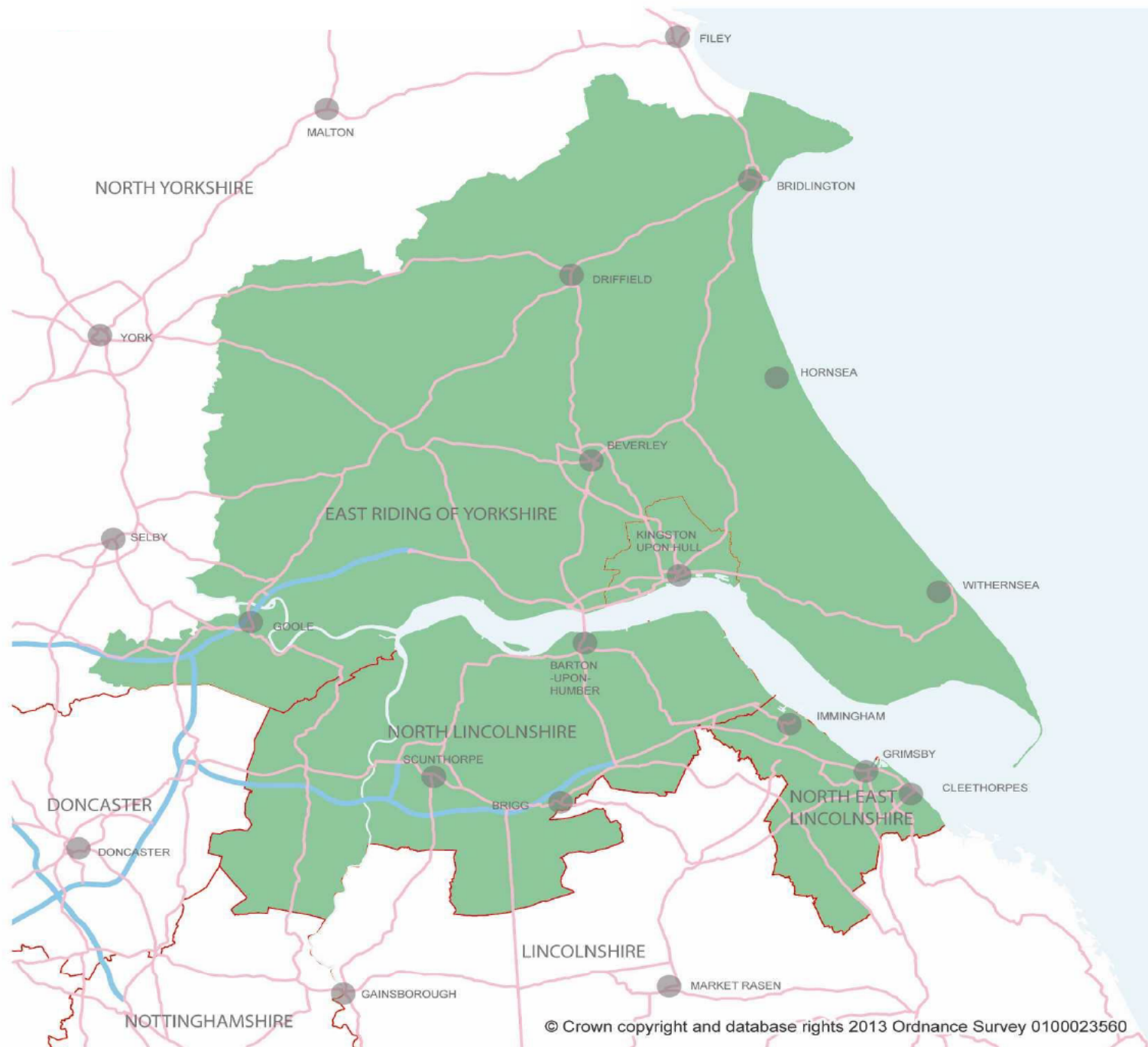


HUMBER AREA LOCAL AGGREGATE ASSESSMENT

June 2023 (Data up to 2021)



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EXECUTIVE SUMMARY

The requirement to produce an annual Local Aggregate Assessment (LAA) was introduced through the publication of the National Planning Policy Framework (NPPF) in March 2012 and is still a requirement set out in the revised NPPF (2021).

The Government issued further guidance on planning for minerals in the National Planning Practice Guidance (NPPG), incorporating previous guidance on the Managed Aggregate Supply System (MASS). This report is the seventh LAA that aims to meet the requirements set out in both of these documents. It is based on sales information data covering the calendar years up to 2021. Landbank data is 2021-based.

Sales and land bank information is sourced from annual surveys of primary aggregate producers in the Humber area (East Riding of Yorkshire, Kingston upon Hull, North East Lincolnshire & North Lincolnshire), alongside data from the Yorkshire & Humber Aggregates Working Party Annual Monitoring Reports, planning applications, the Crown Estate, and the Environment Agency.

Sand and Gravel

- The Humber area has 10 active sites that produce sand and/or gravel for aggregate purposes. Seven are located within the East Riding of Yorkshire, whilst three are in North Lincolnshire. Two further sites in North Lincolnshire produces silica sand, of non-aggregate or industrial use and these sales are not considered by this LAA.
- Sales were steady between 2013 and 2021 at around 0.9 million tonnes, falling in both 2019 and 2020, but rising once more in 2021. Since 2012 they have gradually risen to a consistent rate of 10 year average of 0.85 million tonnes per annum between 2012 and 2021.
- The average aggregate sales for sand and gravel for the most recent ten year rolling period (2012 to 2021), and three year rolling period (2019 – 2021), are 0.85 million tonnes per annum (mtpa) and 0.83 mtpa respectively.
- Reserves (as at 31 December 2021) were 6.53 million tonnes, a decrease from 7.32 million tonnes in the 2018 data last covered by the LAA.
- Based on the average sales for the most recent ten year rolling period (0.85 mtpa), the landbank is 7.7 years which is a decrease from the last LAA data which was 2018 based.
- Based on the Humber aggregate sand and gravel apportionment (0.94 mtpa), the landbank is 6.95 years-under the seven years required by the NPPF. This is the first year the formal Humber apportionment has been used.

Crushed Rock

- The Humber area has nine active sites that produce either chalk or limestone for aggregate purposes. Six are located in the East Riding of Yorkshire whilst three are situated in North Lincolnshire. Five sites produce chalk for industrial (non-aggregate purposes). Four further sites produce chalk only for non-aggregate or industrial purposes (three in East Riding and two in North Lincolnshire). However, of these sites, one has some aggregate sales and another was inactive in 2021.
- Sales have increased gradually from 2012, with very significant growth in 2014 and further growth in 2016. This growth trend continued until 2021, where sales rose to a ten year high of 1.05 million tonnes. The average aggregate sales for crushed rock for the most recent ten-year rolling period (2012 to 2021) and three year rolling period (2019 to 2021) are 0.74 Mtpa and 0.93 Mtpa respectively.

- Reserves (as at 31 December 2021) were 62.25 million tonnes, a very large increase from 13.4 million tonnes in the 2018 data last covered by the LAA.
- Based on the average sales for the most recent ten year rolling period (0.74 mtpa), the landbank is 84.2 years, which is a big increase from the last LAA data which was 2018 based.
- Based on the Humber aggregate crushed rock apportionment (0.78 mtpa), the landbank is 79.87 years- well over the ten years required by the NPPF. This is the first year the formal Humber apportionment has been used.

Marine Sand & Gravel

- Landings of marine sand and gravel in the Humber area amounted to 290,341 in 2021, an increase from the 192,430 tonnes landed in 2020.
- There are reserves in the Humber dredging area of 46.17 million tonnes.

Recycled & Secondary Aggregates

- A number of sites in the Humber area receive construction demolition and excavation waste (CDEW) to be treated or reused to produce recycled aggregate.
- An accurate assessment of the contribution secondary and recycled aggregates make towards overall supply cannot be established at this stage. The capture of consistent and reliable data on secondary and recycled aggregate production will continue to be the subject of future LAAs.

Consideration by the Yorkshire and Humber Aggregates Working Party

- This document was sent out to consultation with the Yorkshire and Humber Aggregate Working Party (YHAWP) on 16th May, 2023 to 6th June, 2023. Two comments were received, which are detailed in appendix 1. The document was 'ratified' at the YHAWP meeting of 14th June, 2023.

SUMMARY OF FINDINGS			
	<i>Performance in 2021</i>	<i>In comparison to previous year (2020)</i>	
Land won sand and gravel (million tonnes)	1.10		0.65
Permitted reserves of sand and gravel (million tonnes)	6.53		7.66
Sand & Gravel landbank (years) against 10 year annual average sales rate	7.7		9.46
Land won crushed rock (million tonnes)	1.05		0.90
Permitted reserves of crushed rock (million tonnes)	62.3		40.99
Crushed rock landbank (years) against 10 year annual average sales rate	84.2		62.10

1. INTRODUCTION

- 1.1 Minerals make a vital contribution to the local and national economy and play an important part in our everyday lives. They have many uses, including the provision of material for construction and for a wide variety of industrial and commercial purposes. The planning system has to ensure that sites are available to provide sufficient minerals to supply these industries.
- 1.2 Aggregate minerals are those that are used by the construction industry, for example in road building, house construction, manufacture of concrete and railway ballast. They include chalk, limestone, sandstone and sand and gravel. It is the provision of these minerals with which this assessment is concerned.
- 1.3 The National Planning Policy Framework (NPPF) (July 2021) requires Minerals Planning Authorities to plan for a steady and adequate supply of aggregates. It requires Local Aggregate Assessments (this document) to be prepared to forecast future demand, 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 Planning Practice Guidance on the Managed Aggregates Supply System (MASS) (March 2014 onwards) and published National and Sub National Guidelines on future provision also need to be taken into account.
- 1.4 The Localism Act 2011 introduced the Duty to Co-operate¹. This requires planning authorities and other public sector bodies to work together on matters that are considered to have cross-boundary or cross-organisation implications. Planning for minerals is considered to fall into this bracket. Compliance with this duty is a legal requirement that will be examined by Planning Inspectors in considering local plans.

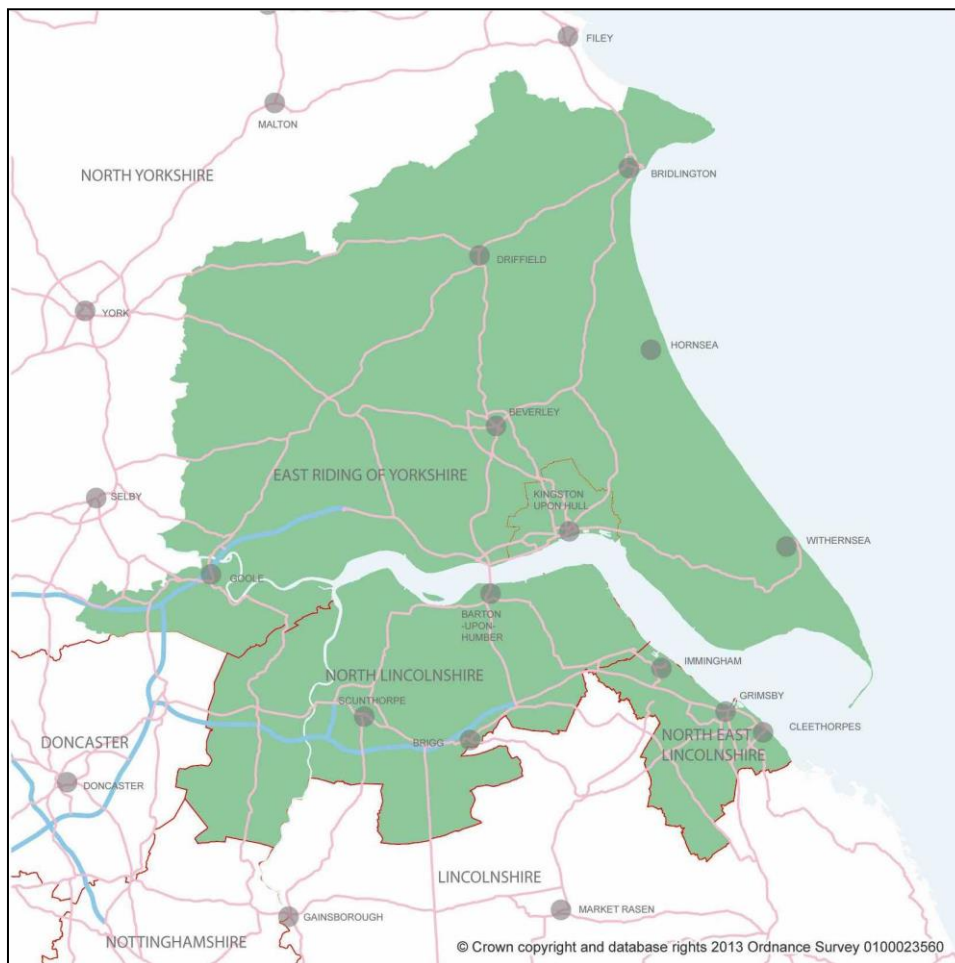
Figure 1: Yorkshire & Humber Aggregates Working Party Area



- 1.5 With this in mind, the members of the Yorkshire and Humber Aggregates Working Party (YHAWP) agreed to co-operate to produce LAAs covering the region. The approach taken to producing the LAA reflects the fact that aggregates are a strategic issue that goes beyond Mineral Planning Authority boundaries.
- 1.6 LAAs are subject to consultation with the minerals industry and other key stakeholders via the YHAWP.
- 1.7 This LAA forms part of the evidence base for Local Plans prepared by the Humber minerals planning authorities (MPAs) and monitors aggregate supply and landbanks within the area.
- 1.8 Throughout this document, the term 'the Humber area' has been used to indicate the area covered by the four Minerals Planning Authorities grouped around the Humber Estuary, namely East Riding of Yorkshire Council, Kingston upon Hull City Council, North Lincolnshire Council and North East Lincolnshire Council.

¹ Localism Act 2011 – section 110

Figure 2: The Humber Area



- 1.9 The LAA sets out the current and future situation in the Humber area regarding aggregate supply and demand including sales data and aggregate apportionment levels to 2038 based on rolling average of ten years sales data, and other relevant local information.

Development Plans

- 1.10 East Riding of Yorkshire and Hull City Councils have an adopted Joint Minerals Local Plan (2019). The East Riding Local Plan Strategy Document (2016) also includes a policy on minerals safeguarding, and Mineral Safeguarding Areas are shown on the respective Policies Maps. Hull City Council's Local Plan (2017) has a policy to safeguard minerals infrastructure. North Lincolnshire Council has a strategic minerals policy in its adopted Core Strategy DPD (June 2011) and the saved minerals policies in the North Lincolnshire Local Plan (May 2003). North East Lincolnshire Council has a Local Plan (2018) encompassing the full range of planning issues facing the Authority's area, including minerals development. This safeguards important mineral deposits and contains a number of policies to address applications for mineral extraction.
- 1.11 The current progress for each of the Humber Mineral Planning Authorities regarding emerging minerals planning policy is as follows:
- There are no plans to review the East Riding of Yorkshire & Hull Joint Minerals Local Plan (2019) as yet. Both Hull and East Riding's general Local Plans are under review. The East Riding submitted its Plan for Examination in Public in March 2023. Hull has yet to release a consultation on the Review of its Local Plan.
 - North Lincolnshire Council has prepared a new full Local Plan to cover the period 2020 to 2038. This

encompasses a full range of planning issues including minerals development. The Plan is now undergoing its Examination in Public having been submitted in November 2022.

- North East Lincolnshire Council – is reviewing its Local Plan and an initial Regulation 18 consultation on scoping and issues was released in September 2022.

Spatial Context

- 1.12 The Humber area is situated around the Humber Estuary on the east coast of the United Kingdom. East Riding of Yorkshire Council is bordered by North Yorkshire County Council to the north and west, City of York Council to the west and Doncaster Metropolitan Borough Council (MBC) to the south-west. The Hull City Council area lies on the north bank of the Humber and is enveloped by the East Riding to the west, north and east. North Lincolnshire Council borders Doncaster MBC and Nottinghamshire County Council to the west and south-west respectively. Both North Lincolnshire and North East Lincolnshire border Lincolnshire County Council to the south. Therefore it is clear that for minerals planning, cross-border working needs to extend beyond the boundaries of the Humber area. In the preparation of previous versions of the LAA, liaison has taken place with adjoining mineral planning authorities and aggregates working parties.
- 1.13 As unitary authorities, the four Humber Councils are responsible for all aspects of local government in their area, including planning for minerals. Each Authority must set out a series of planning policies to guide the location of future mineral development and determine any planning applications for mineral development.
- 1.14 Previously all four authorities were members of the Humber Local Economic Partnership (LEP). Recently this has changed so that Hull and East Riding of Yorkshire Councils are now part of a Hull and East Yorkshire LEP. North Lincolnshire and North East Lincolnshire Councils are now members of the Greater Lincolnshire LEP.
- 1.15 A predominately rural area, the LAA covers an area stretching from Flamborough in the north to Kirton in Lindsey, Grimsby and Cleethorpes in the south, and Pollington in the west to Spurn Point in the east. It contains the city and major urban areas of Hull, Cleethorpes/Grimsby, and Scunthorpe, as well as numerous smaller towns and service centres including Barton upon Humber, Beverley, Bridlington, Brigg, Driffeld, Goole, Hedon, Immingham, Market Weighton, Pocklington and Withernsea.
- 1.16 The whole area has a combined population of 936,700² and has around 410,537 households³. The population is expected to increase to 947,300⁴ by 2036. The number of households is estimated to increase by 23,000 by 2036⁵. This population growth will come hand in hand with further employment opportunities and improvements in infrastructure. As such, it is crucial that the area is able to ensure the supply of sufficient aggregate minerals to provide for development and infrastructure.
- 1.17 The topography of the Humber reflects its underlying geology. The narrow bands of Jurassic rock in combination with the chalk deposits have formed the upland areas of the Yorkshire Wolds and Lincolnshire Wolds and the prominent north-south ridge known as the Lincoln Edge or Cliff. This overlooks the Trent Valley and the Humberhead Levels to the west and the Lincoln Clay Vale (the Ancholme Valley) to the east. The lower slope of the scarp is formed by the Upper Lias, the middle slope comprises Northampton Sand and the Grantham Formation (Lower Estuarine Series), whilst the top of the Lincoln Edge comprises Lincolnshire Limestone. The top forms a plateau which is traversed by the Roman road, Ermine Street. The limestone of the dip slope is locally thin and in places the underlying clays and sands occur near the surface.
- 1.18 To the north of the Humber, the eastern extents of the Vale of York form a similar plain to the Trent Valley, lying to the west of the Yorkshire Wolds. It is more heavily covered by geological drift and the underlying

² ONS2023

³ Household Projections for England & Local Authority Districts 2016 to 2041 – 2016 based (DCLG, September 2018)

⁴ ONS 2023

⁵ Household Projections for England & Local Authority Districts 2016 to 2041 – 2016 based (DCLG, September 2018)

rock formations play no part in the surface topography.

- 1.19 The Lincolnshire Wolds and Yorkshire Wolds which continue the upland chain north of the Humber are a belt of dissected chalk uplands which are up to nine miles wide. In the central area the chalk escarpment is serrated by a number of streams, while to the south it is lower and more regular. North of the Humber, the Yorkshire Wolds form an arc that ends in the sea cliffs at Flamborough Head. It slopes steeply to the Vale of Pickering to the north, but more gently to the Vale of York to the west. The southern and eastern flanks of the Wolds gently falls to the Holderness Plain. South of the Humber, the Lincolnshire Wolds slope gently eastwards towards to Humber Estuary and the Lincolnshire Coast. To the west, they overlook the Ancholme Valley.
- 1.20 Adjacent to the Yorkshire Wolds, the Holderness Plain is undulating but becomes less so further to the south-east near Spurn Head. The eastern edge of the plain terminates in generally low sea cliffs. The cliffs are retreating from the sea at relatively swift rates, whilst Spurn Head now frequently becomes an island during high tides when the sea cuts it off from the mainland.

Environmental Constraints & Opportunities

- 1.20 The single most important consideration for minerals planning is the fact that minerals can only ever be worked where they are found. Unlike other forms of spatial planning and development management, where development can technically occur almost anywhere, minerals planning needs to be focussed squarely on those areas where mineral deposits can be found in quantities where it is economically feasible to extract them. Despite this, potential specific site, preferred area or area of search allocations for minerals development may be constrained by environmental designations and constraints that might be present. This section provides a brief overview of the environmental constraints affecting the Humber area.
- 1.21 The National Planning Practice Guidance (NPPG) on the Managed Aggregate Supply System, states LAAs should include an analysis of environmental constraints and opportunities. The key environmental constraints are recognised to be those areas of international or national importance. By category these key designations are:

Biodiversity and Geodiversity

- Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) designated in accordance with the European Wild Birds and Habitats Directive – *Humber Estuary SPA & SAC, Lower Derwent Valley SPA & SAC, River Derwent SAC, Flamborough Head & Bempton Cliffs SPA, Flamborough Head SAC, Hornsea Mere SPA, Thorne & Hatfield Moors SPA, Thorne Moors SAC, Greater Wash SPA*
- Ramsar sites (wetlands of international importance identified in accordance with the Ramsar Convention) – *Humber Estuary, Lower Derwent Valley*
- Sites of Special Scientific Interest (SSSIs) – *72 sites in total*
- National Nature Reserves (NNRs) – *Humberhead Peatlands, Lower Derwent Valley, Spurn & Far Ings*

Cultural Heritage

- Scheduled Monuments – *408 in total*

Landscape

- Area of Outstanding Natural Beauty – *Lincolnshire Wolds*
- North Lincolnshire Council have produced a proposal to extend the Lincolnshire Wolds AONB so that it includes a large section of North Lincolnshire. This proposal suggests extending the existing Lincolnshire Wolds AONB northwards, into the area. The proposed variation is to extend the existing boundary to include Kirton-in-Lindsey on the southern border of North Lincolnshire through to the banks of the River Trent taking in Normanby, Burton-upon-Stather and Alkborough. It would also extend eastwards, taking in Barton-upon-Humber and across to New Holland before sweeping round to include Ulceby, Kirmington and parts of Brigg. It is suggested that the existing area, and that of the proposed inclusion area share many geographical and geological features which support the extension.

- Additionally, there is a proposal to create a new AONB that covers the Isle of Axholme area within North Lincolnshire Council's boundary. The proposal consists of protecting areas from across Crowle, through Belton and Epworth and surrounding towns and villages through an official AONB designation.
- There is also a proposal to create a new AONB that covers the Yorkshire Wolds in the East Riding of Yorkshire Council area. Natural England announced in June 2021 they are considering the area for designation, and public consultation on a Provisional Candidate Area was undertaken in 2022. Subject to the outcome of further technical assessments and statutory and public consultation, submission of an Order by Natural England to designate the new AONB to the Secretary of State is expected by end of July 2024.

Coastline

- Heritage Coast – *Flamborough Head, Spurn*

1.22 In addition to these international and national environmental constraints it should be noted that the winning and working of minerals may be constrained by:

- Other environmental designations and factors relating to biodiversity and geodiversity (the incidence of protected species, local (nature conservation) sites);
- Cultural heritage assets (listed buildings, conservation areas, areas of archaeological importance, landscape character);
- The protection of other resources, such as agricultural land, groundwater;
- flood risk; and
- local amenity including impacts upon residents of settlements and recreational areas from factors such as noise, dust, blasting, vibration, traffic and visual impact.

1.23 In planning for a steady and adequate supply of aggregates the Humber authorities will need to pay due regard to the environmental constraints and designations within their individual areas. This may limit the scope for mineral working in the future. There are also numerous settlements and areas, which will in future provide a focus for increased housing and employment development. This could place further constraints on potential mineral extraction.

1.24 Minerals working is often a long term activity, but nevertheless still a temporary use which can provide positive benefits to the local environment through well-conceived restoration and after-use strategies. In particular, the restoration of mineral sites can assist in providing opportunities for:

- The enhancement and creation of features of nature conservation importance and geodiversity;
- Improving landscape character;
- The creation of community woodlands or forests;
- The provision of recreation facilities, public open space and new public rights of way;
- The mitigation of flood risk through the creation of new flood storage capacity;
- The remediation of contaminated land or pollution; and
- The improvement of areas previously worked.

2. GEOLOGY & AGGREGATE RESOURCES

- 2.1 As a result of its geology, the Humber area contains significant deposits of a wide range of minerals, of which the most important are sand and gravel, chalk, brick clay, silica sand and limestone. Peat is also present, and there are also potential resources of oil, gas, ironstone and coal. The British Geological Survey (BGS) provide mineral resource mapping on a county-by-county basis, including for the Humber area. This takes the form of a report⁶ and accompanying map⁷.

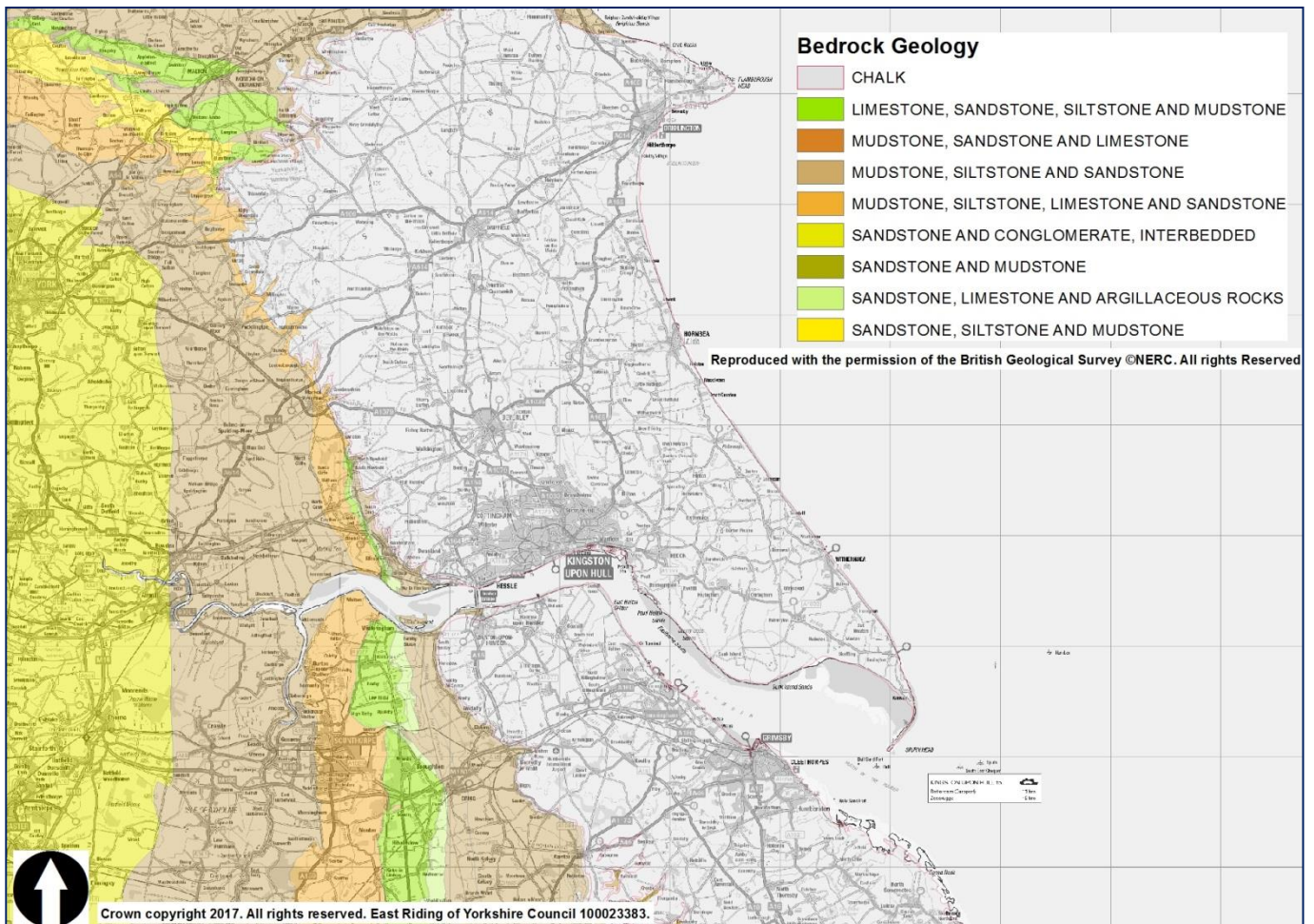
Bedrock Geology

- 2.2 Bedrock geology (see Figure 3) is a main mass of rock that makes up the Earth and is present everywhere, whether exposed in outcrops at the surface or concealed under drift deposits or water. It is this underlying geology that has shaped the Humber area's landscape and has had a significant influence in how it has developed.
- 2.3 In the Humber area, exposures of the solid geology occur in the upland areas of the Yorkshire Wolds and Lincolnshire Wolds and the Lincoln Edge Cliff around the Scunthorpe area. Elsewhere extensive drift deposits predominate. Chalk of the Upper Cretaceous period underlies a significant part of the area. The chalk forms the northern extent of deposits that can be found in an arc running from the North Downs, South Downs and Chiltern Hills of southern England through East Anglia, Lincolnshire and the East Riding of Yorkshire, terminating at Flamborough Head. Within the area workable chalk deposits are found in both the Yorkshire and Lincolnshire Wolds.
- 2.4 West of the Yorkshire Wolds and the Lincoln Edge, lie two major areas underlain by much older rocks formed during the Triassic period. In the Trent Valley layers of Quaternary deposits are underlain by a band of Mercia Mudstone. This runs north to south between Stamford Bridge and Youghorpe in the north, extending south into North Lincolnshire, Lincolnshire and Nottinghamshire. Prominent features in this area include the Isle of Axholme. The other Triassic formation comprises of Sherwood Sandstone. This is found in the remainder of the area west of the Mercia Mudstone, and forms part of a larger deposit running parallel to, and east of, the Pennines.
- 2.5 Between the Triassic and Cretaceous formations lie a number of much narrower deposits formed during the Jurassic period. Together, these form a significant band running northwards through North Lincolnshire into East Riding. As they extend north the bands narrow, with the majority terminating in the vicinity of Market Weighton leaving only Lower Lias to continue in a north westerly direction following the western boundary of the Yorkshire Wolds. The other formations located within this band are, west to east, Middle Lias, Upper Lias, a significant band of Inferior Oolitic limestone lying east of Scunthorpe, Great Oolitic limestone and thin wedges of clay formations from the Middle and Upper Jurassic periods. To the north and east of Scunthorpe are outcrops of the Frodingham Ironstone.
- 2.6 The Trent Valley mainly comprises a layer of Quaternary deposits underlain by the Mercia Mudstone described previously. Similarly the Lincoln Clay Vale (the Ancholme Valley) has a heavy covering of Quaternary deposits but is itself a product of the erosion of the soft Upper Jurassic Clays.
- 2.7 The solid geology of the area also includes hydrocarbon deposits, comprising coal, oil and gas. Coal can be found under the western half of the area as extensions of the West and South Yorkshire coalfields. A number of oil and gas wells have been sunk in the Humber area over the last sixty years, with varying degrees of success. Oil is currently extracted at Crosby Warren to the north east of Scunthorpe.

6 Mineral Resource Information in Support of National, Regional & Local Planning – Humberside (comprising East Riding of Yorkshire, North Lincolnshire, North East Lincolnshire & City of Kingston upon Hull) – Commissioned Report (BGS, 2005)

7 Mineral Resource Information in Support of National, Regional & Local Planning – Humberside (comprising East Riding of Yorkshire, North Lincolnshire, North East Lincolnshire & City of Kingston upon Hull) – Mineral Resources Map (BGS, 2005)

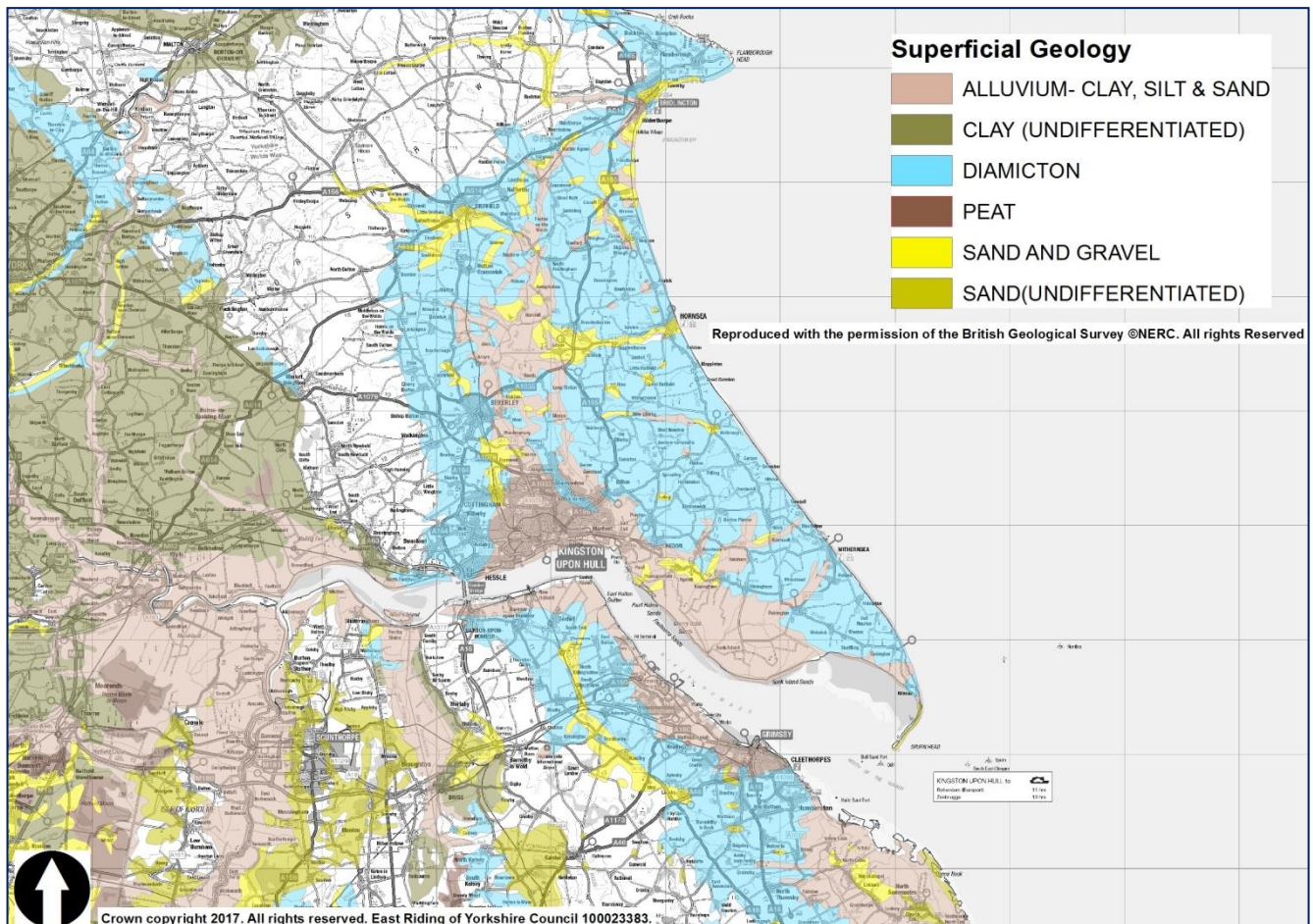
Figure 3: Bedrock Geology of the Humber Area



Superficial Geology

- 2.8 Much of the solid geology of the Humber area is overlain by superficial or drift deposits (see Figure 4) which in some cases reach a depth of 30 metres. These consist mainly of alluvium, peat, blown sands and boulder clay. The main areas of drift are the alluvial and glacial deposits of the Vale of York, and the Holderness Plain which comprise extensive boulder clay and sand and gravel deposits. Alluvium is also found in a band to the north and south east of Hull as well as in the Trent Valley and along the southern bank of the Humber Estuary between Grimsby and Barton upon Humber.
- 2.9 Several parts of the Humber area are covered by sand and/or gravel deposits. These include blown sand as at Messingham and Manton, river terrace sand and gravel and glacial sand and gravel such as those found near Brandesburton and Keyingham. Not all of the deposits within the area are economically workable.
- 2.10 Peat is found in large deposits on the western and south western edges of the Humber area to the west of the River Trent Valley and south of the River Ouse. The main deposits can be found on Goole Moors, Crowle Moors and the Isle of Axholme. In all cases these extensive deposits cross the boundaries of East Riding of Yorkshire and North Lincolnshire into the Doncaster Metropolitan Borough Council area taking in Thorne Moors and Hatfield Moors. Smaller deposits are found in the East Riding to the north of Newport/Gilberdyke in the Hotham Carrs area.

Figure 4: Superficial Geology of the Humber Area



Aggregate Resources

2.11 Aggregate minerals are defined as those used in the building and construction industries and are therefore essential to support built development and other construction and infrastructure projects. Aggregates are derived from a variety of different sources. Primary aggregates are naturally occurring materials extracted from the ground. Examples are sand and gravel, and certain forms of chalk. Aggregates can also be derived from by-product wastes and synthetic materials, and these aggregates are referred to as Secondary Aggregates. Examples are colliery spoil, furnace bottom ash and blast furnace slag. Recycled aggregates are derived from the crushing and other processing of waste materials arising from construction and demolition work. A further source of aggregate that contributes to supply is marine-dredged sand and gravel.

Sand and Gravel

2.12 Historically, sand and gravel has been the most important aggregate resource found in the Humber area. It is principally used for a variety of building purposes including asphalt, concrete and mortar. Sand and gravel deposits in the Humber area are shown in Figure 4 above. They principally occur in the lower lying ground to east and west of the Yorkshire Wolds and Lincolnshire Wolds as well as along the Humber Estuary and river valleys.

2.13 The area to the east of the Yorkshire Wolds contains mainly glaciofluvial deposits. The deposits are fairly dispersed, with the most extensive deposits being in the Catwick/Brandesburton area, and stretching south from Bridlington. West of the Yorkshire Wolds there is a larger deposit of glaciofluvial sand and gravel in the Pocklington area, with smaller patches further south. South of the Humber, there are significant deposits in the Habrough and Laceby areas, with smaller areas found in North Lincolnshire around Winterton/Winteringham, Wrawby, Barnetby and Cadney.

- 2.14 In addition, a large part of the area west of the Yorkshire Wolds contains glaciolacustrine deposits of sand and gravel, although they become more patchy and dispersed further west. The main area of deposits occurs in the Pocklington area, running down to the Humber Estuary at North Ferriby and across into the Ancholme Valley. Blown sand deposits (silica sand) tend to be found along the lower slopes of major west facing escarpments. In particular, around the Scunthorpe and Messingham areas as well as the Isle of Axholme. Other deposits lie between Market Weighton and South Cave as well as around Elsham. River Terrace and sub-alluvial deposits are found along the valleys of the Rivers Trent, Ouse, Derwent, Ancholme, Hull and Gypsy Race as well as along the Humber Estuary.
- 2.15 All deposits are of variable quality, but the sand and gravel layers are relatively shallow, so prior extraction can be feasible. This is particularly the case with sand and gravel as the extraction process does not involve blasting, and if required, processing can be carried out away from the extraction site. Most sand and gravel deposits are located away from the larger settlements where future development pressures will be greatest, but there are exceptions at Catwick, Brandesburton and Pocklington in East Riding.
- 2.16 In 2021 there were 10 sites extracting sand and gravel. The most important areas for working are near Gransmoor, North Cave and Brandesburton in East Riding. In North Lincolnshire, the main operations take place near Haxey and Barnetby-le Wold. Silica sand (industrial sand) working takes place near Messingham and Winteringham. Sand and gravel deposits for aggregate use are distributed sporadically across North Lincolnshire but there are only a few areas where its exploitation is economically viable.

Chalk & Limestone

- 2.17 Crushed rock in the Humber area is derived from chalk and limestone. Generally the quality of the chalk deposits for aggregate use is poor. Small quantities are sold for low grade aggregate applications such as fill and sub base roadstone. There are small areas of higher purity chalk which is used for industrial purposes.
- 2.18 The area also contains Lincolnshire Limestone dating from the Middle Jurassic Period. This bed outcrops in a narrow band along the south west edge of the Yorkshire Wolds between the Humber Estuary and Newbald, as well as in the Scunthorpe area running south into Lincolnshire. It has been historically worked for aggregate limestone, again mainly for lower grade applications. Nevertheless, interest has been expressed by operators in this deposit as a potential source of crushed rock in the future. Limestone is worked at one site in North Lincolnshire near Hibaldstow (two other limestone sites in Kirton Lindsey and Manton were not active at the point of updating this LAA).

Ironstone

- 2.19 Most of the ironstone used in the steel industry is currently imported but significant deposits exist around Scunthorpe. There is no indication that it will be worked in the short term.

3. ASSESSMENT OF SUPPLY AND DEMAND

- 3.1 In planning ahead for future aggregates provision, it is essential that there is a good understanding of existing levels of supply and demand. This section provides an overview of existing aggregate sales, extraction operations, reserves and landbanks alongside details of existing apportionments. It also includes details of aggregate consumption and imports/exports. The information is based on the YHAWP annual survey of mineral operators, planning applications and YHAWP reports as well as national guidelines and other relevant information. A landbank is a number of years' worth of supply of a particular mineral resource based on the amount of permitted resources divided by an annual rate of consumption, such as the 10 year average sales rate.

Sand & Gravel

- 3.2 Sales of sand and gravel for aggregate purposes in the Humber area for the ten year period between 2012 and 2021 are shown in Table 1. The 10 year and 3 year average sales for this period are 0.83 million and 0.78 million tonnes respectively.

Table 1: Sand & Gravel Aggregate Sales in the Humber area 2012 to 2021 (million tonnes)											
2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	10 year Average	3 year Average
0.56	0.92	0.92	0.92	0.90	0.84	0.92	0.75	0.65	1.10	0.85	0.83

Source: Yorkshire & Humber Aggregate Working Party - Annual Reports; Annual Aggregate Monitoring Surveys

- 3.3 Sand and gravel sales have been broadly consistent over the last ten years, averaging just below 1 million tonnes per annum. Production peaked at 1.1 million tonnes in 2021 but sales decreased to their lowest points of 0.56 and 0.65 million tonnes sold respectively in 2012 and 2020. This could have been linked to both prevailing economic circumstances and the impact of Covid 19 pandemic.

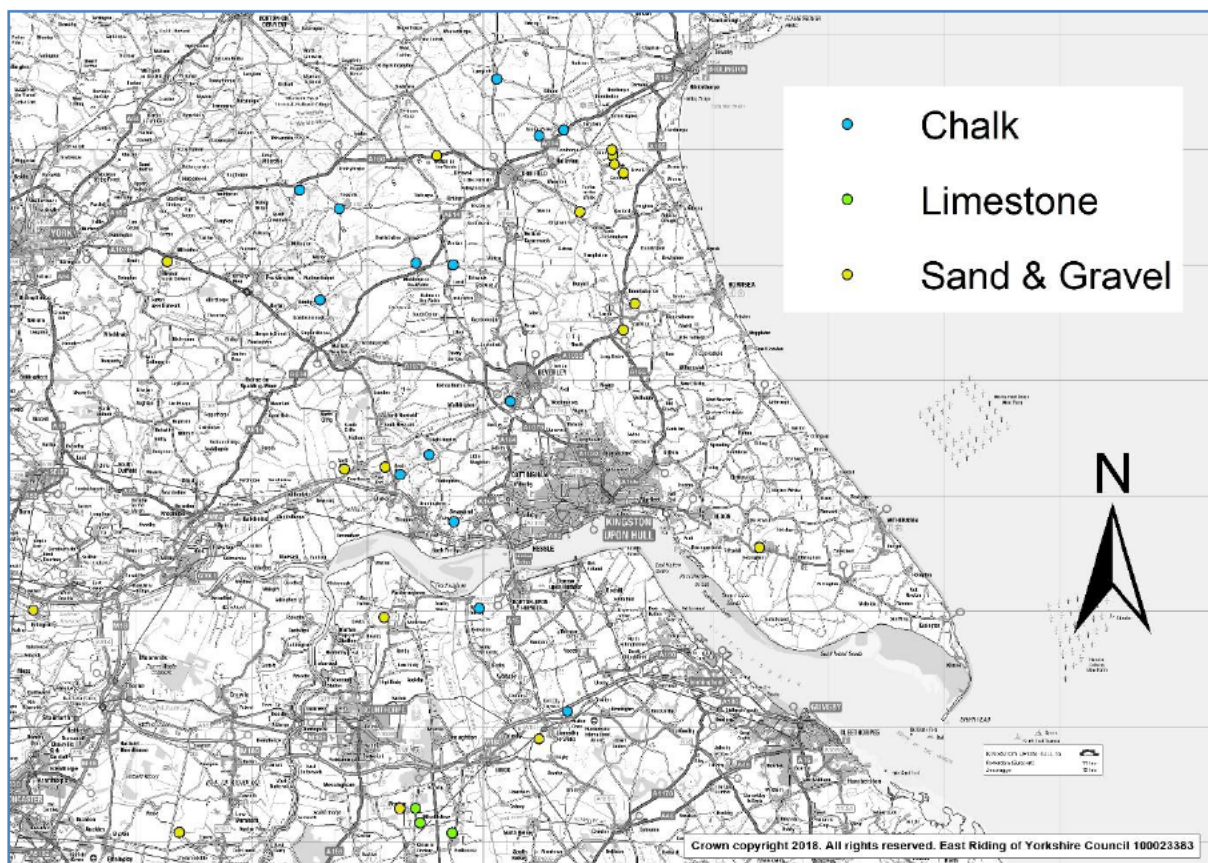
Current Supply

- 3.4 In 2021, the Humber area had 10 active operations producing sand and gravel for aggregate purposes. Two further active sites produce silica sand for non-aggregate or industrial use. All sand and gravel operations (including currently inactive sites) are listed in Table 2 and shown on Figure 5 below.

Table 2: Permitted Sand & Gravel Extraction Sites in the Humber Area in 2021			
Quarry	Mineral Planning Authority	Operator	Status
Barf Hill, Burton Agnes	East Riding of Yorkshire	W Clifford Watts	Active
Brandesburton		Sandsfield Gravel Co	Inactive
Brigham		W Clifford Watts	Dormant
Everthorpe		W Clifford Watts (silica sand)	Inactive
Garton		W Clifford Watts	Dormant
Gransmoor		W Clifford Watts	Inactive
Little Catwick		Yarrows Aggregates	Active
Mill Hill, Keyingham		Holderness Sand and Gravel	Active
North Cave		Breedon Southern Ltd	Active
Park House Farm, Burton Agnes		W Clifford Watts	Active
Turtle Hill, Gransmoor		W Clifford Watts	Active
Wilberfoss, Newton on Derwent		Aggregate Recycling (UK) Ltd	Active
Cove Farm, Haxey	North	North Lincs Sand and Gravel	Active

Eastfield Farm, Winterton	Lincolnshire	A & F Dowson (silica sand and gravel)	Active
Kettleby Parks, Barnetby		Breedon Group	Active
Slate House Farm, Hibaldstow		Welton Aggregates	Active
Messingham		Sibelco UK (silica sand)	Active

Figure 5: Chalk, Limestone, and Sand & Gravel Sites in the Humber Area



Landbanks

- 3.5 Government policy requires the landbank period for sand and gravel to be at least 7 years. Landbanks are a stock of reserves with planning permission. The estimated permitted reserves of land won sand and gravel in the Humber area as of 31st December 2021, amounted to 6.53 million tonnes. This gives a landbank of 7.7 years (see Table 3) based on the ten-year annual sales average, which is above the 7 year landbank required.
- 3.6 This excludes silica sand reserves. It is classed as an industrial mineral and is the subject of a separate requirement to provide at least 10 years stocks of permitted reserves at individual silica sand sites.

Table 3: Landbanks for Sand & Gravel in the Humber Area (2021)	
2021 aggregate sales (Mt)	1.10
Reserves as at 31.12.2021 (Mt)	6.53
Average annual sales (20012 – 2021) (Mt) (10 years)	0.85
Average annual sales (2016 – 2018) (Mt) (3 years)	0.83
Landbank based on 10 year average sales (years)	7.7
Landbank based on 3 year average sales (years)	7.9

Crushed Rock

Sales

- 3.7 Sales of crushed rock for aggregate purposes in the Humber area for the ten year period between 2012 and 2021 are shown in Table 4.

Table 4: Crushed Rock Sales in the Humber area 2012 to 2021 (million tonnes)											
2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	10 Year Average	3 Year Average
0.21	0.21	0.75	0.75	0.85	0.86	0.98	0.85	0.90	1.05	0.74	0.93

Source: Yorkshire & Humber Aggregate Working Party – Annual Reports and Annual Aggregate Monitoring Surveys

- 3.8 These sales figures show that production has averaged 0.74 million tonnes of crushed rock per year over the 10 year period from 2012 to 2021. Before 2014 sales have been fairly consistent, with minor variations. Between 2013 and 2014, there was a large increase in sales, primarily from North Lincolnshire and this has been maintained.
- 3.9 A number of quarries in the Humber area provide material for non-aggregate (mainly industrial) uses. In some cases they can be adjacent to, or part of, the aggregate operations.

Current supply

- 3.10 In the Humber area there are currently nine active aggregate crushed rock sites in the Humber area (13 aggregate sites in total – 2 dormant and 2 inactive), most of which extract chalk. In addition there are five industrial chalk sites, one of which was inactive in 2021 and another also has some aggregate sales. All of these operations are presented below in Table 5 and Figure 5 above.

Table 5: Permitted Crushed Rock Quarries in the Humber Area				
Quarry	Mineral Planning Authority	Operator	Aggregate	Status
Greenwick	East Riding of Yorkshire	Fenstone	Chalk	Active
Huggate		Fenstone	Chalk	Active
Langtoft		W Clifford Watts	Chalk	Dormant
Lowthorpe		Bob Stabler & Sons	Chalk	Active
Lund (Bracken)*		LKAB Minerals	Chalk	Active
Melton*		Omya	Chalk	Active
Middleton		Ashcourt	Chalk	Inactive
Nafferton Limes		W Clifford Watts	Chalk	Dormant
Partridge Hall		Ashcourt	Chalk	Active
Queensgate*		Imerys	Chalk	Active
Riplingham		Stoneledge	Chalk	Active
Swinescaif		W Clifford Watts	Chalk	Active
Kirton Lindsey	North Lincolnshire	Fox (Owmbly) Limited	Limestone	Inactive
Manton		Brianplant	Limestone	Active
Melton Ross**		Singleton Birch	Chalk	Active
Slate House Farm		Welton Aggregates	Limestone	Active
South Ferriby*		Cemex	Chalk	Inactive

*Industrial chalk quarries; **Primarily industrial chalk quarry, with aggregate production

Landbanks

- 3.11 As described above, the NPPF requires landbanks to be maintained for all aggregate minerals, with the recommended landbank period for crushed rock required to be at least 10 years.
- 3.12 Estimated land won crushed rock reserves in the Humber area as of 31st December 2021 were around 62.3 million tonnes. This does not include substantial reserves identified as being for non-aggregate use as they are not part of the aggregates supply. Based on average annual sales over the 10 year period from 2012 to 2021, this would leave a landbank of 84.2 years for crushed rock (see Table 6).

Table 6: Landbanks for Crushed Rock in the Humber Area (2021)	
2021 aggregate sales (Mt)	1.05
Reserves as at 31/12/2021 (Mt)	62.3
Average annual sales 2012 – 2021 (Mt) (10 years)	0.74
Average annual sales 2019 – 2021 (Mt) (3 years)	0.93
Landbank based on 10 year average sales (years)	84.2
Landbank based on 3 year average sales (years)	67.0

4. AGGREGATE CONSUMPTION & MOVEMENTS

- 4.1 Information on consumption and movement of aggregates is set out in the four yearly detailed Annual Monitoring Surveys (AMS)⁸ conducted by the Aggregate Working Parties (AWPs) and collated by British Geological Survey (BGS) on behalf of central Government. The most recent survey was carried out in 2019 (published in August 2021). Some information on consumption and aggregate movements was also provided to assist authorities in preparing their LAAs⁹. The previous published surveys were dated 2014 (published November 2016), 2009 (published in May 2011) and 2005 (published May 2007). It is important to bear in mind that the four yearly national survey is separate to the annual YHAWP survey. Data from the two are not directly comparable due to differences between the overall number of responses and different individual operators responding to each.

Consumption

- 4.2 The 2009 AMS showed that the Humber area consumed 743,000 tonnes of sand and gravel (549,000 tonnes of land-won sand and gravel; 194,000 tonnes of marine dredged sand and gravel) and 789,000 tonnes of crushed rock. This was a reduction from the levels set out in the 2005 AMS which showed that consumption of sand and gravel was 1,683,000 tonnes (1,385,000 tonnes of land won; 298,000 tonnes marine dredged) and 857,000 tonnes of crushed rock. The 2014 AMS shows that 424,000 tonnes of sand and gravel (land-won and marine-dredged combined) and 724,000 tonnes of crushed rock were consumed in the area. For 2019 the AMS showed that the Humber area consumed 408,000 tonnes of sand and gravel and 979,000 tonnes of crushed rock were consumed in the area.
- 4.3 All four AMSs showed that a percentage of the aggregates consumed in the Humber area derive from imports from other areas (see Table 7).

Table 7: Proportion of Aggregate Consumption Met By Imports (Tonnes)				
		Imports	Consumption	% of Consumption Met by Imports
Sand & Gravel	2005	908,000	1,683,000	54%
	2009	287,000	743,000	39%
	2014	305,000	424,000	72%
	2019	50,000	408,000	12%
Crushed Rock	2005	594,000	857,000	69%
	2009	592,000	789,000	75%
	2014	700,000	724,000	97%
	2019	851,000	979,000	87%

Source: Collated Aggregate Mineral Survey for England & Wales (2005, 2009, 2014 & 2019)

- 4.4 Information from the 2019 AMS regarding movement of aggregates between different sub-regions has been issued to assist in preparing LAAs. Table 8 (below) shows the origins of the imported aggregates

⁸ <https://www.gov.uk/government/collections/minerals>

⁹ This takes the form of table that categorises for each destination sub-region the percentage of its total consumption received from other or "source" Mineral Planning Authorities. This is expressed as a percentage ranges in order to maintain commercial confidentiality.

consumed in the Humber area. Much of this is from neighbouring MPA areas or the wider Yorkshire & Humber Region, however some aggregate is imported from further afield, including outside of England and Wales. This may reflect existing commercial contracts, the need for materials that are not available in the Humber or overseas imports.

Table 8: Source of Imported Aggregates Consumed in the Humber Area	
Source Areas	% of Humber Consumption
Sand & Gravel	
Nottinghamshire	1% to 10%
North Yorkshire	1% to 10%
Lincolnshire	1% to 10%
Doncaster	Less than 1%
Sunderland	Less than 1%
Cambridgeshire	Less than 1%
East Riding of Yorkshire	80% to 90%
Durham	Less than 1%
Crushed Rock	
Yorkshire Dales National Park	40% to 50%
North Yorkshire	10% to 20%
East Riding of Yorkshire	15 to 10%
Derbyshire	10% to 20%
Doncaster	1% to 10%
Durham	Less than 1%
Leicestershire	10% to 20%
Peak District National Park	Less than 1%
Powys	Less than 1%
Shropshire	Less than 1%

Source: Collated Aggregate Mineral Survey for England & Wales (2019) – Initial Information Release

- 4.5 As well as being consumers, the Humber provided a percentage of sand and gravel, and crushed rock consumed in other areas (see Table 9, below). Mostly these are neighbouring areas or sub-regions. The exception to this is Derbyshire, Shropshire and Scotland.

Table 9: Consumption of Aggregates Exported from the Humber Area		
Source	Destination Areas	% of Destination Area's Total Consumption
Sand & Gravel		
East Riding of Yorkshire	South Yorkshire	10% to 20%
	West Yorkshire	10% to 20%
	Yorkshire & Humber (Unknown Destination)	10% to 20%
	North Yorkshire, and North York Moors and Yorkshire Dales National Parks	1% to 10%
	Derbyshire	Less than 1%
	Lincolnshire	Less than 1%
	East Yorkshire	Less than 1%
	Shropshire	Less than 1%
	Scotland	1% to 10%
North Lincolnshire	Unknown Destination	Less than 1%
Crushed Rock		
East Riding of Yorkshire	Unknown Destination	1% to 10%
	Humber	1% to 10%
North Lincolnshire	Lincolnshire	1% to 10%
	Humber	1% to 10%

Source: Collated Aggregate Mineral Survey for England & Wales (2019) – Initial Information Release

Imports & Exports

- 4.6 As highlighted previously, aggregates are imported to and exported from the Humber area. The 2005 AMS, 2009 AMS, 2014 AMS and 2019 AMS includes information and analysis of the movements (imports and exports) of aggregates (see Table 10, below).

Table 10: Aggregate Imports & Exports				
		Imports	Exports (or unallocated destination)	Balance
Sand & Gravel	2005	908,000	607,000	+301,000
	2009	287,000	500,000	-213,000
	2014	305,000	520,000	-215,000
	2019	50,000	214,000	-164,000
Crushed Rock	2005	594,000	106,000	+488,000
	2009	592,000	(info not available)	+592,000
	2014	700,000	(info not available)	+700,000
	2019	851,000	126,000	+725,000
Total	2005	1,502,000	713,000	+789,000
	2009	879,000	500,000	+379,000
	2014	1,005,000	520,000	+485,000
	2019	901,000	340,000	+505,000

Source: Collation of the Results of the 2005, 2009, 2014 & 2019 Aggregate Minerals Surveys for England and Wales (DCLG, BGS & Welsh Assembly Government). Note: In the balance column, a “-” prefix indicates a net export, and a “+” prefix indicates a net import.

- 4.7 Based on recent information, the Humber area has been, and continues to be a net importer of aggregates.
- 4.8 Annual surveys undertaken over recent years suggest that aggregates have been exported to neighbouring areas including Lincolnshire, Nottinghamshire and South Yorkshire as well as other parts of the Yorkshire and Humber region. Other destinations have included the East of England, Tyne and Wear and Scotland. See table 9 above.
- 4.9 As part of ongoing plan making processes and revisions to the LAA, dialogue with other MPAs has been taking place about what these trends in imports/exports for the Humber area mean in terms of demand forecasting and assessment of future supply options.

Recycled & Secondary Aggregates

- 4.10 Recycled and secondary aggregates are materials which (after some form of processing or treatment) can potentially be used to substitute for primary or land-won aggregate. It can provide a more sustainable source of aggregate for development and help to reduce the need for primary aggregate extraction. They may be derived from processing of construction, demolition and excavation waste (CDE) (recycled aggregate) or may be by-products of mineral extraction or processing, or industrial processes (secondary aggregate). In 2021, total recycled and secondary sources of aggregates are estimated to have accounted for 28% (69.6 million tonnes) of total aggregates supply in Great Britain, maintaining a leading position internationally in the use of recycled and secondary aggregates¹⁰. This indicates the use of these materials in Britain is potentially reaching full potential¹¹.
- 4.11 The main source of recycled aggregate tends to be CDE waste, which is thought to arise across the Humber area. It can include soils, concrete, stone, brick, spent railway ballast and asphalt/asphalt

¹⁰ Mineral Products Association (2023)-

https://mineralproducts.org/MPA/media/root/Publications/2023/Contribution_of_Recycled_and_Secondary_Materials_to_Total_Aggs_Supply_in_GB_2021_Estimates.pdf

¹¹ Mineral Production Association (2015) - http://www.mineralproducts.org/prod_agg_recy01.htm

planings (from road resurfacing). Secondary aggregates are usually by-products of other industrial processes that have not been used in construction. They include both natural and manufactured materials such as; china clay, slate, flue ash and metallurgic slag.

- 4.12 Information on recycled and secondary aggregate production is variable and not considered to be completely reliable. Therefore, it is difficult to accurately assess the role that they play in aggregate supply and demand.
- 4.13 For example, in many cases CDE waste is processed on redevelopment sites using mobile plant and then either reused on site or taken direct to other construction sites for use. Collecting information from these sites is extremely difficult because of their temporary nature.
- 4.14 The Environment Agency's Waste Data Interrogator can be used to examine the amount of inert construction and demolition, and household industrial and commercial waste received at permitted waste facilities¹², Table 11 (below) sets this out. It does not necessarily represent the total amount of CDE waste arising in the area or the available resource or the amount used. The largest proportion of material that was handled or disposed of in 2021 was naturally occurring minerals, followed by combustion wastes and then construction and demolition wastes.

Table 11: Composition of Construction & Demolition Waste (2021 data)				
Basic Waste Category	SOC Category	SOC Sub Category	Tonnes Received	Percentage
Hhold/Ind/Com, Inert/C+D	12 - Mineral wastes	Naturally occurring minerals	1,032,967	32%
Hhold/Ind/Com	12 - Mineral wastes	Combustion wastes	993,972	31%
Hhold/Ind/Com, Inert/C+D	12 - Mineral wastes	Construction and demolition wastes	533,271	16%
Hhold/Ind/Com, Inert/C+D	06 - Metallic wastes	Ferrous metal waste and scrap	419,667	13%
Hhold/Ind/Com, Inert/C+D	06 - Metallic wastes	Mixed metal wastes	123,390	4%
Hhold/Ind/Com, Inert/C+D	07 - Non-metallic wastes	Glass wastes	104,155	3%
Hhold/Ind/Com, Inert/C+D	06 – Metallic wastes	Non-ferrous metal waste and scrap	27,232	>1%
Hhold/Ind/Com, Inert/C+D	12 - Mineral wastes	Various mineral wastes	2,569	>1%
			3,237,223	100%

Source: Waste Data Interrogator (2021)

¹² Sites where permits are in place issued by the Environment Agency

- 4.15 The most recent national studies on secondary and recycled aggregates were undertaken by DCLG in 2005 (published 2007)¹³.
- 4.16 The first of these studies estimated that East Riding, North Lincolnshire and North East Lincolnshire produced over 1.7 million tonnes of CDE waste. It was estimated that 774,327 tonnes of recycled graded and ungraded aggregate was produced in the area. This represented around 45% of all construction, demolition and excavation waste arisings.

Table 12: Sub-Regional Estimates of CDE waste Recycled by Crushers and/or Screens, Used/Disposed of at Landfills, and Spread on Paragraph 9a(1) And 19a(2) Registered Exempt Sites In 2005 (Tonnes)

East Riding, North Lincolnshire & North East Lincolnshire				
Adjusted estimate of population of recycling crushers				18
Estimated production of recycled graded aggregate (tonnes)				407,072
Estimated production of recycled ungraded aggregate (tonnes)				367,255
Estimated production of recycled soil (excl topsoil) (tonnes)				71,243
Estimated tonnage of unprocessed CDEW entering licensed landfills, and its use/fate				
	Engineering	Capping	Waste	Total
Clean hard C&D Waste	18,379	3	15,171	33,552
Contaminated hard C&D waste	180	0	1,681	1,861
Clean excavation waste	60,416	132,083	360,410	552,908
Contaminated excavation waste	1,915	0	24,950	26,864
Clean “mixed” CDEW	8,143	400	87,315	95,858
Contaminated “mixed” CDEW	29	0	10,031	10,060
Other	7,302	278	28,863	36,443
Total	96,363	132,763	528,420	757,547
Estimated weight of waste materials (mainly excavation waste) used on Paragraph 9A(1) and 19A(2) registered exempt sites (tonnes)				151,618
Total estimated arisings of CDEW in 2005 (tonnes)				1,735,735

Source: Reproduced from Survey of Arisings and Use of Alternatives to Primary Aggregates in England, 2005; Construction, Demolition and Excavation Waste (DCLG, 2007)

- 4.17 The second study contained data on the quantity of secondary aggregates generated from various industrial and other processes. It included regional and sub-regional data on secondary aggregate generation. Table 13 (below) shows the secondary aggregates arising in the Humber area.

¹³ Survey of Arisings and Use of Alternatives to Primary Aggregates in England, 2005; Construction, Demolition and Excavation Waste (DCLG, 2007) & Survey of Arisings and Use of Alternatives to Primary Aggregates in England, 2005; Other Materials (DCLG, 2007)

Table 13: Arisings and Use Of Alternatives To Primary Aggregates In 2005 (million tonnes)						
	Total Arisings (Mt)	Not Relevant (Mt)	Aggregate Use (Mt)	Other Use (Mt)	Potentially Available (Mt)	Stockpiles (Mt)
Incinerator Bottom Ash: Waste to Energy Plants	0.01	0	0.01	0	0	0
Slag: Blast Furnace (Iron)	1	0	0.25	0.75	-	0
Slag: Basic Oxygen Furnace (Steel)	0.25	0	0.13	0	0.12	-
Waste (Container) Glass	0.03	-	-	-	-	-

Source: Survey of Arisings and Use of Alternatives to Primary Aggregates in England, 2005; Other Materials (DCLG, 2007)

- 4.18 The blast furnace slag and basic oxygen furnace slag are by-products of the iron and steel industries. The 2005 survey highlighted that Scunthorpe was the sole source of both of these by-products in the Yorkshire & Humber region, producing 1 million tonnes and 0.25 million tonnes of each respectively. Only part of the total arising was used for aggregate purposes.
- 4.19 The National and Regional Guidelines for Aggregates Provision in England (2005-2020) also includes an assumption about the amount of recycled and secondary aggregate that should be provided in the Yorkshire and Humber region. It assumes that 133 million tonnes (31%) of the overall 431 million tonnes construction aggregates required in the region will be sourced from recycled or secondary aggregate.
- 4.20 As part of its annual aggregates monitoring, the YHAWP (through the Humber mineral planning authorities) used to survey known producers of secondary and recycled aggregates with the aim of understanding the level of secondary and recycled aggregates produced, and how this relates to overall supply. The response rate and quality of data received was poor, however. As a result, this survey is either not completed or not used in the Humber area.

Marine Aggregates

- 4.21 The use of marine aggregates for construction is a long standing practice in the United Kingdom and an important part of the aggregates supply chain. Marine aggregates, in the form of sand and gravel are dredged in a number of places around the UK coastline including off the Humber Estuary, and the north eastern and eastern coasts of England as well as the English Channel, Bristol Channel and Irish Sea. Nationally, around 13.55 million tonnes of marine dredged primary aggregates were landed at English ports and wharves during 2021¹⁴.
- 4.22 The sand and gravel extracted from the seabed can be used for construction, reclamation fill or beach nourishment projects. In the construction industry its use can range from concrete making to road sub-base and fill, whilst for reclamation fill sediment is used to infill areas in ports and harbours. It can also be used to reclaim land from the sea before engineering works take place. For beach nourishment sediment is placed on beaches for coastal protection or amenity and economic enhancement.
- 4.23 Marine aggregate extraction is governed by the U.K. Marine Policy Statement (MPS) (March 2011) and the adopted East Inshore and Offshore Marine Plans (April 2014). The MPS provides the framework for preparing Marine Plans and taking decisions affecting the marine environment. It contributes to the achievement of sustainable development in the United Kingdom marine area. The Marine Plans, prepared by the Marine Management Organisation (MMO) aim to manage and balance the many activities, resources and assets in the marine environment.

¹⁴ Marine Aggregates – Summary of Statistics 2021, The Crown Estate

- 4.24 The **resources** located off the Humber Estuary are thought to be extensive. Crown Estate information¹⁵ produced in 2021 shows that there are currently 10 licensed dredging areas in the North Sea in the Humber region, from which 6.9 million tonnes can be extracted per year. The sand and gravel resources found in this area range from fine sands to coarse gravels.
- 4.25 The most up to date dredging data available was collated by the Crown Estate in 2021 and published in 2022.¹⁶ This report states that during 2021, 3.5 million tonnes of construction aggregate were **dredged** in the Humber region from a total permitted licensed tonnage of 6.9 million tonnes. In addition, around 0.74 million tonnes were dredged for use in beach nourishment projects.
- 4.26 In the Humber/North East region, **landings** of marine dredged sand and gravel took place at ports/wharves in 2021 on the River Humber (290,341 tonnes), River Tees (430,688 tonnes) and River Tyne (318,057 tonnes) as well as at Blyth (Northumberland) (17,186 tonnes).¹⁷ The remainder was landed elsewhere, including mainland Europe, the Thames Estuary and the south coast.
- 4.27 In a similar vein to recycled and secondary aggregates, the National and Regional Guidelines for Aggregates Provision in England (2005-2020) also includes an assumption about the amount of marine dredged aggregate that should be provided in the Yorkshire and Humber region. It assumes that 5 million tonnes (1%) of the overall 431 million tonnes construction aggregates required in the region will be sourced from marine dredged aggregate.
- 4.28 The majority of landings that took place on the Humber were at the relocated Humber Sand and Gravel facility at King George Dock in Hull. Stema Shipping brings imports of crushed rock aggregates from their coastal quarries in Norway, and sand from Denmark to Queen Elizabeth Dock (not monitored in the figures above). The landing facility at King George Dock, can take bigger vessels than the previous facility at Alexandra Dock and is large enough to land 2 million tonnes per year. It also has the advantage of being connected to the rail network, which has the potential of improved distribution to the wider region.
- 4.29 There are other opportunities for landing marine dredged aggregates within the Humber area. ABP also owns the port of Goole, whilst there are wharves on the River Trent near Scunthorpe which can be accessed by similar sized vessels to Goole. The River Trent wharves and New Holland Pier are equipped to handle mineral imports. However, it is not possible to ascertain the amount of minerals landed at these locations. It is likely that they only handle them on an “as and when” basis.
- 4.30 The ports of Grimsby and Immingham currently do not handle marine dredged aggregates on a regular basis, other than specific project related short term campaigns, however the capacity is available should there be a future requirement.
- 4.31 A marine aggregates study was completed by the West Yorkshire Combined Authority in December 2022. The study’s primary purpose was to identify potential site opportunities, land requirements and note the Town Planning requirements within West Yorkshire to facilitate the significant increase in the supply and delivery of marine aggregate into West Yorkshire for the next 10 years. Its analysis has identified a number of new wharf and rail sites worth taking forward for more detailed study. These are all in West Yorkshire. However should these be brought forward then it might result in an increase in aggregate traffic sailing through the area’s waterways including the Humber, Ouse, and Aire.
- 4.32 Existing planning policy in the Humber area broadly supports the envisaged increase in marine won aggregates, however it does not identify or safeguard present or future sites for the handling of marine aggregate. Safeguarding of the capacity for handling imported and marine aggregates at existing wharves is part of government policy in the NPPF. The East Riding and Hull Joint Minerals Local Plan (2019) gave national planning policy due consideration and includes a policy that safeguards the capacity for marine importation of mineral resources.

¹⁵ Marine Aggregates Capability and Portfolio 2021, The Crown Estate

¹⁶ The area involved- 24th annual report, The Crown Estate/MPA

¹⁷ Marine Aggregates – Summary of Statistics 2021, The Crown Estate

- 4.33 Marine aggregates are increasingly being seen as an important part of the overall aggregates supply and as an alternative to primary land-won aggregates. The YHAWP commissioned a Marine Aggregates Study¹⁸ to assess the potential deliverability of a substantially greater supply of marine aggregate into the Yorkshire and Humber region, in substitution for an element of supply currently provided by land-won resources.
- 4.34 This need arises as a result of:
- the increasing potential for shortfalls in the medium/long term availability of indigenous concreting sand and gravel in the region;
 - the need for more evidence on the scope of any potential for increased supply of marine aggregate, as a possible alternative source;
 - the need to help inform statutory planning processes, safeguard wharves and investment in infrastructure.
- 4.35 The final study report was issued in January 2014. It found there was a very large marine aggregate resource of the required quality, and sufficient fleet capacity to land it. No fundamental barriers to the granting of additional licensed capacity were identified. Many wharves are available in the Humber area with the potential to land marine aggregates. However, limitations apply restricting the size of dredger that could berth, and the amount of land immediately available lying adjacent to the berths, to develop the necessary infrastructure to facilitate processing and/or onward transport at the scale proposed by the study.
- 4.36 Only a limited amount of infrastructure utilised for or with the potential to be utilised for the transport of marine aggregates is safeguarded. Stakeholders considered the move towards a greater utilisation of marine aggregates will most likely take place beyond 5 years and thereafter increase with time. Economically, operators did not think the marine option was viable at this point of time but the viability gap against land won aggregate was narrowing. The study noted that the Humber Bridge toll creates separate aggregate markets north and south of the Humber, due to the cost of a lorry making a round trip across the bridge. For example, it is not cost effective to take marine material across the bridge (or around) but this would be circumvented if there was somewhere to land marine material on the south side. With the reduction in bridge tolls since the study was completed, this may be something that needs to be monitored.
- 4.37 The appointed consultants made recommendations for further work that include MPAs reviewing Local Plans to consider the requirements of the National Planning Policy Framework (NPPF) for safeguarding aggregate infrastructure and a formal regional Local Authority group to collaborate on cross boundary aggregate issues (which may fall within the scope of reference for the YHAWP).

Minerals Infrastructure

- 4.38 In order to ensure the effective supply of aggregates, a good network of supporting infrastructure needs to be in place. This includes the bulk transport, handling and processing of minerals; the manufacture of concrete and concrete products; and the handling, processing and distribution of substitute, recycled and secondary aggregate material. The NPPF requires mineral planning authorities as part of their Local Plans to safeguard these facilities, where they exist or are planned. It also allows for the safeguarding of sites with potential to accommodate them¹⁹.
- 4.39 In the Humber area, there are a number of facilities which support the supply of aggregates into the local market including asphalt plants and concrete plants. Most facilities are situated at or adjacent to existing mineral extraction sites or within industrial estates/complexes.

¹⁸ Marine Aggregates Study – Final Report (January 2014), URS

¹⁹ National Planning Policy Framework (February 2019) – paragraph 204(e).

Table 15: Minerals Infrastructure

Asphalt Plants

- Grimsby, Gilbey Road (Breedon)
- Fridaythorpe, Huggate, Greenwich Quarry (Breedon)
- Hull, Dairycoates (Tarmac Ltd)
- Newton upon Derwent, Back O' Newton (Aggregates Recycling Ltd)
- Santon, Dawes Lane (Scunthorpe) (Tarmac) – also processes slag for use as dry stone and cement replacer

Concrete Plants

- Brandesburton - Catwick Lane (Sandsfield Ready Mix Ltd)
- Beverley - Swinemoor Lane (Sandsfield Ready Mix Ltd)
- Bridlington - Pinfold Lane (Hanson)
- Driffild - Kellythorpe Industrial (Breedon); Park Farm Quarry, Burton Agnes (W Clifford Watts)
- Elsham Wold Industrial Estate (Breedon Group)
- Goole – Dutch Riverside (Breedon Group); Seavy Road (Cemex)
- Grimsby - Gilbey Road (Breedon Group)
- Hull - Albert Dock (Hull Readymix Concrete); Queen Elizabeth Dock (Edgar Readymix Concrete Ltd); Dairycoates (Tarmac Ltd); Foster Street (Sandsfield Sand and Gravel Co Ltd); Foster Street (Ashcourt Group); Hotham Street (Breedon Group); Freightliner Road (W Clifford Watts); King George Dock (Titan Cement)
- Immingham - Kiln Lane (Cemex); Manby Road (Tarmac)
- Pocklington- Lancaster Road (Breedon Group); Hereford Road, Pocklington Industrial Estate (Contech UK)
- Scunthorpe - East Common Lane (Cemex); Warren Road (Tarmac)
- South Cave - Station Yard (W Clifford Watts)

Other

- Depot/Transfer Station, Stoneferry Rd (Biffa Group)
- Rail Depot, Dairycoates (Tarmac Ltd)
- Aggregate landing/storage facility, Queen Elizabeth Dock (Mike Wakefield Tippers)
- Recycled Aggregate Processing Plant, Leven By-Pass, Leven (Yarrows Aggregates)
- Recycling plant, Fridaythorpe, Huggate, Greenwich Quarry (Breedon)

Source: Company Websites/Internet seaches

- 4.40 There is currently one operational railhead for mineral transport in the Humber. The Dairycoates Terminal in Hull is operated by Tarmac Ltd as a receiving terminal for aggregates from elsewhere in the region and beyond. A further receiving and unloading terminal was operated by Omya Ltd (and its predecessors) at Melton. It has been out of use for a number of years, although the connection to the Hull to Selby railway line remains intact.
- 4.41 As mentioned in the section on marine aggregates, the area has a number of ports and wharves along the Humber Estuary as well as on the Rivers Trent, Hull and Ouse that could offer potential to land or tranship marine won and imported aggregates. Currently, the only facility for this is at King George Dock, Hull.

5. TOTAL AGGREGATE SUPPLY

- 5.1 As discussed in previous sections, the sales of aggregates in the Humber area comes from a number of sources: land won sand and gravel and crushed rock, recycled and secondary aggregates and imported sand and gravel and crushed rock.
- 5.2 Table 16 presents the total sales for crushed rock and sand and gravel in Humber area over a ten-year period. It shows that on average sand and gravel production is greater than crushed rock.

Table 16: Total Aggregate Sales in the Humber Area 2012 – 2021

Aggregate (Mt)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Average 2012-21
Land won Sand & Gravel	0.56	0.92	0.92	0.92	0.90	0.84	0.92	0.75	0.65	1.10	0.85
Land won Crushed Rock	0.21	0.21	0.75	0.75	0.85	0.86	0.98	0.85	0.90	1.05	0.74
Marine (sand and gravel)	0.1	0.08	0.0	0.02	0.12	0.15	0.14	0.15	0.19	0.29	0.12
Total	0.87	1.21	1.67	1.69	1.87	1.85	2.04	1.75	1.74	2.44	1.71

6. FUTURE AGGREGATE SUPPLY AND DEMAND

- 6.1 Planning for future supply of aggregates has traditionally been a top down activity, managed by Government through the Managed Aggregate Supply System (MASS), and the production of national and regional guidelines for aggregate supply. Changes to the planning system then re-focussed aggregate supply to a more bottom up approach. However, the main principles of MASS are retained along with national and regional guidelines on aggregates provision in England. They recognise that aggregates are a national strategic resource but consider that the need to ensure a steady and adequate supply of aggregate minerals should be devolved to the local level. This is still set out in the revised NPPF (2019).

Managed Aggregate Supply System (MASS)

- 6.2 MASS recognises that most of the aggregate supply is extracted on land and as such there is often a geographical imbalance between where minerals occur and where they are needed. The concept behind MASS is that those areas which have adequate aggregate resources make an appropriate contribution to national as well as local supply, while making due allowance for the need to reduce environmental damage to an acceptable level. However, resource-poor areas are expected to make some contribution to meeting local and national needs where that can be done sustainably.
- 6.3 Given that quarries take many years to plan and bring into production, MASS has provided the mechanism to deliver long term planning for the supply of aggregates, based on sound evidence. It has also served to proactively manage the rate of primary extraction, by placing added emphasis on the need to meet demand from other sources – including secondary and recycled materials and marine dredged aggregates.
- 6.4 MASS works through national, sub-national and local partners working together to deliver a steady and adequate supply of aggregates, at the following levels:
- locally, mineral planning authorities are expected to prepare Local Aggregate Assessments, to assess the demand for and supply of aggregates;
 - sub-nationally, mineral planning authorities belong to and are supported by Aggregate Working Parties, who produce fit-for-purpose and comprehensive data on aggregates covering specific geographical areas; and
 - nationally, the National Aggregate Co-ordinating Group monitors the overall provision of aggregates in England.
- 6.5 A key additional tool which underpins the working of the MASS is the aggregate landbank, a monitoring tool which is the main basis for the Mineral Planning Authority to consider whether to review the local plan²⁰.

National and Regional Guidelines

- 6.6 As part of MASS, guidelines for aggregates supply in England have been published by DCLG and over recent years have provided a basis for the identification of future requirements for aggregate minerals at the national and regional levels.
- 6.7 The most recent guidelines were published in June 2009 and cover the period from 2005 to 2020. They replaced the previous version issued in 2003, which covered the period 2001-2016. The 2003 figures provided the basis for the last set of sub-regional apportionments contained in the former Yorkshire & Humber Regional Spatial Strategy. However, 2009 figures were not apportioned to each sub-region.
- 6.8 The advent of the NPPF and Localism means individual MPAs are now left to determine their own sub-regional aggregates apportionments, in cooperation with the YHAWP members and other relevant MPAs and Aggregate Working Parties, in line with National Policy.

²⁰ <http://planningguidance.planningportal.gov.uk/blog/guidance/minerals/planning-for-aggregate-minerals/the-managed-aggregate-supply-system/>

National Planning Policy Framework (NPPF)

- 6.9 The NPPF requires each MPA to calculate their aggregate supply requirements on the basis of average aggregate sales over a ten year rolling period and other relevant local information. Previously a 'historic shares' approach to apportionment at the sub-regional level was used where the nationally prescribed regional apportionment figure was sub-divided.
- 6.10 Based on the sales information set out in Tables 1 and 4, the average level of sales over a 10 year period (2012 to 2021) in the Humber area are 0.85 million tonnes for land won sand and gravel, and 0.74 million tonnes for land won crushed rock.

Approaches to Identifying Future Requirement

- 6.11 Calculating the potential scale of future requirements for aggregates can be undertaken via a number of approaches. Whichever approach is adopted should be in line with national policy and guidance, be relatively straightforward to calculate and result in a forecast supply that is realistic which in turn is capable of being monitored through the LAA and Local Plan monitoring work.
- 6.12 Using historic average sales, in this case sales over the previous 10 years, as a means of identifying future aggregate requirements has some drawbacks. It can be viewed as backward looking and does not anticipate any changes in the patterns of aggregates supply as a result of future economic trends. Also it does not take account of any emerging environmental issues or constraints. The main advantage is its simplicity and transparency. Furthermore, it is supported in principle by national planning policy and guidance. The 10 year average sales data provides a benchmark against which the implications of local factors can be assessed.

Other Factors to Take Into Account:

- 6.13 As well as the ten year average based aggregate provision figures, national policy and guidance advises mineral planning authorities to consider other relevant factors that could influence the level of demand for aggregates. These include requirements from neighbouring areas, population and housing growth, and other proposed major development or infrastructure projects.

Cross Boundary Aggregate Movements

- 6.14 Minerals need to be moved around the country to meet requirements in areas where supply is limited or constrained.
- 6.15 In Yorkshire and Humber, there are concerns about the long term supply of concreting sand in the South and West Yorkshire, in particular in the Doncaster and Leeds/Bradford areas. As a result, it is possible that increasing amounts of sand and gravel will have to be imported into these areas from other parts of the region or elsewhere. If the demand and supply to West and South Yorkshire increases, then the forecast demand in the future Humber LAAs (particularly for sand and gravel) may need to be revisited. This could potentially have an impact on the level of sand and gravel that will need to be extracted in the Humber area, above and beyond what is already exported.
- 6.16 Information from North Yorkshire suggests that it is not expected that any increased call on reserves from the Humber area to supply its needs would be required. This was subject to the conclusion of preparing the new Minerals and Waste Joint Local Plan for the City of York, North York Moors National Park, and North Yorkshire County Council. This plan was adopted in February 2022.
- 6.17 In order to plan appropriately to meet requirements of the authorities concerned, discussions take place to ascertain the level of demand for aggregates in their areas and the likely amount needed from the Humber area as well as when this supply would be needed. A review of current and emerging information relating to linkages between the Humber and its neighbouring LAA areas has been undertaken to gain an understanding of any cross-boundary requirements.

Doncaster & Rotherham LAA Area

- 6.18 The latest LAA (2022) notes that to deliver Local Plan proposals South Yorkshire will be dependent not just on its own resources, but those of other areas too, including sand and gravel imports from Nottinghamshire, Lincolnshire and the East Riding..

- 6.19 AMS2019 shows that 10% to 20% of South Yorkshire's sand and gravel consumption (amounting to 12,240 to 122,400 tonnes) came from the Humber in 2019 and all of this was from the East Riding. It amounts to between 2% and 21% of the Humber's primary aggregate sand and gravel sales. AMS2019 shows that only less than 1%, amounting to less than 4,080 tonnes, of the sand and gravel consumed within the Humber area was from Doncaster.
- 6.20 In terms of crushed rock, AMS2019 shows that none of South Yorkshire's crushed rock consumption was met from the Humber area, however 1% to 10% of the Humber area's consumption of crushed rock, amounting to 9,790 to 97,900 tonnes, was supplied from Doncaster MB Council's area.

Nottingham & Nottinghamshire LAA Area

- 6.21 The latest LAA (2022) reports that the 64,000 tonnes of sand and gravel from the Nottinghamshire area was exported to the Humber area in 2018 according to the East Midlands Aggregate Working Party survey- this is trending downwards from surveys in 2009 and 2014. However, no other mention has been made about imports and exports to/from the Humber area.
- 6.22 AMS2019 records a less than 1% contribution from the Humber to Nottinghamshire's primary land won sand and gravel supply, and this equates to less than 14,020 of the overall consumption in this area. It all came from the East Riding. It also shows that between 1% and 10% of the primary land won sand and gravel consumed within the Humber area was from Nottinghamshire in 2019. This amounts to between 4,800 and 48,000 tonnes.
- 6.23 AM2019 shows that none of the crushed rock consumed within Nottinghamshire was sourced from the Humber area. Incidentally, none of the crushed rock consumed within the Humber area was sourced from Nottingham.

Lincolnshire LAA Area

- 6.24 The LAA (2022) notes that less than 1% of Lincolnshire's aggregate sand and gravel consumption in 2019 was met by imports from East Riding. It notes that 0.4% of its sand and gravel sales were sold to the Humber area in 2019.
- 6.25 AMS2019 shows that less than 1% of Lincolnshire's sand and gravel consumption (amounting to less than 12,830 tonnes) came from the Humber in 2019 and all of this was from the East Riding of Yorkshire's area. Between 1% and 10% of the land won primary aggregate sand and gravel consumed within the Humber area was from Lincolnshire in 2019. This amounts to between 4,080 and 40,800 tonnes.
- 6.26 AMS2019 shows that 1% to 10% of Lincolnshire's crushed rock consumption (amounting to 14,380 to 143,800 tonnes) came from the Humber in 2019 and all of this was from North Lincolnshire's area. None of the crushed rock consumed within the Humber area was sourced from Lincolnshire.

West Yorkshire LAA Area

- 6.27 The West Yorkshire LAA (2022) recognises that significant amounts of sand and gravel travel into West Yorkshire from the East Riding. It is noted that 69,900 tonnes of sand and gravel was imported to West Yorkshire from the East Riding in 2019. It notes a meeting was held in October 2017 between minerals officers representing the West Yorkshire Combined Authority, and East Riding of Yorkshire and Hull City Councils. During this meeting, cross-boundary issues were discussed including the supplies of sand and gravel into West Yorkshire from East Yorkshire and also the potential for increased marine aggregate supply into West Yorkshire from landings at the Humber Docks. The importance of safeguarding the rail and wharf infrastructure within West Yorkshire which could facilitate the sustainable transportation of marine aggregates from the Humber was acknowledged.
- 6.28 It was agreed that aggregate movements from East Riding of Yorkshire to West Yorkshire had been taken into account in both the Humber LAA and the East Riding and Hull Aggregates Apportionment Background Paper. The Combined Authority was content that the proposed uplift in the East Riding/Hull primary aggregate apportionment figure for sand and gravel will contribute to the ongoing supply of sand and gravel to West Yorkshire. However, the situation needs to be kept under regular review and further

meetings arranged at appropriate intervals to ensure that any cross boundary issues between East Riding and West Yorkshire are identified and mutually understood and addressed.

- 6.29 AMS2019 shows that 10% to 20% of West Yorkshire's sand and gravel consumption (amounting to 46,600 to 93,200 tonnes) came from the Humber in 2019 and all of this was from East Riding of Yorkshire's area. It amounts to between 8% and 16% of the Humber's primary aggregate sand and gravel sales, which is a significant proportion. West Yorkshire made no contribution to the Humber's sand and gravel consumption.
- 6.30 None of the crushed rock consumed within the West Yorkshire area was sourced from the Humber. Under 1% (under 9,790 tonnes) of the Humber's crushed rock consumption was supplied from West Yorkshire, and all of this was from Kirklees Council's area.

North Yorkshire LAA Area

- 6.31 The North Yorkshire LAA (2021) recognises that sand and gravel is imported to the North Yorkshire area from East Riding of Yorkshire and vice versa. It also recognises that crushed rock is exported to the Humber area from the County, including the Yorkshire Dales National Park area. Figures from the out of date 2014 National Aggregates Survey are quoted.. It notes these as key issues for cross boundary liaison.
- 6.32 AMS2019 shows between 4,080 tonnes and 40,800 tonnes (1% and 10% of the Humber's consumption) of land won aggregate sand and gravel was supplied from North Yorkshire in 2019. It shows that 1% to 10% of North Yorkshire's sand and gravel consumption (amounting to 12,240 to 122,400 tonnes) came from the Humber in 2019 and all of this was from East Riding of Yorkshire's area.
- 6.33 None of the crushed rock consumed within the North Yorkshire area was sourced from the Humber. Between 50% and 70% of the Humber's crushed rock consumption (amounting to between 489,500 and 685,300 tonnes) came from the North Yorkshire area in 2019 and between 10% and 20% was from the North Yorkshire County Council area and between 40% and 50% from the Yorkshire Dales National Park area.
- 6.34 Engagement with the Yorkshire Dales National Park Authority has identified that a significant amount of Carboniferous Limestone comes from Swinden Quarry via rail to Hull, and Immingham. The quarry has an existing planning permission till the end of 2039. There are therefore no reasons why there would be any issues with continuing supply from this source until at least 2039.

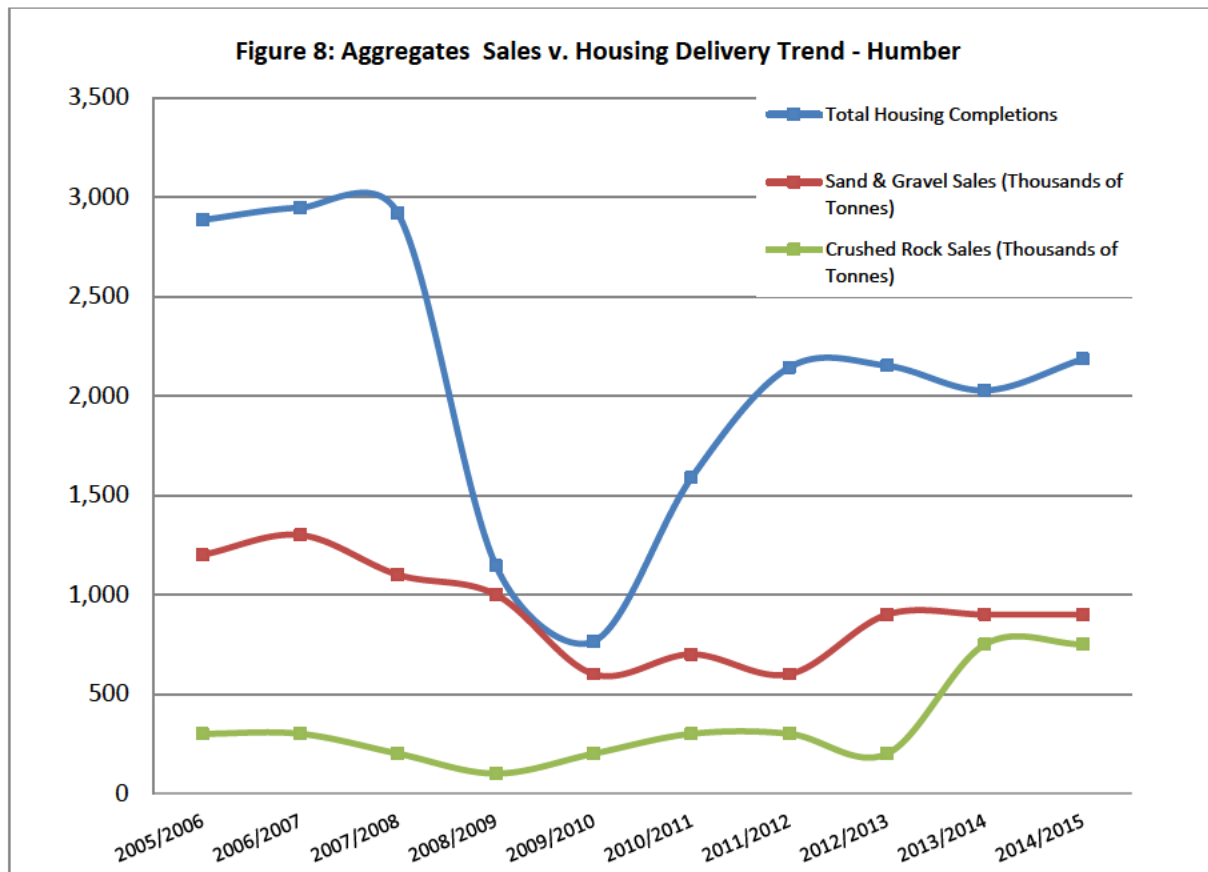
Population Forecasts

- 6.35 The population of the Yorkshire and Humber area is expected to grow from 5,479,615 in 2018 to 5,890,408 by 2043, representing an increase of 7.5%²¹. However, it is difficult to make a direct comparison between this and increased demand for aggregates.

Future House Building

- 6.36 Future house building is likely to require a significant amount of aggregates over the life time of each of the Humber authorities' plans. Based on adopted and emerging development plans, a total of around 45,088 new dwellings (2,818 dwellings per annum) will be delivered across the Humber area up to 2038.

²¹ Source: ONS Subnational population projections for England: 2018-based



6.37 Figure 8 (above) shows that there has been a degree of consistency between aggregate sales and the level of housing delivery across the area in the past, in particular for sand and gravel. However, the exact nature of the relationship is difficult to establish for the following reasons:

- not all aggregates are used for house building;
- Some aggregates produced in the Humber area are exported elsewhere;
- Some of the Humber's aggregate consumption is supplied from elsewhere

Major Developments/Infrastructure Projects

6.38 The Humber area will see a number of major developments and one-off infrastructure projects over the coming years, all of which will have an important role in helping to support the local economy and housing growth. These have the potential to increase demand for aggregates.

6.39 **Able Marine Energy Park** – this major project will involve the development of 245ha of land on the South Humber Gateway for the manufacturing and assembly of off-shore wind turbines with extensive areas of storage for the component parts of off-shore wind turbines. It will involve the construction of a 1.3km long quay that will extend into the Humber Estuary to allow operators to load turbines onto ships to be taken to their destinations off the East Coast. This project is the largest of its type in the country and will be a major job creator.

6.40 The 1.3km quay will be constructed from a steel pile wall. The space between this wall and the existing flood defences will be filled with sea or estuary dredged material to bring the levels up to the proposed finished level of the quay. The upper sections of fill, approximately 1 metre, will comprise imported stone that will provide a drained heavy duty pavement suitable for operation plan which will include tracked cranes and self-propelled mobile transporters. For the manufacturing area of the site, it is expected that 2 million m³ of fill will need to be imported onto the site over a period of around two years. Ground raising and levelling will take place. Details of where this would come from and the type of material area are not available²².

²² Able Marine Energy Park (AMEP) – Local Impact Report, NLC (2012): Section 2.9 - <http://infrastructure.planningportal.gov.uk/wp->

- 6.41 **Able Logistics Park** – this project, which has received planning consent, involves the development of 454ha of land for facilities to support the growth of the South Humber Gateway. It includes the creation of transport depots, warehousing, and external storage areas, together with offices, a business park and a motel. There will be road and rail links to Immingham Port and the Humber Sea Terminal, and a large part of the site will also provide landscaping and provision of areas for wildlife and ecology.
- 6.42 **Stallingborough Enterprise Zone** – A 64ha employment site, allocated for B1, B2 and B8 uses, located just off the A180 Stallingborough interchange and being brought forward for development through the SHIP programme.
- 6.43 **Lincolnshire Lakes** – this development is one the area’s largest regeneration projects. The vision is to create six high quality, sustainable village communities containing a total of 6,000 new homes on land between the western edge of Scunthorpe and the River Trent, set within an attractive waterside environment with major opportunities for leisure, sport and recreation. It will also provide an ideal setting for new businesses with the creation of new high quality employment space within a business park. All new development will meet the highest environmental standards.
- 6.44 Using the BGS “rule of thumb”, building the 6,000 new homes would require a total of 360,000 tonnes of aggregates. If infrastructure is included this could mean 2.4 million tonnes being needed. As previously mentioned, it has not been possible break these tonnages down into sand and gravel, and crushed rock requirements.
- 6.45 **Grimsby West** – this development is a significant strategic housing site located to the west of the Grimsby urban area, providing in excess of 3,300 homes, 2 local centres and a through school.
- 6.46 **A63 Castle Street** – this major project is underway to improve a 1.5km stretch of the A63 at Castle Street, which runs through the southern section of Hull city centre. It is one of the busiest sections of road in East Yorkshire and provides an important link between the M62 and the Port of Hull. The project aims to relieve congestion, improve access to the Port of Hull, improve road safety and reduce the barrier between Hull city centre and tourism/recreational facilities around Hull Marina.
- 6.47 The proposal involves lowering the road into cutting at the Mytongate Junction, with a new split level junction being created, widening the eastbound side of the existing road with three lanes, construction of new foot bridges at key points to allow better pedestrian access from the city centre to the marina, as well as closing off some access points on safety grounds with new ones being provided. Information on the amount of aggregates required is not available. Construction is expected to be complete in 2024/25.
- 6.48 **A164/A1079 Jocks Lodge Junction Improvement and Duelling** - Jock’s Lodge Junction, where the A1079 and A164 meet, is the busiest Local Authority managed junction in the East Riding and forms a pinch point on the local road network. A £51m improvement scheme on the A164 and Jock's Lodge junction gained over £40m construction funding from the Department for Transport in May 2018. The £86.9m updated scheme involves reconfiguration of the Jocks Lodge junction so that turning movements are carried out using a new roundabout on the A1079 with two connecting roads back to the A164 replacing the current split level junction controlled by two sets of traffic signals. It is also proposed to dual the A164 between Castle Hill roundabout at Cottingham and Morrisons roundabout in Beverley. Construction could start in October 2023. The scheme is due to be complete by 2026.

Potential Future Requirements

- 6.49 A range of methods could be used to help identify the potential scale of future requirements for aggregate. Any method used should be compatible with national policy and guidance, be relatively straightforward to calculate and lead to a realistic forecast capable of being monitored.

- 6.50 It is necessary for a Humber aggregates apportionment to be devised based on the best available evidence. The Humber MPAs have agreed that this is best carried based upon separate approaches for the East Riding/Hull and North Lincolnshire/North East Lincolnshire areas. This approach recognises:
- The largely separate aggregate markets with varying characteristics (such as aggregate export destinations) north and south of the Humber, due to the cost of a lorry making a round trip across the Humber Bridge; and
 - Joint working between East Riding of Yorkshire and Hull City Councils on their Joint Minerals Local Plan.
- 6.51 As part of work on the East Riding and Hull Joint Minerals Local Plan (JMLP), an aggregates apportionment background paper was produced that should be read alongside this LAA. It discusses the range of issues outlined above, then established an annual amount of primary crushed rock, and sand and gravel the Joint Minerals Local Plan (2019) plans for as follows:
- Crushed Rock - 0.13 million tonnes per annum
 - Sand and Gravel - 0.81 million tonnes per annum
- 6.52 In the case of crushed rock this has been based on the latest annual average sales over a 10 year period. For sand and gravel it is based on annual average sales over the latest three year period, which uplifts the apportionment from the lower ten year sales average to factor in latest trends and make an allowance for an increase in housebuilding. This approach has been endorsed by a Planning Inspector examining the JMLP.
- 6.53 A similar background paper has been produced for the south Humber area by North Lincolnshire Council (as North East Lincolnshire Council does not produce any land won primary aggregates) alongside the new North Lincolnshire Local Plan. As above, this discusses a range of issues, then establishes an annual amount of primary crushed rock, and sand and gravel the North Lincolnshire Local Plan should plan for as follows:
- Crushed Rock - 0.65 million tonnes per annum
 - Sand and Gravel - 0.13 million tonnes per annum
- 6.54 For the purposes of assessing the future aggregate requirements of the area, the aggregates apportionments for the 'north bank' have been aggregated with the apportionments for the 'south bank' to form the following combined Humber apportionments:
- Crushed Rock - 0.78 million tonnes per annum
 - Sand and Gravel - 0.94 million tonnes per annum
- 6.55 Table 17 below uses these apportionments to establish aggregates requirements for the Humber over the 15 year period to 2038, potential shortfalls or surpluses over the same period against current reserves, and current land banks.

Table 17: Aggregates Requirements & Shortfalls in the Humber Area (to 2038)		
	Sand & Gravel	Crushed Rock
Annual Humber Aggregates Apportionment (Million Tonnes)	0.94	0.78
Total requirement to 2038, based on apportionment x 15 years (Million Tonnes)	14.10	11.70
Current Reserves (Million Tonnes)	6.53	62.3
Potential Surplus/Shortfall (million tonnes)	-7.57	+50.60
Land Bank based on apportionment (years)	6.95	79.87

Note: In Potential Surplus/Shortfall row, a “-” prefix indicates a shortfall, and a “+” prefix indicates a surplus.

7 CONCLUSION

- 7.1 It is essential that a steady and adequate supply of aggregates is maintained to support growth and development in the Humber area. In accordance with national policy and guidance on aggregate supply and planning to meet future demand, 10-year sales averages and current aggregate apportionments for the Humber area have been considered, alongside other relevant local factors such as supply/demand requirements from neighbouring areas, future house building and major development and infrastructure projects.
- 7.2 The average aggregate sales for primary aggregate **sand and gravel** for the most recent ten year rolling period (2012– 2021) is 0.85 million tonnes per annum and most recent three year rolling period (2019 – 2021) is 0.83 million tonnes per annum. There are sufficient permitted reserves to maintain the government recommended seven year land bank based on the 10 year annual average sales rate. On this basis the current land bank is 7.70 years. Table 17 above shows that this is not quite the case when it comes to the landbank based on the Humber apportionment. Here, the landbank drops to 6.95 years.
- 7.3 The average aggregate sales for primary **crushed rock** for the most recent ten year rolling period (2012 – 2021) is 0.74 million tonnes per annum and most recent three year rolling period (2019 – 2021) is 0.93 million tonnes per annum. The years 2014, 2016, 2017, 2018, 2020 and 2021 witnessed increases in crushed rock sales, compared with previous levels. There are ample permitted reserves to maintain the government recommended ten year land bank based on the 10 year annual average sales rate. On this basis the current land bank is 84.20 years. Table 17 above shows that this continues to be the case when the landbank based on the Humber apportionment for crushed rock. Here, the landbank drops slightly to 79.87 years.
- 7.4 A number of sites in the Humber area receive and/or produce recycled aggregates through treatment of construction, demolition and excavation waste, whilst there are others that produce secondary aggregates as a by-product of industrial processes. However, a reliable indication of overall recycled aggregate production is not available. Therefore an accurate assessment of the contribution secondary and recycled aggregates make towards overall supply cannot be established at this stage. The capture of consistent and reliable data on secondary and recycled aggregate production will continue to be the subject of future LAAs.
- 7.5 Aggregates move in and out of the Humber area. Under the Duty to Co-operate, the Humber MPAs are continuing to better understand these movements and whether they are likely continue into the future. Engagement with neighbouring authorities and mineral operators is ongoing.
- 7.6 There are a range of factors that may influence the demand for aggregates including major development and infrastructure projects (a number of which are occurring the Humber area), and house building rates. Further assessment of these was carried out in producing Aggregates Apportionment Background Papers in support of the East Riding and Hull Joint Minerals Local Plan and the new North Lincolnshire Local Plan. These have been considered in establishing the annual apportionments for crushed rock and sand and gravel the two plans should provide for. These apportionments have been incorporated into the annual Humber aggregates apportionment figures referred to above.

Monitoring and Reviewing the Local Aggregates Assessment

- 7.7 LAAs should be undertaken on an annual basis. As such the contents of this document will be kept under review. This will be done as part of the annual monitoring process for the YHAWP and existing and emerging Local Plans for the area.
- 7.8 Aggregates sales, uses and reserves data will be collected by each MPA in order to feed into subsequent LAAs. Landbanks will be monitored to check the requirements of the NPPF and local aggregate needs are being met.

Consideration by the Yorkshire and Humber Aggregates Working Party

- 7.9 This document was sent out to consultation with the Yorkshire and Humber Aggregate Working Party (YHAWP) on 16th May, 2023 to 6th June, 2023. Two comments were received, which are detailed in appendix 1. The document was 'ratified' at the YHAWP meeting of 14th June, 2023.

9. GLOSSARY

Aggregate – Sand and gravel, crushed rock and other bulk materials used in the construction industry for purposes such as the making of concrete, mortar, asphalt or for roadstone, drainage or bulk filling.

Aggregate Working Party (AWP) – The AWP is a technical working group with membership drawn from mineral planning authorities, the minerals industry and the Department for Levelling Up, Housing and Communities (DLUHC). The Humber authorities are members of the Yorkshire & Humber AWP.

Alluvium - Loose, unconsolidated soil or sediments, eroded, deposited, and reshaped by water in some form in a non-marine setting. Alluvium is typically made up of a variety of materials, including fine particles of silt and clay and larger particles of sand and gravel. When this loose alluvial material is deposited or cemented into a lithological unit, or lithified, it would be called an alluvial deposit.

Basic Oxygen Slag – By-product of the steel making industry from works using basic oxygen furnaces.

Bedrock Geology (formerly known as 'solid' geology by BGS) - Is a term used for the main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water. The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 2.6 million years ago.

Blast Furnace Slag – By-product of the iron making industry, where blast furnaces are used to make iron.

Blown Sands - Loose sand covering other mineral deposits which has been deposited as a result of wind.

Boulder Clay - A deposit of clay, often full of boulders, which is formed in and beneath glaciers and ice-sheets wherever they are found, but is in a special sense the typical deposit of the Glacial Period in northern Europe and North America. Boulder clay is variously known as till or ground moraine.

Brick Clay - Term used to describe clay and shale used in the manufacture of structural clay products such as bricks, pavers, clay tiles for roofing and cladding and vitrified clay pipes.

British Geological Survey (BGS) – Founded in 1835, the BGS is the world's oldest national geological survey and the United Kingdom's centre for earth science information and expertise. The BGS is responsible for advising the UK government on all aspects of geoscience as well as providing impartial geological advice to industry, academia and the public.

Chalk - A soft, white, porous sedimentary rock, a form of limestone composed of the mineral calcite. Occurs extensively in southern and eastern England, and is a key component in the manufacture of cement and lime.

Colliery Spoil - Waste material from the coal mining industry, previously deposited in spoil heaps at colliery sites.

Construction, Demolition & Excavation Waste (CDEW) - Waste generated during construction and demolition processes which includes masonry, wood and rubble. CDEW is by far the largest waste stream by weight, although significant proportions are currently recycled. This can be used as a secondary aggregate.

Cretaceous - The geological period and system dating from 145.5 to 65.5 million years ago.

Crown Estate – Are responsible for managing a wide ranging property portfolio on behalf of the Crown, including much of the seabed around the United Kingdom. They are responsible for licensing areas for dredging of marine aggregates.

Crushed Rock – Hard rock, such as limestone, which has been quarried, fragmented and graded for use as aggregate.

Department for Housing, Communities & Local Government (DHCLG) – The government department responsible for local government, housing, planning, regeneration, social exclusion and neighbourhood renewal. It works with other government departments, local councils, businesses, the voluntary sector, and communities

themselves, to help create sustainable communities. DCLG data sets are referenced throughout this document, but the department has now been renamed and known as the Department for Levelling Up, Housing and Communities (since September 2021).

Duty to Co-operate – Local Planning Authorities are expected to address strategic issues in conjunction with neighbouring authorities (who are considering the same issues). It is a requirement of the Localism Act 2011.

Electric Arc Furnace Slag – A by-product of the steel making industry from works using electric arc furnaces.

Furnace Bottom Ash – The ‘coarse’ ash fraction produced in the furnaces of coal fired power stations when pulverised coal is fed into the boilers and burnt at high temperatures and pressures. Used in road construction.

Glacial Sand & Gravel – Sand and gravel deposited by glaciers or ice sheets when they have retreated.

Ironstone - Fine-grained, heavy and compact sedimentary rock. Its main components are the carbonate or oxide of iron, clay and/or sand. Traditionally the source of iron ore for the British iron industry resulting in the establishment of the iron and steel industries in Scunthorpe. Outcrops of Frodingham Ironstone occur to the east of Scunthorpe.

Jurassic - The geological period and system dating from 196.6 to 145.5 million years ago.

Landbank – A landbank is the sum in tonnes of all permitted reserves for which valid planning permissions are extant, this includes non-working sites but excludes dormant sites and “inactive sites”, divided by the annual rate of future demand based on the latest LAA. 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 area.

Lias; Upper, Middle & Lower - The Lias Group (or Lias) is a lithostratigraphic unit (a sequence of rock strata) found in a large area of western Europe, including the British Isles, the North Sea, the low countries and northern Germany. It consists of marine limestones, shales, marls and clays often divided into Lower, Middle and Upper subgroups. Within the Humber area, it consists mainly of limestone.

Licensed Dredging Area – Areas allocated under the sea where dredging is allowed to take place with the permission of the Marine Management Organisation.

Limestone - A sedimentary rock composed largely of the minerals calcite and/or aragonite, which are different crystal forms of calcium carbonate. Used in the construction of buildings as well as the production of lime, mortar and cement.

Local Aggregate Assessment (LAA) – A report prepared by one or several Minerals Planning Authority(ities) which assesses the demand for and supply of aggregates now and in the future.

Managed Aggregate Supply System (MASS) – The system used by Government to ensure that there is a steady and adequate supply of aggregate minerals to meet national and local requirements.

Marine Dredged Sand & Gravel – Sand and gravel dredged from the sea.

Mercia Mudstones - Formerly known as Keuper Marl: Characterised by a sequence of brown, red-brown, calcareous clays and mudstones, with occasional beds of impersistent green siltstone and fine-grained sandstone.

Minerals Planning Authority (MPA) – The Local Authority responsible for the control of mineral extraction and waste management development, through forward planning, determining planning applications, monitoring and enforcement.

National Planning Policy Framework (NPPF) – Introduced in March 2012, revised in July 2018 and again in June 2019 and finally in July 2021 the NPPF is a result of the Government’s wish to streamline and simplify the planning system in England. It sets out the Government’s planning policies for England and how these are

expected to be applied. It replaced Planning Policy Statements, Planning Policy Guidance, Minerals Policy Statements, Minerals Policy Guidance and a number of other Circulars and Letters to Chief Planning Officers. It is a material consideration in determining planning applications and must be taken into account when preparing local and neighbourhood plans.

Oolitic; Inferior & Greater – Groups of rocks dating from the middle Jurassic period consisting mainly of limestone. A band of these run north to south through the Humber area, adjacent to the Yorkshire Wolds and Lincolnshire Wolds from Market Weighton in the north to the boundary with Lincolnshire.

Peat - Made up of partially decaying vegetation, plant matter, trees and occasionally animal remains. It forms in wetland bog or marshland areas where decay is inhibited by the acidic and anaerobic conditions. It is soft in character and any water can be forced out when put under pressure. It is used primarily in horticulture to improve soils, and can also be used as fuel.

Pulverised Fuel Ash (PFA) - A by-product of pulverised fuel (typically coal) fired power stations. The fuel is pulverised into a fine powder, mixed with heated air and burned. The resultant ash is used as engineering fill and as a component for concrete.

Quaternary - The most recent of the three periods of the Cenozoic Era in the geologic time scale. This period runs for around 2.6 million years ago to the present.

Recycled Aggregate – Can be sourced from construction and demolition waste, highway maintenance waste and excavation and utility operations and then be reused as aggregate.

Regional Spatial Strategy (RSS) – A regional level of strategic planning with which local authority plans were required to be broadly consistent. The RSS for the Yorkshire and Humber region was revoked by the Government in February 2013.

Sand & 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 blast furnace slag.

Sherwood Sandstone - The Sherwood Sandstone Group is a Triassic lithostratigraphic group (a sequence of rock strata) which is widespread in Britain, especially in the English Midlands. The name is derived from Sherwood Forest in Nottinghamshire which is underlain by rocks of this age. It runs southwards from north-east England, through the Vale of York into Nottinghamshire.

Silica Sand - Silica sand is a mineral of national importance as it contains a high proportion of silica in the form of quartz and relatively low levels of impurities compared with sands used as construction aggregates. It is used mainly as raw material for the glass and foundry casting industries but can have a wide range of other uses including ceramics and chemicals manufacture, firing and drying.

Sub-Regional Apportionment – The splitting of regional supply guidelines for aggregate minerals between local planning authorities or sub-regions.

Superficial Deposits - Formerly known as 'drift' deposits, these are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 2.6 million years from the present. They rest on older deposits or rocks referred to as bedrock.

Triassic – The geological period and system that dating from about 250 to 200 million years ago.

Yorkshire & Humber Plan – See Regional Spatial Strategy (RSS).

APPENDIX 1: YHAWP Consultation responses to a draft version of this LAA, the Councils' response, and any amendments to the document as a result.

Consultation took place with the Yorkshire and Humber Aggregate Working Party on 16th May, 2023 to 6th June, 2023. Two comments were received, which are detailed below. The document was 'ratified' at the YHAWP meeting of 14th June, 2023.

Respondent	Comments Summary	Councils' Response and Amendments
Helen McCluskie, Doncaster City Council	No comments.	Noted.
Nick Reeves, Kirklees Council	-Agree with the figures in Table 9 regarding exports from the Humber Region to West Yorkshire. -Agree with the figures regarding sand and gravel exports from East Riding to the West Yorkshire sub-region discussed in paragraphs 6.27-6.29 of the LAA. -Agree with paragraph 6.30 that states that 9,790 tonnes of crushed rock consumed in the Humber originated from Kirklees. -With regards to sand and gravel movements from the Humber to West Yorkshire, it may be worth noting that last year, a West Yorkshire Marine Aggregates Study was prepared by Royal Haskoning on behalf of the West Yorkshire Combined Authority which could lead to West Yorkshire sourcing more marine aggregates from the Humber area https://www.westyorks-ca.gov.uk/media/9812/royal-haskoningdhv-report-for-the-wyca-marine-aggregates-study-redacted-21dec2022-inc-app.pdf	Noted. The West Yorkshire Marine Aggregates Study has now been noted in paragraph 4.31.