the 2005 – 2020 annual apportionment requirement of 0.43mt.

10.10. The forecast for crushed rock is 0.85 mt, down 0.47 mt on the 2005 – 2020 annual apportionment requirement of 1.32 mt.

10.11. The landbank for sand and gravel is below the requirement set out in NPPF for a landbank of at least 7 years. The landbank for crushed rock meets the requirement set out in NPPF of at least 10 years.

10.12. Based on these figures, the sub-region will make provision for 12.75 million tonnes of crushed rock aggregate for the 15-year period 2016 – 2031. There were 19.59 million tonnes crushed rock reserves permitted at the end of 2016 so it would appear that there will be no immediate shortfall, although this does not take into account limitations on the planning permission relating to lifespans of quarries or permitted annual extraction. The sub-region will make

provision for 4.5 million tonnes of sand and gravel for the 15-year period 2016 – 2031. The landbank for sand and gravel is below the minimum required by NPPF. A planning application a Morley's Hall has been submitted and this should be monitored in future Local Aggregate Assessments as the approval of this application would extend the landbank to over 7 years.

11. Conclusions on Future Supply Capacity

11.1. The position regarding primary aggregate extraction in the sub-region should be kept under review through future LAA to reflect opportunities for substitution of primary land won aggregate by secondary and recycled aggregates and marine aggregates.

11.2. The aggregate produced in the sub-region is locally important and districts should ensure plans/policies are in place to ensure a continued supply.

11.3. The national Marine Policy Statement (2011) highlights the importance of marine aggregate in UK supply and the NPPF and associated guidance also provide support for use of this source of supply. The port facilities of the Mersey Estuary are likely to continue to function as significant landing and transhipment points for aggregate materials coming in to the area. The future of marine aggregate extraction in Liverpool Bay seems secure and remains economically significant, but is increasingly competing with other priorities in the offshore area and areas which may be available for extraction may become increasingly restricted in the future. In this respect the first Marine Spatial Plan for the Irish Sea area, to be prepared by the Marine Management Organisation will have a significant role to play, subject to the capacity constraints of the port.

11.4. Robust data on the use of alternative aggregates has proved very difficult to obtain, particularly at the local level. This is a data gap that will need to be filled in the future particularly if, as an area that is not self-sufficient in land-won aggregates, we wish to understand more fully and address the extent to which a dependence exists on material imported from other areas. This data gap has been recognised by the AWP, which has noted it as a priority for joint action at AWP level to address it.

11.5. A key issue for the sub-region is the importation of aggregates from within the North West and beyond. In order to meet construction needs, it is likely that imports would continue to be required. Therefore, safeguarding of rail depots and wharfs by the MPAs is a requirement of the NPPF.

12. Key Messages, Cross-Boundary Liaison and Future Review

12.1. This LAA has been produced jointly for the 17 unitary local authorities comprising the aggregate apportionment sub-region of Merseyside, Greater Manchester and Warrington**. Its principal conclusion is that the authorities of the sub-region should adopt a 2% annual uplift for predicted future demand for aggregates, in line with predicted economic growth. .** This is more realistic and achievable than the sub-regional apportionment or the 10 and 3 year rolling averages from previous year's sales. The sub-region has not met apportionment for some time and evidence from industry is that there is limited interest in taking advantage of the aggregate materials that the sub-region provides. There is no indication that this position is likely to change in the immediate future, as no new proposals for quarries are currently known. The situation will be kept under review through future LAAs and the MPAs of the sub-region will respond as the evidence requires.

12.2. Although the report has highlighted a number of areas where data is weak, absent or not readily applicable at MPA level, it is possible to identify a number of key issues for policy makers in individual MPAs, taking account of their local circumstances and the position for the sub-region identified by the LAA. These key messages for the future direction of policy for the MPAs are set out in Table 12-1 below.

Table 12-1: Planning implications summary

Mineral Planning Authority	Aggregate Resources Present?	Aggregate Extraction Sites with Live Consents?	Aggregate Wharves?	Planning Implications
Greater Manchester Authorities (Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford and Wigan)	Yes	Yes	No	• The Greater Manchester Minerals Plan was adopted in April 2012. The Minerals Plan identifies areas of search which could contribute to meeting any shortfall in provision of aggregates during the Plan Period should a suitable planning application be made. • Greater Manchester to continue to work with industry in order to contribute to the apportionment and participate in AWP. • Safeguarding of mineral resources and processing facilities
Halton	No	No	No	• Prioritise use of secondary and

Mineral Planning Authority	Aggregate Resources Present?	Aggregate Extraction Sites with Live Consents?	Aggregate Wharves?	Planning Implications
				recycled material. • Safeguard critical transport infrastructure and processing facilities. • Provide for windfall applications appropriately. • Continue to work with industry in order to contribute to the apportionment and participate in AWP. • Monitor landbank adequacy through annual LAA.
Knowsley	No	No	No	• Prioritise use of secondary and recycled material. • Safeguard critical transport infrastructure and processing facilities. • Provide for windfall applications appropriately. • Continue to work with industry in order to contribute to the apportionment and participate in AWP. • Monitor landbank adequacy through annual LAA. • Safeguarding of mineral resources
Liverpool	No	No	Yes	• Prioritise use of secondary and recycled material. • Safeguard wharves and transport infrastructure and processing facilities. • Provide for windfall applications appropriately. • Continue to work with industry in order to contribute to the apportionment and participate in AWP. • Monitor landbank adequacy through annual LAA. • Safeguarding of mineral resources
Sefton	No	No	Yes	• Prioritise use of secondary and recycled material. • Safeguard wharves and transport infrastructure and processing facilities. • Continue to work with industry in

Mineral Planning Authority	Aggregate Resources Present?	Aggregate Extraction Sites with Live Consents?	Aggregate Wharves?	Planning Implications
				order to contribute to the apportionment and participate in AWP • Safeguarding of mineral resources
St Helens	Yes	Yes	No	• Prioritise use of secondary and recycled material. • Safeguard critical transport infrastructure and processing facilities. • Provide for windfall applications appropriately. • Continue to work with industry in order to contribute to the apportionment and participate in AWP. • Monitor landbank adequacy through annual LAA. • Safeguarding of mineral resources
Warrington	Yes	Yes	No	• Prioritise use of secondary and recycled material. • Safeguard critical transport infrastructure and processing facilities. • Provide for windfall applications appropriately. • Continue to work with industry in order to contribute to the apportionment and participate in AWP. • Monitor landbank adequacy through annual LAA. • Safeguarding of mineral resources
Wirral	No	No	Yes	• Prioritise use of secondary and recycled material. • Safeguard wharves and associated transport infrastructure and processing facilities • Safeguard critical transport infrastructure. • Provide for windfall applications appropriately. • Continue to work with industry in order to contribute to the apportionment and participate in AWP. • Monitor landbank adequacy through

Mineral Planning Authority	Aggregate Resources Present?	Aggregate Extraction Sites with Live Consents?	Aggregate Wharves?	Planning Implications
				annual LAA. • Safeguarding of mineral resources

12.3. There are a number of broader messages that emerge from this process that apply to the strategic position in the sub-region and the strengthening of the LAA process for the future. These include:

- There is a need to ensure liaison with those authorities, including relevant National Parks, that export aggregates to the sub-region as these are important to ensure future growth ambitions are realised.
- There is a need to monitor permitted sand and gravel reserves as they become depleted to ensure steady and adequate supply.
- Future marine aggregate extraction may be increasingly competing with other offshore priorities and the Marine Spatial Plan for the Irish Sea area should be taken into account in future Local Aggregate Assessments.
- There is a data gap regarding secondary and recycled aggregates and potential opportunities should be sought to increase understanding of this material and the level of supply and demand.
- There is a need to safeguard mineral resources as well as the critical transport and processing facilities that are essential for distribution and processing of aggregates.

12.4. A number of the issues regarding weak or absent data have been recognised by the AWP and targeted for further work at that level. The MPAs of the sub-region welcome this and will work with the AWP to resolve the identified issues and strengthen the evidence base supporting the LAA process in the future.

13. Glossary

Term	Acronym	Definition
Active Permissions		Sites with valid permissions which may be working or mothballed on a temporary basis (and for which new working and reclamation schemes are not required before working can recommence)
Association of Greater Manchester Authorities	AGMA	AGMA is the local government association for Greater Manchester. It represents the ten district councils of Greater Manchester (Manchester, Bolton, Bury, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford, Wigan); developing policy, lobbying government and others, and running a range of services. In this capacity, AGMA directs the strategic public and social services of Greater Manchester on behalf of it's ten metropolitan boroughs and the Greater Manchester Integrated Transport Authority, the Greater Manchester Police Authority, the Greater Manchester Fire and Civil Defence Authority and the Greater Manchester Waste Disposal Authority, who are all members by subscription.
Aggregate Minerals		Defined in Technical Guidance to the National Planning Policy Framework (DCLG, Mar 2012) (Paragraph 54) as sand and gravel, and crushed rock. Generally they are used in the construction industry for purposes of making concrete, mortar, asphalt or for roadstone, drainage or bulk filling.
Aggregate Reserves		The amount of crushed rock or sand and gravel which is covered under planning permissions for working, but is still to be extracted.
Aggregate Resources		All of the deposits of crushed rock and sand and gravel which are known to be present in the ground.
Aggregate Sales		The amount of an aggregate (crushed rock, sand & gravel, secondary or recycled) sold in a set period of time.
Aggregate Working Party	AWP	The AWP is a technical working group with membership drawn from mineral planning authorities, the minerals industry and Department for Communities and Local Government (DCLG).
Construction, Demolition and Excavation Waste	CD&E	Waste arising from site construction or refurbishment, demolition or excavation.
Core Strategy		Document setting out the long-term spatial vision for the local planning authority area, the spatial objectives and

Term	Acronym	Definition
		strategic policies to deliver that vision. The Core Strategy has the status of a *Development Plan Document* (PPS12 definition).
Crushed Rock		Hard rock (such as limestone) which has been quarried, fragmented and graded for use as aggregate.
Department of Communities and Local Government	DCLG	The Government department responsible for planning and local government.
Dormant Site		Dormant sites are those sites which were granted planning permission after 21 July 1943 and before 1 July 1948, but in which no substantial mineral working has been carried out between 1 May 1989 and 30 April 1991.
Duty to Co-operate		Requirement in the NPPF for Planning Authorities to address strategic issues in conjunction with neighbouring authorities who have to deal with the same issues.
Examination in Public	EIP	The process of determining whether a Development Plan Document meets the requirements of the relevant legislation and is 'sound'. Soundness is tested by considering whether the DPD is justified; effective and consistent with national policy. As part of that process the Inspector (appointed by the Secretary of State) Will consider representations made on the soundness of the DPD by interested parties such as local residents and developers. At the end of the examination the Inspector will issue a report to the Local Planning Authority (LPA). The report will contain recommendations relating to any changes that need to be made to the DPD, to ensure it is sound, before being formally adopted. The recommendations will be binding if the LPA chooses to adopt the DPD that has been examined.
Extant Permission		Existing planning permission.
Inactive Site		Minerals extraction site with planning permission but where no extraction is currently taking place.
Landbank		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'. They are a monitoring tool to provide MPA's with early warning of possible disruption to the provision of an adequate and steady supply of land-won aggregate in their

Term	Acronym	Definition
		area.
Licenced Marine Aggregate Dredging Areas		Areas allocated under the sea where dredging is allowed to take place with the permission of the Marine Management Organisation.
Local Aggregate Assessment	LAA	A report prepared by a Mineral Planning Authority or group of Authorities which assesses the demand for and supply of aggregates now and in the future.
Local Development Framework	LDF	The folder of documents which contains all of the a local authorities local development documents (including Local Plan documents, Local Development Schemes, Statements of Community Involvement and Supplementary Planning Documents)
Local Development Scheme	LDS	Document setting out the programme for preparing *Local Development* *Documents* (PPS12 definition).
Local Plan		The NPPF defines a Local Plan as the plan for the future development of an area, drawn up by the local planning authority. In law this is described as the development plan documents adopted under the Planning and Compulsory Purchase Act 2004. Current Core Strategies and other planning policies, which under the regulations would be considered to be development plan documents, form part of the Local Plan. The term includes old policies which have been saved under the 2004 Act.
Marine dredged sand and gravel		Sand and gravel excavated from the sea by dredging.
Merseyside Environmental Advisory Service	MEAS	Merseyside Environmental Advisory Service is a sub-regional service that works for Halton, Knowsley, Liverpool, Sefton, St.Helens and Wirral Councils. The service comprises professional technical staff and its role is to assist the Merseyside Districts by providing technical advice on a wide range of environmental matters, primarily to the Planning Services of the Councils.
Mineral Planning Authority	MPA	The planning authority responsible for the control of mineral extraction and waste management development, through forward planning, determining of planning applications, monitoring and enforcement.
Mineral Safeguarding Areas	MSA	An area designated by Mineral Planning Authorities which covers known deposits of minerals which are of sufficient economic value to warrant protection from unnecessary

Term	Acronym	Definition
		sterilisation by non-mineral development.
National Planning Policy Framework	NPPF	The document that sets out the government's planning policies for England. The Framework sets out planning policies for England and how they are expected to be applied. It provides guidance for local planning authorities and decision-takers, both in drawing up plans and making decisions about planning applications.
Primary Aggregate		Crushed rock and sand and gravel, which is extracted directly from the ground.
Recycled Aggregate		Material sourced from construction and demolition waste, highway maintenance waste and excavation and utility operations and then be reused as aggregate.
Sand and gravel		Rock which nature has already broken into fragments mostly by weathering and by erosion during the ice age.
Secondary Aggregate		Derived from a range of materials which may be used as aggregate, including power station ash and colliery spoil.
Sub-regional Apportionment		The splitting of regional supply guidelines for aggregate minerals between planning authorities or sub regions.

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