

# Minerals and Waste Joint Plan



# Minerals Topic Papers

February 2014

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## Topic Paper – Sand and Gravel

### What is Sand and Gravel?

Sand and gravel is one of the main types of aggregate minerals, along with crushed rock, which are mainly used as bulk minerals in the construction industry. Sand and gravel is defined on the basis of particle size rather than composition. Gravel, sometimes known as coarse aggregate, is between 4mm and 80mm in particle size and is mainly used in concrete manufacture. Sand is particles less than 4mm but greater than 0.063mm and is mainly used as fine aggregate in concrete, mortar and asphalt.

### Where does it occur?

Sand and gravel resources occur mainly along the north-south central axis of the Plan area in and around the valleys of the River Swale and Ure, as well as significant occurrences to the east around the Vale of Pickering. These deposits are mainly used for concreting sand and gravel. A small amount of sand is also worked for

aggregate purposes within Selby District, which are predominantly used as building sand. Commercially significant sand and gravel resources are not known to exist in the North York Moors National Park. However, mineral resource information suggests that sand and gravel resources are likely to exist within the City of York area and British Geological Survey (BGS) have recently undertaken work on behalf of the City of York Council to find out the economic potential of any resources in this area. The report suggests that there are some sand and gravel resources in the City of York area although in many cases these are constrained by surface development. In addition to land based resources there are large deposits of marine dredged sand and gravel known to exist on the UK continental shelf. Commercial extraction is taking place off the coast of the Plan area and landed at Hull and Ports in Teesside and elsewhere in the North East.

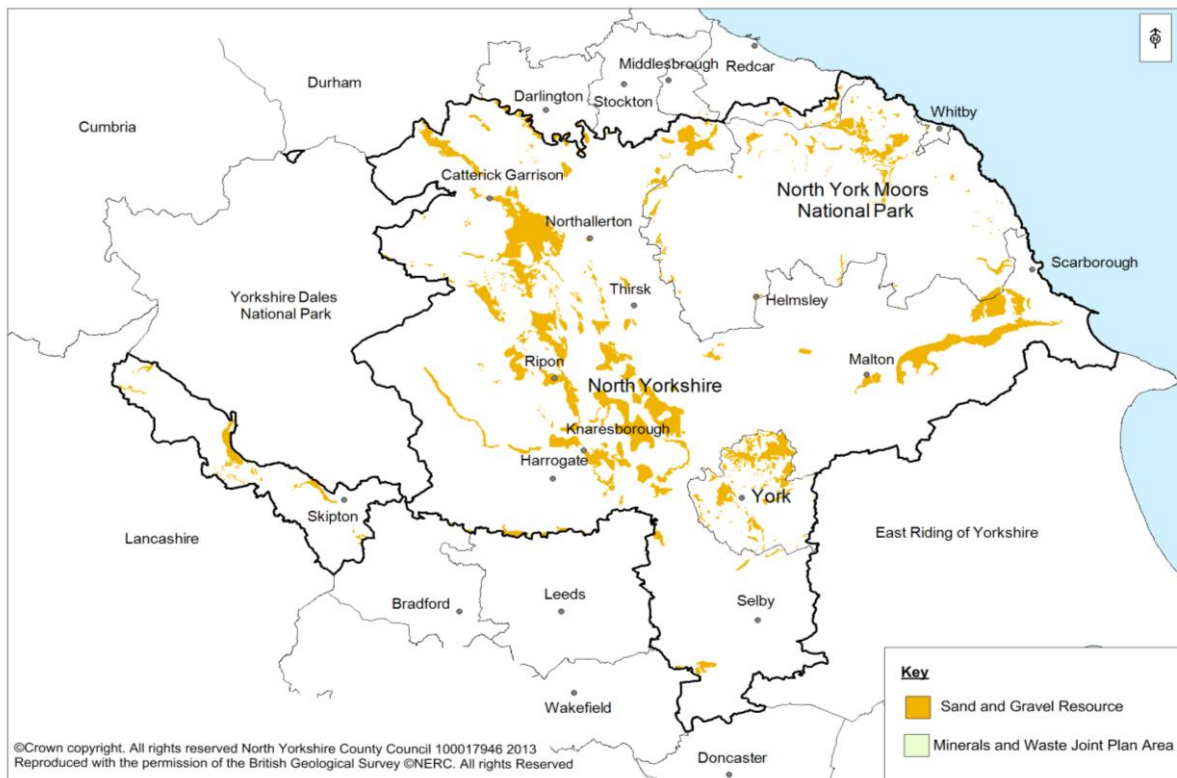


Figure 1: Map illustrating the distribution of sand and gravel resources in the joint plan area

### **Key Policy Influences**

The National Planning Policy Framework (NPPF) requires mineral planning authorities to, so far as practicable, take account of the contribution that substitute or secondary and recycled material and minerals waste would make to the supply of materials, before considering extraction of primary materials, whilst aiming to source mineral supplies indigenously.

Government policy requires Mineral Planning Authorities (MPAs) to plan for an adequate and steady supply of aggregates by: preparing an annual Local Aggregate Assessment, either individually or jointly by agreement with other mineral planning authorities, based on a rolling average of 10 year sales data and other relevant local information, and an assessment of all supply options. A Local Aggregate Assessment for the North Yorkshire Sub-region (LAA) has been produced in partnership with North Yorkshire County Council, North York Moors National Park, Yorkshire Dales National Park and the City Of York. The LAA has been produced in accordance with the advice in national policy contained within the NPPF. The outcome of the LAA has been fed into the discussion within this topic paper. The LAA can be viewed on our website: [www.northyorks.gov.uk/mwevidence](http://www.northyorks.gov.uk/mwevidence)

Marine sand and gravel is subject to the separate marine planning system administered by the Marine Management Organisation and is not subject to control by the MPAs in the Plan area.

The national Marine Policy Statement sets the framework for preparing marine plans. It provides guidance on pressures and impacts which decision makers need to consider when planning for a permitting development in the UK marine area.

### **Key Data and discussion**

The Joint Plan area, specifically the NYCC area, is the largest producer of sand and gravel in the Yorkshire and Humber Region and is particularly important for the supply of higher quality concreting aggregate. There is a shortage of concreting aggregate available elsewhere in the Region and in the adjacent Tees Valley area and North Yorkshire exports over 60% of sand and gravel to other surrounding areas such as West and South Yorkshire and the North East Region, making those areas partly dependent upon the Plan area to help maintain continuity of supply.

One of the key issues in terms of concreting sand and gravel is the low level of the existing landbank and the maintenance of supply over the plan period. For sand and gravel the minimum landbank required by Government policy is at least 7 years. Concreting sand and gravel landbanks in the NYCC have historically been subdivided into a north/south split, reflecting the different market destinations served by the two areas. The northward distribution area (comprising sand and gravel quarries in the Catterick/Scorton area in northern North Yorkshire) mainly exports sand and gravel to Teesside and County Durham. Supply from the Southern area (which comprises the remaining concreting sand and gravel quarries in the area) is mainly used in North Yorkshire or exported to East Riding, South Yorkshire and West Yorkshire. A third subdivision for building sand has traditionally been identified due to the different end use of this material. Building sand is produced in smaller quantities than concreting sand and gravel and resources are concentrated in the Selby District with a few other isolated occurrences in the North Yorkshire and York area.



The Sub-regional Local Aggregate Assessment (LAA) sets out current information on sales and potential future requirements for aggregate. The information presented in the LAA identifies that estimated reserves (at end 2011) of sand and gravel in North Yorkshire are, in overall terms, 16.2mt, equating to a land bank of around 7 years. If this is considered on the basis of the north/south distribution areas this equates to a landbank of 7.9 years in the northern distribution area, and 6.3 years in the southern distribution area, with remaining building sand reserves equating to a land bank of 12.4 years. Depending on the approach used to calculate future requirements, there is an estimated shortfall of around 27.5mt over the plan period to 2030. Since preparation of the LAA permission has been granted for extraction of around 4.5mt of sand and gravel, this reduces the shortfall to about 23mt up to 2030. The Joint Plan will therefore need to establish an approach to sand and gravel provision over the plan period. This will require the identification of new and/or extended quarries over the plan period if continuity of supply is to be maintained.

The consideration of possible supply options has been considered in the Aggregate Supply Options Discussion Paper (June 2013) which can be found on our website:

[www.northyorks.gov.uk/mwevidence](http://www.northyorks.gov.uk/mwevidence)

Government guidance encourages the use of marine dredged aggregates as substitutes for primary land-won aggregates. These resources can be of good quality and have the potential to be an effective substitute to land-won concreting sand and gravel.

There is a large resource of marine sand and gravel off the coast of the Joint Plan

area and dredging currently takes place off the Humber estuary, with landings in Hull and in the North East Region, including Teesside. The North Yorkshire Sub-region LAA contains available data on marine sand and gravel supply. It identifies that landings from Hull have averaged between 0.1 and 0.3mtpa over recent years, with a higher level of landings in the NE region. It is understood that landings in these locations are significantly less than the actual tonnage permitted to be removed, therefore potential may exist to increase the amount of marine dredged sand and gravel supplied into the Yorkshire and Humber area.

A study has been commissioned by mineral planning authorities within the region to investigate the potential for an increased contribution from marine dredged sand and gravel. An increase in marine dredged sand and gravel supply into key markets (such as West and South Yorkshire) served by landbased sand and gravel resources within North Yorkshire could help reduce the pressure on land won resources in the Joint Plan area. It is anticipated that the results of the study will be available early in 2014, although any significant shift in supply balance, if any, would not be expected in the near term.

Aggregate, including marine dredged aggregate, needs to be transported from the location it is landed to markets for use. This may involve the need for rail links or water transport by barge if substantial lorry movements are to be avoided. It is therefore important that any such transport infrastructure is safeguarded. Current information on known mineral transport infrastructure is available in the evidence base, *Safeguarding of Minerals Infrastructure Paper*, which is available on our website

[www.northyorks.gov.uk/mwevidence](http://www.northyorks.gov.uk/mwevidence).

The key issues associated with infrastructure safeguarding are discussed in a Topic paper dealing with *Minerals Supply and Transport Infrastructure*.

The main market for sand and gravel produced in North Yorkshire is for the production of concrete. Concreting quality deposits are typically associated with the glacio-fluvial deposits within the main river corridors, particularly the Swale and Ure and in the Vale of Pickering area. As a result these areas have been extensively worked, particularly areas within the Swale and Ure valleys, and these areas are likely to be subject to ongoing pressure for further development due to the limited availability of suitable resources elsewhere. Consequently this can lead to impacts on the environment, landscape and local amenity. Consideration therefore needs to be given to the extent of any future working.

Given the association of sand and gravel resources with the river corridors, working often takes place below the water table with lakes being left behind after working has been completed. Current restrictions both on availability of landfill material, and the permitting regime which discourages landfilling into water bodies, means that infilling such sites on a significant scale is unlikely to be practical. This can result, especially in areas with a number of working sites, in progressive landscape change taking place. It may be appropriate in these areas to consider a more co-ordinated approach to future working and reclamation to help ensure that any cumulative impacts are minimised.

Furthermore there is a high correlation between sand and gravel resources and areas of high grade agricultural land. Whilst in some instances minerals sites on agricultural land can be restored back to agricultural use this is not always possible.

Although it may be possible in theory to limit extraction so that workings do not breach the water table, this approach could significantly reduce the availability of sand and gravel resources and sterilise substantial volumes of mineral resources.

Sand and gravel extraction which results in water based reclamation schemes gives rise to a number of issues, in addition to those mentioned earlier. Water-based reclamation schemes give rise to potential for conflict with airfield safeguarding requirements. There is a close correlation between the distribution of sand and gravel resources and the location of military and civil air safeguarding zones (both running roughly along the line of the A1 corridor). This is particularly an issue for reclamation schemes which involve habitat creation which attract particular types of birds which have the potential to cause hazard to aircraft as a result of birdstrike.

Notwithstanding the above, reclamation of sand and gravel sites has the potential to provide environmental benefits, including the potential for mitigation and adaption to climate change. Mineral workings in proximity to river corridors offer potential to provide flood storage capacity (although *insitu* sand and gravel can help the slow throughflow of water and therefore contribute to flood attenuation). The Joint Plan will need to establish an appropriate approach to reclamation of sand and gravel sites.

It may also be appropriate in these areas to consider a more co-ordinated approach to future working and reclamation to help ensure that any cumulative impacts are minimised.

### **Consultation Responses**

Representations received in relation to the Minerals and Waste Joint Plan First

consultation identified a number of issues that the Joint Plan will need to consider in relation to sand and gravel. These include ensuring that the plan is sufficiently flexible to take account of changes in demand which may arise from growth in economic activity. Responses also raised issues concerning the role the Joint Plan area plays in supplying aggregates to adjoining areas. Although this was supported by several representations, some representations suggested that the plan should explore potential to limit exports to adjoining areas. Durham County Council has indicated that sand and gravel reserves are sufficient to sustain a potential increase in sales for a number of years but has suggested that the Tees Valley area should be encouraged to contribute more aggregate to the Regional total (for the North-East) and be more self-sufficient to reduce the need for imports from Durham and North Yorkshire. However, the Tees Valley authorities have indicated that there are constraints on aggregate supply within the Tees Valley and no additional viable sites. They acknowledge that there may be potential for a limited increased supply of marine sand and gravel into the Tees Valley in the near term but that supply of sand and gravel from North Yorkshire is likely to continue to play a significant role in meeting demand. Mineral Planning Authorities in both West and South Yorkshire have also indicated an expectation that ongoing supply from North Yorkshire is likely to be needed due to supply constraints in those areas, although the potential for some increase in supply into these areas from the East Midlands has also been recognised. Furthermore, some representations suggested the plan should identify sites located close to markets.

Pervious consultations, carried out by North Yorkshire County Council, have

raised matters concerning sand and gravel. These include the need to consider supply of and demand for resources and the potential to limit exports from the North Yorkshire area. Respondents suggested that the continued uses of the north/south distribution areas needs to be considered as part of the plan. Other representations related to the impact of working on environmental and historic assets and some support was given to restoration of former sand and gravel sites to agricultural use. In terms of marine dredged aggregates, respondents supported the consideration of increasing supply of marine dredge sand and gravel to reduce the overall demand from North Yorkshire, although the view was also expressed that increased supply of marine aggregate is unlikely to be deliverable at the present time. Responses also identified that the environmental impacts of marine dredged aggregates would need to be fully considered. Support was given to the use and safeguarding of sustainable transport infrastructure.

### Summary of Key Points

The information in this topic paper is designed to provide an introduction to the key information relating to sand and gravel within the Joint Plan Area which has been identified from the current evidence base for the joint plan.

- The Joint Plan area, specifically North Yorkshire, is the largest producer of sand and gravel in the Region, especially high quality concreting sand.
- There is a shortage of concrete sand and gravel elsewhere in the Region.
- Potential concreting sand and gravel resources are mainly located in the valleys of the rivers Swale and Ure and in the Vale of Pickering. Building sand is mainly located in the Selby area.
- There is currently an estimated shortfall in the provision of sand and gravel over

the plan period and new resources will need to be identified if continuity of supply is to be maintained.

- Marine dredged sand and gravel has the potential to substitute for concreting sand and gravel and may provide an opportunity to reduce the reliance on resources within the North Yorkshire area in the longer term
- Some areas have undergone relatively intense working and these areas are likely to remain under pressure to contribute to supply
- Reclamation of sand and gravel is often constrained due the presence of a high water table.
- There is a significant overlap of sand and gravel resources and high grade agricultural land.

**Key Issues to be addressed**

The information in this topic paper provides a basis on which to help begin to identify some of the key issues that the strategy will need to address. As the preparation of the Joint Plan progresses this information will be used, together with any new and additional information that may become available, to help the identification of suitable policy responses.

A summary of the key issues which have been identified above are as follows:

Key issues to be addressed:
<ul style="list-style-type: none"> <li>• Establishing the level of supply of sand and gravel we should plan for and maintaining an adequate and steady supply, taking into account cross-boundary supply issues.</li> <li>• Establishing a suitable locational strategy for new sand and gravel quarries</li> <li>• Considering the potential for increasing the contribution from marine dredged sand and gravel and how this could be delivered.</li> <li>• Identifying a suitable approach for the reclamation and after-use of sand and gravel sites</li> <li>• Safeguarding sand and gravel resources and infrastructure for the future</li> <li>• Protection of the environment and amenity</li> </ul>



## Topic Paper – Crushed Rock

### What is Crushed Rock?

Crushed rock is one of the main sources of aggregate minerals, which are used mainly as bulk materials in the construction industry. A variety of hard rocks, such as limestone, may be suitable when crushed for use as aggregate, with their technical suitability for particular uses being dependent on the physical characteristics of the rock, such as strength and resistance to abrasion. Good quality crushed rock can be coated with asphalt and used in road surfacing or used for manufacturing of concrete, and lower quality crushed rock is typically used for purposes such as construction fill and drainage media.

### Where does it occur?

Crushed rock resources in the Joint Plan area typically comprise three main types;

Carboniferous limestone, Magnesian limestone and Jurassic limestone. Smaller amounts of chalk have also been produced but there is currently no significant production. Carboniferous limestone occurs in two main but widely separate areas, the Scotch Corner-Leyburn area in Richmond District in the North of the plan area and Craven District in the west. An important source of Carboniferous limestone is also worked near Pateley Bridge in Harrogate Borough. Magnesian limestone occurs as a narrow belt running north-south through the central part of the plan area. Jurassic limestone occurs around the fringes of the Vale of Pickering and the North York Moors National Park. Chalk outcrops in the eastern part of the plan in Ryedale and southern Scarborough District.

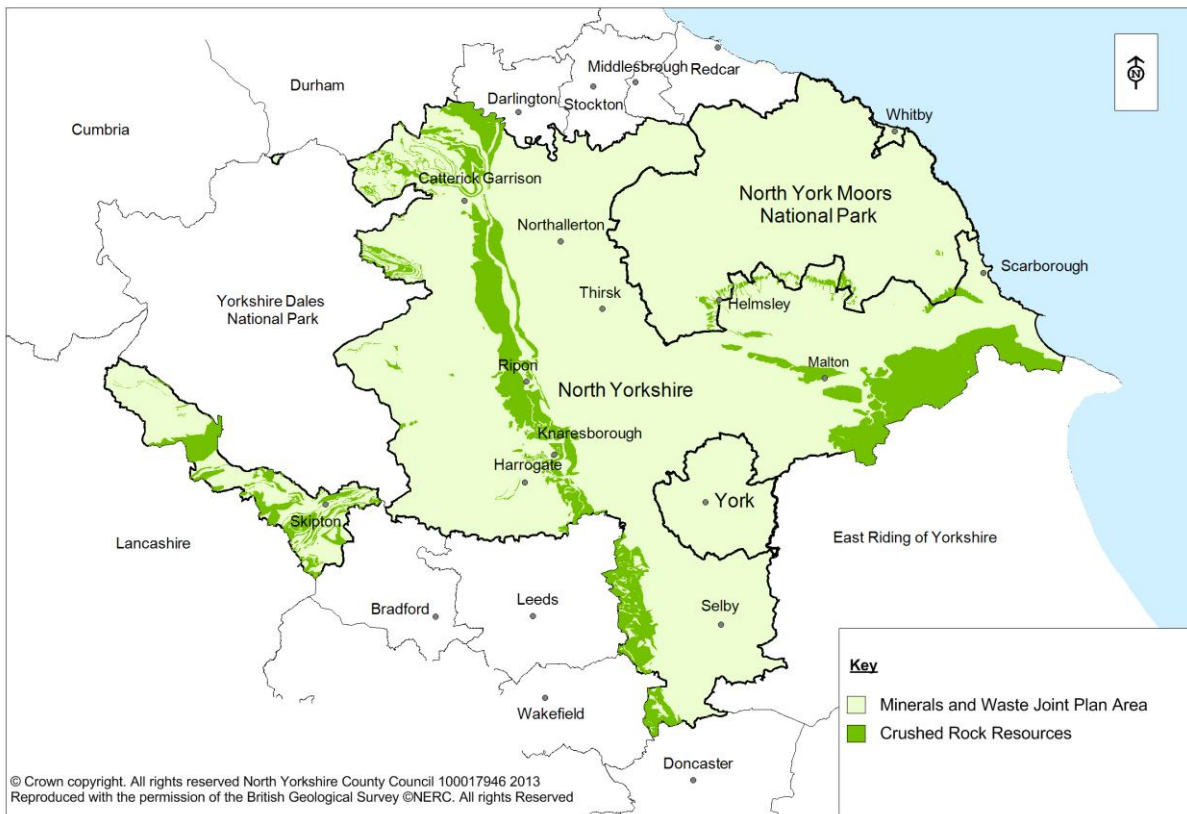


Figure 1: Map illustrating the distribution of crushed rock across the Joint Plan area.

The National Planning Policy Framework (NPPF) sets out the Government's policy in relation to minerals planning. Key relevant policy is contained within chapter 13: Facilitating the sustainable use of minerals. Amongst a number of requirements it states that Mineral Planning Authorities (MPAs) should plan for an adequate and steady supply of aggregates by: preparing an annual Local Aggregate Assessment, either individually or jointly by agreement with other mineral planning authorities, based on a rolling average of 10 year sales data and other relevant local information, and an assessment of all supply options. A Local Aggregate Assessment for the North Yorkshire Sub-region (LAA) has been produced in partnership with North Yorkshire County Council, North York Moors National Park, Yorkshire Dales National Park and the City Of York. The LAA has been produced in accordance with the advice contained within the NPPF and the outcomes of the LAA have been fed into the discussion within this topic paper. The LAA can be viewed on our website:

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National policy requires MPAs to maintain landbanks of at least 10 years for crushed rock, whilst ensuring that the capacity of operations to supply a wide range of materials is not compromised. It states that longer periods may be appropriate to take account of the need to supply a range of types of aggregates, locations of reserves relative to markets, and productive capacity of permitted sites. Furthermore it states that provision can be made by calculating and maintaining separate landbanks for any aggregate material of a specific type or quality which have a distinct and separate market.

In addition the NPPF seeks, as far as practical, to provide for the maintenance of

landbanks of non-energy minerals from outside National Parks and Areas of Outstanding Natural Beauty.

### **Key Data and discussion**

The plan area is one of the major producers of crushed rock in the Yorkshire and Humber Region. The main end use for crushed rock within the Plan area is uncoated roadstone, with other end uses including concreting and construction fill. Evidence indicates that significant amounts of crushed rock are exported to other destinations in the Yorkshire and Humber region, mainly West Yorkshire, and outside the Yorkshire and Humber Region to the North East region. Although not in the Joint Plan area, the adjacent Yorkshire Dales National Park also produce large amounts of crushed rock, some of which meets different specifications, and hence serve different markets, to those in the Plan area.

Some crushed rock is worked within the designated Areas of Outstanding Natural Beauty (AONB) in the Plan area. In particular, Pateley Bridge Quarry (the largest crushed rock quarry in the plan area) is located within the Nidderdale AONB and a number of Jurassic limestone quarries are located in the Howardian Hills AONB. National Policy states that major development in AONBs and National Parks, which can include mineral working, should only take place in exceptional circumstances and if it is in the public interest. National policy also requires that, so far as practicable landbanks of aggregate are maintained from reserves outside National Parks and AONBs. Most sites in these areas have significant reserves remaining and it is not currently anticipated that there will be pressure to release new permissions. Therefore it is unlikely that any substantial new resources of crushed rock will need to be

developed in these areas over the plan period.

There has been no recent working of crushed rock in the North York Moors National Park and crushed rock resources do not exist in the City of York area.

National policy requires that a minimum 10 year landbank should be maintained for crushed rock in order to ensure an adequate and steady supply. The LAA for the North Yorkshire Sub-region sets out information on the current supply of aggregate minerals within the sub-region.

In overall terms there are substantial reserves of crushed rock within the plan area. At the end of 2011 estimated reserves were 96mt. In line with Government advice the LAA considers the supply of crushed rock for the Joint plan area based on a rolling average of 10 years sales. Using this method the potential requirement for the Joint plan area equates to 66.5mt, resulting in no need for any additional requirement to be made over the Plan period.

However it is important to consider more specific factors which may impact on the expected availability of supply. In terms of crushed rock these factors may include the availability of different rock types to serve different markets and end uses. Considering reserves in this way leads to the identification of a potential shortfall in availability of Magnesian limestone. The consideration of possible supply options has been considered in the Aggregate Supply Options Discussion Paper (June 2013) which can be found on our website: [www.northyorks.gov.uk/mwevidence](http://www.northyorks.gov.uk/mwevidence)

Substantial reserves of Carboniferous limestone are thought to exist in dormant sites. These sites would require further approval before extraction could start or

recommence at these sites. Re-opening of dormant sites could give rise to a number of environmental issues and in some case it may be preferable to maintain supply through opening new or extensions to existing sites rather than the re-opening of dormant sites.

Crushed rock quarries tend to have a long life and can be excavated to substantial depths, resulting in large voids which may lead to substantial visual and/or landscape impact. Traditionally, crushed rock quarries have been reclaimed through infilling with imported waste material. However, there is current pressure to divert waste from landfill and increased recycling and reuse of waste results in reduced potential for this method of restoration in future. There also potential issues associated with pollution, such as groundwater pollution, in certain areas, particularly where existing or former quarries are located within or above important aquifers.

### **Consultation Responses**

Representations received in relation to the Minerals and Waste Joint Plan suggested that a separated landbank for Magnesian limestone should be maintained. Other responses suggested the plan should encourage small scale extensions to ensure continuity of supply. A response received from Durham County Council recommended that adequate provision of crushed rock should be made within the plan area to prevent an increase in requirements from the Durham area.

Previous consultation exercises, carried out by North Yorkshire County Council in July 2011, raised a number of issues which respondents considered important for minerals planning in North Yorkshire. These included the potential impact on, and decline in working within, the AONBs. Further responses considered that

restoration of crushed rock sites should be given careful consideration within the plan. Another matter raised was the potential for the different types of crushed rock comprising the overall landbank to be identified separately. A number of amenity issues, such as transport and dust were also raised in responses, as well as the potential for pollution of important groundwater supplies.

In March 2012 North Yorkshire County Council invited minerals industry representatives to attend a workshop to consider some of the key issues relating to the provision of aggregates within the North Yorkshire area. One of the topics discussed related to the supply and maintenance of landbanks of crushed rock, including the potential to subdivide the landbanks based on rock type. Overall the view of those that attended was that subdivision of the crushed rock landbank may not be practicable and would be considered a dis-benefit, although some support was also received.

Consultation carried out with the minerals industry during the preparation of the LAA led to the view being expressed that, with the exception of high specification aggregate (in the Yorkshire Dales National Park) and Magnesian Limestone, there are large reserves and changing the methodology by which future requirements are calculated is not going to make a great deal of difference to landbanks for crushed rock.

**Summary of Key Points**

The information in this topic paper is designed to provide an introduction to the key information relating to crushed rock within the Joint Plan area which has been identified from the current evidence base for the joint plan.

- The Plan area is a significant producer and supplier of crushed rock within the Yorkshire and Humber region as well as supplying markets in the North East Region.
- Substantial reserves exist within the plan area but some additional reserves of Magnesian limestone may be required to maintain supply towards the end of the plan period.
- Some reserves occur within nationally protected areas (AONBs) which give rise to environmental considerations if working in these areas were to continue.
- There is uncertainty about the role of dormant sites in contributing to future supply.
- There are likely to be environmental considerations in developing appropriate restoration and reclamation options.
- The environmental and amenity impacts of any future crushed rock working needs to be addressed.

**Key Issues to be addressed**

The information in this topic paper provides a basis on which to help begin to identify some of the key issues that the strategy will need to address. As the preparation of the Joint Plan progresses this information will be used, together with new any new and additional information that may become available, to help the identification of suitable policy responses.

A summary of the key issues which have been identified above are as follows:

<b>Key Issues to be addressed:</b>
<ul style="list-style-type: none"> <li>• Establishing the level of supply, including consideration of the extent to which further resources of Magnesian limestone should be made available in order to maintain a balance of supply between the main</li> </ul>

types of crushed rock currently worked with in the plan area.

- Establishing a suitable locational strategy for any new crushed rock sites, including the potential role of sites in Areas of Outstanding Natural Beauty.
- Identifying a suitable approach to reclamation and afteruse of crushed rock sites.
- Considering the need to safeguard resources of crushed rock for the longer term.
- Protection of the environment and amenity.



## Topic Paper – Secondary and Recycled Aggregates

### What are secondary and recycled aggregates?

Secondary aggregates are by-products of other processes, usually of an industrial nature, which have appropriate properties enabling them to be used to substitute for primary aggregate minerals such as sand and gravel and crushed rock. Examples include colliery spoil and power station ash. Recycled aggregates arise as waste products from construction, demolition and excavation activities e.g. bricks and concrete which are then processed (usually involving crushing and screening) and can be reused as low quality aggregate in applications such as fill.

### Where do they occur?

In the Joint Plan area the main sources of secondary minerals include power station ash from Drax and Eggborough power stations and colliery spoil from Kellingley Colliery. The ash comprises two main types, pulverised fuel ash (PFA) and furnace bottom ash (FBA). The production of recycled aggregate tends to be relatively widespread and generally associated with significant new development and construction projects and more urban areas.

Selby District contains two of the three major power stations in the Yorkshire and Humber region and the only operational coal mine in the Joint Plan area, resulting in a high concentration of secondary aggregate production in this part of the Plan area. Ash from a third power station, Ferrybridge, is generated just outside the sub-region and is currently disposed of at a facility (Gale Common) inside the Joint Plan area.

### Key Policy Influences

The National Planning Policy Framework (NPPF) advises Mineral Planning Authorities (MPAs) to, so far as practicable, take account of the contribution that substitute or secondary and recycled materials and minerals waste would make to the supply of materials, before considering extraction of primary minerals, whilst aiming to source minerals supplies indigenously.

The NPPF states that MPAs should plan for a steady and adequate supply of aggregates through preparing an annual Local Aggregate Assessment, either individually or jointly by agreement with other mineral planning authorities, based on amongst other things an assessment of all supply options including secondary and recycled sources.

A North Yorkshire Sub-regional Local Aggregate Assessment (LAA) has been produced covering the administrative boundaries of the Yorkshire Dales National Park, North Yorkshire County Council, City of York and of the North York Moors National Park. The outcomes of the LAA will be used to help inform the preparation of the Joint Minerals and Waste Plan, including the discussion within this topic paper. The LAA can be viewed on the Joint Plan website at [www.northyorks.gov.uk/mwevidence](http://www.northyorks.gov.uk/mwevidence)

### Key Data and discussion

A national study in 2005 (Survey of arising and use of alternatives to primary aggregates in England, DCLG 2005) stated that 54% of PFA, 100% of FBA and 21% of Colliery spoil produced were used for alternative uses including secondary aggregate. Although the information is now more than several years old it

highlights the potential for an increase in use of some secondary materials as aggregate and as an alternative to primary resources. It is known that the power stations in the Plan area produce a relatively constant supply of PFA (around 0.88mt) and FBA (around 0.34mt) per annum. Evidence suggests that in 2011 66% of ash produced at Drax was sold for use in the construction industry.

One power station operator has indicated that secondary aggregate sold from the station plays a substantial role as a replacement aggregate over an extensive area, replacing primary aggregates in County Durham, West and South Yorkshire and Humberside, Derbyshire, Cheshire and further afield.

However, the availability of secondary and recycled materials is also dependent upon the primary processes to which they relate. For example, closure of a major producer of secondary aggregate would impact upon the overall availability of secondary or recycled sources, or change to the nature of the processes taking place could impact on the quality of secondary aggregate produced. For example, increasingly stringent emissions targets and proposed conversion to biomass fuel of a proportion of the generation capacity at Drax and Eggborough may have an impact upon the nature and quantity of the ash produced and hence the potential supply of secondary aggregates. Current information presented in the NY Sub-region Local Aggregate Assessment suggests that, for the time being, it would be reasonable to assume capability to maintain supply at levels similar to those in recent years.

Secondary and recycled aggregates are initially classified as waste and their use helps contribute to diversion of material from landfill as well as the need to extract

primary aggregate. However, operators within the Joint Plan area have highlighted that issues can arise as a result of the designation by the Environment Agency of PFA as a waste requiring disposal at a licensed or exempt site. WRAP Quality Protocols sets out criteria which need to be met for the PFA and FBA to be considered a by-product. If the criteria are met the resulting outputs cease to be a waste.

Substantial quantities of colliery spoil and power station ash have been deposited at waste disposal facilities connected to power stations and existing or former coal mines, including Barlow and Gale Common ash disposal facilities, Gascoigne Wood spoil mound (which received spoil from the now closed Selby coalfield) and Womersley spoil disposal facility. These potentially could be subject to partial reworking to provide an ongoing source of supply of secondary aggregates in future if resource availability or sustainability considerations suggest it would be appropriate. The operator at Gale Common has approval to retrieve and export ash from designated unrestored parts of the site. However, there is a 30kt per annum limit on the export of ash. An upward revision of this limit could help support greater use of these materials. Permission also exists which allows ash to be retrieved from a designated part of Barlow ash mound.

Good quality data on the supply, or availability, of recycled aggregate does not exist for the plan area. However, it is understood from a national survey that a significant majority of material with potential to be recycled as aggregate is already being put to beneficial use. This suggests that the potential for significant increase in supply from this source is relatively limited, a point acknowledged in

the Local Aggregate Assessment for the North Yorkshire Sub-region.

The extent to which a planning authority can influence the use of secondary and recycled aggregates in development is limited. However, policy support in principle by the Joint Plan Authorities and District and Borough Councils within the North Yorkshire area for the use of such materials in new development would encourage the consideration of this matter early in the design stage. This issue would need to be further developed in consultation with the relevant planning authorities.

At present ash and colliery spoil that is sold for use as secondary aggregate is transported by road. However, both the power stations and Kellingley colliery have rail connections. There is also a wharf located on the River Ouse adjacent to Drax power station. Therefore there may be potential for some non-road based transportation in the longer term if markets allow. It will be important to ensure that transport infrastructure, which can facilitate sustainable transport, is safeguarded to ensure future availability. This issue is addressed in the topic paper dealing with Minerals Supply and Transport Infrastructure.

Additionally, there is a potentially new source of secondary aggregates available in the form of Incinerator Bottom Ash associated with Energy from Waste Facilities. An application for a major Energy from waste facility has recently been granted within the Plan area and, if developed, any potential for secondary aggregates from this source or other similar facilities will need to be kept under review as the Plan progresses.

### **Consultation Responses**

Representations received in relation to the Minerals and Waste Joint Plan First Consultation considered that the Plan should encourage the use of Recycled aggregates.

Previous consultation exercises, carried out by North Yorkshire County Council in 2011 resulted in a number of comments in relation to secondary and recycled aggregates. Responses considered that the plan has a role to play in encouraging the use of recycled aggregates through the requirement for submission of waste management plans by developers. Responses also suggested that consideration should be given to the long term role of mineral sites for recycling activities. The impacts of transportation of such minerals and the potential for use of alternatives to road were also raised in responses.

Additionally, a consultation carried out on the Sub-regional LAA identified that the operator of Gale Common considered that an upward revision of the current limit on export of ash could help increase supply from this source. Barlow ash mound was also identified in responses as a potential supply of secondary resources.

### **Summary of Key Points**

The information in this topic paper is designed to provide an introduction to the key information relating to secondary and recycled aggregates within the Joint Plan Area which has been identified from the current evidence base for the joint plan.

- The Plan area is an important source of secondary aggregates and is the largest supplier in the Yorkshire and Humber Region.
- The main sources of secondary aggregates are located in Selby District.

- Recycled aggregates tend to be associated with construction projects and evidence suggests that rate of reuse are already high.
- The Government encourages the use of secondary and recycled aggregates in place of primary aggregates.
- There is uncertainty over the future trend of available sources of suitable material.
- The NY LAA identifies that there is unlikely to be a substantial increase in the substitution of primary resources by secondary and recycled aggregates, compared with the current position
- Surplus colliery spoil and power station ash not used as secondary aggregate is disposed of in waste disposal facilities. There is potential to explore the extraction of such sources if adequate markets exist.

**Key Issues to be addressed**

The information in this topic paper provides a basis on which to help begin to identify some of the key issues that the strategy will need to address. As the

preparation of the Joint Plan progresses this information will be used, together with any new and additional information that may become available, to help the identification of suitable policy responses.

A summary of the key issues which have been identified above are as follows:

<b>Key Issues to be addressed:</b>
<ul style="list-style-type: none"> <li>• Making appropriate and realistic assumptions about the potential role of secondary and recycled aggregates in future supply.</li> <li>• Considering the potential for re-working of previously deposited colliery spoil and ash to meet future supply requirements.</li> <li>• Supporting delivery of new infrastructure needed to help with supply of secondary and recycled aggregates.</li> <li>• Safeguarding key supply infrastructure for future use.</li> </ul>

## Topic Paper – Silica Sand

### What is Silica Sand?

Silica sand 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 often used 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.

### Where does it occur?

There are two isolated occurrences of silica sand resources in the Plan area, one located within Carboniferous sandstone deposits in the Nidderdale Area of Outstanding

Natural Beauty in Harrogate Borough and the other within Jurassic sandstone near Malton, in Ryedale District. There are two permitted site in the plan area, Burythorpe Quarry near Malton and Blubberhouses Quarry near Harrogate. Of the two sites only Burythorpe is active.

Active Sites	Spatial Zone <sup>1</sup>
Burythorpe, Ryedale	Moors and Vale of Pickering
Blubberhouses Harrogate	Dales and Nidderdale AONB

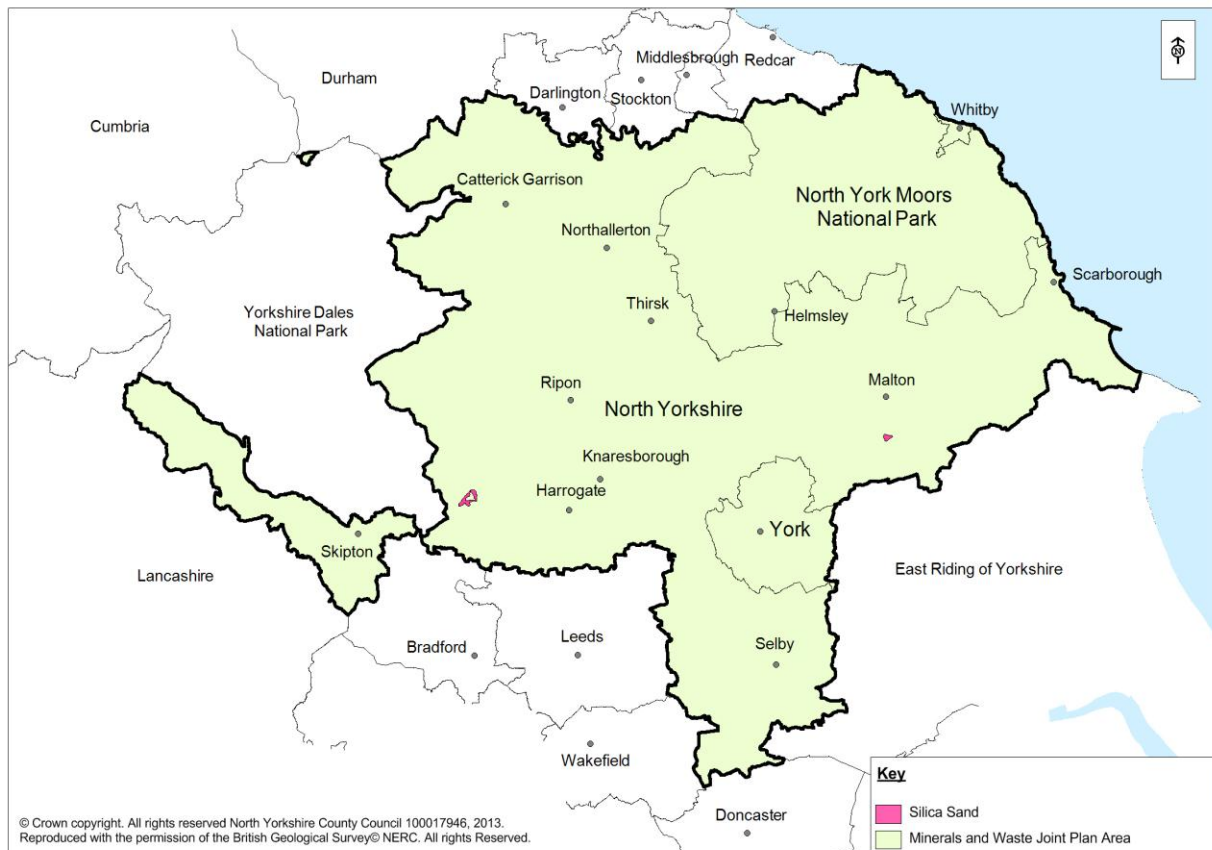


Figure 1: Illustration showing location of silica sand resources and sites within the joint plan area.

<sup>1</sup> Spatial Zones information



### Key Policy Influences

Due to its relative scarcity silica sand is a resource of national significance. The NPPF states that MPAs should plan for a steady and adequate supply of industrial minerals by

- co-operating with neighbouring and more distant authorities to co-ordinate the planning of industrial minerals to ensure adequate provision is made to support the use in industrial and manufacturing processes,
- by encouraging safeguarding or stockpiling so that the minerals remain available for use,
- providing a stock of permitted reserves to support the level of actual and proposed investment required for new or existing plant and the maintenance and improvement of existing plant and equipment of at least 10 years for individual silica sand sites and at least 15 years for silica sand sites where significant new capital is required.

### Key Data and discussion

Burythorpe Quarry is a relatively small site which extracts silica sand for a variety of markets including industry, such as resin coated sand, and agricultural uses. The site has adequate resources over the plan period, and a permitted life until 2042. It is not anticipated that additional reserves will be required over the plan period

Blubberhouses Quarry is located within the Nidderdale AONB, which is subject of national policy protection and lies immediately adjacent to an internationally important nature conservation site. The site has been mothballed since 1991, and the processing Plant has been removed. The silica sand resource at Blubberhouses is suitable for glass production. Permission at the site was due to expire in 2011. However, a planning application has been submitted which seeks to extend the

life of the permission for 25 years. Current information indicates that there is approximately 4mt of reserves remaining within the permitted site, equating to 20-25 years of production according to the applicant. As a result of the location of the site within the AoNB it will need to be demonstrated that the development would be in the public interest before permission could be granted. There is also a requirement for appropriate assessment under the Habitats Regulations because of the proximity of the site to an internationally important nature conservation site. The complexity of these considerations suggests that the future planning status of this site may best be resolved via determination of the current planning application. It is likely that the application will be resolved prior to completion of preparation of the minerals and waste joint plan. However, safeguarding of the resource in the Minerals and Waste Joint plan will be important.

Work carried out by the British Geological Survey indicates that some additional resources are present adjacent to both the Blubberhouses and Burythorpe sites and these will also require safeguarding for the longer term.

A major float glass manufacturing facility is located at Eggborough in Selby District, which utilises silica sand as a raw material. It is understood that silica sand is imported to the manufacturing facility from Norfolk due to the specific properties of the silica sand needed to produce the quality of glass required. The level of import to the facility also depends upon the amount of recycled glass available for use. It is understood that land use plans in Norfolk are seeking to make provision for continued extraction of silica sand in that area.

### Consultation Responses

Representations received in relation to the Minerals and waste Joint Plan First Consultation suggested that the retention of the Blubberhouses quarry should be reviewed due to its impact upon the Landscape and designated AONB. Representations also suggested that the description of Silica sand, given in the consultation document, was not reflective of the range of uses suitable for silica sand.

Previous consultations exercises carried out by NYCC raised concern in relation to the potential environmental impacts from silica sand extraction. Of particular concern was the overlap of resources with high quality landscapes and the potential impact upon groundwater.

### Future Requirements

The National Planning Policy Framework requires planning authorities to provide a stock of 10 years of permitted reserves for individual silica sand sites, or 15 years where significant new capital investment is required. There are no published forward projections of demand for silica sand and no specific up to date data on production of silica sand from the one active site in North Yorkshire. Should planning permission be granted for the re-opening of the Blubberhouses Quarry this site would have reserves of between 20 and 25 years, which would meet the NPPF requirement. The active site at Burythorpe has planning permission until 2042 and it is not therefore anticipated that any future reserves will be required during the Plan period.

### Summary of Key Points

The information in this topic paper is designed to provide an introduction to the key information relating to Silica Sand within the Joint Plan Area. Further detailed information is available in the current

evidence base for the joint plan available on our website

[www.northyorks.gov.uk/mwevidence](http://www.northyorks.gov.uk/mwevidence)

The key information can be summarised as follows

- Only limited areas of resource exist within the Plan area
- Silica sand is of national importance
- The resources at the two existing sites have different properties and serve different markets
- There is significant overlap between silica sand resources in the Blubberhouse area and important environmental designations
- No additional reserves are likely to be required over the plan period at Burythorpe Quarry but renewed planning permission at Blubberhouses would be required in order to maintain the potential for continuity of supply, although the site has been mothballed since 1991.
- Safeguarding of silica resources within the plan area will need to be addressed

### Key Issues to be addressed

The information in this topic paper provides a basis on which to identify some of the key issues that the strategy will need to address. As the preparation of the Joint Plan progresses this information will be used, together with new any new and additional information that may become available, to help the identification of suitable policy responses.

A summary of the key issues which have been identified from the information above and which may need addressing in the Joint plan area:

**Key Issues to be addressed:**

- Safeguarding resources of silica sand for the future
- Considering the potential to maintain supply of silica sand at existing sites, including taking account of constraints resulting from internationally and national important statutory designations and the status of the current planning application to extend the life of the current permission at Blubberhouses Quarry

## Topic Paper – Clay

### What is Clay?

Clay is a very fine grained sedimentary rock, often associated with other types of mineral deposits such as shale and sandstone. Clay is commonly used for the manufacture of bricks, blocks, tiles and decorative pottery.

### Where does it occur?

Within the Joint Plan area brickclay deposits are widely distributed, particularly within the central and southern parts of the Plan area, mainly the Vale of York and in Selby district. There are also several smaller outcrops of fireclay on the western fringe of Selby District, in association with shallow coal deposits. Clay is also produced as a secondary product at a small number of crushed rock sites within the Plan Area. Secondary clay is generally produced in small quantities and needs to be separated from the primary mineral.

Currently brick clay is worked at a small number of sites within the Joint Plan area. In addition there is also one dormant site. There has been no recent history of fireclay extraction in the area. Current sites are listed in the table below.

Active Sites	
Alne Brick Works, Hambleton	Central Corridor
Hemingbrough Clay Pit, Selby	Selby District
Littlethorpe Potteries, Harrogate	Central Corridor
Dormant Sites	
Grange Brickworks, Harrogate	Central Corridor

The map below illustrates the distribution of clay across the Joint Plan area.

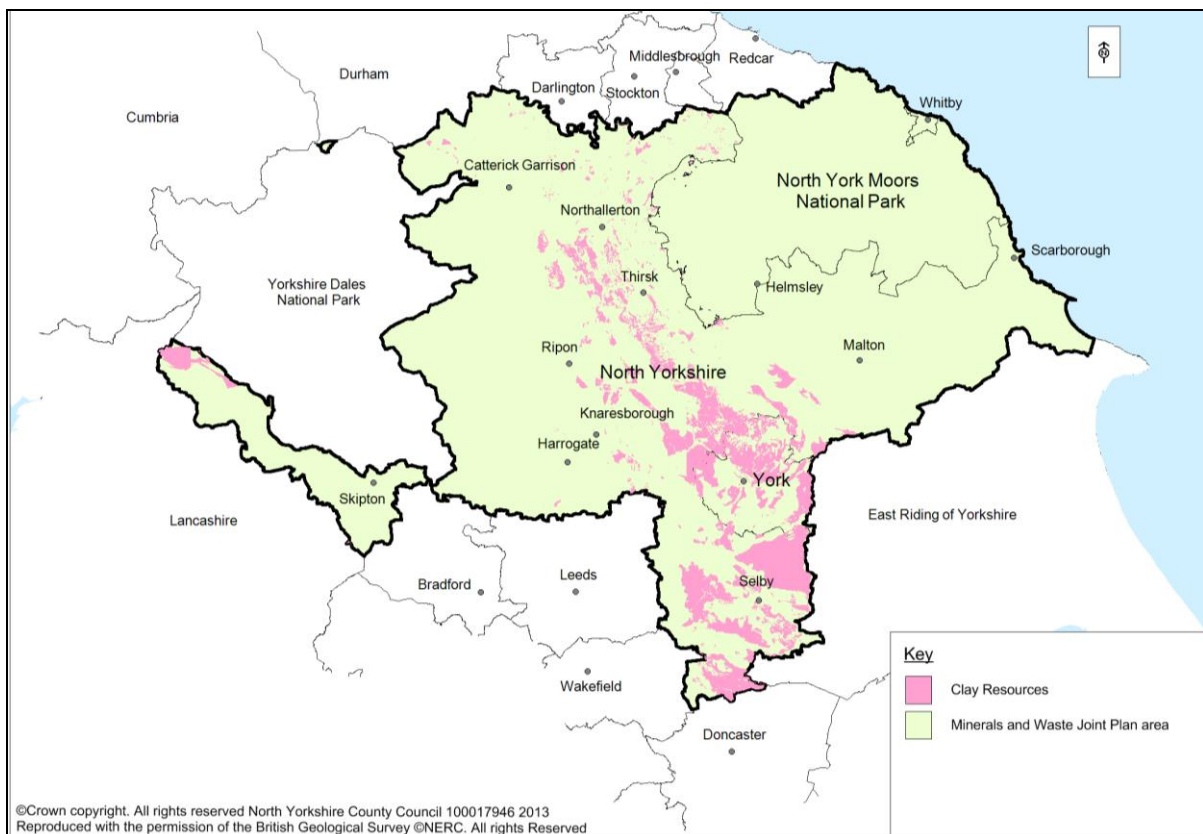


Figure 1: Map illustrating the distribution of clay resources

## Policy Influences

The National policy context for clay is set out in the National Planning Policy Framework (NPPF) *Chapter 13: facilitating the sustainable use of minerals*. Essentially the NPPF identifies brickclay, including fireclay, as a mineral of local and national importance. As such there is a requirement for Minerals Planning Authorities (MPAs) to identify and include policies for extraction and to safeguard known resources to prevent sterilisation by non-mineral development.

The NPPF requires MPAs to plan for a steady and adequate supply of industrial minerals (including clay) by;

- co-ordinating the planning of industrial minerals with other MPAs;
- encouraging safeguarding and stockpiling of minerals and;
- providing a stock of permitted reserves to support the level of investment required for new or existing plant, and take account of the need for provision from a number of sources to enable appropriate blends to be made

In addition the NPPF states that MPAs should provide for coal producers to extract separately, and if necessary stockpile fireclay so it remains available for use.

## Key Data and discussion

Clay worked in the plan area is mainly used for traditional brick making and manufacture of lightweight expanded clay blocks, with very small amounts used in decorative pottery. Existing extraction is located relatively near, if not adjacent to, the point of use.

Detailed information on historic levels of production is not available but the 2009 Minerals Yearbook shows that 1.055mt of

clay was produced in the Yorkshire and Humber region in 2007, of which around 60% was used for brick, pipe and tile manufacture. Production of clay from North Yorkshire for these uses was 0.01mt. As clay worked in North Yorkshire is also used for lightweight block manufacture total production will be higher than this. In 2010 regional production had declined to 0.544mt. It is likely that more recent production will have been impacted by the effects of the recession on the construction industry.

No published data is available on reserves of clay within the Joint Plan area. Discussions have taken place with operators of each of the active sites. These discussions identified that current reserves at Hemingbrough (which supplies clay to a lightweight block making plant at Great Heck) may be exhausted in the next 3 to 6 years. Alne Brick works has sufficient on site reserves for around 4 years. It is likely that additional reserves will be required to ensure continuity of supply for both these facilities over the Plan period.

The site at Littlethorpe is a small scale site where clay is extracted by hand. The site has a valid permission until 2042 however a periodic review of the permission will be required during the Plan period.

Government policy suggests that a range of clays of different aesthetic and technical properties may be needed to help ensure that a range of product specification requirements can be met. This may result in the need to release additional reserves, even when reserves of clay remain at existing locations. Many of the towns and villages in the Vale of York are of brick construction, which contributes to the local character and distinctiveness of the area.



Consideration will also need to be given to a suitable approach to safeguarding clay resources from sterilisation. BGS have already carried out some work to identify safeguarding areas in the Plan area. This work has been carried out in accordance with advice set out in *'Minerals safeguarding in England: good practice advice, 2011'* and through consultation with mineral operators.

### Consultation Responses

Previous consultation exercises, carried out by North Yorkshire County Council in July 2011, have raised matters in relation to environmental impacts of clay extraction including the effects upon groundwater. One response considered it appropriate for the strategy to support extraction of clay as a by-product of other extractive processes.

### Future Requirements

The National Planning Policy Framework requires planning authorities to provide at least 25 years stock of permitted reserves for brick clay. As current operations have considerably less than 25 years reserves (see above) there will be a need for the Plan to support further clay extraction.

### Summary of Key Points

The information in this topic paper is designed to provide an introduction to the key information relating to Clay within the Joint Plan area which has been identified from the current evidence base for the joint plan.

- There are only a small number of clay sites in the Joint Plan area.
- Clay extracted in the Joint Plan area is mainly use for manufacture of house bricks and expanded blocks.
- The end products (brick and blocks) from clay manufacturing processes in the Joint Plan area contribute both to

the local character of the towns and villages in the Vale of York and help reduce the demand for primary aggregates.

- Extraction sites are located at or relatively close to dedicated manufacturing sites.
- The main clay sites have some reserves remaining, but it likely that additional reserves will be required to ensure that adequate supply is maintained in accordance with the requirements set out in the NPPF.
- The need to reflect quality and technical considerations and ensure future supply capability suggests a need to consider the identification and/ safeguarding of resources to ensure continuity of supply in the longer term.

### Key Issues to be addressed

The information in this topic paper provides a basis on which to help begin to identify some of the key issues that the strategy will need to address. As the preparation of the Joint Plan progresses this information will be used, together with new any new and additional information that may become available, to help the identification of suitable policy responses.

A summary of the key issues which have been identified above are as follows:

#### Key Issues to be addressed:

- Safeguarding resources of clay for the future
- Identifying an appropriate approach to securing continuity of supply of clay at existing supply locations and encouraging the supply of clay in association with other workings



### Key Policy Influences

There are no specific national targets for the production of building stone. The National Planning Policy Framework (NPPF) identifies the need for planning policies and decisions to address the connections between people and places and the integration of new development into the natural, built and historic environments. The NPPF states that when determining planning applications MPAs should consider how to meet demand for small scale extraction of building stone at, or close to, relic quarries needed for the repair of heritage assets, taking account of the need to protect designated sites, and recognise the small scale nature and impact of building stone and roofing stone quarries, and the need for a flexible approach to the potentially long duration of planning permissions reflecting the intermittent or low rate of working at many sites.

The NPPF also states that known locations of specific minerals of local and national importance should be safeguarded so they are not needlessly sterilised by non-mineral development, this includes building stone.

### Key Data and discussion

Supply of building stone is important in helping to maintain and enhance the built environment, which contribute to the distinctive character of the Plan area. Supply of an appropriate type of building stone is important both for new development and for the repair and maintenance of historic buildings.

The stone obtained from different sites exhibits local variations in colour, texture or appearance and therefore is frequently used for local building purposes. For example the types of building stones available in and around the North York Moors National Park have greatly

influenced the appearance of villages and landscapes across the Park, the built heritage being one of the factors behind its designation as a National Park. A recent study, carried out by the British Geological Survey and English Heritage, identifies some of the significant types of building stone in the plan area and where these have been used in construction. This Strategic Stone Study identifies that building stone from the plan area has been used for building work at iconic buildings such as York Minster and Ripley Castle. The Study identifies 302 stone quarries (the very large majority of which are historic quarries) within the Joint plan area. 240 of these are located in the NYCC area, with the remainder located in the North York Moors National Park.

There are far fewer active building stone quarries in the Joint Plan area compared with the number many years ago. The reduction over time in the number of building stone sites has limited the variety of building stone available, and can make it harder to find an appropriate match for new buildings and repair and maintenance of historic ones if required.

Building stone sites tend to be relatively small scale and sometimes only worked when the stone is needed for specific construction projects. Due to the specific characteristics of individual sites, building stone may be transported substantial distances in order to meet particular requirements. Published data on building stone extraction is limited. The most recent information available indicates that approximately 20,000 tonnes was extracted in North Yorkshire in 2009, around 75% of which was used within North Yorkshire, with the majority of the remainder being transported to Scotland<sup>1</sup>.

<sup>1</sup> North Yorkshire planning authority area only. Survey by North Yorkshire County Council.

In the National Park, all building stone currently extracted is for use within the National Park itself. Limestone and sandstone is also imported into the area from a range of locations including Lincolnshire, County Durham and further afield although detailed information is not available.

Several active building stone quarries within the North Yorkshire part of the plan area have permissions which will expire before 2030, therefore consideration needs to be given to extensions of time to allow any remaining reserves to be worked, as well as the potential to release further reserves to maintain longer term continuity of supply.

It is important for the plan to provide for the future supply of building stone to enable historic assets to be maintained and repaired and to ensure that new development respects the character of the surrounding townscape and landscape. The Strategic Stone Study will help provide an improved evidence base to identify the important building stone resources and sites in the Joint Plan area.

Safeguarding of important building stone resources and, potentially, sites will be important.

### **Consultation Responses**

Responses to previous consultations carried out by NYCC indicated the need for a greater understanding of the markets for building stone and what is likely to be required in the future. One response suggested that the provision of a realistic landbank for building stone would allow industry to make long term investment and give greater certainty over future working. Support was also given to an approach which would make building stone available for local use and repair of historic buildings.

At the First Consultation stage on the Joint Plan respondents suggested that the supply of building and roofing stone for local use should be facilitated. Other responses suggest that quality of stone and demand / need for it should be assessed to avoid unnecessary damage. A further response suggested that facilitating development of small scale sites to provide local materials for maintenance and repair should be encouraged in the plan.

### **Future Requirements**

As mentioned above, building stone is produced at a small number of low output sites and no specific production data is available. There are no quantified requirements for provision of building stone and no guidance on establishing the level of future demand. However, the National Planning Policy Framework identifies local minerals of importance to heritage assets and local distinctiveness as 'minerals of local and national importance' and as such requires planning authorities to include policies for their extraction. The National Planning Policy Framework also specifically requires local planning authorities to meet demand for small scale extraction of building stone needed for the repair of historic assets at or close to relic quarries. The scale of future requirements for building stone will therefore be determined through consultation and discussion with the building stone industry, and is likely to change throughout the Plan period. Building stone resources may also need to be safeguarded from sterilisation.

### **Summary of Key Points**

The information in this topic paper is designed to provide an introduction to the key information relating to Building Stone within the Joint Plan area. Further detailed information is available in the current

evidence bases for the joint plan available on our website

[www.northyorks.gov.uk/mwevidence](http://www.northyorks.gov.uk/mwevidence).

The key information can be summarised as follows:

- Building stone sites tend to be small scale operations.
- Stone is often used for local buildings, walling roofing or ornamental purposes.
- Building stone resources are widely distributed over the Joint Plan area, but may have variable and locally important characteristics
- Several sites are subject of permissions which expire before the end of the plan period
- Consideration will need to be given to how supplies can be maintained and help preserve and improve the quality of the built environment in the plan area

#### **Key Issues to be addressed**

The information in this topic paper provides a basis on which to help begin to identify some of the key issues that the strategy will need to address. As the preparation of the Joint Plan progresses this information will be used, together with any new and additional information that may become available, to help the identification of suitable policy responses.

A summary of the key issues which have been identified from the information above is as follows:

#### **Key Issues to be addressed:**

- Identifying an appropriate strategy to support the continued availability of local sources of building stone.
- Safeguarding important building stone sources.



## Topic Paper – Oil and Gas

### What is Oil and Gas?

In this instance oil and gas includes naturally occurring hydrocarbons in liquid and gaseous forms respectively. They are generally derived from the breakdown of organic matter and tend to occur underground in accumulations (reservoirs) or within other specific geological settings. The NPPF deals with four forms of oil and/or gas development. *Conventional on-shore oil and gas (COG)* development involves the extraction of petroleum or hydrocarbon oils and gases by drilling and, if necessary, pumping from land based sites. *Coal bed methane* is extracted by drilling into unmined coal seams to release the gas. *Methane capture* takes place from active and abandoned coal mines and can take place where the methane has accumulated in, and may be freely venting from, mine voids. The fourth form is *underground*

*coal gasification*, which involves drilling into and subsequent controlled gasification of pressurised coal seams and the recovery and use of the resulting gases. More recently, the Government has lifted a ban on extraction of *shale gas* reserves within bedrock through hydraulic fracturing (or fracking) and has announced tax incentives to encourage exploration for shale gas. The process uses high pressure injections of water (mixed with sand or chemicals) which release gas stored within the rock.

### Where does it occur?

The main conventional onshore gas fields are located in the Vale of Pickering with gas at depths of 1200 and 1500 metres in Permian limestone and at depths of 1500 metres occurring in carboniferous sandstone. Companies who wish to drill for onshore oil or gas need to obtain a Petroleum Exploration and Development licence (PEDL) from the Department for Environment and Climate Change

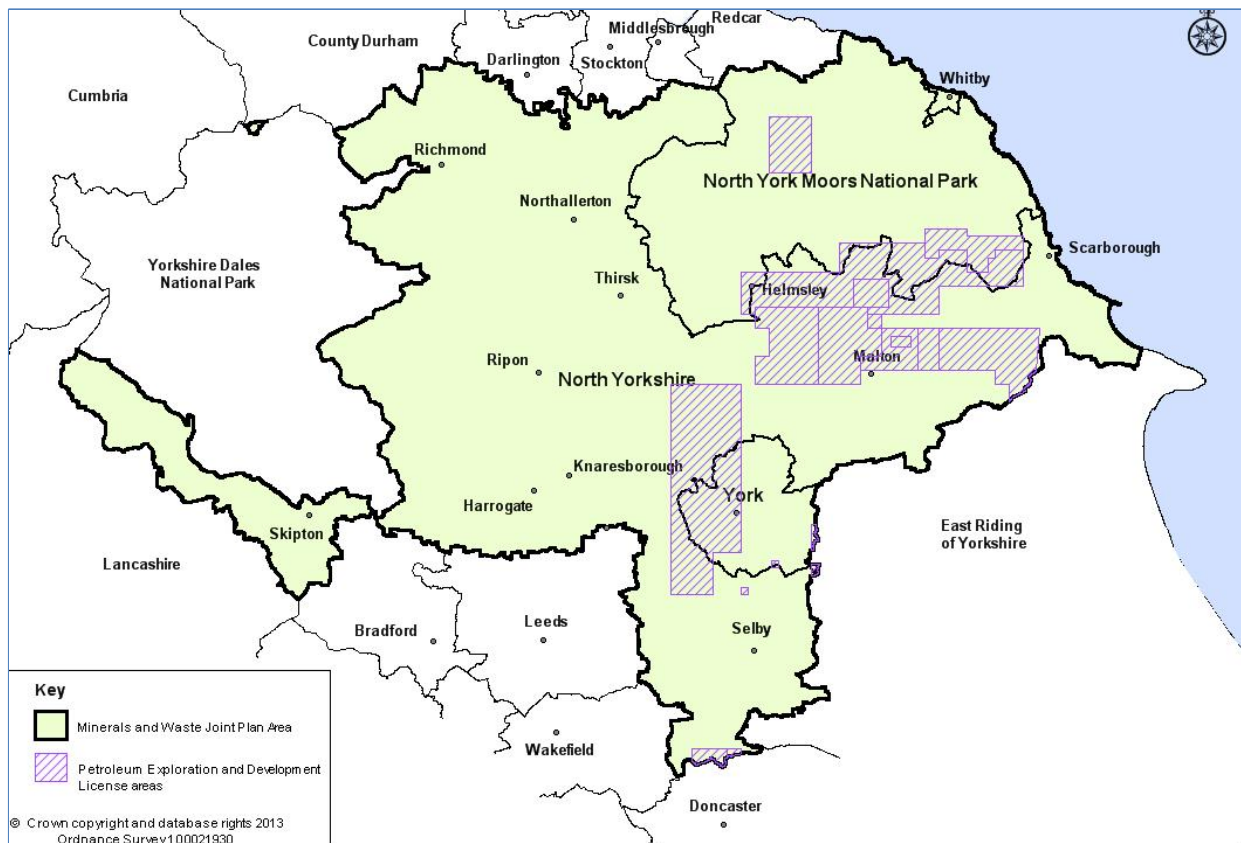


Figure 1: Petroleum Exploration and Development Licenses in the Joint Plan area

(DECC). Existing licences are mainly concentrated in Ryedale, Selby, Hambleton and the North York Moors as shown on the map above. It is expected that the Government will progress a further round of Petroleum Exploration and Development Licences during 2014.

Extraction of coal mine methane takes place in association with underground coal resources and existing former mine sites in the Selby District and areas around the City of York. Recent information produced by British Geological Survey on behalf of the Government has indicated the potential presence of large resources of shale gas within northern England, including within parts of the Plan area (see below). There is no known commercially viable oil resource within the Plan area.

### Key Policy Influences

The NPPF indicates that, when planning for oil and gas development, including unconventional hydrocarbons, mineral planning authorities' planning policies should distinguish between the three main phases of development (i.e. exploration, appraisal and production) and address constraints on production and processing within licensed areas.

Mineral Planning Authorities (MPAs) should encourage underground gas and carbon storage and associated infrastructure where local geological circumstances indicate its feasibility. When determining planning applications MPAs should ensure that the integrity and safety of underground storage facilities are appropriate, taking into account the maintenance of underground storage facilities, the maintenance of gas pressure, prevention of leakage of gas and the avoidance of pollution.

The overarching National Policy Statement for Energy (EN-1) (DECC,

2011)<sup>1</sup> advises that the UK needs to wean itself off the current reliance on fossil fuels, such as oil and gas, to reduce greenhouse gas emissions and to improve the security, availability and affordability of energy through diversification. However, EN-1 recognises that gas will continue to play an important role in the electricity sector - providing vital flexibility to support an increasing amount of low carbon generation and to maintain security of supply.

Government guidance on planning for onshore oil and gas, including shale gas, was published in July 2013<sup>2</sup>. This indicates that local plans should include Petroleum Licence Areas on their proposals maps and contain criteria-based policies for each of the exploration, appraisal and production phases of hydrocarbon extraction and that these policies should set clear guidance and criteria for the location and assessment of hydrocarbon extraction within licence areas. Local plans should identify existing hydrocarbon extraction sites and MPAs may include specific locations for development should the onshore oil and gas industry wish to promote specific sites. The Guidance also indicates that there is normally no need to create mineral safeguarding areas for hydrocarbons, given the depth of the resource, the ability to use directional drilling and the small surface area requirements of well sites.

### Key Data and discussion

There are currently two sites in the Selby area extracting coal mine methane from within active and abandoned mines (at Kellingley Colliery and the former

<sup>1</sup> The National Policy Statements are relevant in the consideration of nationally significant infrastructure projects

<sup>2</sup> Planning practice Guidance of Onshore Oil & Gas (DCLG, July 2013)

Stillingfleet Mine). The gas is used to generate electricity to either be used on site or fed into the National Grid.

Exploration for gas has been undertaken at a range of sites across the eastern part of the Plan area. Many of these have not been taken forward for extraction but there are several well sites in Ryedale where conventional onshore gas is being extracted. The gas extracted from these wells is being transported by pipeline to a generating station at Knapton near Malton, which uses the gas to produce electricity which is fed into the National Grid. Planning permission was granted in June 2012, for the development of a well site at Ebberston within the North York Moors National Park, a gas processing facility in Thornton-le-Dale (in NYCC) and pipe connection to the National Grid Transmission System. Planning permission has also recently been granted for production of gas from an existing well site at Ebberston which would supply gas to the existing generating station at Knapton via a new pipeline.

Between April 2012 and March 2013 6,038<sup>3</sup> tonnes of gas was produced from wells in the Plan area, around 16% of UK on-shore production. This is notably lower than 2008 when production was 19,000 tonnes, understood to be due to competition with coal for energy generation<sup>4</sup>.

It is likely that there will be continued interest in exploring for and potentially developing such resources and further DECC licensing rounds, including one scheduled for 2014, which may result in interest in areas not currently licensed. There is ongoing interest in coal bed methane as demonstrated by the drilling of

a recent coal bed methane exploration well in southern Hambleton District. This suggests there may be a need for a relatively flexible approach to consideration of any future proposals.

The impacts for oil and gas related development vary. Exploration and appraisal generally involves small scale temporary works whereas actual development of gas reserves raises different issues, associated with the need for surface infrastructure, with corresponding potential for longer term impacts on the environment and amenity. Recent Government guidance on onshore oil and gas indicates that the exploration and appraisal phases for unconventional hydrocarbons may take considerably longer than for conventional resources, as a result of the different processes involved. A range of regulatory bodies are involved in controlling the impacts of oil and gas exploration and development activity.

Although not a requirement of Government planning policy, co-ordination between operators and across licence areas can act in the best interests of the environment. Such an approach is likely to be of particular relevance in relation to consideration of any proposals for development of resources, for example in relation to processing facilities or associated power generation equipment, in order to help minimise unnecessary duplication of infrastructure. The merits of continuing such an approach will need to be considered as work on the Joint Plan progresses.

Carbon capture and storage (CCS) and underground coal gasification (UCG) are both emerging forms of development. CCS is a method which can be used for reducing carbon dioxide emissions into the atmosphere from sources such as fossil

<sup>3</sup> UK Production Data Release (DECC, 2012).

<sup>4</sup> Updated Energy and Emissions Projections (DECC, 2012)

fuel power stations and major steel or cement facilities. National Government considers CCS to be an important technology in mitigation of climate change. British Geological Survey has identified area with potentially suitable geologies, including areas in Ryedale and Scarborough. The full extent of the potential of these areas is not yet known. Proposals are currently being brought forward for a CCS scheme at Drax power station, which will be dealt with under the national infrastructure planning regime. This would involve collection of the CO<sub>2</sub> from the power station at a dedicated facility, transport of captured carbon by underground pipeline to a storage location under the North Sea. The likelihood of other proposals coming forward in the landward area during the plan period is not known but is considered unlikely and is not anticipated to involve above-ground infrastructure at the storage location.

UCG involves the drilling of unmined coal seams and injecting water/oxygen mixture down a pipe, igniting and partially combusting the coal and extracting gasification products through a different pipe. This results in the release of a mixture of gasses, including carbon dioxide, hydrogen and methane, which can be processed to provide fuel for uses such as power generation and vehicles.

There is no known interest in UCG development at present within the Joint Plan area.

A recent review of current geological information, produced by the British Geological Survey on behalf of DECC and published in June 2013, suggests that there is potential for substantial quantities of shale gas to occur within Carboniferous strata at depth below substantial parts of the eastern part of the Joint Plan area, including areas within NYCC, City of York

and the North York Moors National Park, much of which is already licensed for gas exploration and development. The report suggests that more detailed geological investigation and exploration would be required before the existence of any commercially viable resources could be demonstrated. To date there is no specific known interest in hydraulic fracturing for shale gas in the Plan area. As mentioned above, the UK Government has recently lifted a ban on the process and is putting measures in place to encourage further exploration.

### **Consultation Responses**

Previous consultation responses, carried out by NYCC, raise a number of issues in relation to impacts of gas related developments. A range of views were received in relation to the existing North Yorkshire Minerals Local Plan policy seeking coordination between developers. Some responses supported the approach and contrary views were received suggesting the approach is outdated. There was a view that sought gas extraction to be carried out in the least damaging way possible with appropriate conditions being imposed and robust policies being developed in the new plan. The consultation has also shown interest in underground coal gasification within the concealed coalfield to the east of Selby or to the north-east of York.

A number of responses to the First Consultation on the Joint Plan stated that shale gas extraction (fracking) should be addressed within the Plan and a number were strongly opposed to shale gas extraction, whilst others considered that further research is needed before developing any planning policies on the subject. Other respondents suggested that gas extraction in National Parks should be subject to strict policies. One respondent requested that a 10km fracking exclusion

zone be applied around the extent of the permitted potash workings at Boulby mine.

### Requirements

There are no quantified requirements for gas extraction (either conventional or non-conventional). However the NPPF requires planning authorities to have policies in place relating to gas exploration, appraisal and production and to address constraints on production and processing in licensed areas. The NPPF also requires planning authorities to encourage underground gas storage and the capture and use of methane from coal mines. The NPPF does not, however, make any reference to coal bed methane or underground coal gasification. There is nothing to suggest that interest in on-shore gas, coal mine and coal bed methane will be not continue throughout the Plan period, in addition to the interest in underground coal gasification mentioned above.

DECC projections show that demand for gas is likely to decline by around 6 million tonnes (equivalent) or 11% between 2010 and 2030 although demand for electricity (which would include electricity produced from gas) is predicted to increase by around 4 million tonnes (equivalent) or 14%. DECC projections show that gas supplied for electricity generation is predicted to remain roughly at 2012 levels until 2020 after which there will be increasing demand for the fuel. As demand for gas itself as a fuel is expected to fall, as mentioned above, it could be concluded that overall demand may be lower in the short term but increase in the longer term. This is consistent with DECC's assertion that 'Primary energy demand has fallen by over 14% since 2005 and is projected to fall further

through the next decade or so, before rising in the years leading up to 2030'<sup>5</sup>.

The Government guidance published in July 2013 makes it clear that planning authorities should not consider demand for or alternatives to oil and gas resources, based upon the Government's policy that energy should come from a variety of sources. It confirms that oil and gas underpin key aspects of modern society and remain an important part of the UKs energy mix whilst the country transitions to low carbon energy supplies. Due to the absence of specific guidance on levels of production, it is however unlikely to be possible to identify specific future requirements for gas. Consultation and discussion with operators will help enable an appropriate basis for future planning to be established.

Early indications from discussions with the gas industry indicate that re-assessment of reserve exploitation is currently taking place which may provide a clearer picture of future requirements.

### Summary of Key Points

The information in this topic paper is designed to provide an introduction to the key information relating to oil and gas within the Joint Plan area. Further detailed information is available in the current evidence base for the joint plan available on our website

[www.northyorks.gov.uk/mwevidence](http://www.northyorks.gov.uk/mwevidence).

The key information can be summarised as follows:

- Includes onshore gas, coal bed methane, coal mine methane and underground gasification and shale gas

<sup>5</sup> Updated Energy and Emissions Projections (DECC, 2012)

- Licenced areas currently exist in the Ryedale, southern Hambleton and Selby Districts
- Exploration for gas is currently focussed in Ryedale District (conventional onshore gas) and Selby District (coal mine methane), with some interest in coal bed methane in Hambleton District
- Unlike other minerals transport is via pipeline
- Extraction sites need both a licence and planning permission
- The impacts of the different stages of development vary and there needs to be a clear distinction between the three phases of oil and gas development (exploration, appraisal and production)
- Areas with potentially suitable geological characteristic for both conventional onshore gas have been identified within the Ryedale and Scarborough areas
- The potential for exploitation of gas by other means, such as Underground Coal Gasification, and the exploitation of shale gas, is less well understood at present and the potential for proposals for landward storage of captured carbon is considered low.

**Key Issues to be addressed**

The information in this topic paper provides a basis on which to help begin to identify some of the key issues that the strategy will need to address. As the preparation of the Joint Plan progresses this information will be used, together with new any new and additional information that may become available, to help the identification of suitable policy responses.

A summary of the key issues which have been identified from the information above is as follows:

Key Issues to be addressed:
<ul style="list-style-type: none"> <li>• Identifying a suitable approach to the potential development of new gas resources, including distinguishing between the three phases of development and consideration of the need for a co-ordinated approach to development of surface infrastructure and gas transport infrastructure such as pipelines.</li> <li>• In considering the above address constraints on production and processing within areas that are licensed for exploration and production</li> <li>• Identification of a suitable approach to potential UCG, coal bed methane and shale gas proposals which may come forward</li> </ul>



## Topic Paper – Coal

### What is Coal?

Coal is one of a number of energy minerals and is formed through the decomposition and lithification of plant material. Coal seams can vary significantly in terms of their lateral extent and thickness, as well as in terms of their calorific value and levels of impurities such as sulphur and ash, with high calorific value and low levels of impurities representing higher quality coals. Coal mined in North Yorkshire is used mainly for power generation, but a small amount is sold as house coal. Colliery spoil produced during mining, as well as ash by-products from coal and biomass burning, are important sources of secondary aggregate materials and both are produced in North Yorkshire. Further information about these are contained in a Topic Paper covering Secondary and Recycled Aggregates which is available on our website.

### Where does it occur?

The main resource of coal in the Plan area is deep coal, capable of being worked only by underground mining methods. The Plan area contains part of the concealed East Pennine Coalfield, comprising Lower and Middle Coal Measures strata. These rocks underlie the south and southeast of the County at depths between 50 metres and 1,200 metres below the surface, with depths generally increasing to the east and whilst resources extend into Ryedale District they are at very substantial depths. Small areas of shallow coal are indicated to exist along the western fringes of Selby District and in western Craven District, although there has been no commercial interest in these resources.

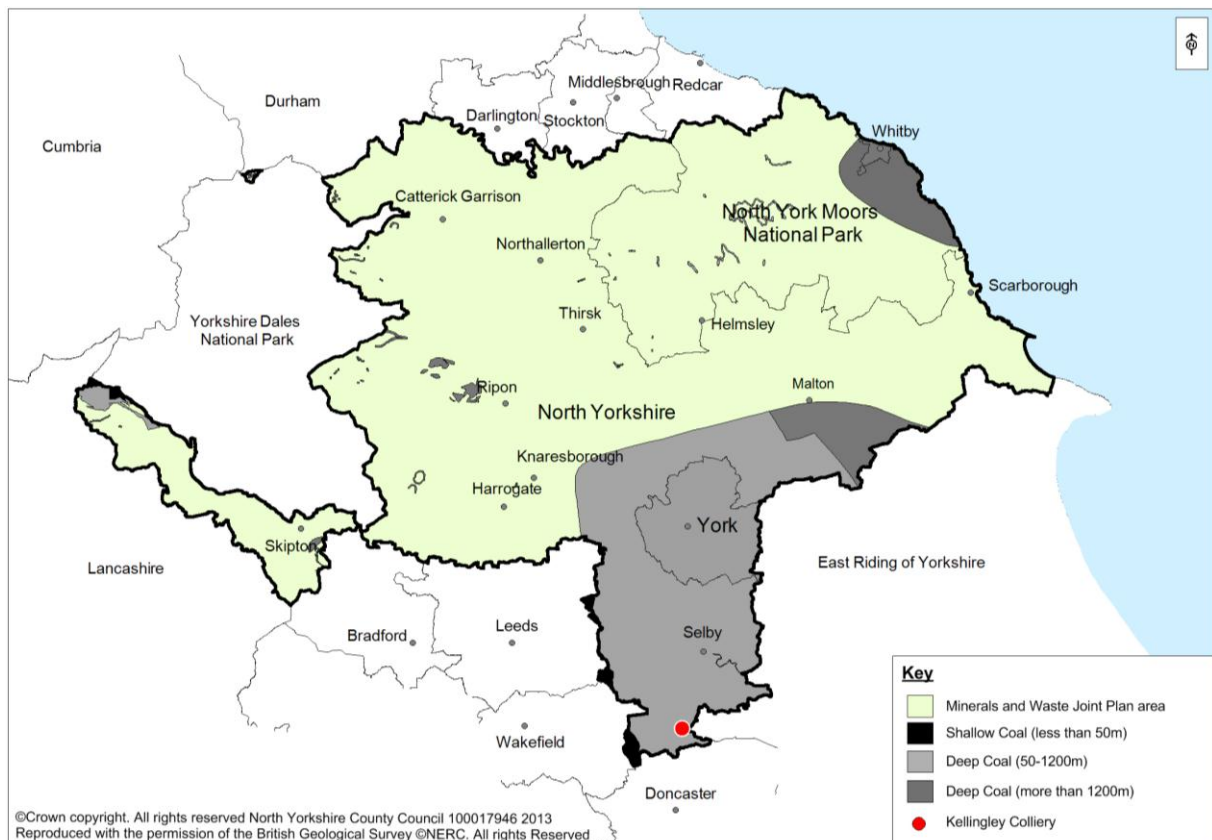


Figure 1: Map illustrating distribution of coal resources and location of active sites.

### Key Policy Influences

The National Planning Policy Framework (NPPF) states that MPAs should identify and include policies for extraction of mineral resources of local and national importance and indicate any areas where coal extraction and the disposal of colliery spoil may be acceptable. Permission should not be given for the extraction of coal unless the proposal is environmentally acceptable, or can be made so by planning conditions or obligations; or if not, it provides national, local or community benefits which clearly outweigh the likely impacts to justify the grant of planning permission.

The NPPF also requires that MPAs should, so far as practicable, take account of the contribution that substitute or secondary and recycled materials and waste would make to the supply of minerals, before considering extraction of primary minerals.

The NPPF states that the planning system should contribute to and enhance the natural and local environment by preventing new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by, unacceptable levels of land instability. The planning system should also contribute to and enhance the natural and local environment by remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land where appropriate.

To prevent unacceptable risks from land instability, planning policies and decisions should ensure that new development is appropriate for its location. Where a site is affected by land stability issues, responsibility for securing a safe development rests with the developer and/or landowner.

Planning policies and decisions should also ensure that the site is suitable for its new use taking account of ground conditions and land instability, including from natural hazards or former activities such as mining.

### Key Data and discussion

Until 2004 substantial tonnages of coal were worked within the Selby Coalfield in North Yorkshire. However, with the closure of the coalfield in 2004, current workings are confined to seams accessible from Kellingley Colliery. Typical output is in the vicinity of 1 to 2mt per annum and this one site is significant for several reasons; it is of a large scale, employs over 700 people, makes a significant contribution to the local economy and is a key supplier of fuel for local power stations, who are major producers of electricity on a national scale. A very large majority of the coal produced at Kellingley is sold to nearby power stations to which it is transported by rail from a rail head located at the colliery.

Whilst it is understood that there are substantial reserves remaining (approximately 54 million tonnes in 2010<sup>1</sup>), the mine operator has indicated that further resources to the north and north east may be accessible in the longer term subject to further permissions being granted. Development of these would be expected to require development of a new surface access site and this is currently considered unlikely. Technical and operational reasons, for example localised geological conditions, may also lead to a need for the operator to seek the development of additional reserves in the nearer term in the form of smaller

<sup>1</sup> UK Coal Annual Report 2010

extensions to the current working area at Kellingley Colliery.

A major by-product of deep coal mining is colliery spoil. Colliery spoil can be re-used as secondary aggregate subject to market conditions and other factors, and so be diverted from disposal, moving the management of colliery spoil up the waste hierarchy.

In 2010 there was nearly as much colliery spoil produced as there was coal, indicating that it is a land use matter which needs consideration. In 2010 over 10% of the colliery spoil produced was sold for use as secondary aggregate. The remaining 90% was either used for lagoon construction at the Gale Common ash disposal site or disposed of off-site at the nearby Womersley Quarry spoil disposal facility, which is also within the Plan area and where remaining capacity is now quite limited. Further capacity for spoil disposal may need to be identified during the Plan period.

Whilst there are small areas of shallow coal resources in the Plan area these are not considered to be of commercial interest.

The use of alternatives to primary aggregate, such as colliery spoil, is encouraged in national planning policy as representing a more sustainable option, firstly because it will reduce the need for primary minerals and secondly it will help divert colliery spoil from the waste stream. The Authorities will need to consider how such re-use can be supported, whilst also helping to ensure that suitable arrangements can be made to dispose of any remaining spoil which cannot be put to more beneficial use, for more information please refer to the topic paper covering secondary and recycled aggregates.

## Consultation Responses

Responses received in relation to the Minerals and Waste Joint Plan First Consultation identified that the Joint Plan should take account of mining legacy issues and including safeguarding of the coal resources. In addition individual representations suggested that there should be a presumption against exploitation of coal resources. Opposing views were also received which suggested that the domestic need for coal production should be considered. Representations also suggested that the Joint Plan should provide for Underground Coal Gasification within the onshore concealed coalfields such as the deposits in the East of Selby or the North East of York.

A wide range of views have been received in relation to coal matters during previous consultations, carried out by NYCC, including the need for the plan to consider the potential impacts of open cast mining as well as the impact of deep mining on the water table. It was also considered important for the plan to consider increasing use of renewable low carbon energy and the impact this may have upon demand for coal over the life of the plan.

A further area which has been highlighted in previous consultation work relating to coal mining is the legacy issue of disused mines in the Plan area. Across the whole of North Yorkshire there are approximately 13,500 recorded mine entries. These can give rise to land stability issues and other hazards. It is the responsibility of the Coal Authority to map and monitor old and disused mines and also highlight the public safety hazards and risk associated with them, but the Authorities, and the District and Borough Councils, must take them into consideration when dealing with planning applications and development proposals.

In discussion with the operator of Kellingley colliery it was identified that there is potential to work additional seams within the existing permission area subject to further investment and resolution of constraints. The operator is seeking the safeguarding of all coal resources in the Plan area for the future.

### Future Requirements

There are no government targets for the extraction of coal and no requirement to maintain a landbank. The National Planning Policy Framework requires planning authorities to indicate where coal mining would be acceptable. As Kellingley Colliery's reserves of 54mt in 2010 equate to 26 years worth of reserves at current output rates, there is unlikely to be a need in overall terms to identify additional coal resources for extraction over the Plan period, although the operator has indicated that there may be a need for future extensions to the working area to help maximise production and to facilitate ongoing working at Kellingley.

### Summary of Key Points

The information in this topic paper is designed to provide an introduction to the key information relating to coal within the Joint Plan Area. Further information can be found in the current evidence base for the joint plan which is available on our website

[www.northyorks.gov.uk/mwevidence](http://www.northyorks.gov.uk/mwevidence).

The key information can be summarised as follows;

- Only one active mine remains within the Plan area.
- Resources are located predominantly in the south east of the plan area
- A large quantity of reserves remain at Kellingley Colliery but longer term

potential for further development may need to be safeguarded

- A large amount of colliery spoil is produced, with some used as secondary aggregate but further disposal capacity is likely to be required during the plan period and encouragement given to support re-use of spoil.
- The legacy of disused mines needs to be taken into consideration
- There is no evidence of commercial interest in extraction of shallow coal in the plan area, although any resources would need to be safeguard for the future.

### Key Issues to be addressed

The information in this topic paper provides a basis on which to identify some of the key issues that the strategy will need to address. As the preparation of the Joint Plan progresses this information will be used, together with any new and additional information that may become available, to help the identification of suitable policy responses.

A summary of the key issues which have been identified from the information above and which may need addressing in the Joint plan area:

#### Key Issues to be addressed:

- Considering the need to maintain continuity of supply of coal from Kellingley Colliery
- Identifying a suitable approach to management of colliery spoil from Kellingley Colliery and supporting the use of spoil as secondary aggregate
- Addressing the need for safeguarding shallow and deep coal
- Minimising the environmental and amenity impact of any future coal extraction

- Addressing any coal mining legacy issues

## Topic Paper – Potash, Salt and Gypsum

### What are potash, salt and gypsum?

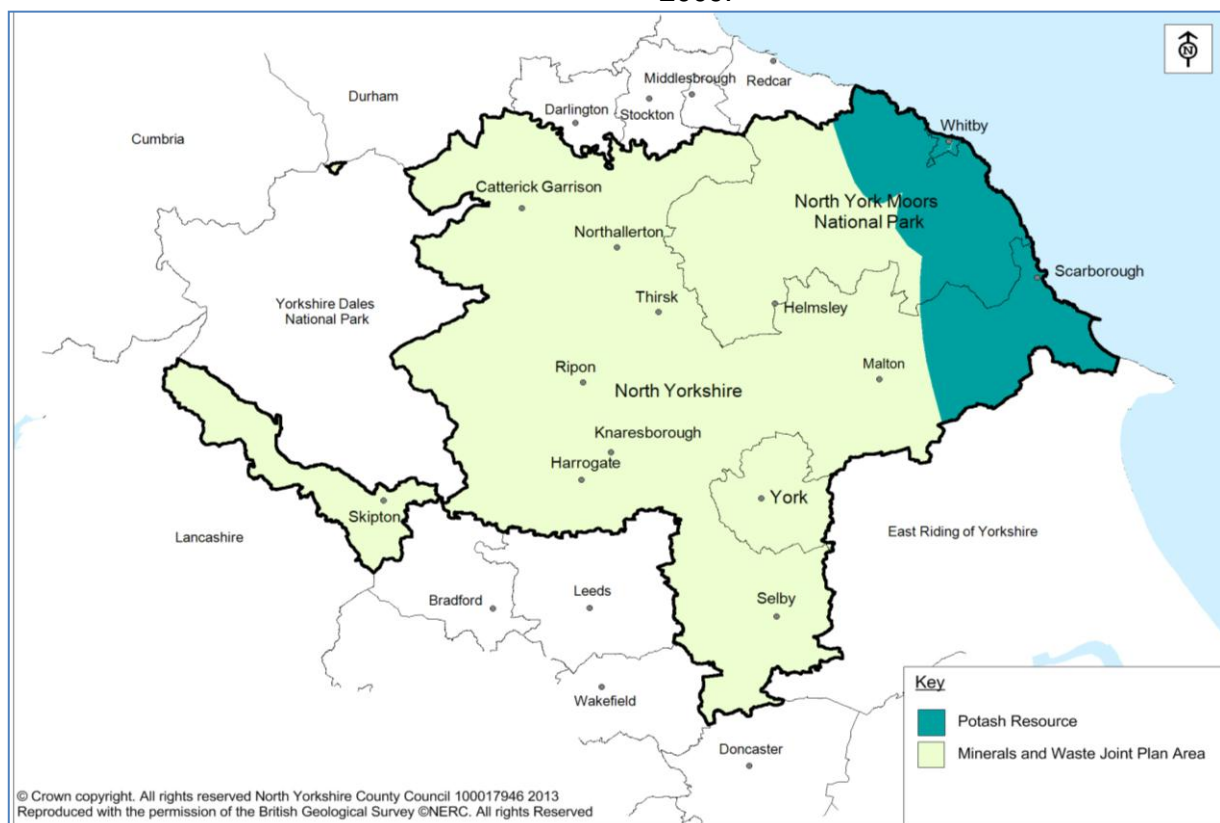
There are various forms of potassium-bearing minerals which can be mined for potash including sylvinite, polyhalite and carnalite. Potash is mainly used as a fertiliser. Rock salt may occur in association with potash and is commonly used for de-icing roads. Gypsum is the product of the evaporation of seawater and is used mainly in the manufacturing of plaster, plasterboard and cement.

### Where do they occur?

Both potash and salt (halite) occur at substantial depths below the eastern part of the Plan area. The UK's only potash mine is located within the Plan area at Boulby in the north-eastern part of the North York Moors National Park. The most extensive rock salt deposit in the Plan area is the Boulby Halite which occurs beneath the potash bed mined at Boulby.

A less extensive salt horizon, Sneaton Halite, occurs above the Boulby Halite.

The mine at Boulby has been producing potash (muriate of potash) since 1973. Here the primary ore mined is sylvinite which is processed to form muriate of potash, although rock salt and polyhalite are also extracted. Mining occurs at depths of 800-1350m below ground and operations currently extend to around 14km off-shore. The muriate of potash extracted from Boulby is processed on site and transported by rail to Teesside. Output of potash from the mine has totalled 24.6m tonnes to date (2011), with a peak in 2003 of 1.04m tonnes. Whilst the mine supplies between 60% and 70% of the UK's demand for muriate of potash, it is estimated by British Geological Survey that around 200,000 tonnes of potash (about a third of output) were exported in 2009.





The map above illustrates the distribution of potash across the Joint Plan area.

Gypsum occurs close to the surface and can be found in many parts of the Plan area.

### Key Policy Influences

The National Planning Policy Framework (NPPF) identifies potash, salt and gypsum as being mineral resources of local and national significance and states that plans should include policies for the extraction of such resources. As much of the potash and salt resource lies below the North York Moors National Park it is necessary to consider this in conjunction with policies in the NPPF relating to development in National Parks, particularly the considerations for the assessment of major developments. The NPPF states that the maintenance of landbanks of non-energy minerals should be provided for outside of National Parks and AONBs as far as is practical.

### Key Data and discussion

The North York Moors National Park contains the UK's only potash mine. Boulby Potash Mine's current planning permission extends until 2023. Output of potash was 770,000 tonnes in 2011 (estimate). The present combination of potash resources and reserves totals 70-80mt, and this has been reasonably constant over the past 12 years, although Cleveland Potash (the mine's operators) are aiming to increase production significantly over the next 2 to 3 years through proposed investment in new equipment and plant.

In addition to sylvinitite, more recently Boulby Mine have also begun to extract polyhalite, at a lower tonnage than potash and rock salt due to lower levels of demand for the product. Extraction is currently around 100kt per year.

Sixteen temporary potash exploration boreholes have been granted planning permission in the National Park around the Whitby area and a planning application for a second potash mine in the National Park was submitted to the National Park Authority in February 2013. This has now been withdrawn but a revised application is expected to be submitted during 2014.

Rock salt is mined in the National Park at Boulby, as a by-product of potash extraction. The rock salt is exposed via the roads which are carved through the salt to access the potash. Boulby is one of 3 mines producing rock salt in the UK. In 2009 Boulby produced around 700,000 tonnes of rock salt, around half of that used in the UK. The rock salt is transported by rail to Teesside from where it is either exported or transported to locations within the UK, with a small amount transported by road to local highways authorities.

As it is a by-product, extraction of reserves of rock salt at Boulby are dependent upon potash production. Demand for rock salt is dependent largely upon the weather, with longer periods of ice and snow increasing demand for the product and milder winters leading to a decrease in demand.

In the UK 1.7m tonnes of gypsum was extracted in 2011, and this has remained constant over recent years. No natural gypsum is currently extracted in the Plan area although between 0.75 and 1.5mt of synthetic gypsum is produced each year at Drax Power Station as a by-product of flue-gas desulphurisation and amounts are also produced at Eggborough Power Station, both in Selby District<sup>1</sup>. Gypsum is transported by rail from the power stations.

<sup>1</sup> [www.draxgroup.plc.co.uk](http://www.draxgroup.plc.co.uk)

Gypsum has formerly been mined in North Yorkshire at Sherburn gypsum mine, which is now closed and flooded. British Geological Survey suggest that as demand for houses and other buildings increases, so too will the demand for gypsum, although there is no evidence of any current interest in the further working of gypsum in the Plan area. There is no information on the thickness and quality of any gypsum beds present in the Joint Plan area.

### Consultation Responses

In the previous consultations carried out by North Yorkshire County Council respondents considered that, for potash and salt, consideration should be given to protection of the natural environment, landscape and heritage designations where these minerals lie, along with consideration of its scarcity and demand.

There were not many responses relating to potash received at the First Consultation on the Joint Plan. However there were suggestions that potash extraction should not take place in the National Park. A recommendation to safeguarding the potash resource with the inclusion of 5km buffer around existing permitted areas as well as applying restrictions on the types of development that can take place between 5km and 10km was also received in consultation responses.

No comments were received in relation to salt or gypsum.

### Requirements

There are no quantified requirements for potash, salt or gypsum. Potash, salt and gypsum are all identified as minerals of local and national importance in the NPPF. The NPPF requires planning authorities to include policies for extraction of mineral resources of local and national

importance but does not express a specific policy stance in support of their extraction or otherwise.

### Summary of Key Points

The information in this topic paper is designed to provide an introduction to the key information relating to potash within the Joint Plan area which has been identified from the technical evidence base papers for the Joint Plan. Further detailed information is available on our website [www.northyorks.gov.uk/mwevidence](http://www.northyorks.gov.uk/mwevidence).

The key information can be summarised as follows:

- The Plan area contains the UK's only potash mine and supplies around 60-70% of the UK's demand for potash.
- Much of the potash resource exists below the North York Moors National Park. Policy for major minerals extraction in National Parks reflects the weight given to protection of their landscape, wildlife and cultural heritage.
- There is commercial interest in further extraction of potash from the National Park.
- Potash working is important in the provision of salt as a by-product.
- There is no evidence of current interest in the extraction of gypsum, formerly worked in the plan area.
- The plan area is also an important supplier of synthetic gypsum, produced at Drax and Eggborough power stations.

### Key Issues to be addressed

The information in this topic paper provides a basis on which to help begin to identify some of the key issues that the strategy will need to address. As the preparation of the Joint Plan progresses this information will be used, together with

any new and additional information that may become available, to help the identification of suitable policy responses.

A summary of the key issues which have been identified above are as follows:

**Key Issues to be addressed:**

- Protecting the special qualities of the North York Moors National Park
- Addressing the aims for continued production at Boulby potash mine
- Addressing the interest in developing a further potash mine in the National Park
- Considering the need to safeguard potash and gypsum resources

## Topic Paper – Vein Minerals

### What are vein minerals?

Vein minerals include minerals such as fluorspar, lead and barytes.

### Where do they occur?

Fluorspar, barytes and lead mineralisation occur in association with other minerals within parts of Craven District, Richmondshire District and Harrogate Borough as part of the Northern Pennine orefield, where they have been worked in the past. There has been no extraction of vein minerals in the Plan area for several decades.

### Key Policy Influences

The National Planning Policy Framework (NPPF) requires local planning authorities to identify and include policies for extraction of mineral resources of local and national importance in their area, although, with the exception of fluorspar, vein minerals are not specifically mentioned.

### Key Data and discussion

Fluorspar occurs in Carboniferous limestone within the North Pennine ore field, as well as in the Southern Pennine ore field, within the Derbyshire area. Currently all fluorspar is worked within the Southern Pennine ore field. Historically there were many workings within the Yorkshire Dales National Park around Grassington and Upper Swaledale. However, workings within the Plan Area were concentrated around the vicinity of Greenhow Hill near Pateley Bridge in Harrogate Borough and Cononley in Craven District.

Historic working comprised a combination of both surface and underground mining. Working of vein minerals within the Plan area ceased prior to 1982. However,

planning permissions still remain in the vicinity of Greenhow Hill and Cononley but these would have to be subjected to a mineral review and a new set of planning conditions determined before working could take place, as the sites are currently classified as dormant. There is no evidence of any current commercial interest in reactivating workings, or the opening of new workings.

### Consultation Responses

Vein minerals have not been considered during previous consultations.

### Future Requirements

There are no quantitative requirements relating to future provision of vein minerals. However, fluorspar is identified as a mineral of local and national importance within the NPPF. There is currently no commercial interest in the extraction of vein minerals in the Plan area and no indication of the likely scale of any future requirements if any.

### Summary of Key Points

The information in this topic paper is designed to provide an introduction to the key information relating to vein minerals within the Joint Plan area.

- Vein Minerals area located within the Craven District, Richmondshire District and Harrogate Borough parts of the Plan area.
- There are no active sites working vein minerals within the Plan Area and no evidence of any current commercial interest.
- There are two dormant sites with permission for extraction of vein minerals which, in principle, could re-open subject to the determination of a new set of planning conditions.

**Key Issues to be addressed**

The information in this topic paper provides a basis on which to identify some of the key issues that the strategy will need to address. As the preparation of the Joint Plan progresses this information will be used, together with any new and additional information that may become available, to help the identification of suitable policy responses.

**Key Issues to be addressed:**

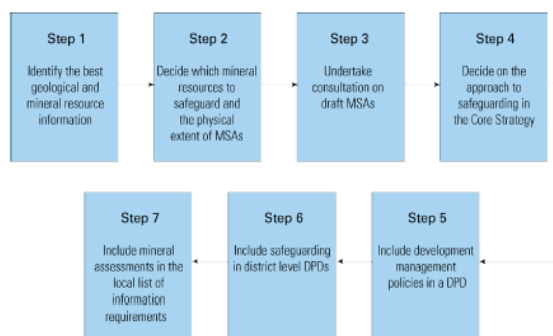
- It is considered that due to the lack of recent activity and lack of current commercial interest that vein minerals are not a priority to address within the Joint Plan
- Any new policy for vein minerals should be criteria based in the absence of further evidence on the potential for future working

## Topic Paper - Minerals Safeguarding

### What is Minerals Safeguarding?

Minerals safeguarding is a process which is used to help ensure that the future existence, availability and potential significance of minerals, minerals supply and transport infrastructure is taken into account in planning decisions. It ensures that other forms of development such as built development does not take place in locations which may prevent (or sterilise) access to important mineral resources, unless there are overriding reasons.

British Geological Survey (BGS) has produced guidance for minerals safeguarding<sup>1</sup> and a summary of the process is illustrated in the diagram below.



### Which mineral types will it cover?

The safeguarding process can be applied to any minerals resource, although it is particularly relevant to surface resources. British Geological Survey were commissioned by NYCC to carry out the first three stages of the safeguarding process, considering all of the mineral resources in the North Yorkshire County Council area. A safeguarding report<sup>2</sup> was produced and the report provided draft safeguarding maps for sand and gravel, limestone, sandstone, chalk, brick clay,

coal, potash and building stone. The report is available to view at [www.northyorks.gov.uk/mwevidence](http://www.northyorks.gov.uk/mwevidence).

City of York Council and the North York Moors National Park Authority also commissioned BGS to produce comparable safeguarding reports for those areas in order to allow an approach to safeguarding to be developed for the whole of the Joint Plan area and these are also available to view at [www.northyorks.gov.uk/mwevidence](http://www.northyorks.gov.uk/mwevidence).

### Key Policy Influences

The national policy context for safeguarding of minerals is set out in the National Planning Policy Framework (NPPF). The NPPF reinforces the Governments' objective that minerals should be conserved as far as possible and unnecessary sterilisation of mineral resources should be prevented by stating that mineral planning authorities should:

- Define Minerals Safeguarding Areas and adopt appropriate policies in order that known locations of specific minerals resources of local and national importance are not needlessly sterilised by non-mineral development, whilst not creating a presumption that resources defined will be worked; and define Minerals Consultation Areas based on these Minerals Safeguarding Areas.

### Safeguard:

- Existing planned and potential railheads, rail links to quarries, wharfage and associated storage, handling and processing facilities for the bulk transport by rail, sea or inland waterways of minerals; and

<sup>1</sup> BGS Mineral safeguarding in England: good practice advice. 2011

<sup>2</sup> Mineral Safeguarding Areas for North Yorkshire County Council 2011



- Existing planned and potential sites for concrete batching, the manufacture of coated materials, other concrete products and the handling, processing and distribution of substitute, recycled and secondary aggregate material.

### Key Data and Discussion

This topic paper will only discuss the safeguarding of mineral resources; minerals infrastructure and transport is discussed in a separate topic paper; 'Minerals Supply and Transport Infrastructure.'

The NPPF states that minerals planning authorities (MPAs) should develop minerals safeguarding areas (MSAs) and policies for specific minerals resources of local and national importance in their plan area.

By volume of production sand and gravel, crushed rock (limestone), coal and potash are the most significant minerals in the Plan area. Sand and gravel and crushed rock are surface minerals but coal can be both a deep and surface resource and potash exists in the plan area only as an underground resource. Both surface and underground resources need to be considered during the safeguarding process.

The non-aggregate minerals, including silica sand, clay and building stone which are worked in the plan area are extracted on a much smaller scale, either in terms of number of sites or volume of production, but also need to be considered for safeguarding

In 2011 BGS were commissioned to undertake an updated assessment of the distribution of sand and gravel resources in the North Yorkshire County Council area. The results of the assessment are

detailed in the '*North Yorkshire Sand and Gravel Assessment 2011*', which is available on the website at [www.northyorks.gov.uk/mwevidence](http://www.northyorks.gov.uk/mwevidence). The assessment provides a more accurate picture of where future extraction may be feasible. The revised resource areas for sand and gravel were carried forward into the safeguarding report.

BGS has carried out a similar sand and gravel assessment for the City of York area and this has fed into the minerals safeguarding report for the same area.

Another important report which provides evidence for the safeguarding of building stone is the Strategic Stone Study, carried out by English Heritage and BGS. The report helps identify important heritage building stone sources which should potentially be safeguarded.

The approach to safeguarding in the Joint Plan will need to consider the extent of the area(s) for each mineral which may need to be safeguarded, on a case by case basis.

Another consideration will be whether underground resources should be safeguarded. Generally the safeguarding process concentrates on surface minerals. In the Plan area the underground resources which are currently excavated are coal and potash. During consultation on the safeguarding report concerns were raised about the effects of subsidence and underground blasting on sensitive surface development in North Yorkshire. As a result of this BGS, in their reports, have recommended safeguarding all of the underground coal resource and potash resource. A decision will have to be taken on whether this approach to safeguarding should be carried forward, and if so to what extent.

Concerns have also been raised over the potential for conflicts between extraction of different underground minerals, including gas and potash. In their report for the North York Moors National Park BGS have recommended that the identification of buffer zones or separation distances would not be practicable due to the many variables and uncertainties associated with the extraction of underground resources but have instead recommended that developers of sub-surface minerals should demonstrate the likely impact on other underground resources.

Buffer zones around the safeguarded physical mineral resource are designed to prevent sterilisation of the resource by adjacent incompatible development. The size of the buffer tends to be based on the extraction methods used. If blasting is involved then the buffer may need to be larger to minimise the potential impact on surrounding development. In the BGS safeguarding reports the buffer recommended for limestone, which is often worked by blasting, is 500 meters, but for sand and gravel it is 250 meters. A decision will need to be taken on the approach to identification of any buffer zones and their size for each of the mineral resource types present.

In the NYCC area, liaison with District and Borough Councils in the Joint Plan area will be important as once the mineral safeguarding areas are finalised, it will be expected that the District and Borough Councils will incorporate relevant safeguarding areas into their constraints checklist when checking planning applications. This will help ensure that minerals resource considerations are taken into account in planning decisions made by other planning authorities in the area.

It is also important to consider cross-boundary issues in terms of safeguarding minerals. The distribution of mineral resources does not reflect planning boundaries. A report produced for the NYCC area identifies where there is an overlap of a mineral resource at the planning authority boundary. The approach taken by the relevant adjoining MPA to minerals safeguarding has been noted and the safeguarded resource has been mapped to illustrate where the overlap occurs. Information acquired during the study suggests that there is generally a good degree of consistency between the areas safeguarded or proposed for safeguarding near the boundary. The study provided an opportunity to identify any cross boundary issues of consistency and enable discussions to take place if required. The mineral resources this applies to are sand and gravel, crushed rock, gypsum and shallow coal. The maps relating to cross boundary safeguarding issues are available in '*Minerals and Waste Local Plan Evidence Base: Cross boundary minerals safeguarding*' at [www.northyorks.gov.uk/mwevidence](http://www.northyorks.gov.uk/mwevidence). The work suggests that, in terms of areas under consideration for safeguarding, there are no significant potential inconsistencies with the approach of neighbouring authorities.

### **Consultation responses**

A range of work relevant to minerals safeguarding has already taken place in the Plan area and remains relevant to the consideration of safeguarding issues in the Joint Plan.

Responses received from stakeholders have indicated that safeguarding of minerals and associated development is important. Stakeholders stated that the safeguarding process should follow national guidance.

The First Consultation stage of the Minerals and Waste Joint Plan generated several comments relating to minerals safeguarding. These included that the safeguarding process should follow the national BGS Good practice guidance on safeguarding (BGS 2011), coal and building and roofing stone resources should be safeguarded, Magnesian limestone should be safeguarded separately to other hard rocks and the Plan should have regard to the approach of neighbouring authorities in relation to safeguarding issues. In addition, concern was raised over the potential for conflicts to arise between the extraction of different underground minerals.

### Summary of Key Points

The purpose of this topic paper is to provide an introduction to the key information relating to the safeguarding of minerals within the Joint Plan Area.

The key points which have arisen from this topic paper are;

- There is a requirement to develop an appropriate approach to safeguarding for all relevant locally and nationally significant minerals in the Plan area, including consideration of deep mineral resources.
- National Guidance provided by BGS for minerals safeguarding, supplemented with more up to date local work where available, should form the basis for an approach and minerals safeguarding areas defined in line with the NPPF.
- The Plan should ensure that there are suitable liaison mechanisms with District and Borough councils in the NYCC area to provide a co-ordinated approach to safeguarding.
- Where there are overlapping resources between the plan area boundary and adjacent authorities coordination to

help ensure a consistent approach to safeguarding would be of benefit

### Key Issues to be addressed

The information in this topic paper provides a basis on which to help begin to identify some of the key issues that the strategy will need to address. As the preparation of the Joint Plan progresses this information will be used, together with any new and additional information that may become available, to help the identification of suitable policy responses.

Key Issues to be addressed:
<ul style="list-style-type: none"> <li>• Safeguarding should be considered for all minerals in the Joint Plan area, including underground mineral resources to help preserve the security of supply now and in the future.</li> <li>• The extent of the resource to be safeguarded and size of buffer zones for each mineral type will need to be decided so they can be included as part of each MSA.</li> <li>• The content of a supporting safeguarding policy will need to be decided to ensure an effective approach.</li> <li>• Liaison should take place with District and Borough Councils along with adjacent Mineral Planning Authorities to provide a co-ordinated approach to minerals safeguarding.</li> </ul>

## Topic Paper – Minerals Supply and Transport Infrastructure

### What is minerals supply and transport infrastructure?

Minerals infrastructure in terms of this topic paper is classified under two headings; minerals ancillary infrastructure and minerals transport infrastructure.

Minerals ancillary infrastructure mainly includes developments such as concreting plants, coating plants, aggregate bagging facilities and facilities processing and blending recycled aggregate materials. The ancillary infrastructure may be either located on active extraction sites or located at a 'freestanding' site (i.e. not within the boundary of an associated permission for mineral working), such as on an industrial estate.

The minerals ancillary infrastructure which is located on active mineral sites receives an element of protection under the terms of the associated permission for mineral

working and therefore may not need extra protection through a separate approach to safeguarding.

Minerals transport infrastructure includes railheads, rail sidings or wharves with the potential to transport minerals. Such infrastructure provides the potential to transport minerals in a more sustainable manner than road transport, which is the main means of mineral transport in the plan area (with the exception of coal, gas and potash.)

This topic paper will focus on freestanding minerals ancillary infrastructure and minerals transport infrastructure and how to protect it for the future. The map below shows current known locations of the main minerals ancillary infrastructure in the Plan area.

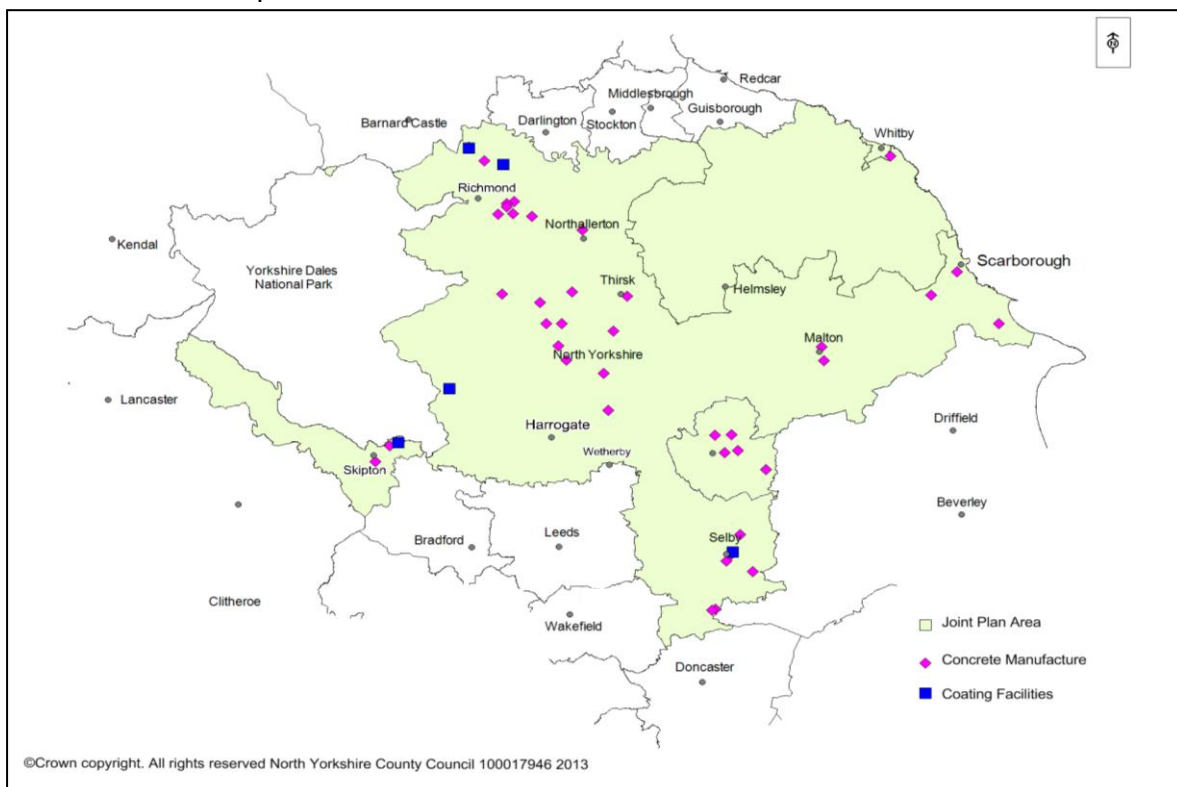


Figure 1: Map showing location of ancillary minerals infrastructure within the plan area.

**Where does it occur?**

Over half of the ancillary infrastructure is located on freestanding sites; these are more susceptible to encroachment or replacement by other forms of development than the ancillary

infrastructure located on active minerals sites.

The map below shows the location of the minerals transport infrastructure including rail heads, rail sidings and wharves.

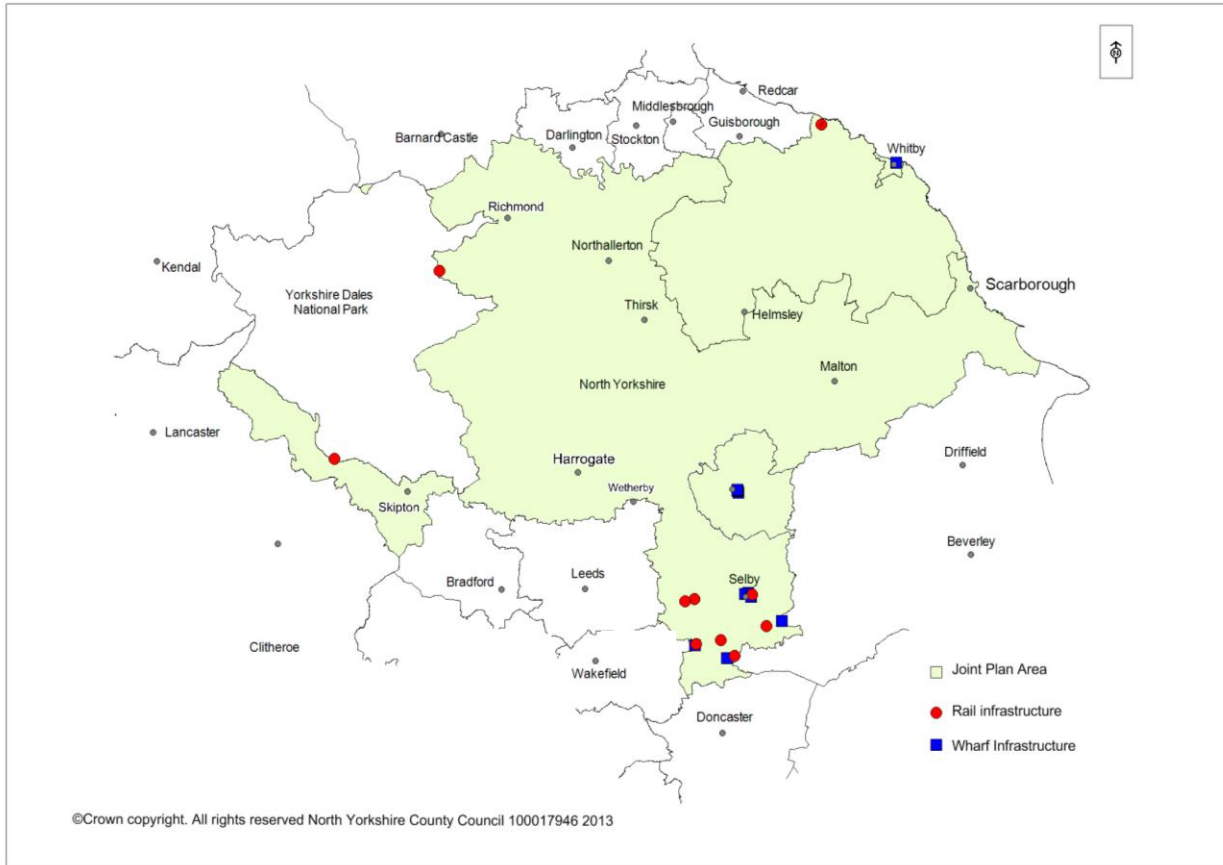


Figure 2: Map showing location of minerals transport infrastructure in the plan area

It can be seen from the map that the majority of the transport infrastructure is located in the south of the Plan area in Selby District.

**Key Policy Influences**

The main reference to minerals infrastructure and transport safeguarding in terms of current policy is in the National Planning Policy Framework (NPPF) *Chapter 13: Facilitating the sustainable use of minerals*. The NPPF reinforces the Government’s objective that minerals should be conserved as far as possible and unnecessary sterilisation of mineral

resources should be prevented, by stating that mineral planning authorities should:

**Safeguard:**

- Existing planned and potential railheads, rail links to quarries, wharfage and associate storage, handling and processing facilities for the bulk transport by rail, sea or inland waterways of minerals; and
- Existing planned and potential sites for concrete batching, the manufacture of coated materials, other concrete products and the handling, processing and distribution of substitute, recycled and secondary aggregate material.



## Key Data and Discussion

The minerals ancillary infrastructure and minerals transport infrastructure contributes to the overall capability of the Joint Plan area to produce and deliver aggregate in the forms needed to serve the market. It therefore plays an essential role in maintaining the supply of aggregate.

Mineral ancillary infrastructure which is located on active mineral sites is likely to be protected under the terms of the associated permission for the mineral working on the site.

The freestanding ancillary infrastructure and minerals transport infrastructure currently has no protection against encroachment or replacement by other types of development. The NPPF encourages the safeguarding of minerals ancillary infrastructure and minerals transport infrastructure. In response to this evidence has been gathered on the location of these facilities within the Plan area. The information is available in *'Minerals and Waste Joint Plan Evidence Base: Safeguarding of Minerals Infrastructure'*, which is available on [www.northyorks.gov.uk/mwevidence](http://www.northyorks.gov.uk/mwevidence).

In terms of ancillary facilities, approximately half of the concrete facilities are freestanding and so not associated with active mineral sites. The majority of coating plants are located on active mineral sites with only two being freestanding in different areas of the Plan area. All of the block making sites are freestanding and distributed throughout the Plan area. The freestanding facilities are quite widely distributed throughout the Plan area and the majority are located on industrial estates.

The majority of rail and water infrastructure is located in Selby District.

The rail infrastructure includes rail heads and sidings. Some of the rail infrastructure is currently used to transport minerals, such as coal at Kellingley Colliery and Drax and Eggborough power stations, sand and gravel at the Potter Group storage depot in Selby and potash at Boulby Mine in the North York Moors. The wharves are also concentrated in Selby District but currently none are being used for the movement of minerals.

More detailed information about the individual ancillary infrastructure locations and minerals transport locations is available in *'Minerals and Waste Joint Plan Evidence Paper: Safeguarding of Minerals Infrastructure'* and the *'North Yorkshire Sub-region Local Aggregate Assessment'* both of which can be viewed at [www.northyorks.gov.uk/mwevidence](http://www.northyorks.gov.uk/mwevidence).

Safeguarding policies will be developed through the preparation of the Minerals and Waste Joint Plan.

## Consultation responses

A range of work relevant to minerals safeguarding has already taken place in the NYCC area.

From the responses received stakeholders have indicated the safeguarding of minerals and associated development is important. Stakeholders state that the safeguarding process should follow national guidance.

The Minerals and Waste Joint Plan First Consultation resulted in one comment being submitted in relation to minerals transport infrastructure; this was that minerals should be transported by pipeline or canal where possible.



### Summary of Key Points

The information in this topic paper is designed to provide an introduction to the key information relating to freestanding minerals infrastructure in the Joint Plan area. Below are the key points relating to minerals freestanding infrastructure:

- Ancillary minerals infrastructure and minerals transport infrastructure support the delivery of minerals to locations of demand and in the most appropriate form.
- The NPPF states that minerals infrastructure and rail and water transport infrastructure should be safeguarded.
- Ancillary minerals infrastructure present on active minerals sites is already protected by the terms of the associated minerals permission.
- Over half of the ancillary minerals infrastructure facilities are freestanding and are more vulnerable to pressures from other forms of development.
- Safeguarding of freestanding ancillary infrastructure and transport facilities will help prevent encroachment and replacement by other types of development and so help ensure that aggregates supply is maintained.
- There may also be a need to provide policy support for the development of new minerals infrastructure.

### Key Issues to be addressed

The information in this topic paper provides a basis on which to identify some of the key issues that the Plan will need to address. As the preparation of the Joint Plan progresses this information will be used, together with any new and additional information that may become available, to help the identification of suitable policy responses.

A summary of the key issues which have been identified above are as follows:

#### Key Issues to be Addressed:

- Safeguarding of existing freestanding minerals ancillary infrastructure should be considered.
- Safeguarding of potential minerals transport infrastructure including rail and water facilities should be considered.
- Development of policy support for future freestanding minerals infrastructure should be considered.

## Contact us

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