

HAMPSHIRE COUNTY COUNCIL, NEW FOREST NATIONAL PARK AUTHORITY, PORTSMOUTH CITY COUNCIL, SOUTH DOWNS NATIONAL PARK AUTHORITY & SOUTHAMPTON CITY COUNCIL

Hampshire Minerals & Waste Plan: Partial Update

Minerals Background Study

August 2022



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Executive summary

Introduction

An update to the Hampshire Minerals and Waste Plan (adopted in 2013) is being prepared by the five Minerals and Waste Planning Authorities which cover the geographical area of Hampshire and include Hampshire County Council, New Forest National Park Authority, Portsmouth City Council, South Downs National Park Authority and Southampton City Council.

This Minerals Background Study will seek to establish what provision of minerals is required, where these may be located, when they are to be provided and how they will be delivered during the Plan period to 2040.

Minerals Issues

Hampshire's principal geological deposits, in economic terms, are sharp sand and gravel with additional soft sand deposits. There are deposits of clay as well as oil and gas. The plan area contains no 'hard' rock deposits. Other minerals such as chalk have a limited role.

Hampshire is well connected by road, rail and sea all of which contribute to the movement of minerals within the Plan area.

Recycled and secondary aggregate

The total capacity for recycled and secondary aggregate processing in Hampshire is estimated to be 2.4Mt based on 2021 sales return data¹.

There has been a reduction in sales of recycled and secondary aggregate since 2014, where sales peaked at 1.1Mt.

Crushed Rock

Due to the geology of Hampshire, crushed rock is imported by rail predominantly from Somerset, who have confirmed that they cannot foresee any issues with ongoing supply.

Supply is imported to rail depots running between Eastleigh and Fareham. On occasion, a small percentage has been imported into Hampshire's wharves.

Marine-won sand and gravel

Marine-won imports are received at five wharves within Hampshire. There is a potential for a lack of capacity to pose difficulty in meeting an increase in

¹ HMWP Local Aggregate Assessment (2021) - <https://hants.sharepoint.com/sites/ETEE8681/Shared Documents/Forms/AllItems.aspx?id=%2Fsites%2FETEE8681%2FShared Documents%2FHMWP LAA 2021%2Epdf&parent=%2Fsites%2FETEE8681%2FShared Documents&p=true&ga=1>

demand at the current time, as reported headroom capacity is marginal. However, evidence is limited and will continue to be monitored.

Land-won aggregate

Hampshire's geology gives rise to sharp sand and gravel, soft sand and silica sand. Aggregates are sourced from land-won resources, recycled aggregate and imports by rail.

There were twelve permitted quarries in 2021, with the site at Roeshot not yet extracting making only eleven of these quarries active.

Soft sand resources are scarce and concentrated in a small number of areas. In comparison sharp sand and gravel resources are much more prolific and spread out within Hampshire.

Landbank

Reserves of sand and gravel in Hampshire with planning permission for extraction (permitted reserves) at 31st December 2020 were 8.183Mt².

The Local Aggregate Assessment (LAA) 2021 determined the LAA Rate as 0.92Mt. Based on the 2020 LAA rate the landbank for sand and gravel is 7.12 years.

In order to determine the supply rate required in the future, a range of economic forecasts were made taking into account past sales data and future demand from development plans.

The provision rates were derived from the forecasting undertaken and were set at:

- 0.92Mt for sand and gravel
- 0.23Mt for soft sand
- 2Mt Marine sand and gravel
- 1Mt Crushed Rock

Future provision of aggregates

The proposed Plan period is up to 2040. If the LAA rate is projected forward over 19 years to 2040 a total of 21.85Mt of sand and gravel would be required over the course of the Plan period (1.15Mt per annum). Current permitted reserves for Hampshire are 12.183Mt. This means that there is a total requirement of 9.67Mt of sand and gravel.

² HMWP Local Aggregate Assessment (2021) - <https://hants.sharepoint.com/sites/ETEE8681/Shared Documents/Forms/AllItems.aspx?id=%2Fsites%2FETEE8681%2FShared Documents%2FHMWP LAA 2021%2Epdf&parent=%2Fsites%2FETEE8681%2FShared Documents&p=true&ga=1>

This requirement can be broken down into sharp sand and gravel requirement (17.48Mt over the plan period, 0.92Mt per annum). With the permitted reserves of sharp sand and gravel at 11.016Mt, there is a requirement for **6.46Mt** over the plan period.

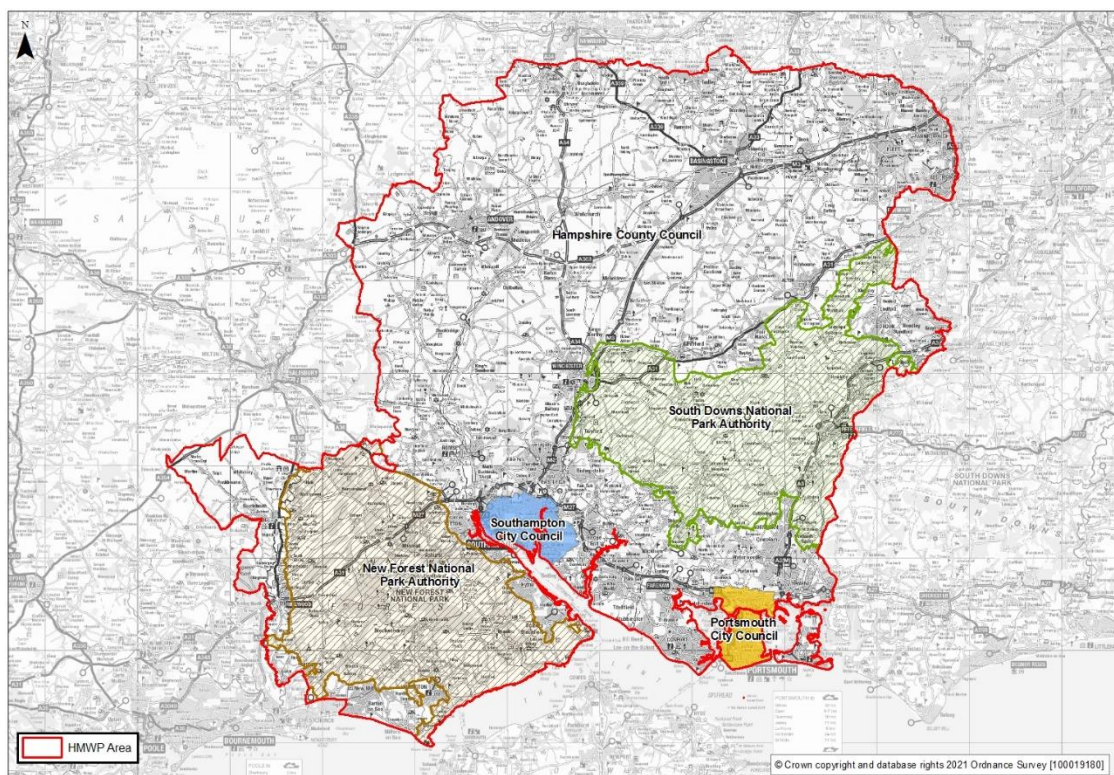
Projecting the LAA rate to 2040 for soft sand indicates a requirement for **4.37Mt** (0.23Mt per annum).

A number of allocations remain undeveloped from Policy 20 of the adopted Hampshire Minerals and Waste Plan. Should the remaining allocations be permitted, this would increase the reserves by a further 2Mt. Should all allocations be permitted (based on the application yields provided) there would be a shortfall of **2.17Mt** in total provision.

1. Introduction

- 1.1 The Hampshire Minerals and Waste Plan (HMWP) covers the administrative areas of Hampshire County Council, New Forest National Park Authority, Portsmouth City Council, Southampton City Council and South Downs National Park Authority (collectively referred to as the 'Hampshire Authorities').
- 1.2 The HMWP is subject to a Partial Update. This will improve, update and strengthen the vision, plan objectives, policies and provide details of strategic sites that will deliver the objectives of the Plan.

Figure 1: Hampshire Minerals & Waste Plan and Hampshire Authorities administrative area



- 1.3 The Hampshire Authorities are required to provide a plan to ensure an adequate and steady supply of minerals. An important aspect of this role is to balance the need for minerals, such as sand and gravel, against environmental constraints and ensure the minimum impact on the Hampshire environment. Potential impacts on local communities also need to be balanced. Engagement with communities, as well as the minerals industry, is a major part of ensuring realistic delivery of minerals through the Plan.
- 1.4 The Plan will indicate what provision of minerals is required, where these may be located, when they are to be provided and how they will be delivered during the proposed new Plan period to 2040.

Study preparation

- 1.5 The information, data and analysis contained within this Study is required to inform the preparation of the Hampshire Minerals and Waste Plan: Partial Update. Therefore, this Study attempts to answer the following key questions:
- Why does Hampshire need to plan for minerals?
 - What mineral resources are in Hampshire?
 - What are the current reserves of minerals in Hampshire?
 - What mineral supply infrastructure is available to facilitate supply e.g. wharves, rail depots, access to neighbouring facilities, recycled aggregate capacity?
 - What are the main constraints and opportunities associated with minerals development in Hampshire?
 - How much additional mineral resource and infrastructure may be required to meet the needs of Hampshire?

Study structure

- 1.6 Following this Introduction (1), this Study is structured as follows:
2. *Policy context* – provides some contextual information about the national, regional, and local policies which influence planning for minerals in Hampshire.
 3. *Minerals development*– sets out what the main constraints and issues are associated within minerals development; what minerals development is important; and what opportunities and benefits can be associated with minerals development.
 4. *Mineral issues in Hampshire* – sets out the issues affecting minerals development in Hampshire.
 5. *Planning for minerals development* – sets out the key issues and information on the following areas:
 - Recycled and secondary aggregate
 - Crushed rock
 - Marine-won sand and gravel
 - Land-won sand and gravel
 - Clay
 - Chalk
 - Oil and gas

Mineral data

- 1.7 The information and data from this Study has been predominately derived from the following sources:
- British Geological Survey (BGS);

- Aggregate Monitoring (AM) survey returns;
- Hampshire Authorities – Local Aggregate Assessments (2014-2020);
- South East Aggregates Monitoring Report 2014 & 2015, 2016, 2017, 2018, 2019 and 2020 (South East England Aggregate Working Party);
- Collation of the results of the 2019 Aggregate Minerals survey for England and Wales (BGS and DCLG, 2021);
- Collation of the results of the 2014 Aggregate Minerals Survey for England and Wales (BGS and DCLG, 2016); and
- Collation of the results of the 2009 Aggregate Minerals Survey for England and Wales (BGS and CLG, 2011).

2. Policy context

2.1 This section of the Study provides information on national, regional, and local policy relevant to planning for minerals in Hampshire.

National policy

2.2 National planning policy for minerals is contained in the National Planning Policy Framework³ (NPPF) which was published in March 2012 and subsequently updated and revised in 2018, 2019 and 2021. The NPPF seeks to ensure that there is an adequate and steady supply of aggregate to provide the infrastructure, buildings and goods that society, industry and the economy needs, but that this provision is made in accordance with the principles of sustainable development. The NPPF recognises that minerals are essential to support sustainable economic growth and our quality of life, and that it is important that there is a sufficient supply of material to provide the infrastructure, buildings, energy and goods that the country needs. It also acknowledges that minerals are finite natural resources, and can only be worked where they are found, so it is important to make best use of them to secure their long-term conservation.

2.3 The NPPF states that in preparing local plan policies minerals planning authorities should⁴:

- provide for the extraction of mineral resources of local and national importance;
- 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 materials;
- aim to source minerals supplies indigenously;
- define Minerals Safeguarding Areas and Mineral Consultation Areas;
- encourage the prior extraction of minerals, where practicable and environmentally feasible; and
- safeguard existing, planned and potential sites for: the bulk transport, handling and processing of minerals; the manufacture of concrete and concrete products and the handling, processing and distribution of substitute, recycled and secondary aggregate material;
- set out criteria against which planning applications will be assessed to ensure operations do not have adverse impact on the natural and historic

³ National Planning Policy Framework (Section 17):
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

⁴ National Planning Policy Framework (Para. 210)

environment or human health, whilst also taking into account cumulative impacts; and

- outline policies to ensure worked land is reclaimed at the earliest opportunity.

2.4 In addition, when planning for a steady and adequate supply of aggregates, the NPPF states that minerals planning authorities should⁵:

- prepare an annual Local Aggregate Assessment based on a rolling average of 10 years sales data, other relevant local information and an assessment of all supply options;
- participate in the operation of an Aggregate Working Party;
- make provision for the land-won and other elements of their Local Aggregate Assessment, taking account of the advice of the Aggregate Working Parties and the National Aggregate Coordinating Group as appropriate;
- take into account any published National and Sub National Guidelines on future provision which should be used as a guideline when planning for the future demand for and supply of aggregates;
- use landbanks of aggregate minerals reserves principally as an indicator of the security of aggregate minerals supply, and to indicate the additional provision that needs to be made for new aggregate extraction and alternative supplies in mineral plans;
- make provision for the maintenance of landbanks of at least seven years for sand and gravel and at least 10 years for crushed rock, whilst ensuring that the capacity of operations to supply a wide range of materials is not compromised;
- ensure that large landbanks bound up in very few sites do not stifle competition; and
- calculate and maintain separate landbanks for any aggregate materials of a specific type or quality which have a distinct and separate market.

2.5 In relation to industrial minerals, the NPPF states that minerals planning authorities should⁶:

- co-operate with neighbouring and more distant authorities to co-ordinate the planning of industrial minerals to ensure adequate provision is made to support their likely use in industrial and manufacturing processes;
- encourage safeguarding or stockpiling so that important minerals remain available for use;

⁵ National Planning Policy Framework (Para. 213):

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

⁶ National Planning Policy Framework (Para. 214)

- provide 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, as follows:
 - at least 10 years for individual silica sand sites;
 - at least 25 years for brick clay, and 15 years for cement primary and secondary materials to support a new kiln; and
- take into account the need for provision of brick clay from a number of different sources to enable appropriate blends to be made.

2.6 For oil and gas development, the NPPF states that mineral planning authorities should⁷:

- when planning for on-shore oil and gas development, including unconventional hydrocarbons, clearly distinguish between the three phases of development (exploration, appraisal and production) and address constraints on production and processing within areas that are licensed for oil and gas exploration or production; and
- encourage underground gas and carbon storage and associated infrastructure if local geological circumstances indicate its feasibility.

2.7 The Planning Practice Guidance⁸ (PPG) which sits alongside the NPPF was launched in 2014 and is a live document, updated as necessary by the Government.

2.8 The PPG⁹ outlines how aggregate supply is managed nationally through the Managed Aggregate Supply System (MASS):

‘The Managed Aggregate Supply System seeks to ensure a steady and adequate supply of aggregate mineral, to handle the significant geographical imbalances in the occurrence of suitable natural aggregate resources, and the areas where they are most needed. It requires mineral planning authorities which have adequate resources of aggregates to make an appropriate contribution to national as well as local supply, while making due allowance for the need to control any environmental damage to an acceptable level. It also ensures that areas with smaller amounts of aggregate make some contribution towards meeting local and national need, where that can be done sustainably.

⁷ National Planning Policy Framework (Para. 215):
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

⁸ Planning Practice Guidance: <https://www.gov.uk/government/collections/planning-practice-guidance>

⁹ Planning Practice Guidance (Paragraph: 060 Reference ID: 27-060-20140306):
<https://www.gov.uk/guidance/minerals#planning-for-aggregate-minerals>

The Managed Aggregate Supply System works through national, sub-national and local partners working together to deliver a steady and adequate supply of aggregates’.

- 2.9 The landbank is a key tool which underpins the working of the Managed Aggregate Supply System and acts a monitoring tool and provides the main basis for mineral planning authority to determine whether to review their minerals local plan.

Regional policy

- 2.10 When the Hampshire Minerals and Waste Plan (2013) was prepared, examined and adopted, the South East Plan was still the regional policy for the plan area. Whilst it was acknowledged that there were plans to abolish regional planning through the Localism Bill, a number of policies were re-examined through the development of the plan. This included minerals apportionment for sand and gravel. The South East Plan was partially revoked on 25 March 2013 and so regional policy no longer applies.

Local policy

- 2.11 The currently adopted minerals plan for the Hampshire Authorities, is the Minerals and Waste Plan (HMWP) adopted in 2013¹⁰. The Minerals Local Plan covers the administrative areas covered by the Hampshire Authorities.
- 2.12 The NPPF requires that Local Plans should be reviewed to assess whether they require updating at least once every five years¹¹.
- 2.13 A Review of the adopted HMWP (2013) took place in 2018 (5 years following adoption) and concluded that the policies were working effectively to achieve the Vision and there is no requirement to update the HMWP.
- 2.14 A review of the adopted HMWP (2013) in 2020 recommended updating the HMWP to reflect national policy changes, the Hampshire 2050 Vision for the Future, and to ensure that the Plan is delivering a steady and adequate supply of minerals and enabling sustainable waste management provision. It was subsequently decided by all partners that the HMWP would be subject to a partial update.

¹⁰ Hampshire Minerals and Waste Plan (2013):
<https://documents.hants.gov.uk/mineralsandwaste/HampshireMineralsWastePlanADOPTED.pdf>

¹¹ National Planning Policy Framework (Para. 33):
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

3. Mineral development

- 3.1 This section considers the background to mineral development such as quarries and the role they have in development. It also outlines:
- General issues and constraints on minerals planning that need to be taken into account in the assessment of options for mineral supply; and
 - Opportunities and benefits which may be associated with mineral development.

The strategic and economic importance of minerals development

- 3.2 Minerals are an important element both in the national economy and that of the Plan area. Their exploitation can make a significant contribution to economic prosperity and quality of life. The maintenance of a buoyant economy, the improvement and development of infrastructure and maintenance of the building stock all requires an adequate supply of construction minerals known as aggregates.
- 3.3 Mineral development is a key part of the wider economy. The location and type of minerals development can lead to local economic benefits, through the supply of a local resource to development projects and the provision of local employment.
- 3.4 Mineral production is influenced by economic factors, in terms of operators wishing to extract based upon the market demand for these mineral resources. The demand for mineral resources will be determined by the action of the market and macro-economic forces that are beyond the remit of the minerals planning authority to influence.
- 3.5 The performance of the economy is constantly changing, and the activities of the minerals industry could give rise to temporary and reversible effects. For example, shortages of local supply could have implications for the timing and cost of physical development but would be unlikely to prevent it from going ahead altogether.

Ensuring resource efficiency and sustainable development

- 3.6 Sustainable minerals development is essential to minimise potential adverse impacts on the environment and local communities. Therefore, the design, construction and operation of minerals development are very important considerations. For example, the use of conveyors to transport mineral from the extraction site to a processing plant instead of vehicles would reduce the number of vehicle movements and the associated noise and dust impacts.

Supporting employment

- 3.7 The minerals industry provides direct employment and influences indirectly employment in several other industries, such as the construction and manufacturing sector. However, employment can be temporary and reversible. For example, opportunities for direct employment would exist for the lifetime of a mineral site but the labour force could grow or contract in line with demand for minerals.
- 3.8 The minerals industry underpins the wider economy and its employment with construction markets such as improving housing stock, transport, commercial and industrial buildings, schools, and hospitals. As well as non-construction markets such as iron and steel manufacture, glassmaking, agriculture, and pharmaceuticals¹².

Opportunities and benefits from minerals development

Co-location of minerals developments

- 3.9 Mineral development may also provide the opportunity for the co-location of other minerals activities. For example, mineral extraction sites can be used for other uses such as aggregate recycling. However, this can only take place in appropriate locations that comply with the relevant development management policies and criteria set within the Plan.

Restoration and aftercare of mineral workings

- 3.10 The effective restoration, as well as the long-term aftercare, of minerals and waste development is an integral part of all mineral extraction. Although the extraction of minerals and landfilling/infilling are only considered to be temporary, albeit potentially long-term land uses, it is critical that the restoration and aftercare of these sites is carefully planned and maintained, to ensure that maximum benefits are achieved for local communities and the environment. This approach is reinforced in the NPPF¹³ which states that local planning authorities should provide for restoration to be carried out to a high environmental standard through appropriate conditions to planning applications.
- 3.11 Mineral development can be restored to meet wider planning objectives. Restoration and aftercare of a mineral site is an essential element of any

¹² Profile of the UK Mineral Products Industry – 2020 Edition (MPA, 2021):
https://www.mineralproducts.org/MPA/media/root/Publications/2021/Profile_of_the_UK_Mineral_Products_Industry_2021.pdf

¹³ National Planning Policy Framework (Para. 211(e)):
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

planning application and associated permission for development. It can include the following elements:

- improving public access to the countryside and open spaces;
- creating and enhancing habitats and species;
- enhancement of landscape;
- improving accessibility to the historic environment;
- adapting and mitigating to climate change;
- management of water resources;
- improvements to agricultural and forestry land;
- sustainable tourism facilities;
- environmental education; or
- energy security.

3.11 There may be opportunities for the multiple uses of restored sites and cross-cutting benefits. For example, this may include restoration for biodiversity enhancement alongside public and recreational access.

3.12 Restoration of minerals and waste developments will be considered in more detail in the *Restoration Topic Paper*¹⁴.

Mineral development constraints and planning issues

3.13 There are a number of different constraints and issues which may impact the location of minerals development in Hampshire. These include:

- geology;
- potential impact on nature conservation;
- potential impact on water resources and flooding;
- potential impact on landscape and historic heritage designations;
- potential impact on land, soils and water;
- potential impact on local communities and health;
- transportation of mineral;
- potential impact on public safety;
- viability of mineral deposits;
- the safeguarding of mineral resources; and
- potential impacts on the climate.

3.14 These issues and constraints all need to be taken into account through the plan review process and when applications for minerals development have been submitted to the relevant mineral planning authority for consideration.

¹⁴ Restoration Topic Paper (August, 2022):
<https://www.hants.gov.uk/landplanningandenvironment/strategic-planning/hampshire-minerals-waste-plan/minerals-waste-plan-partial-update-consultation>

Geology

- 3.15 Mineral development is very different from other forms of development because minerals can only be worked where they occur naturally, based on geological deposits. The scope for finding alternative locations for mineral workings is therefore limited.

Potential impact on nature, landscape and other designations

- 3.16 International or nationally designated sites have the highest level of protection afforded to them. Mineral development may often be located close to or within such areas. Permission in these areas may require additional mitigation and controls or may not be feasible dependant on the designation.
- 3.17 National Policy states that great weight must be given to conserving and enhancing National Parks, Areas of Outstanding Natural Beauty (AONBs) and their settings which have the highest level of protection¹⁵.
- 3.18 Mineral development is an exception to the restrictions on the development in the Green Belt, as set out in National Policy¹⁶. This is provided that they preserve the openness of the Green Belt and do not conflict with the purposes of including land within the Green Belt.

Potential impact on water resources and flooding

- 3.19 Floodplains (groundwater / fluvial / tidal), Source Protection Zones (SPZs), minor and major aquifers, groundwater depth, type of geology and smaller abstractions (without modelled SPZs) are all constraints and will need to be taken into consideration when identifying sites.

Potential impact on land, soils, and water

- 3.20 Mineral development tends to be in areas of rich soil quality. This can include best and most versatile agricultural land.
- 3.21 Development must take account of local environmental constraints such as the potential effects on surface water, groundwater, and flooding. Water quality must be either improved or at least maintained.

¹⁵ National Planning Policy Framework (Para. 176):
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

¹⁶ National Planning Policy Framework (Para. 150)

Potential impact on communities

- 3.22 Mineral development should not have an undue significant impact on communities if it is designed, managed, and located appropriately. However, concerns may still be raised at the time of a planning application, about the potential impacts of noise and dust, as well as associated lorry movements. Such issues need to be addressed to ensure that minerals development does not significantly impact the amenity of local communities and policies are put in place to secure community protection.
- 3.23 Planning conditions attached to planning permissions for minerals development can reduce and mitigate any potential impacts, as appropriate. For example, many mineral developments will be supported by a lorry routeing agreement or a dust and noise suppression scheme to reduce and mitigate any potential impacts on local communities.
- 3.24 Detailed consideration of minerals processes and the implications, if any, for human health is the responsibility of the pollution control authorities. However, planning authorities operate in the public interest to ensure that the locations of proposed development are acceptable, and health is material to such decisions. Mineral extraction and processing will inevitably have physical impacts. However, the primary aim of minerals planning is to prevent, minimise or mitigate these impacts to an acceptable level.
- 3.25 Most environmental effects can be controlled by suitable planning conditions, although some, such as air or water pollution, are dealt with separately by the Environment Agency (EA) through environmental protection legislation.
- 3.26 Air pollution in the form of dust emissions is considered to be one of the main potential threats to human health from mineral workings. To mitigate against the potential impacts of dust on health, mineral planning authorities may agree or specify planning conditions relating to:
- buffer zones between the proposed development and adjoining sensitive areas such as residential areas, schools, hospitals and businesses;
 - layout of the site;
 - management of stockpiles;
 - hard surfacing of vehicle areas;
 - containment of conveyors and processing plant and dust collection equipment;
 - use of bowzers, sprays and vapour masts on haul-roads, stockpiles, transfer points;
 - design of material-handling systems, drop heights, wind guards, loading points;

- limiting levels of dust measured in a specific way;
- provision of monitoring facilities;
- agree the method of monitoring dust (how and where), together with the limits; and
- the containment of material transported from the site to protect the environment and people along the route from the site.

3.27 Noise is an inevitable consequence of surface minerals operations using heavy plant and machinery. With much of the activity being carried out in the open, this has implications for the level of noise attenuation that is possible. National Planning Policy¹⁷ requires the minerals industry to ensure that any unavoidable noise is controlled, mitigated or removed at source, and establish appropriate noise limits for extraction in proximity to noise sensitive properties. In an Environmental Impact Assessment (EIA) accompanying any planning application for a new or extended quarry, operators will be required to provide information on existing ambient noise levels at affected properties, predicted noise levels at different stages of working, details of noise mitigation measures and monitoring procedures.

3.28 Any application for minerals working should include details of measures for the protection of ground and surface water. This may include:

- requirements for the provision of settlement lagoons;
- the way in which surface water is disposed of, so as not to increase risk of flooding;
- the avoidance of impairing drainage from adjoining areas; and
- the prevention of material entering open water courses, and any proposal for dewatering the mineral excavation area.

3.29 The transportation of aggregates can also have an impact on local communities. This is considered below.

3.30 Whilst minerals can only be worked where they naturally occur, good planning can ensure that they are worked in a controlled manner, so that health, well-being, and community impacts are managed to an acceptable level.

Transporting aggregates

3.31 Minerals can only be extracted where they are found. Therefore, minerals are likely to be transported elsewhere and at the same time minerals are likely to be supplied from elsewhere.

¹⁷ National Planning Policy Framework (Para. 211(c):
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

- 3.32 It is normally expected that minerals development should be located with good access onto the strategic highway network. The routes will be dependent on the location of the quarries and the market, which can change over time as the focus of development changes.
- 3.33 Heavy Goods Vehicles (HGV) traffic is often regarded as one of the most visible features associated with mineral production. This may include complaints made to mineral planning authorities about the intimidating effect of large vehicles, danger, use of roads unsuitable for the size of vehicle, damage to verges, dust, spillages, mud from wheels, vibration, and noise.
- 3.34 Conditions and legal agreements on transport management and HGV routeing can be used to mitigate some of these impacts. Alternatives to road transport such as conveyors, water and rail should be encouraged where feasible. Planning conditions can be specified relating to:
- site working hours;
 - direction vehicles turn out of the site;
 - provision of signposting;
 - sheeting of HGVs; and
 - wheel / vehicle washing facilities.

Public safety

- 3.35 Minerals can be located in areas which are subject to some form of 'safeguarding' relating to public safety. This can include 'Bird Strike' zones around commercial and Ministry of Defence aerodromes. Minerals operations within these areas, including site working and restoration, can be affected due to the need to keep birds away from flight paths.

Viability of mineral deposits

- 3.36 Whilst mineral resources may be known to be found at a given location, extraction may only take place when there is a mineral operator that has the inclination to submit an application to the minerals planning authority for consideration. A number of factors may affect this decision such as the current economic value of the reserve, the local, regional and national need for these minerals and the level of existing mineral extraction currently being undertaken by the operator and others in the area.
- 3.37 A further important constraint is that imposed by land ownership of areas of mineral potential, as the willingness of landowners is fundamental to deliverability.

Safeguarding and sterilisation of mineral resources

- 3.38 In order to secure a supply of mineral for communities and businesses, it is necessary to ensure that opportunities for extracting suitable mineral resources exist now, and in the future, and these are protected. This is known as 'safeguarding'.
- 3.39 It is also important that viable mineral reserves (not previously extracted) are protected from other forms of non-mineral development. Safeguarding reserves ensures that the mineral is not permanently 'sterilised' by other developments such as housing. Sterilised resources are considered to be unworkable as a result of the development. Safeguarding of areas with viable mineral does not provide a presumption for the working of the mineral but is used to provide a greater level of protection and is taken into consideration when determining applications for built development.
- 3.40 To help provide guidance for developers and local planning authorities on implementing Hampshire's safeguarding policies, Supplementary Planning Guidance was prepared¹⁸.

Prior extraction

- 3.41 It is important that where opportunities exist, mineral should be extracted before other forms of non-mineral development take place (i.e. the mineral is sterilised). This is known as 'prior extraction'. Prior extraction may result in all or part of the mineral reserves being extracted. However, its extraction, even at a lower level, is much more sustainable than its permanent sterilisation. This is supported through National Policy¹⁹.
- 3.42 It is also important that existing mineral sites are protected from other inappropriate development. Safeguarding operational and allocated sites ensures that the reserves can be extracted without interferences to meet demand. Through safeguarding, minerals planning authorities can resist other types of future development (e.g. housing) which could be incompatible with existing mineral operations.

¹⁸ Minerals & Waste Safeguarding in Hampshire (2016): <https://documents.hants.gov.uk/planning-strategic/HMWPMineralsandWasteSafeguardinginHampshireSPDFinalFeb2016.pdf>

¹⁹ National Planning Policy Framework (Para. 210(d)): https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

Mitigating against and adapting to climate change

- 3.43 Minerals, along with recycled and secondary aggregates do not decompose to release greenhouse gases, unlike waste. However, the extraction and processing of minerals can contribute to climate change. If minerals and other natural resources are not reused or recycled, then new primary resources need to be extracted and new products manufactured resulting in the use of additional energy.
- 3.44 Research has shown that the biggest carbon emission and reduction issues in the UK's onshore mineral production and use arise not from extraction and initial transport, but in downstream processing of mineral products²⁰. Some of this is very energy intensive. However, there are also links between minerals development and climate change, relating to the energy used by machinery in the extraction/processing and transport. Mitigation measures can be applied such as the use of in-field conveyors.
- 3.45 Transporting minerals from source to users can be carbon intensive. Reducing the transportation of minerals, by re-using or recycling construction and demolition waste on site where possible, can reduce the impact.
- 3.46 The Office for National Statistics highlighted that in 2010, the quarrying and mining industries were one of the industries with the highest greenhouse emissions (alongside agriculture and energy supply)²¹. The UK Minerals Strategy²² suggests that there is a relatively small carbon footprint associated with minerals development (under 0.3% of the UK's land area and 0.15% of the UK seabed) but recognises there is a need for investment and innovation in reducing impacts.
- 3.47 Most of the Hampshire Authorities and district and borough local planning authorities within the Plan area have declared climate emergencies and have prepared associated strategies and action plans. These strategies/plans set out policies, objectives and actions to achieve net zero carbon by target dates prescribed by each authority and implement climate change mitigation and adaption measures.

²⁰ UK Minerals Forum – Carbon and Proximity in Minerals Working Group (June 2009):

<https://www.ukmineralsforum.org.uk/groups.php>

²¹Greenhouse gas emissions intensity, UK: 2018 estimates (Office for National Statistics):

<https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/greenhousegasintensityprovisionalestimatesuk/2018provisionalestimates>

²² UK Minerals Strategy (2018): https://mineralproducts.org/documents/UK_Minerals_Strategy.pdf

4. Mineral issues in Hampshire

4.1 This section sets out the issues affecting minerals development in Hampshire.

Hampshire Geology

4.2 Geology is the first factor to consider for the minerals planning of an area and the geological structure of Hampshire comprises the following main types of minerals – sand and gravel, silica sand, chalk, brick-making clay and oil and gas. Each of these has been, and continues to be, extracted to varying extents. Soft sand is reported on separately to sharp sand and gravel because of the particular characteristics that make it important to the construction industry. There are no ‘hard’ rock deposits like limestone in the Plan area. Figures 2 and 3 show the extent of the deposits.

Figure 2: Bedrock geological map of Hampshire

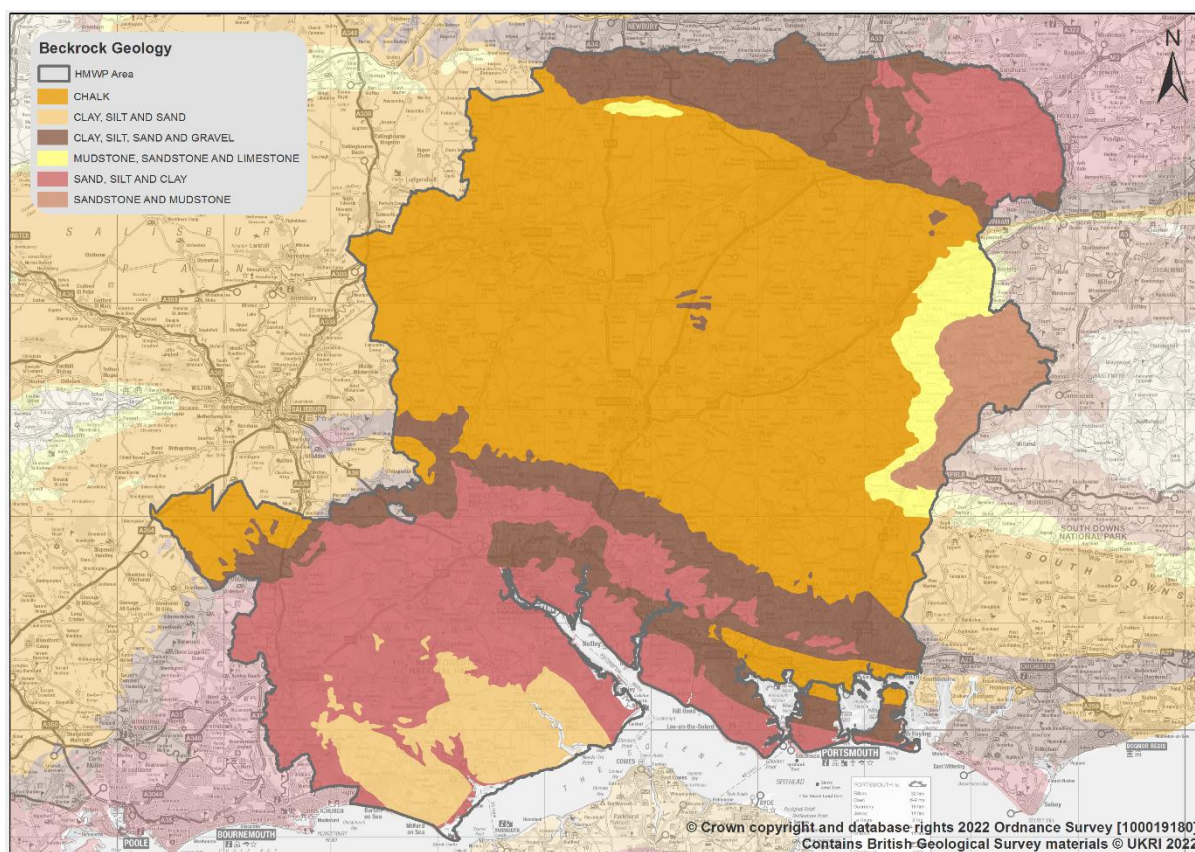
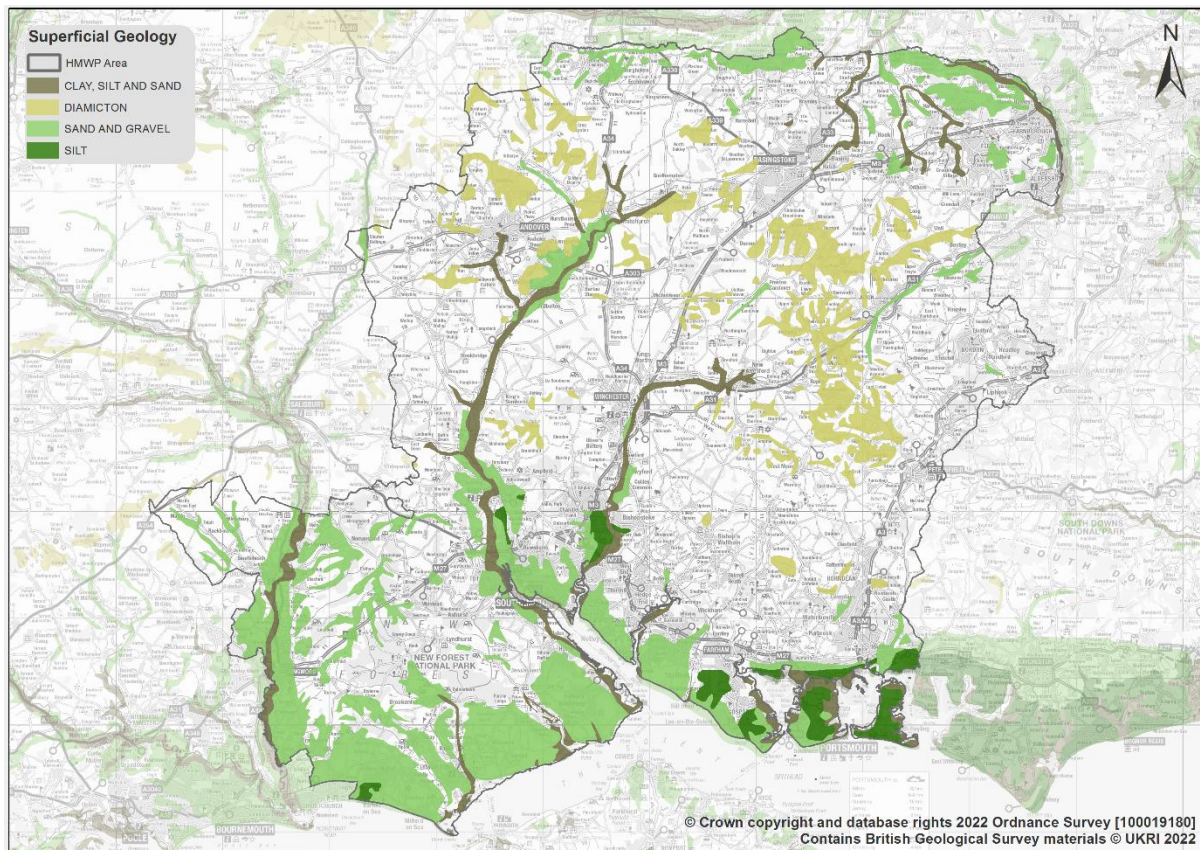


Figure 3: Superficial geological map of Hampshire



- 4.3 Hampshire's principal geological deposit, in economic terms, are the aggregate or construction minerals which comprise sharp sand and gravel, suitable for most types of concreting purposes. There are also deposits of soft sand, suitable as building sand for use in making mortar or plaster, or in asphaltting.
- 4.4 The other minerals, such as chalk and clay, do have a limited role which is explained in due course. The mineral of more than local significance in Hampshire is sharp sand and gravel. Owing to the obligations under the NPPF and more specifically Managed Aggregate Supply System, there is a requirement for the Hampshire Authorities to enable provision of this mineral as best they can. Accordingly, this Study gives some emphasis to the issues of local primary aggregate supply and alternatives to these.
- 4.5 Geologically, sharp sand and gravel is a very recent deposit, dating from the end of the last ice age (c. 11,700 years ago). The ancient peri-glacial activity created gravel terraces and plateau deposits, particularly on the coast and river valleys. As shown on figure 3, the most important sand and gravel deposits are in the Avon Valley, on the western side of Hampshire. It is also found in the river terrace deposits (formerly called 'plateau gravels') which are the remnants of earlier abandoned floodplains raised by geological forces above the present course of the rivers.

- 4.6 Superimposed on this basic underlying solid geology are drift deposits, the most extensive of these being sand and gravel. Valley gravel deposits occur in the Avon, Test, Itchen and Blackwater valleys. These lie mostly below the water table and include comparatively small proportions of silt, clay and fine sands. They are generally fairly uniform in thickness.
- 4.7 Plateau gravels occur at somewhat higher levels (mostly above the water table) in the areas between the main river valleys and along the coast. They tend to be more variable in content than valley gravels and contain more clay. At a deeper level, below the chalk, are Jurassic and Triassic deposits, some of which include oil and gas-bearing strata.
- 4.8 The better-quality sharp sand and gravel is mainly used for making concrete and is referred to as 'concreting sand'. Where the deposit contains clay and silt, it is not suitable for concreting and instead is used as a sub-base in roads and hardstandings, or otherwise as a fill material. This poorer quality sharp sand and gravel is colloquially known as 'hoggin'.
- 4.9 Bedrock deposits are generally thicker than the superficial sharp sand and gravel deposits, and hence the yield per hectare is higher.
- 4.10 Soft sand is a much older deposit, dating from around 60 million years ago. Deposits can be found within the New Forest National Park and whilst soft sand in Hampshire is quite scarce, a significant proportion of the reserves can be found within the South Downs National Park. Soft sand is considered to be of national importance.
- 4.11 Hampshire also contains a broad band of chalk downland, which separates the more developed areas of north-east and south. Whilst the downland is of limited importance for minerals it also contains some small on-shore oil and gas fields.
- 4.12 Historically, clay has been extracted at many locations in Hampshire. This has included extraction for the main purposes of local brick making within the: Hampshire Basin; London Basin; and Wealden Edge. However, today clay extraction in Hampshire has reduced significantly within only one traditional brick works now being located within the County, at Michelmersh. Local sources of brick-making clay in this location are used directly to supply the brickworks.

Mineral extraction in Hampshire

New Forest

- 4.13 To the west of Southampton is the New Forest, an area of managed ancient woodland and heath, bordered to the south by the narrow coastal strip between the Dorset boundary and Lymington.
- 4.14 The area contains the New Forest National Park which was established in 2005. It covers 56,658 hectares (220 square miles), making it the smallest national park in the UK. The National Park includes an area which is part of Wiltshire, and this forms part of the plan area.
- 4.15 The National Park extends from the wooded slopes of Wiltshire in the north, across the central New Forest plateau to the open coastline of the Solent in the south. It has been formed through the close relationship between the land and its people over many thousands of years. A wealth of archaeological and historic features has been preserved and much of the area is still managed by traditional agriculture and a strong system of commoning.
- 4.16 The New Forest is a unique landscape survival in lowland England: a great expanse of natural habitats, with extensive areas of ancient woodland, mire and heath intimately connected to the villages, small-holdings and farms of the Forest.
- 4.17 There are extensive sand and gravel deposits which have been exploited and extraction continues to take place within the National Park to the south of Fawley. The prospects for further major minerals and waste developments are limited to outside of the New Forest National Park due to the sensitive character of the area and its setting.
- 4.18 The coastal strip, outside of the New Forest National Park, has gravel resources with the potential for extraction. There is a large aggregate processing facility in the area and permitted quarries which help to supply material into Dorset. However, there are significant limitations to additional major developments, both minerals and waste, without causing cumulative adverse traffic impacts and damage to the area's character.

Avon Valley

- 4.19 The Avon Valley runs from the Wiltshire boundary, including Cranborne Chase AONB, and with the Ringwood Forest is adjacent to the Dorset boundary. The principal towns in this area are Ringwood and Fordingbridge.

4.20 Significant gravel resources exist in the valley, and it produces about 40% of the material extracted in Hampshire. A significant proportion of this goes to Dorset. It has also been an important landfill area with a major site located in the Ringwood Forest.

4.21 Most of the gravel extraction has taken place north of Ringwood. The operations other than processing have stopped on the valley terraces. There are still significant resources on the terraces, but their exploitation is problematical. There are potential landscape change impacts and hydrogeological issues that affect the river environment. On the other hand, there are plentiful resources in Ringwood Forest if the traffic issues can be managed and the impacts on the landscape are not considered to be significant.

West of Romsey

4.22 Between Romsey and the Wiltshire border is a distinct area of mixed farming and woodland.

4.23 The area is situated on a deposit of soft sand and some gravel which has been extracted in the past and landfilled.

South Hampshire

4.24 Southern Hampshire is a largely urban area which consists of the two cities of Portsmouth and Southampton and their neighbouring towns. Southern Hampshire is a largely urban area which stretches from the Waterside parishes west of Southampton, northwards to Romsey and then eastwards including Eastleigh, Fareham, Gosport, Portsmouth, Havant and into West Sussex. Much of its northern boundary is the South Downs National Park.

4.25 The availability of local gravel resources has enabled the growing population of south Hampshire to be supplied by local quarries. However, viable mineral resources are depleted and limited mainly to the Romsey, Hamble, Fawley and Warsash areas. Their exploitation could give rise to environmental or community issues that might be difficult to overcome in some instances.

4.26 The constraint on local supply has been and can in the future be partially substituted by imports. The marine dredged gravel from the English Channel south of the Isle of Wight is an important resource for South Hampshire. Another is limestone from Somerset, which is imported into the county via the railway network. Neither of these sources of supply is unduly constrained

currently. Whilst current capacity at the wharves and rail depots would not unduly limit delivery, the capacity needs to be protected and where possible increased.

- 4.27 A further option is the use of construction waste as a recycled aggregate. This has increased significantly in the last decade. There are a number of recycled aggregate suppliers, and the continuing development of houses and businesses means there is a steady supply of construction waste. There are also opportunities to increase capacity with further sites. Nevertheless, there are still limits to the quantity and quality of this type of aggregate currently.
- 4.28 Despite the availability of alternative supplies, the need to locally extract aggregates cannot be avoided. Soft sand cannot be substituted by alternative sources. Commercial needs require a secure and adequate range of materials.
- 4.29 In addition, clay resources in South Hampshire have been used in a number of brickworks historically. Only one brickwork remains, at Michelmersh. This only has limited permitted clay reserves remaining.

Mid Hampshire

- 4.30 Mid Hampshire is the chalk heartland of Hampshire and includes part of the South Downs National Park and North Wessex Downs AONB. It includes the towns of Andover, Winchester, Alton and Petersfield.
- 4.31 There are very few sand and gravel resources in mid Hampshire.
- 4.32 In the past, the large reserves of chalk have been exploited for use in agriculture and industry and there is evidence of old working all over the landscape. The demand for the material is now low and only a few workings remain, most of which are now dormant.
- 4.33 This area also contains all the active, albeit small and unobtrusive oilfields in Hampshire. These are located near Winchester (some are located within the South Downs National Park), Alton and Horndean. Oil prospects have been explored throughout Hampshire but to date no other reserves have been considered viable for exploitation. The pressure for further exploration and possible production continues.
- 4.34 A rail oil terminal is located at Holybourne, linked to the oil site at Humbly Grove. Another oil terminal is located at Micheldever Station. There are also further railway sidings which have the potential to receive aggregates or dispatch waste.

Whitehill & Bordon and surrounding area

- 4.35 The area around Kingsley – Whitehill & Bordon, adjacent to the Surrey border, is a distinct locality. It is situated on a deposit of clay and soft sand which has been, and will continue to be, exploited under existing permissions.
- 4.36 However, the options for new workings are severely constrained as part of the mineral deposit is within or adjacent to the South Downs National Park. Options for sand extraction away from the National Park also raise issues as landscape (although not nationally important landscapes) and heritage constraints are involved. There are known soft sand reserves in the area of the Whitehill & Bordon Green Town.
- 4.37 Clay is also found within this area and has been used in connection with the Selborne Brickworks. Currently the works is not operating.

North east Hampshire

- 4.38 North of the chalk downland is another area of sand, clays and silts that are part of the London Basin which extends into Hampshire.
- 4.39 Along with the New Forest, this is a significant area of heathland and has the highest nature conservation status. It is more heavily settled with Basingstoke, another overspill town, and Fleet, Farnborough and Aldershot. This is another area subject to growth pressures that have arisen in part from hi-tech business development.
- 4.40 Sand and gravel extraction has historically been concentrated around Blackbushe Airport, in the Blackwater Valley, and near Mortimer on the Berkshire boundary. Some resource limitations may be present due to limited road access to parts of the area and environmental constraints.

5 Planning for minerals in Hampshire

- 5.1 This section of the Study considers planning for minerals which in Hampshire includes aggregates (recycled aggregate, sand and gravel including sharp and soft sand), imported aggregate, chalk, clay, oil and gas.

Aggregates

- 5.2 Aggregate is the term used to describe the type of minerals that are used by the construction industry, and are defined by the British Geological Survey (BGS)²³ as:

"...the most commonly used construction materials used in the UK. They are essential for constructing and maintaining what is literally the physical framework of the buildings and infrastructure on which our society depends."

- 5.3 They are the largest component of minerals and are the most voluminous materials extracted from the UK landmass.
- 5.4 Aggregates consist of granular or particulate material, which is suitable for use on its own, or with a binder such as cement, lime or bitumen (in construction). They are also used in concrete, mortar, roadstone or asphalt (drainage courses), or for constructional fill and railway ballast. The two principal types of natural (or primary) aggregate within the UK are crushed rock (limestone, igneous rock and sandstone) and sand and gravel. Other primary aggregate used in the construction industry includes clay, chalk, limestone, dolomite, brick clay, gypsum, slate and building stone.
- 5.5 Primary aggregates are those aggregates which can be obtained naturally and are either obtained from the ground ('land-won') or from the sea ('marine-won') through marine dredging. The primary aggregates that are most commonly used in construction are sand and gravel and crushed rock.
- 5.6 Construction aggregates can also comprise materials derived non-naturally, but with the properties of aggregates to allow it to be substituted in place of primary aggregates. These typically comprise of two main types; recycled aggregate and secondary aggregate.
- 5.7 Recycled aggregates are materials that are derived from construction, demolition and excavation waste that has been reprocessed to provide a product suitable for use as a substitute for primary aggregate. Meanwhile,

²³ British Geological Survey – Construction aggregates: www.bgs.ac.uk/downloads/start.cfm?id=1355

secondary aggregates are materials that are usually by-products of industrial processes which can then be re-used as a construction aggregate.

Aggregate Supply

- 5.8 A steady and adequate supply of construction aggregate is required to ensure that market needs in Hampshire are met in order to support continued economic development and prosperity. The aggregate required can be made up of different sources such as recycled materials, imported mineral products or extracted sand and gravel from either the sea or land.
- 5.9 Sales figures are monitored annually by minerals planning authorities and provide a basis for estimating the needs and requirements of Hampshire.
- 5.10 The sales data reviewed throughout section 5 for aggregates in Hampshire is summarised in Table 1. The data provides the basis for planning for future mineral supply and determining future provision rates.

Table 1: Average sales of aggregate in Hampshire (2011-202) (Million tonnes, Mt)

Aggregate type	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	10-year average
Land-won: Sharp sand and gravel	0.71	0.58	0.73	0.78	0.71	0.75	0.73	0.96	0.66	0.83	0.74
Land-won: Soft sand	0.12	0.16	0.12	0.11	0.12	0.2	0.23	0.23	0.23	0.02	0.15
<i>Land-won: Sub-total</i>	<i>0.83</i>	<i>0.75</i>	<i>0.85</i>	<i>0.88</i>	<i>0.83</i>	<i>0.95</i>	<i>0.96</i>	<i>1.18</i>	<i>0.90</i>	<i>0.85</i>	<i>0.90</i>
Rail & Sea Imports: Crushed rock**	0.33	0.28	0.39	0.46	0.46	0.55	0.57	0.69	0.53	0.52	0.44
Marine-won: Sharp sand and gravel	1.17	1.1	1.43	1.36	1.55	1.55	1.52	1.42	1.34	1.35	1.38
Recycled and Secondary	0.93	0.81	0.93	1.11	0.99	0.83	0.76	0.72	0.77	0.67	0.85
Total	3.26	2.94	3.6	3.81	3.83	3.88	3.81	4.01	3.54	3.39	3.57 (sum)

Planning future aggregate supply

- 5.11 Sales data is usefully compared with that on past aggregate consumption. Aggregate consumption figures can be calculated from data published by the Department for Levelling Up, Housing and Communities (DLUHC) (formerly Ministry of Housing, Communities, and Local Government (MHCLG)) every four years as part of the Aggregate Mineral survey for England and Wales undertaken by the BGS. The latest survey comprises five years of data to account for the delay in conducting the survey.

Table 2: Total consumption of Primary Aggregate in Hampshire and Isle of Wight (IoW), 2009, 2014 and 2019 (Thousand tonnes, Tt)

Hampshire & IoW	Land Won Sand and Gravel			Marine Won Sand and Gravel			Total Sand and Gravel			Crushed Rock			Total Primary Aggregates		
	2009	2014	2019	2009	2014	2019	2009	2014	2019	2009	2014	2019	2009	2014	2019
Imports	289	215	262	49	45	120	338	260	383	716	895	680	1,054	1,155	1,062
Consumption*	973	882	947	1,034	1,140	1,478	2,007	2,022	2,425	746	912	688	2,754	2,933	3,113
Consumption % of total	35%	30%	30%	38%	39%	47%	73%	69%	78%	27%	31%	22%	100%	100%	100%
Imports/Consumption %	30%	24%	28%	5%	4%	8%	17%	13%	16%	96%	98%	99%	38%	39%	34%

Source: Collation of the results of the 2009, 2014, and 2019 Aggregate Minerals survey for England & Wales (Ministry of Housing, Communities, and Local Government).

*Consumption is determined by total sold internally plus total imported.

- 5.12 The comparison of 2009²⁴, 2014²⁵ and 2019²⁶ data in Table 2 indicates a trend for an increase in consumption of total aggregate over the time period. Whilst consumption and imports of land won sand and gravel decreased between 2009 and 2014 and increased to reach previous levels. It is the imports and consumption of marine won sand and gravel that have dramatically increased over the 10-year time period and contribute most to the overall increase in consumption. Data pertaining to crushed rock showed an increase between 2009 and 2014 of imports and consumption, however levels of both are slightly lower in 2019 than they were in 2009.

- 5.13 Nationally, the sales of primary aggregates have shown an increase, with total sales in England increasing by 8% between 2014 (137.0 Mt) and 2019 (148.1 Mt).

²⁴ Collation of the results of the 2009 Aggregate Minerals survey for England and Wales: www.gov.uk/government/uploads/system/uploads/attachment_data/file/6366/1909597.pdf

²⁵ Collation of the results of the 2014 Aggregate Minerals survey for England and Wales: www.gov.uk/government/uploads/system/uploads/attachment_data/file/563423/Aggregate_Minerals_Survey_England_Wales_2014.pdf

²⁶ Collation of the results of the 2019 Aggregate Minerals survey for England and Wales: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1008931/AM2019_National_Collation.pdf

- 5.14 Reported sales of marine-dredged sand and gravel decreased nationally (18%) from 14.0 Mt in 2014 to 11.4 Mt in 2019. However, total landings of marine sand and gravel as reported by The Crown Estate increased (14%) from 11.8 Mt in 2014 to 13.4 Mt in 2019. As Hampshire has several wharves, this would account for the significant uplift in sales of marine sand and gravel and particularly imports.
- 5.15 The South East England Aggregate Working Party (SEEAWP) Annual Report (2018)²⁷ states that there has been very little change in the pattern of supply in the South East over the last 10 years (see Figure 4) which suggests that there have been no dramatic changes in sources of supply.
- 5.16 The SEEAWP Annual Report (2020)²⁸ concludes that overall primary aggregates (land won sand and gravel and crushed rock, and marine aggregates) sales increased from 2019 figures and represents a general rising trend over the last 10 years.
- 5.17 Land won aggregates (sand and gravel, and crushed rock) sales were 8 Mt, an increase on 2019, but this trend was distorted by strong local crushed rock sales. Sand and gravel sales were 5.6 Mt (comprising soft sand (1.4 Mt), sharp sand and gravel (4.1 Mt)) and had declined from 2019 and below average sales levels. Nevertheless the 10-year average sales trend was modestly increasing. Marine aggregates sales were 6.5 Mt and above average sales.
- 5.18 The SEEAWP Aggregates Minerals 2020 Survey collected no information on the consumption, imports or exports of aggregates. However, the National Collation report outlined the following summary for 2020:
- Primary aggregates consumption at 18.2Mt, compared with sales of 14.1Mt.
 - An aggregates sales to consumption ratio of 73%. This has changed little since 2014 but makes South East England a net importer of aggregates overall.
 - Land won sand and gravel and marine aggregates sales and consumption were broadly in balance in 2019. But crushed rock sales only represented 29% of consumption.
 - 93% of aggregates sold were moved by road.
 - But 40% of the crushed rock imports were transported by rail and 29% by water - the latter were principally imports from outside England and Wales. The limited import data from the Aggregates Minerals 2020

²⁷ SEEAWP Annual Report 2018 (Jan 2020): <https://documents.hants.gov.uk/see-awp/SEEAWP-annual-report-2018.pdf>

²⁸ SEEAWP Annual Report 2020 (Dec 2021): <https://hants.sharepoint.com/sites/ETEE8681/Shared Documents/Forms/AllItems.aspx?id=%2Fsites%2FETEE8681%2FShared Documents%2FSEEAWP Annual Report 2020 %2Epdf&parent=%2Fsites%2FETEE8681%2FShared Documents&p=true&ga=1>

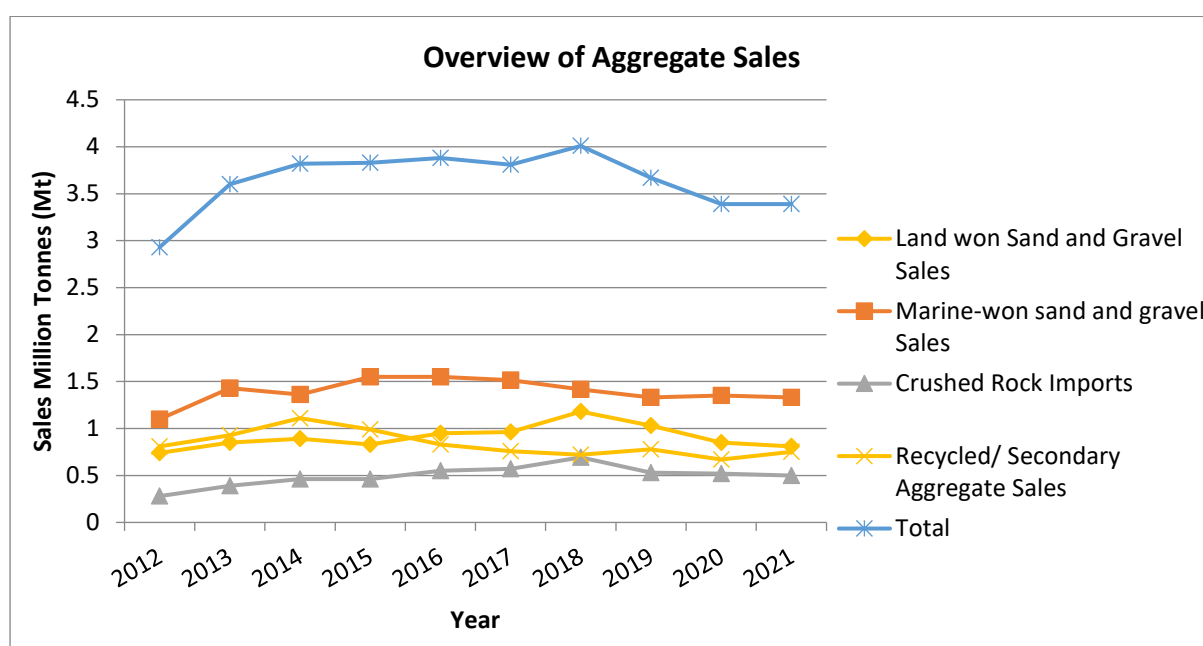
Survey shows that imported crushed rock sales at the wharves and rail depots were 2.6Mt and 4.4Mt respectively. These were above 10-year average sales level.

- Aggregates landbanks and reserves at the end of 2020 were above the minimum landbank requirements of the NPPF, but there was a limited surplus margin for sharp sand and gravel. There is a general declining trend in reserves over the decade 2009–2019 with 23% reduction in sand and gravel reserves since 2014.
- Marine aggregates reserves, as reported by the Crown Estate in 2020 had permissions that varied between 12 and 24 years of extraction. The South Coast dredging region, which supplies most of marine aggregate to South East England has a 24 years landbank.

5.19 The crushed rock resources within England and Wales that South East England rely on are in Somerset and Leicestershire. The LAAs for these MPAs indicate significant reserves although there is a query about supply in the medium term. A permission for one of the Leicestershire rail-linked quarries expires in 2032.

5.20 Figure 4 provides an overview of aggregate sales in South East England over the last ten years.

Figure 4: Aggregates sales in South East England 2012-2021



Source: SEEAWP Annual Reports (2012-2021)

Recycled and Secondary Aggregates

- 5.21 Recycled and secondary aggregates can be used as a substitute for some land-won sharp sand and gravel extraction, providing a more sustainable source of supply. These have combined benefits of reducing the need for land-won (or marine aggregate) and reducing the amount of waste requiring disposal by landfill.
- 5.22 When used locally, recycled aggregate can reduce the impact of transport and cut carbon emissions.

Sources of recycled and secondary aggregates in Hampshire

- 5.23 Recycled aggregates are those derived from construction, demolition and excavation activities that have been reprocessed to provide materials or a product suitable for use within the construction industry. It includes materials such as soils and subsoil, concrete, brick or asphalt for re-use (rather than disposing of it). It can also comprise other secondary aggregate which is slightly different to the sources noted above and are usually by-products of other construction or industrial processes. For example, the production of Incinerator Bottom Ash (IBA) at energy recovery facilities, a by-product of the incineration process, can be used as a secondary aggregate for road construction. Additional secondary aggregate includes spent railway ballast, recycled glass, plastics and rubber (tyres).

- 5.24 Highway maintenance work has the potential to comprise a relatively large source of recycled aggregate through recycled road planings, asphalt, concrete kerbs and soils.
- 5.25 Road planings (material removed as from the surface layer of roads or footpaths as part of resurfacing operations) is also considered as recycled aggregate. However, data on this material is difficult to obtain as it is more often processed in a closed loop system which means the planings are used in the production of new surface materials. A recent example of this is the new plant in Micheldever, Hampshire²⁹. The benefits of systems of this nature are not only financial but also reduce carbon emissions which contribute to climate change.
- 5.26 The South East England Aggregate Working Party sought to collate data on this material in 2018 recognising that information would be held by 'disparate organisations including Highway Authorities, Highways England and the utility companies'³⁰. A local operator suggested that the material is 'difficult to track, as the material was moved, in some instances long distances (including by rail) and involved waste transfer notes and EA permits'. The survey generated a limited response from highway authorities and the Highways Agency did not participate. The limited data received suggested that arisings of the material were increasing but due to the limitations of the data, this was not a reliable source of information.
- 5.27 The SEEAWP Annual Report (2018)³¹ reported that the Aggregate Monitoring survey 2018 did cover road planings. There were returns from the highway authorities of East Sussex, Hampshire, Kent, Medway, Surrey and West Berkshire which totalled 121,000, 163,000 and 194,000 tonnes for 2016, 2017, 2018 respectively. The Highways Agency did not participate in the survey. Highway authorities indicated that a high proportion of road planings generated are recycled on-site. It was recognised that further work was required to gain a better understanding on what level of contribution this source of material could provide.
- 5.28 A significant amount of recycled and secondary aggregate is processed on development and construction sites, but an increasingly large amount is processed at free standing sites or sites located within existing minerals and waste activities such as mineral extraction, waste transfer, materials recovery

²⁹ Recycling Materials Launch (2021): [Highways Magazine - Hampshire saves £300k a year with new materials recycling centre](#)

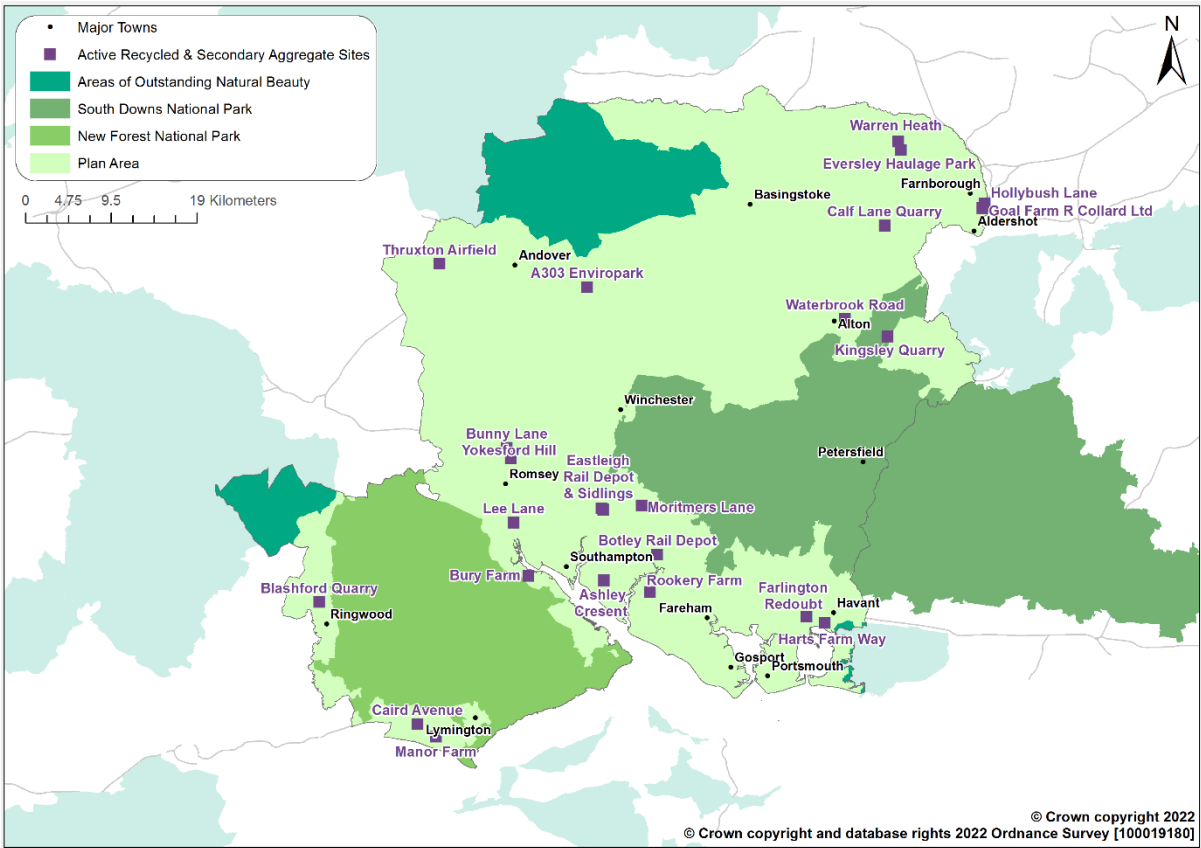
³⁰ SEEAWP Annual Report (2018): <https://documents.hants.gov.uk/see-awp/SEEAWP-annual-report-2018.pdf>

³¹ SEEAWP Annual Report (2018) - <https://documents.hants.gov.uk/see-awp/SEEAWP-annual-report-2018.pdf>

and landfilling. Sites producing recycled aggregate and operational in 2021 are shown in Figure 5.

5.29 Incinerator bottom ash, produced by the Energy from Waste facilities in Hampshire provides a source of secondary aggregate used in road construction.

Figure 5: Location of recycled aggregate sites in 2021



Current capacity for recycled aggregate in Hampshire

5.21 By understanding current capability of sites, through capacity, it is hoped that this information can be used to assist planning for future demand.

Production and sales of recycled aggregate in Hampshire

5.22 The sales figures of the recycled and secondary aggregate in Hampshire for the most recent 10-year period, 2011-2020 are shown in Table 3.

Table 3: Recycled and Secondary aggregate sales in Hampshire, 2011-2020 (Million tonnes, Mt)

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Last 10 yr average	Last 3 yr average
Sales	0.93	0.81	0.93	1.11	0.99	0.83	0.76	0.72	0.77	0.67	0.85	0.72

Source: Aggregate Monitoring Surveys, 2011-2020

5.24 Sales in Hampshire have shown a decline over the 10 years. Although sales figures appear to be holding relatively steady since 2017. But this is well below the 10-year peak in 2014 at 1.11Mt and 10-year average sales of 0.85Mt.

5.25 It should be noted that due to difficulties in obtaining comparable data on aggregate recycling, the South East England Aggregate Working Party has agreed a standard methodology for calculating recycled aggregates using data available³².

Capacity

5.26 Site capacity is included as part of the Aggregate Monitoring survey. By understanding current capability of sites, through capacity, it is hoped that this information can be used to assist planning for future demand. The results of this are shown in Table 4.

5.27 There is currently capacity to accommodate an increase in demand, particularly on recycled and secondary aggregates which has the potential to provide almost an additional 2.2Mt over the current demand of 0.67Mt. In 2020, it is shown that there was additional capacity of 77% for managing recycled and secondary aggregate.

5.28 It is worth noting that not all operators returned information on capacity, and therefore the capacity data provided is not 100% accurate. This is stressed with wharf capacity, as with only 1/6 sites returning capacity information it appears that the wharves are already working at 83% capacity. However, due to the lack of information provided by the operators in the survey, this cannot be assumed to be correct. Sales figures have been used to estimate capacity where capacity data was not provided.

³² Recycled Aggregate Data – Guidance on Assessing Levels of Recycled Aggregates (April 2022)
Prepared by National Waste Technical Advisory Board Chairs and Aggregate Working Party Chairs

Table 4 : Recycled and Secondary Aggregate Capacity 2020

	Sales	Capacity	% Sales/ Capacity	Capacity 3 yr Average
Recycled & Secondary Aggregate Sites	0.67	2.90	23%	2.4

Source: Aggregate Monitoring Survey, 2020.

5.29 Please note that capacity data collection is still in the early stages, and as such, results should be treated with caution.

Waste Data Interrogator

5.30 The Waste Data Interrogator (WDI) shows data collected by the Environment Agency and includes 'fixed' sites that handle construction, demolition and excavation (CDE) waste. Therefore, recycled aggregates production can be estimated from WDI but to support this, a recycling rate needs to be applied.

5.31 Recycling or recovery rates of CDE wastes vary and depend on the type of material processed and the capability of the facility. Those that have sorting, handling, screening, crushing, and washing plant can process wastes with a high proportion of hard material that readily produces clean aggregates that meet appropriate specifications. Evidence from industry indicate such sites can achieve a 75% or higher recovery rate³³. On the other hand, some sites have lower recycling rates and produce less recycled aggregate. Accordingly, upper and lower 'rates' are employed in Table 5 that estimates between 1.35 to 2.02Mts of recycled aggregate were produced on average in Hampshire during 2018 to 2020. The 10-year average suggests a lower estimate of between 1.29 and 1.94Mt.

Table 5: CDE arisings in Hampshire, 2011-2020

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	3 yr Av.	10 yr Av
CDE ¹ Waste Received for Treatment	1.87	2.22	2.48	3.04	2.53	2.67	2.89	2.78	2.82	2.51	2.7	2.58
Recycled Aggregates (lower estimate) ²	0.936	1.11	1.24	1.52	1.26	1.34	1.44	1.39	1.41	1.25	1.35	1.29
Recycled Aggregates (upper estimate)	1.4	1.66	1.86	2.28	1.89	2.01	2.17	2.08	2.12	1.88	2.02	1.94

Source: Environment Agency Waste Data Interrogator 2011 -2020

Notes: ¹ Construction, Demolition and Excavation

³³ Mineral Products Association 'From Waste to Resources 2019' - https://www.aggn.net.com/files/aggnnet/attachments/news/from_waste_to_resource_a_uk_mineral_products_industry_success_story.pdf

² Lower and Upper bands for estimated tonnage are 50% and 75% respectively of all relevant CD&E waste treated at CDE waste recycling sites in Hampshire

5.32 Owing to the limited information from the WDI it is not possible to estimate the capacity of recycled and secondary aggregates facilities using this approach. Generally, Environmental Permits include limits that are much more than the through-put of the sites. It is therefore concluded there are no major capacity issues for the facilities.

Local uses and markets for recycled aggregate

5.33 Estimates on the utilisation of recycled and secondary aggregate have to be treated with caution. Secondary and recycled aggregate do not currently substitute for primary aggregates in structural uses, only in lower specification construction uses like sub-base in roads and car parks. Of particular relevance is that secondary and recycled aggregate does not generally provide a suitable alternative to sand and gravel aggregates, either sharp sand and gravel (particularly for concrete) or building sand. The main use is to provide a fill that substitutes for the lower quality sand and gravel produced within Hampshire.

Future provision

5.34 The Mineral Products Association reports that the use of recycled and secondary materials in the Great Britain aggregates market has increased rapidly. The proportion of total aggregates supplied from recycled and secondary sources rose from 10% in 1990 to 29% in 2016³⁴. The Mineral Products Association undertook aggregate scenarios to determine potential future growth (see Appendix 2 in their study for more details). The study concluded that recycled and secondary materials are likely to continue to make a significant contribution to supply (30%) but this is not expected to continue to grow significantly³⁵. The MPA has advised that aggregates recycling is reaching the 'upper limit' of its contribution to the aggregate market, with this figure further refined to 28%³⁶.

5.35 The NPPF³⁷ states that as far as practicable, Local Plans should '*take account of the contribution that substitute, or secondary and recycled materials and minerals waste would make to the supply of materials, before considering*

³⁴ The Mineral Products Industry at a Glance (MPA, 2018):

<https://mineralproducts.org/documents/Facts-at-a-Glance-2018.pdf>

³⁵ Long-term aggregates demand & supply scenarios, 2016-2030 (MPA, 2017):

https://mineralproducts.org/documents/MPA_Long_term_aggregates_demand_supply_scenarios_2016-30.pdf

³⁶ Aggregates recycling reaching 'upper limit' says MPA (MPA, 2022) [Aggregates recycling reaching 'upper limit' says MPA \(mineralproducts.org\)](https://mineralproducts.org)

³⁷ National Planning Policy Framework (Para. 210(b)):

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

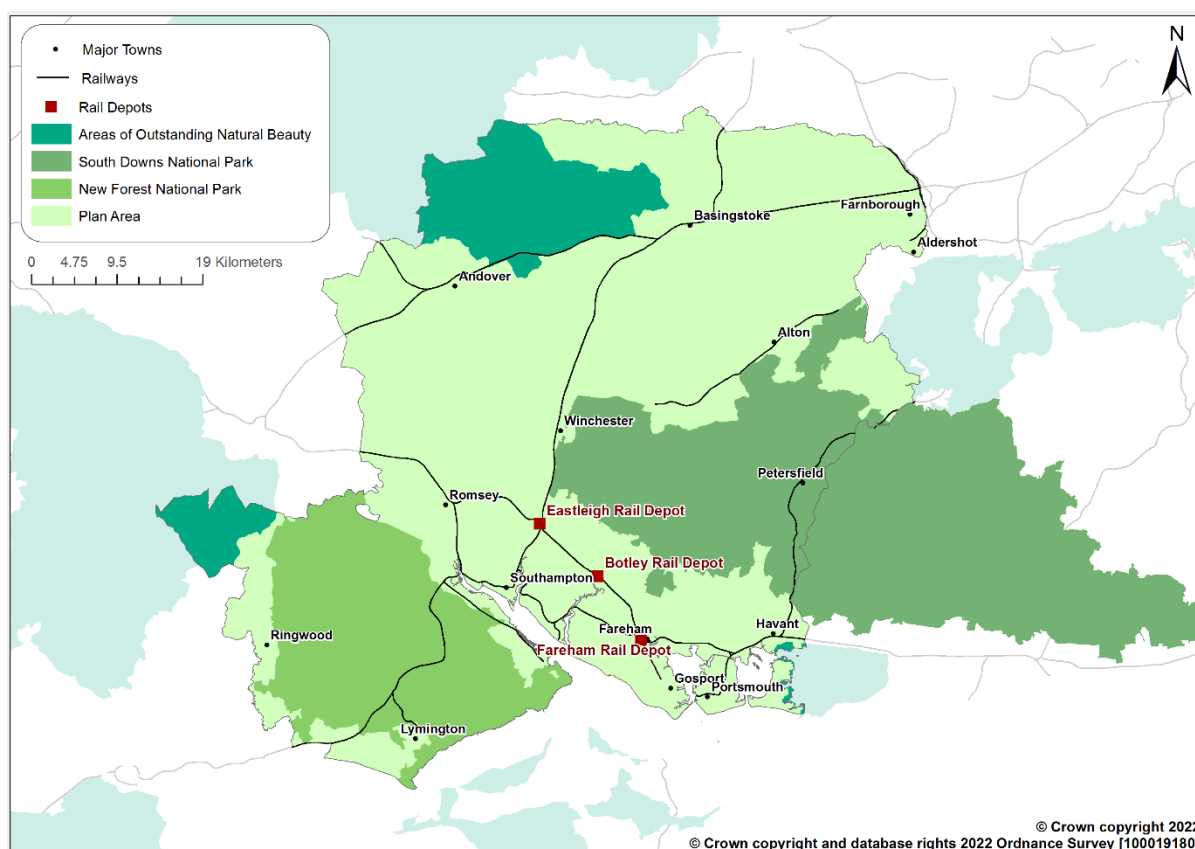
extraction of primary materials, whilst aiming to source mineral supplies indigenously’.

- 5.36 As information regarding existing capacity is unreliable, it is difficult to determine the level of need through the Plan period. Therefore, there is a need to encourage additional sites in the Plan area and the HMWP Partial Update should seek to maintain the existing capacity at standalone sites (as temporary sites are likely to be permitted in relation to another development such as a large regeneration site or extraction site) but not limit additional capacity.
- 5.37 The Aggregate Recycling Topic Paper recommends that in relation to gathering data, the Hampshire Authorities should continue to monitor sales and capacity through the annual Aggregates Monitoring Survey as well as reviewing the Waste Data Interrogator.
- 5.38 The Hampshire Authorities should continue to work with regional bodies such as the South East Waste Planning Advisory Group and the South East England Aggregate Working Party as well as the Department for Levelling Up, Housing and Communities to gain a better understanding of recycling and secondary aggregate data as well as future demand.
- 5.39 The Aggregate Recycling Topic Paper explores a number of different methodologies of calculating capacity. Whilst it is recognised that the capacity figures may be inflated based on the information received or obtained from permits, it is also recognised that a large proportion of capacity from temporary or mobile plants is not recorded at all. The Mineral Products Association outlines that only a third (28%) of demand is met by recycled and secondary aggregate. Based on total planned supply of aggregates in Hampshire, this would suggest that at least 1.8Mt capacity should aim to be provided.

Crushed rock

- 5.40 The geology of Hampshire means that it does not have its own source of crushed and hard rock minerals such as limestone. Therefore, those minerals that cannot be derived from within the Plan area have to be imported in order to meet local needs. Imports are mainly by road and rail. However, there has been some importation by sea in recent years.
- 5.41 Limestone is largely imported into Hampshire from quarries in Somerset by rail directly into three aggregate rail depots in the south of the county at Botley, Eastleigh and Fareham. The location of the rail depots processing crushed rock imports is shown on the location map contained in Figure 6.

Figure 6: Location map of active rail depots in Hampshire, 2021



Sources of crushed rock

5.42 The movement of crushed rock is tracked in the Aggregate Minerals (AM) survey. Table 6 shows the sources of crushed rock consumed in Hampshire in 2014 and 2019. The dominant source of crushed rock for Hampshire is Somerset which has some 400 million tonnes of approved reserves (equivalent to 29.9 years)³⁸. While not all the quarries in Somerset have rail connections, those that do form a significant proportion. Provided Somerset maintains its productive capacity, it is estimated that there are sufficient reserves available to supply on-going market demand.

Table 6: Sources of crushed rock consumed in Hampshire (Thousand tonnes, Tt)

Source	2014		2019	
	Proportion	Tonnage	Proportion	Tonnage
Somerset	70%	638	80%	550.4
Leicestershire	20%	182.4	>1%	-
Elsewhere	10%	91.2	20%	137.6

Source: BGS

³⁸ Somerset LAA 2016: www.somerset.gov.uk/EasySiteWeb/GatewayLink.aspx?allId=112822

Crushed rock flow to / from Hampshire

5.43 The importation and consumption of crushed rock within Hampshire is reported in the Aggregate Monitoring (AM) reports. The 2014 AM survey for England and Wales³⁹ identifies that 911,600 tonnes of crushed rock were imported into Hampshire. The 2019 AM Survey⁴⁰ identifies 688,000 tonnes of crushed rock imported into Hampshire. This is a reduction of 24%.

5.44 In terms of exports of crushed rock, these are technically zero as Hampshire does not have its own source of crushed rock to export. However, it is understood that a small amount of rail imported crushed rock arrives at Hampshire rail depots, to then be sold on outside of Hampshire via road exports.

5.45 Table 7 suggests that there is an increasing demand for crushed rock within the Hampshire area. Sales have steadily increased, remaining at a sustained level since 2016, reflected in the higher 3-year average of 0.58Mt.

Table 7: Sales from Hampshire Rail Depots (Million tonnes, Mt)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	10-year Av.	3-year Av.
Sales	0.33	0.28	0.39	0.46	0.46	0.55	0.57	0.69	0.53	0.52	0.48	0.58

Source: South East Aggregate Monitoring Report 2020

Current capacity for crushed rock imports

5.46 As the current sales at the rail depots (as shown in Table 7) are currently below earlier amounts, it would suggest that there is existing capacity at the rail depots.

Uses and markets for crushed rock in Hampshire

5.47 Crushed rock imports into Hampshire are mainly used for roadstone, rail track ballast, concrete aggregate and amoustone as well as other graded aggregate and constructional fill.

³⁹ Collation of the results of the 2014 Aggregate Minerals survey for England and Wales: www.gov.uk/government/uploads/system/uploads/attachment_data/file/563423/Aggregate_Minerals_Survey_England_Wales_2014.pdf. Tables 10 (imports) and 11 (consumption).

⁴⁰ Collation of the results of the 2019 Aggregate Minerals survey for England and Wales: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1008931/AM2019_National_Collation.pdf

Future provision

- 5.48 In 2018 Somerset County Council confirmed that they have sufficient reserves to meet current needs and do not foresee any likely issues that would affect the future supply of crushed rock to the South East Region, which includes Hampshire. Should future demand increase, the issue lies with the capacity of the rail depots to manage a higher level of imports, rather than with future supply.
- 5.49 Reviewing the sales data, the provision rate of 1mtpa as set out in the adopted Plan (2013) allows current demand to be met with an element of growth. The extra provision allows Hampshire's aggregate supply flexibility in meeting demand.

Marine-won sand and gravel

- 5.50 Marine-won sand and gravel is a significant source of aggregate for Hampshire.
- 5.51 The level of marine-won sand and gravel sales at wharves in Hampshire is shown in Table 8.

Table 8: Marine-won sand and gravel sales from wharves in Hampshire, 2011-2020 (Million tonnes, Mt)

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	10-yr Av.	3- yr Av.
Sales	1.17	1.1	1.43	1.36	1.55	1.55	1.52	1.42	1.34	1.35	1.38	1.37

Source: South East Aggregate Monitoring Report 2020

- 5.52 Hampshire's consumption of marine-won aggregates has increased over the last 10 years according to the AM2020 Aggregate Mineral Survey. Hampshire's level of imported marine sand and gravel represented 4% of the marine aggregates consumed within Hampshire in 2014, this rose to 8% in 2019⁴¹.

Sources of marine aggregate

- 5.53 The AM2019 Aggregate Mineral (AM) survey collation data provides details the sources of the imported marine sand and gravel (see Table 9).

⁴¹ Collation of the results of the 2019 Aggregate Minerals Survey for England and Wales: [Aggregate minerals survey for England and Wales, 2019 \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/671111/Aggregate-minerals-survey-for-England-and-Wales-2019.pdf)

Table 9: Sources of marine sand and gravel consumed in Hampshire 2019

Source	Proportion
Hampshire (inc SCC and PCC)	60-90%
Brighton and Hove	1-10%
West Sussex	1-10%
IOW	1-10%
Medway	1-10%
Total	1,478 (thousand tonnes)

Source: BGS

5.54 Table 9 shows that the main source of material is from Hampshire which suggests that this is marine dredged material that has been landed at wharves within Hampshire. Second to this, some marine dredged material comes from areas along the coast to the East.

Future provision

5.55 There is no evidence to suggest that marine sand and gravel imports are likely to cease but safeguarded wharves in Southampton and Portsmouth are threatened by encroachment and desired redevelopment by other forms of development such as housing and should remain safeguarded.

5.56 The current marine sand and gravel import figures suggest an increase in their role in total primary aggregate supply for Hampshire.

5.57 Any additional provision that saw marine-won sand and gravel exported from Hampshire would preferably be via rail to limit road movements. Wharf capacity to serve Hampshire, should be safeguarded. However, a recent survey⁴² suggests that Hampshire's wharves are operating at 83% of capacity which would indicate that there is little headroom to accommodate future growth in demand.

5.58 The number of operational wharves in Hampshire has decreased, but the impact that has had on capacity is less apparent. There are currently five operational wharves in Hampshire. There have been new opportunities to increase capacity; an application⁴³ was submitted to New Forest District Council for the development of the existing Marchwood Military Port to a commercial port including an aggregate use element.

⁴² Hampshire LAA 2021:

<https://hants.sharepoint.com/sites/ETEE8681/Shared%20Documents/HMWP%20LAA%202021.pdf>

⁴³ Marchwood Military Port, Application Number: 21/11156 - [21/11156 | Hybrid planning application for the development of land at Marchwood Port \(existing classes B2, Class B8 and ancillary uses\) for additional development to support the proposed use of the land for port and port related uses comprising:](#)

5.59 Safeguarding policies will be vital to ensure there is no further overall loss of capacity of wharves or rail depots.

5.60 The adopted Plan sets out a provision rate of 2.0mtpa for marine-won sand and gravel. Monitoring as part of the LAA process saw a provision rate for marine-sand and gravel proposed at a lower rate of 1.49Mt⁴⁴. This is lower than the Plan rate of 2Mt. However, as land-won supplies become more constrained it is anticipated that demand for marine-won sand and gravel will increase. Therefore, a Plan provision rate of 2Mt is considered to allow more flexibility and an element of future growth during the Plan period. The limiting factor will be the capacity of the wharves to accommodate an increase in supply and for this reason the provision rate of marine-won sand and gravel capacity is limited to 2Mt. This will continue to be monitored as part of the annual monitoring assessments.

Land-won sand and gravel

5.61 Land-won sand and gravel provides a significant source of the sand and gravel construction aggregate used in Hampshire. Indeed, it provides the only source of soft sand (building sand) as this cannot currently be substituted by alternative materials.

Local uses, sales and markets

5.62 Sand and gravel are important to the continued economic prosperity of Hampshire which is subject to major growth pressures. A steady and adequate supply of aggregate is required to enable the development of new houses, schools, offices, to maintain and improve existing building stock and to service infrastructure and roads. Locally produced sand and gravel is an essential element to overall aggregate supply.

5.63 Uses of sand and gravel across Hampshire may include its general application as an aggregate, as a material to make concrete, concrete products or cement, in other building material uses as a constructional base material or fill. Unwashed or as-raised sand and gravel is commonly used as construction fill material and also helps for resurfacing tracks and paths. This material is often referred to as 'hoggin' and contains the clay content which helps act as a binding agent.

⁴⁴ Local Aggregate Assessment (2021) - <https://hants.sharepoint.com/sites/ETEE8681/Shared Documents/Forms/AllItems.aspx?id=%2Fsites%2FETEE8681%2FShared Documents%2FHMWP LAA 2021%2Epdf&parent=%2Fsites%2FETEE8681%2FShared Documents&p=true&ga=1>

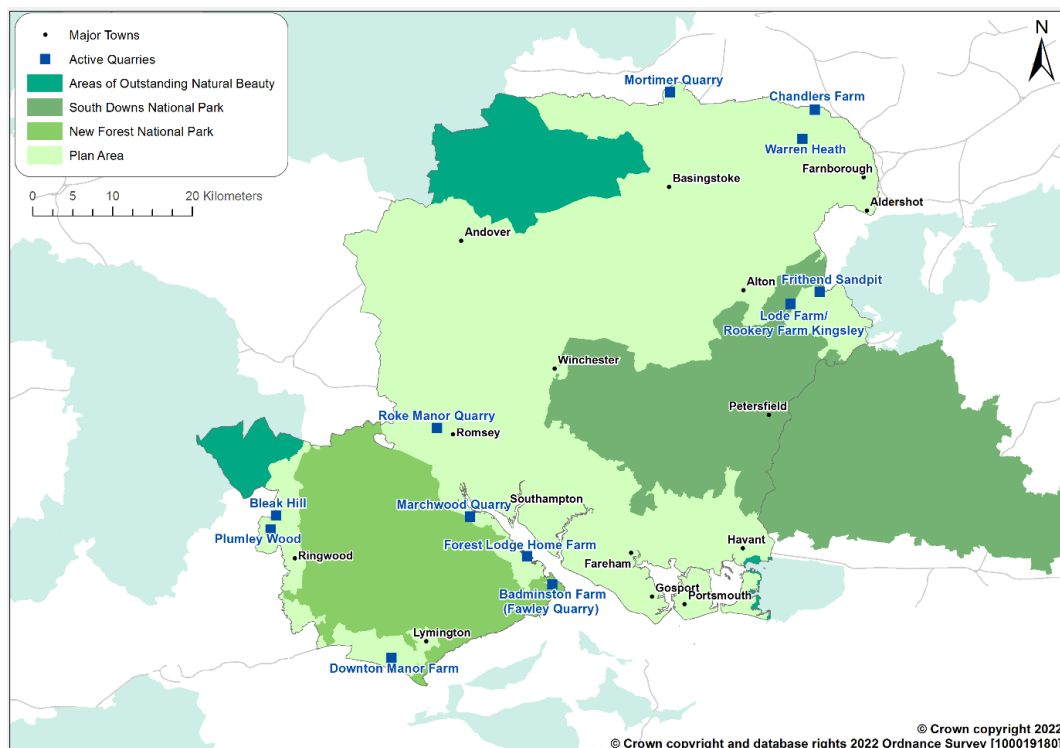
- 5.64 Sand and gravel may also have a number of other uses such as roofing shingles, on icy roads in the winter, for glass making, for railroad ballast, for water filtration and for household gardening.
- 5.65 'Soft sand' is an important mineral resource with specific applications; such as asphalt, mortars, plaster and top dressing, for all of which sharp sand and gravel and other aggregate materials are unsuitable.
- 5.66 Patterns of sand and gravel supply largely reflect the location of mineral resources. It can be assumed that the markets for sand and gravel generally support the major towns within Hampshire.

Current production in Hampshire

- 5.67 The main economic mineral deposit worked from the land within Hampshire is sand and gravel. Valley gravel deposits occur in the Avon, Test, Itchen and Blackwater valleys. These lie mostly below the water table and include comparatively small proportions of silt, clay and fine sands. They are generally fairly uniform in thickness.
- 5.68 The quarrying of sand and gravel in Hampshire has historically been focussed in the south west, in the Avon. In addition, there have been concentrations of workings in north east Hampshire in the Blackwater Valley.

Extraction locations

Figure 7: Active sand and gravel sites in Hampshire, 2021



5.69 The quarries that have approved reserves for extraction of sharp sand and gravel and soft sand in Hampshire are listed in Table 9. Roeshot is shown as inactive as the site was granted permission in 2019 and has not yet commenced operations.

5.70 Those Active sites with permission in 2021 are shown in Figure 7.

Table 10: Permitted sand and gravel quarries in Hampshire

Site	Operator	Aggregate		Status
		Sharp Sand & Gravel	Soft Sand	
Badminton Farm, Fawley	Mid Hants Ltd	✓		Active
Blashford Quarry, Ringwood	Tarmac Ltd	✓	✓	Active
Bleak Hill Quarry, Ringwood Forest	CEMEX	✓	✓	Active
Bramshill Quarry (Warren Heath)	CEMEX	✓		Active
Downton Manor Farm, Milford on Sea	New Milton Sand and Ballast Sharp	✓		Active
Forest Lodge Farm	TJ Transport Ltd	✓	✓	Active
Frith End Quarry	Grundons		✓	Active
Kingsley Quarry	Tarmac Ltd		✓	Active
Marchwood Quarry	Marchwood Aggregates	✓		Active
Mortimer Quarry	Hills Quarry Products Ltd	✓		Active
Roke Manor Quarry	Raymond Brown Aggregates	✓		Active
Roeshot	TBC	✓		Inactive

Source Hampshire LAA 2021

5.71 Marchwood Quarry is no longer extracting, but still retains a small amount of approved reserves. Roeshot Quarry was granted permission in 2019 and has not commenced extraction yet.

5.72 The permitted sand and gravel reserves in Hampshire at 31 December 2020 were **8,183,000 tonnes**⁴⁵.

⁴⁵ Hampshire LAA 2021:
<https://hants.sharepoint.com/sites/ETEE8681/Shared%20Documents/HMWP%20LAA%202021.pdf>

Resources

5.73 The Hampshire Minerals and Waste Plan (2013) sets out allocations for new sites in Policy 20 as well as reserves at existing permitted sites and extensions to existing sites. Whilst some sites have come forward and others completed, the remaining allocations and yields are set out in Table 11. Allocations are considered in more detail under ‘future provision’.

Table 11: Estimated yield of remaining allocations within Hampshire (Million tonnes, Mt)

Site	Amount (Mt)	Aggregate
Bleak Hill Quarry Extension*	0.6	SS+G
Bramshill Quarry Extension	1	SS+G
Cutty Brow	1	SS+G
Hamble Airfield**	1.5	SS+G
Purple Haze**	4	SS and SS+G
Total	8.1	

Footnotes

* Permission was granted in December 2021 for the Bleak Hill Quarry extension

**Planning applications have been submitted for Hamble Airfield and Purple Haze sites

Aggregate flow to / from Hampshire

5.74 Information on flows of aggregate between mineral planning authority areas is difficult to obtain, and much of the data is commercially confidential. However, information can be extracted from the BGS collation results for the Aggregate Minerals survey. This information is available for 2009, 2014 and data has just recently been released from the 2020 survey which collates the data from 2015 to 2019.

Imports

5.75 The market dictates that sand and gravel will be obtained from the cheapest location for that particular material, and mineral planning authority boundaries do not influence the flow of minerals. Where the demand in Hampshire can be satisfied most efficiently and cost effectively from locations in other areas, such as Dorset, Wiltshire, West Sussex, Brighton and Hove, or Oxfordshire then it will. This may be due to the specific type or quality that is required only being available in a neighbouring mineral planning authority area, or simply due to the fact that the point of demand is closer to the point of supply somewhere other than in Hampshire.

5.76 The sources of sand and gravel consumed in Hampshire in 2014 and 2019 are shown in Table 12. The table shows that in 2014 and to a greater extent in 2019, the majority of the sand and gravel consumed in Hampshire was from Hampshire, with between 10% and 20% imported from elsewhere.

Table 12: Sources of Sand and Gravel consumed in Hampshire in 2014 and 2019 (Thousand Tonnes, Tt)

Source	2014		2019	
	Proportion	Tonnage	Proportion	Tonnage
Hampshire	80%	1617.6	90%	2182.5
Elsewhere	20%	404.4	10%	242.5

Source: BGS

Exports

5.77 The principal destinations of Hampshire's sand and gravel in 2014 and 2019 are shown in Table 13.

Table 13: Destinations of Hampshire's Sand and Gravel in 2014 and 2019 (Thousand tonnes, Tt)

Destination	2014		2019	
	Proportion	Tonnage	Proportion	Tonnage
Hampshire & IOW	71%	1590	84%	1855
South East	20%	440	10%	209
Elsewhere	9%	207	6%	132
Unallocated	0%	0	0%	0

Source: AM2014 and AM2019 Table 9b

5.78 The destination data on sand and gravel shows that of the aggregates sold in Hampshire in 2014, 71% was consumed in Hampshire with the remainder being exported, principally to Berkshire, Surrey and West Sussex in South East England, but also west to Dorset, Wiltshire and west of England (Avon). It is noted that this consumption figure is lower than that suggested in Table 12.

5.79 The proportion of aggregates consumed in Hampshire increased in 2019 with 84% being consumed within Hampshire and 16% exported to destinations in the South East and elsewhere.

Identifying future demand

5.80 The NPPF⁴⁶ states that a steady and adequate supply of aggregates should be planned for by minerals planning authorities through the preparation of annual

⁴⁶ National Planning Policy Framework (Para. 213):

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

Local Aggregate Assessments. These should be based on a rolling average of 10 years sales data and other relevant local information. They should also consider all supply options.

5.81 Minerals planning authorities are also encouraged to use landbanks of aggregate minerals reserves as an indicator of the security of supply and to indicate any additional provisions that may be required. The landbank of at least seven years should be maintained for sand and gravel.

5.82 Hampshire has both sharp sand and gravel deposits and deposits of soft sand. Table 14 outlines the sales of sand and gravel for Hampshire, for the period 2011 to 2020.

Table 14: Sales of Sand and Gravel in Hampshire 2011-2020 (Million Tonnes, Mt)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	10-yr Av.	3-yr Av.
Sharp sand and Gravel sales	0.71	0.58	0.73	0.78	0.71	0.75	0.73	0.96	0.66	0.83	0.74	0.81
Soft Sand Sales*	0.12	0.16	0.12	0.11	0.12	0.2	0.23	0.23	0.23	0.02	0.15	0.16
Total Sales	0.83	0.75	0.85	0.88	0.83	0.95	0.96	1.18	0.9	0.85	0.90	0.98

Source: Hampshire LAA 2021 and AM Survey.

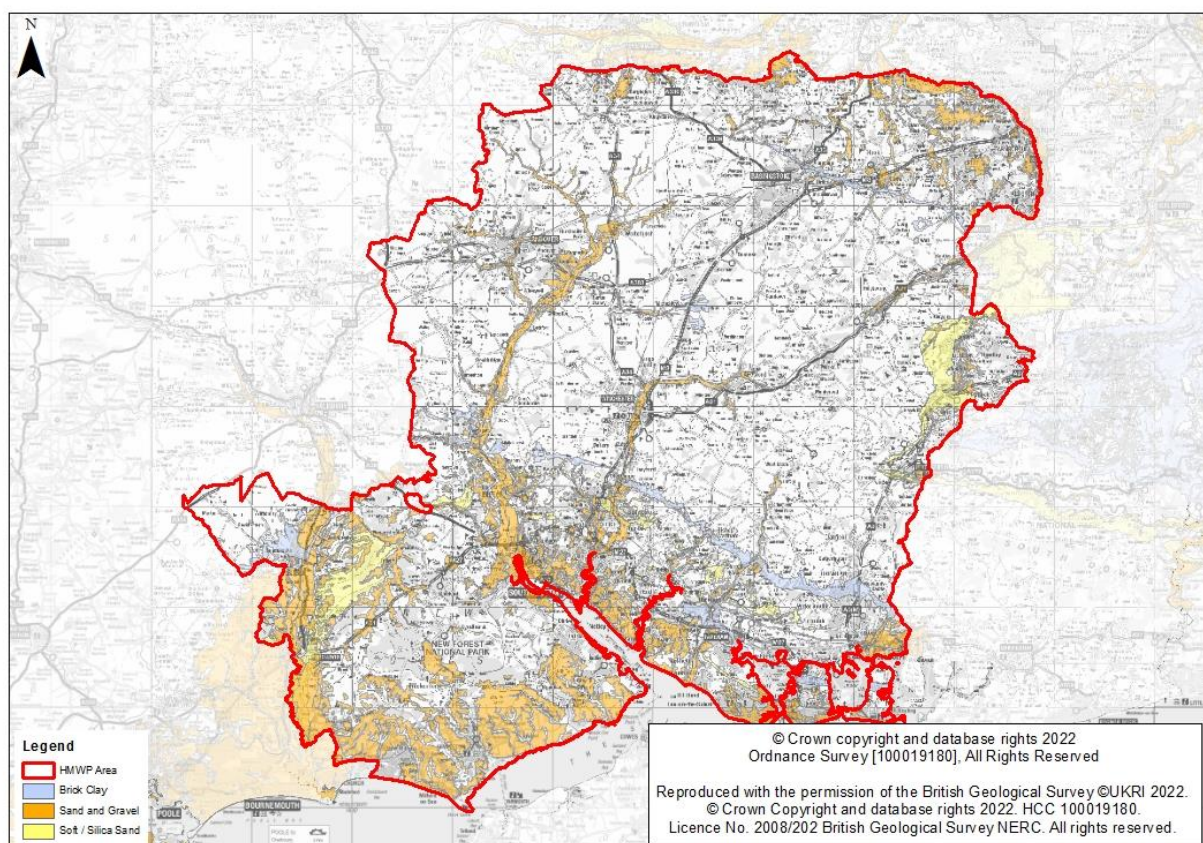
5.83 The increase in the 3-year average (in comparison to the 10-year average) reflects the increase in sales between 2018 and 2020 in Hampshire. The peak was 1.18Mt per annum (Mtpa) in 2018, but with a drop in 2010 and 2018 to 0.9Mtpa and 0.85Mtpa. In fact, there has been a sustained uplift in sales for the past 5-year period for sand and gravel. This has been the case with soft sand, for the exception of 2020 where separate incidents at soft sand quarries halted extraction. There has been slightly more fluctuation when looking at sharp sand and gravel sales, but the 3-year average reflects the uplift in sales.

5.84 Appendix 1 outlines evidence for future aggregate demand. Construction and economic forecasts both suggest growth and there are already a number of national and local development projects which all indicate an increase in need for construction aggregates.

Soft sand

5.85 'Soft sand' is generally fine-grained sand in which the individual grains are well-rounded, which provides a relatively soft texture and free-flowing nature to the material and is used in products which need to be easily worked, such as mortars and plaster. These are collectively known as 'building sands', and this term is used interchangeably with soft sand.

Figure 8: Minerals of economic interest in Hampshire



5.86 Soft sand resources found in the Folkstone beds in East Hampshire have the potential to be Silica sand, as shown on Figure 8. This has been demonstrated in the reported sales figures for quarries located in this area.

5.87 The current adopted Hampshire Minerals & Waste Plan (2013) allocated sites for soft sand supply. These were Forest Lodge Farm⁴⁷, which has now been permitted and Purple Haze⁴⁸, which has been submitted as an application but is yet to be determined.

⁴⁷ Forest Lodge Home Farm: <https://planning.hants.gov.uk/Planning/Display/16/10450>

⁴⁸ Purple Haze: <https://planning.hants.gov.uk/Planning/Display/21/10459>

Table 15: Soft Sand sales in Hampshire 2011-2020 (Million Tonnes, Mt)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	10-yr Av.	3-yr Av.
Soft Sand Sales*	0.12	0.16	0.12	0.11	0.12	0.2	0.23	0.23	0.23	0.02	0.15	0.16

Source: Hampshire LAA 2021 and AM Survey.

5.88 Sales in 2020 were 0.2Mt, as shown on Table 15, which was exceptionally low.

This is attributed to two separate incidents at soft sand quarries which effectively resulted in the temporary halt to the extraction of soft sand. The national pandemic is also likely to have had an impact. This extreme variation has resulted in a lower 3-year average. Prior to this, sales of soft sand had been steady between 2016 and 2020 at over 0.2Mt.

5.89 In 2020, the South East had a collective reserve of around 22Mt of soft sand which equates to 12 years in landbank⁴⁹. Sales of soft sand are generally increasing (except for the drop in 2020), but reserves are declining and the 12-year landbank is lower than average for last decade.

5.90 The AM survey also collects data on 'sand and gravel or hoggins for constructional fill'. In Hampshire, this has always consisted of small quantities but slightly increasing quantities, as shown in Table 16. In 2018, a significant amount was reported at a particular quarry which has skewed the averages and may have been a mis-recording based on amounts previously recorded. However, it may also represent the quality of material extracted at the site that year or may have been required to support a particular project.

5.91 Hoggins or fill material is not considered of local importance and is not provided for in the Hampshire Minerals & Waste Plan. However, it is recognised that it is required to support localised projects such as the restoration of road edges, particularly in designated landscapes including the National Parks which specify its use in Design Guides. Therefore, its use will continue to be monitored through the AM survey.

⁴⁹ South East England Aggregate Working Party – Annual Report 2020 (December 2021): <https://hants.sharepoint.com/sites/ETEE8681/Shared%20Documents/SEEAWP%20Annual%20Report%202020%20.pdf>

Table 16: Hoggins or 'fill' sales in Hampshire 2011-2020 (Thousand Tonnes, Tt)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	10-yr Av.	3-yr Av.
Hoggins or fill material Sales	12.9	2.7	20.0	38.3	31.8	51.2	51.8	207.6	23.0	57.0	46.6	95.9

Source: AM Survey.

Landbank

5.92 The landbank is a measure of the permitted reserves of mineral expressed in the number of years that the reserves would provide production for at the apportionment or other given rate. It is a theoretical measure of the life of the combined reserves assuming they can be worked at a consistent rate across the period. In practice, reserves will be unevenly distributed between quarries and some quarries will run out of reserves before others. A large amount of reserve in a quarry with only a low production rate is notably less available to the landbank than equivalent reserves in a high producing quarry.

5.93 The NPPF⁵⁰ requires mineral planning authorities to make provision for the maintenance of a landbank of at least seven years for sand and gravel. Reserves of sand and gravel in Hampshire with planning permission for extraction (permitted reserves) at 31st December 2020 were 8,183,000 tonnes.

Table 17: Hampshire sand and gravel landbanks (Million tonnes, Mt)

	Permitted Reserve (Mt)	Landbank based upon Local Requirement (years)*	Landbank based upon LAA Rate (years)*	Landbank based upon 10yr average sales between 2011-2020 (years)	Landbank based upon 3yr average sale between 2018-2020 (years)	Landbank based upon 2020 sales (years)
Soft sand	0.167	0.60	0.73	1.08	1.04	7.26
SS+G	8.016	6.26	8.71	10.79	9.85	9.70
Total	8.183	5.25	7.12	9.11	8.38	9.63

Please note: the silica sand landbank is incorporated into the soft sand landbank as the resources can be classed as either soft sand or silica

*Local Requirement for SS&G – 1.28, Soft Sand – 0.28, Total – 1.56 (mtpa)

** LAA Rate for SS&G – 0.92, Soft Sand – 0.23, Total- 1.15 (mtpa)

Source: Aggregate Monitoring survey data.

⁵⁰ National Planning Policy Framework (Para. 213(f)) -

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

- 5.94 The Local Aggregate Assessment for the period 2020, determined the LAA Rate⁵¹ as 1.15 million tonnes. Based on the 2021 LAA rate the landbank for sand and gravel is 7.12 years (see Table 17).
- 5.95 The NPPF requires mineral planning authorities to ensure (among other things) that large landbanks bound up in very few sites do not stifle competition and to provide for a steady and adequate supply of aggregates.
- 5.96 A review of the sales and supply within the set market areas of Hampshire has been conducted. The market areas are defined as:
- Whitehill & Bordon
 - Avon Valley
 - New Forest
 - West of Romsey
 - North East Hampshire
- 5.97 Sales data for the past 10 years was compiled for each known extraction site within the set market areas. This included all those that have now ceased extracting or have only just commenced over the entire time period. The 10 year sales average for each market area was then calculated.
- 5.98 The 10 year average figure for each market area was then plotted on a graph against the anticipated extraction rates for those sites known to be permitted and those proposed within each area. The difference between these was the known shortfall or surplus.
- 5.99 The results varied between the market areas. The Avon Valley market area is currently below what the market average indicated. However, with the site proposals, this then creates a surplus for the next 10 years, before falling back in line with the market average. A similar situation exists for the West of Romsey Area.

⁵¹ The LAA Rate can also be referred to as the 'Annual Production Rate' (APR).

Figure 9: Avon Valley market area provision projection

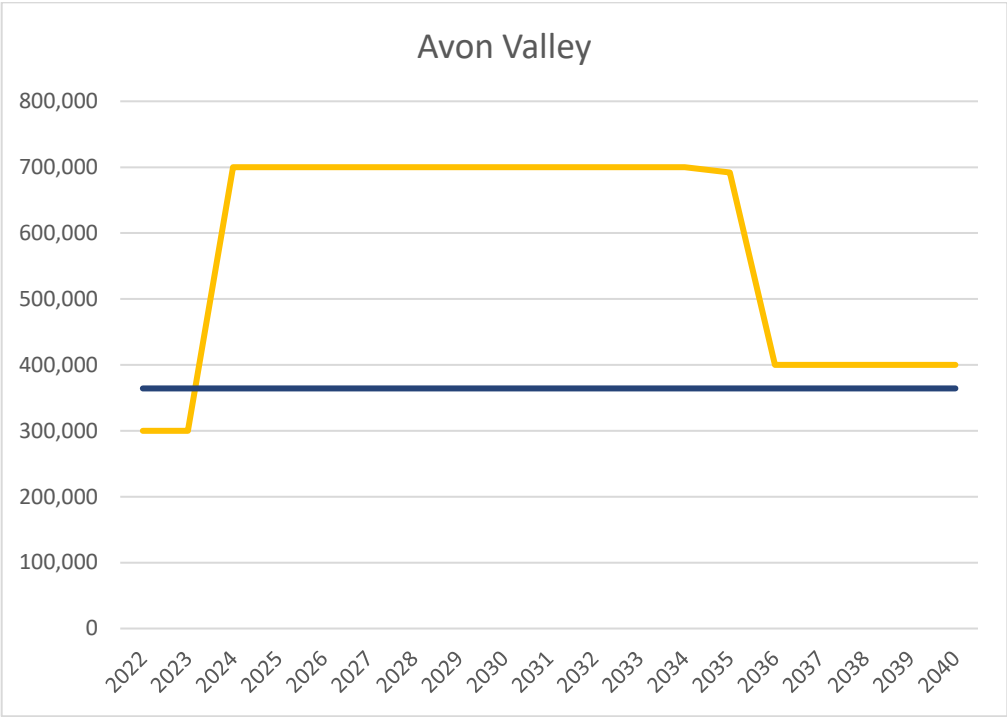
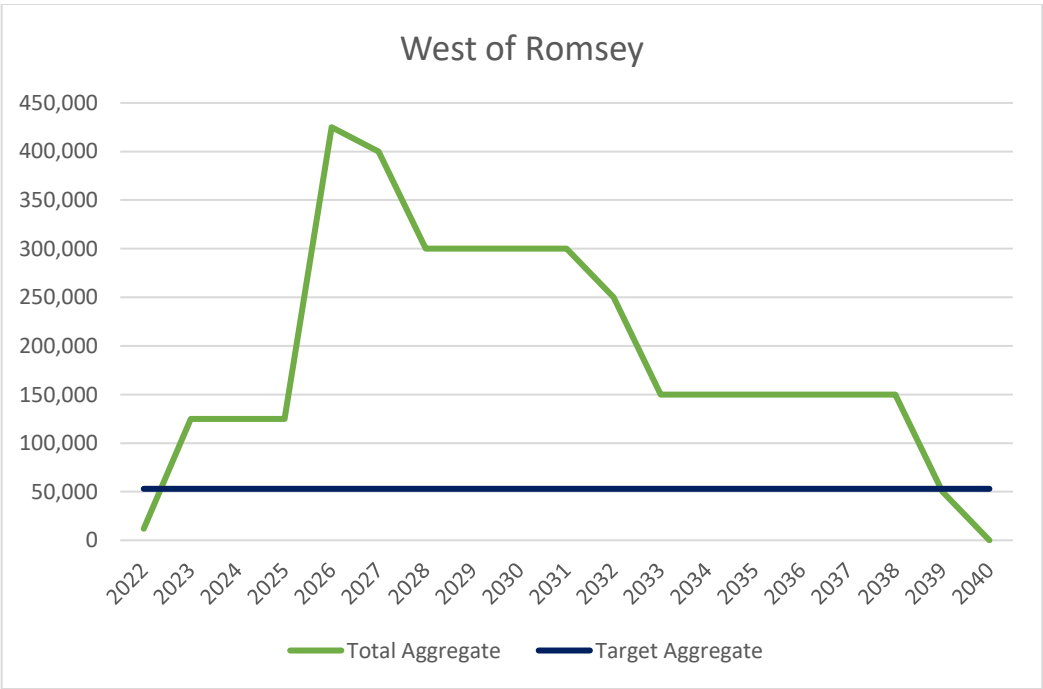


Figure 10: West of Romsey market area provision projection



5.100 For North East Hampshire, there is currently a surplus for the area which exists until around 2030, where upon it drops sharply below the market average. A similar situation occurs when plotting the figures for the Whitehill & Bordon market area. However, there is an intervening plateau between the surplus and shortfall periods.

Figure 11: North East Hampshire market area provision projection

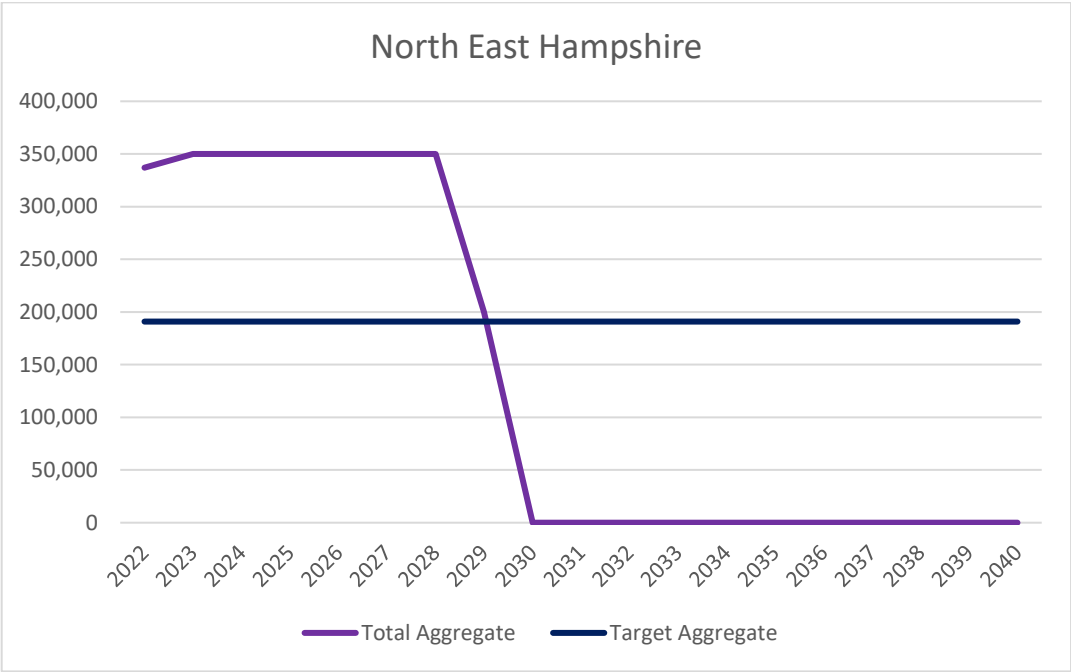
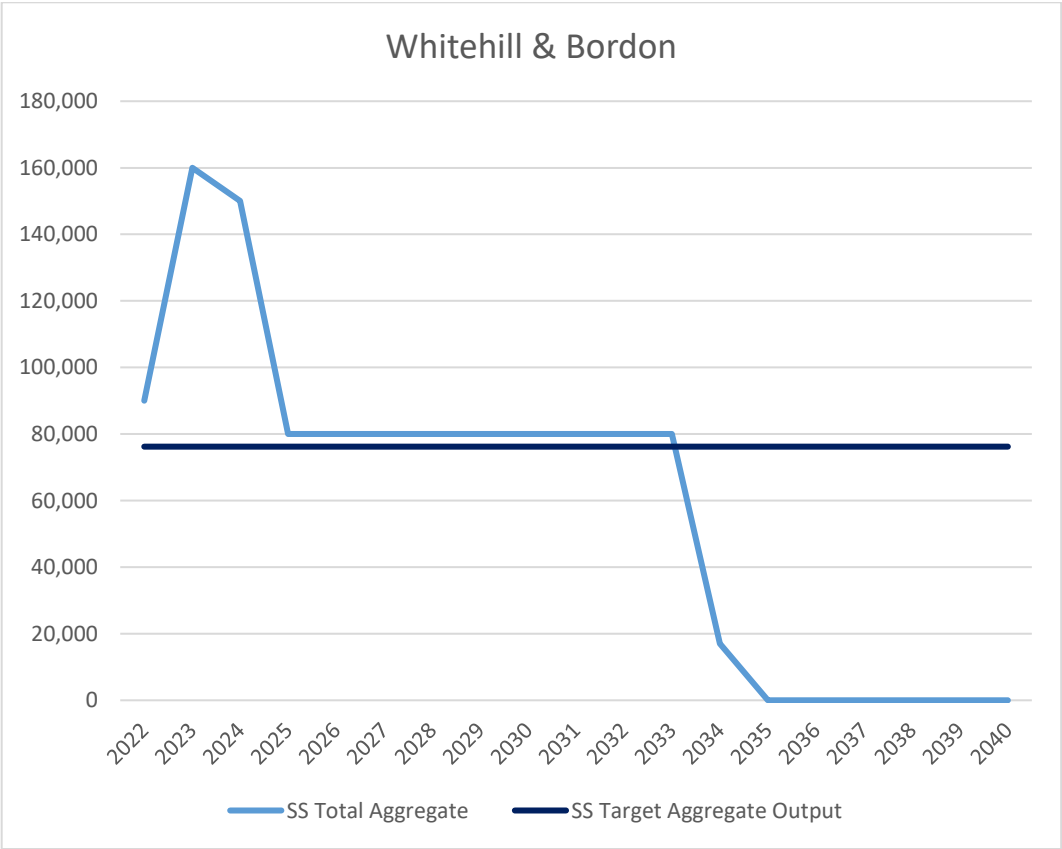


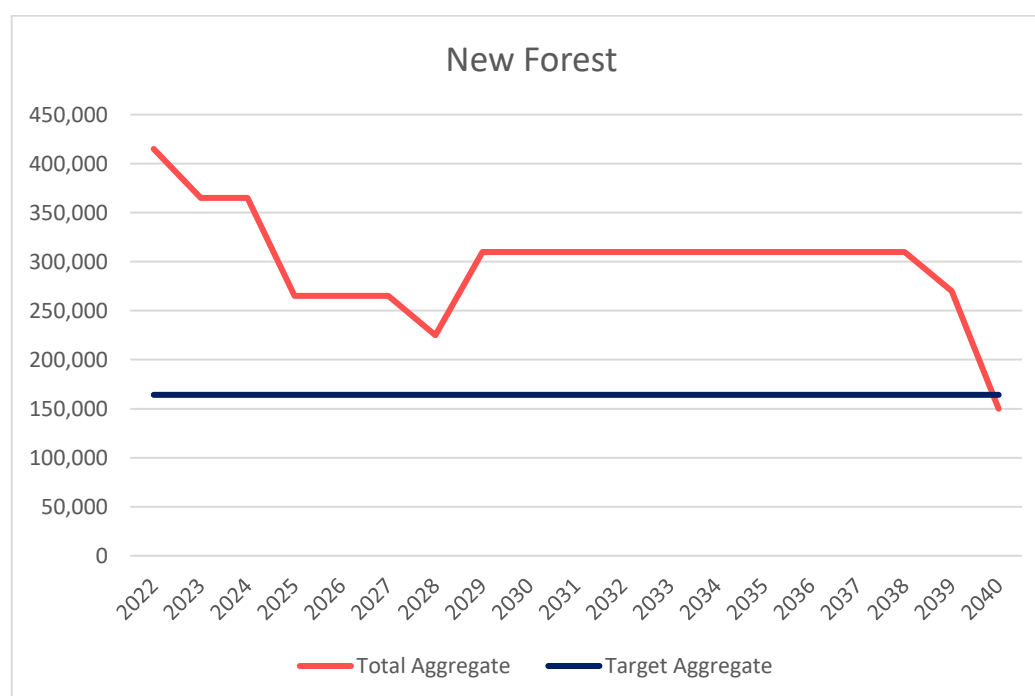
Figure 12: Whitehill & Bordon market area provision projection



5.101 The New Forest appears to be operating above the market average for the Plan period, only decreasing at the end of the proposed plan period around 2040

which is the extent of the site proposals. It is important to note that the South Hampshire area does not have any sites included in this assessment as it was not possible to determine a market average due to a lack of sites in this market area in the last 10 years. Therefore, whilst the New Forest is operating above the past market area average, it could be assumed that these areas are a wider market area and could be making provision more widely to accommodate other market area shortfalls. This assumption goes for the whole of Hampshire, the ideal being a steady supply of mineral.

Figure 13: New Forest market area provision projection



Future provision of sand and gravel

- 5.102 The proposed Plan period is up to 2040. If the LAA rate is projected forward over 19 years to 2040 a total of 21.85Mt of sand and gravel would be required over the course of the Plan period. Current permitted reserves for Hampshire are 12.183Mt. This means that there is a total requirement of 9.67Mt of sand and gravel (1.15Mt per annum).
- 5.103 This requirement can be broken down into sharp sand and gravel requirement of 17.48Mt over the plan period (0.92Mt per annum). With the permitted reserves of sharp sand and gravel at 11.016Mt, there is a requirement for **6.46Mt** over the plan period.
- 5.104 Projecting the LAA rate to 2040 for soft sand indicates a requirement for **4.37Mt** (0.23Mt per annum).

- 5.105 A number of allocations remain undeveloped from Policy 20 of the adopted Hampshire Minerals and Waste Plan. Planning applications have been submitted for Hamble Airfield⁵² and Purple Haze⁵³ but are yet to be determined. However, it should be noted that both applications state a higher yield than that set out in the Plan (see Table 18). Purple Haze is also stated to contain a majority of soft sand. Should both current applications be permitted, a further 6.2Mt will be added to the reserves.

Table 18: HMWP Sand and Gravel Allocations

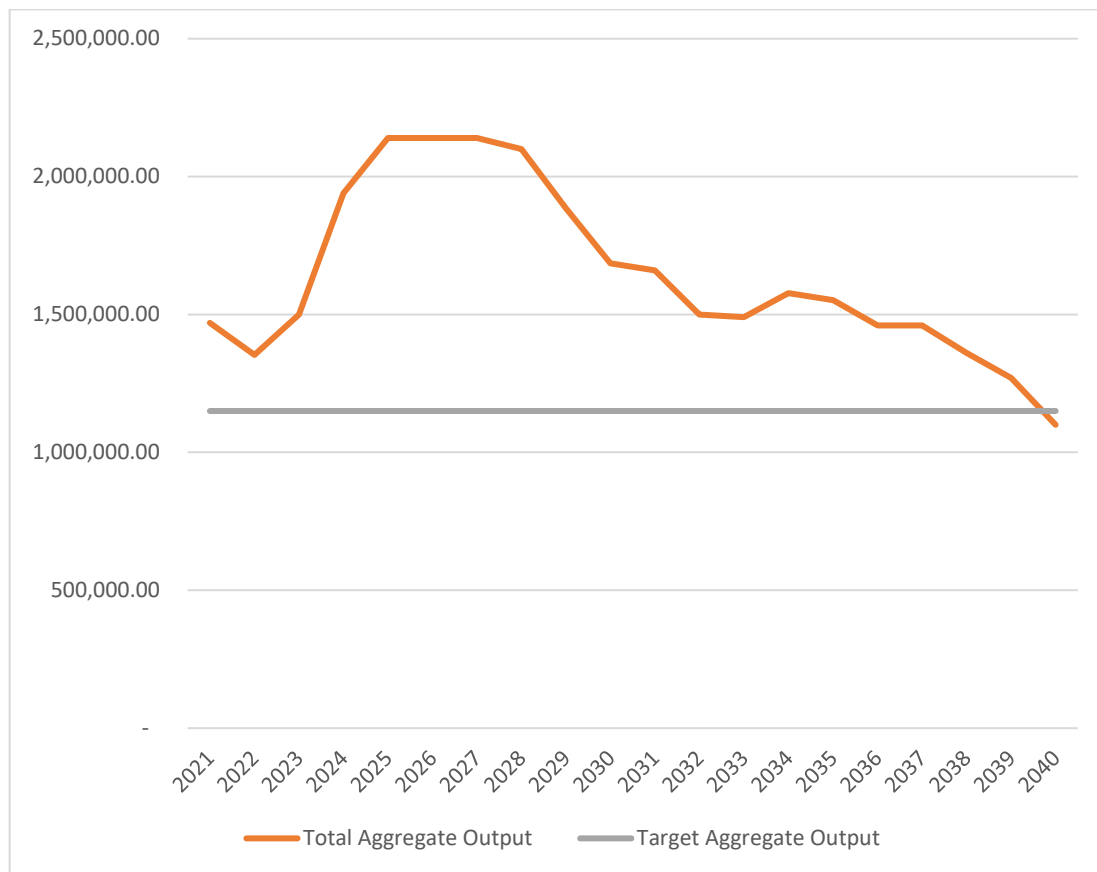
Site	Allocated Amount (Mt)	Planning Application Amount (Mt)	Aggregate	Planning status	Estimated Date of extraction commencing
Bleak Hill Quarry Extension	0.6	0.6	SS+G	Permitted	2022
Bramshill Quarry Extension	1.0	n/a	SS+G		
Cutty Brow	1.0	n/a	SS+G		
Hamble Airfield	1.5	1.7	SS+G	Application submitted	2024
Purple Haze	4.0	4.5	SS / SS+G	Application submitted	2024
Total	7.5	6.2	-	-	

- 5.106 Should the remaining allocations be permitted, this would increase the reserves by a further 2Mt (see Table 18). Should all allocations be permitted (based on the application yields provided) there would be a shortfall of 2.17Mt in total provision.
- 5.107 Each of the existing operations and allocations include an annual throughput which outlines the rate at which the site will deplete. Figure 14 shows the rate of depletion (Total Aggregate Output) of the existing allocations based on the estimated commencement date of the proposals as well as the remaining reserves of the existing operations. This is plotted against the planned provision rate of 1.15Mtpa (Target Aggregate Output). Figure 14 demonstrates that despite the allocations, the HMWP would still experience a small shortfall at the end of the plan period. Therefore, the HMWP Partial Update will need to identify and enable additional development to address this shortfall.

⁵² Hamble Airfield: <https://planning.hants.gov.uk/Planning/Display/HCC/2021/0787>

⁵³ Purple Haze: <https://planning.hants.gov.uk/Planning/Display/21/10459>

Figure 14: Predicted depletion rate of sand and gravel in Hampshire



(based on 1.15Mtpa provision and existing operations plus allocations)

5.108 The provision of mineral supply is set out in National Policy⁵⁴. This is supported by Planning Practice Guidance (PPG)⁵⁵ which states that:

‘Mineral planning authorities should plan for the steady and adequate supply of minerals in one or more of the following ways (in order of priority):

1. *Designating Specific Sites – where viable resources are known to exist, landowners are supportive of minerals development and the proposal is likely to be acceptable in planning terms. Such sites may also include essential operations associated with mineral extraction;*
2. *Designating Preferred Areas, which are areas of known resources where planning permission might reasonably be anticipated. Such areas may also include essential operations associated with mineral extraction; and/or*

⁵⁴ National Planning Policy Framework (Chapter 17):

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

⁵⁵ Paragraph: 008 Reference ID: 27-008-20140306: <https://www.gov.uk/guidance/minerals#planning-for-minerals-extraction>

3. *Designating Areas of Search – areas where knowledge of mineral resources may be less certain but within which planning permission may be granted, particularly if there is a potential shortfall in supply.'*

5.109 This approach is recognised as providing the most certainty to developers and local residents, as set out in the PPG⁵⁶:

'Designating Specific Sites in minerals plans provides the necessary certainty on when and where development may take place. The better the quality of data available to mineral planning authorities, the better the prospect of a site being designated as a Specific Site.'

5.110 The Minerals & Waste Site Proposals Study⁵⁷ sets out the process carried out to identify new sites. This included a call for sites followed by a longlist assessment of the sites proposals received. This then defined the short list of proposed allocations.

5.111 The new site proposals received included sites for the extraction of sharp sand and gravel as well as some soft sand sites. Proposals were also received for new rail sidings sites that have the potential to be used for aggregate operations. This has the capability of leading to an increase in rail depot capacity.

Planned future provision rates of aggregates

5.112 To ensure the appropriate rate of supply of aggregates in a plan area, MPAs are required to produce a 'Annual Provision Rate'⁵⁸ as part of the annual Local Aggregate Assessment. For Hampshire this was derived by applying a range of forecasting growth factors to past year's sales (2018 sales), 3-year and 10-year average sales. The growth factors applied in past LAAs included⁵⁹:

- Mineral Products Association Growth Factor
- Construction Growth Factor
- Population Growth Factor (based on ONS data for Hampshire) and
- GDP (Bank of England) Growth factor

⁵⁶ Paragraph: 009 Reference ID: 27-009-20140306 - <https://www.gov.uk/guidance/minerals>

⁵⁷ Minerals & Waste Site Proposal Study (August 2022): [Hampshire Minerals and Waste Plan - Partial Update | Hampshire County Council \(hants.gov.uk\)](#)

⁵⁸ Annual Provision Rate previously referred to as 'Local Aggregate Assessment (LAA) Rate'

⁵⁹ Hampshire Local Aggregate Assessment (2021)
<https://hants.sharepoint.com/sites/ETEE8681/Shared Documents/Forms/AllItems.aspx?id=%2Fsites%2FETEE8681%2FShared Documents%2FHMWPLAA 2021%2Epdf&parent=%2Fsites%2FETEE8681%2FShared Documents&p=true&ga=1>

- 5.113 Data reported in the 2021 Local Aggregate Assessment demonstrated that the last two-year period between 2019 and 2020 has been that of uncertainty due to the departure from the European Union and the Covid-19 pandemic outbreak in 2020. This affected both the actual sales figures for a variety of reasons such as site closures, delays to projects as well as the accuracy of data recorded during this period as it was not business as usual. In order to enable a robust forecast to be made, sales data from 2018 has been used as a starting base point, from which to project forward as this was considered to be the last point of stable sales and provides an element of growth.
- 5.114 The forecasted figures are considered to capture a range of future growth scenarios to ensure future aggregate demand in Hampshire can be met. Further details are shown in Appendix 1.
- 5.115 Having modelled a range of growth forecasting approaches, the 2020 LAA Rate for sharp sand and gravel was proposed at 0.92Mt. This figure is higher than both the 10-year and 3-year average sales, but not quite at the level of the figures forecasted at the end of the plan period. This figure is also lower than the 'Local Requirement' set in the Plan of 1.28Mt, this apportionment figure was based on an average figure of 10-years land-won aggregate sales without any consideration of wider factors that could impact demand.
- 5.116 Given the level of uncertainty in the market in recent years, it is considered that the LAA provision rate figure of 0.92Mt better reflects the future level of demand.
- 5.117 The annual LAA will allow for this rate to be kept under review and revised as necessary.
- 5.118 The approach was replicated for soft sand, with a figure of 0.23Mt proposed. This is also lower than the current Plan rate of 0.28Mt but is consistently more in line with future forecasts.

Silica Sand

- 5.119 Silica sand (also referred to as 'industrial sand') is used in industrial processes, not in the construction industry. For this reason, silica sand sales have been excluded from the assessment of land-won aggregates.
- 5.120 Table 19 lists the permitted sand and gravel quarries in Hampshire that provide silica sand; Frith End Quarry and Kingsley Quarry. Historical data identified the quarries as sources of soft sand only. This means that the sites are included in the data of previous years' LAA reports for soft sand.

Table 19: Silica sand sites in Hampshire, 2021

Site	Operator	Aggregate*			Status
		SSG	SS	Silica sand	
Frith End Quarry, Sleaford	Grundon		✓	✓**	Active
Kingsley Quarry, Kingsley	Lafarge		✓	✓**	Active
* SSG = Sharp sand and gravel / SS = Soft sand **Resources have been traditionally identified as soft sand. These resources can now be classified as silica sand as well as soft sand.					

Source: Aggregates Monitoring Survey 2020

- 5.121 Paragraph 207 of the National Planning Policy Framework (NPPF) states that ‘Minerals planning authorities should plan for a steady and adequate supply of industrial minerals by: (c) maintaining 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’. In terms of individual silica sand sites, the NPPF⁶⁰ states that this should be for ‘at least 10 years’.
- 5.122 In addition, Planning Practice Guidance (Minerals) states that ‘*The required stock of permitted reserves for each silica sand site should be based on the average of the previous 10 years sales. The calculations should have regard to the quality of sand and the use to which the material is put.*’⁶¹
- 5.123 On the basis of current national planning guidance outlined above, silica sand reserves for Hampshire have been calculated and are shown in Table 20. As only two sites provide sales data for silica sand, for reasons of commercial confidentiality, sales data can only be published as a 3-year average.
- 5.124 For the period 2018-2020, the 3-year sales average for silica sand in Hampshire was 57,050 tonnes. This is a significant decrease from the previous 3-year average (2017-2019) of 82,786 tonnes. An increase in non-aggregate sales at Frith End and Kingsley is likely to lead to a more rapid depletion of soft sand reserves as resources at these locations can be classed as both soft sand and silica sand. The reserves based on 2020 sales is particularly high due to the low sales during 2020 due to extraction difficulties on site.

⁶⁰ National Planning Policy Framework – Footnote 68

⁶¹ Paragraph: 090 Reference ID: 27-090- 20140306, Revision date: 06 03 2014

Table 20: Silica sand permitted reserves, 2021

	Permitted Reserve (Mt)	Date (when permitted reserve recorded)	Reserve (years)			
			Based upon Local Requirement*	Based upon 10-yr Average sales between 2011-2020	Based upon 3-yr Average sales between 201 8-2020	Based upon 2020 Sales
Silica sand	c	31.12.2018	c	c	c	11
*Please note that the Silica Sand permitted reserve is incorporated into the Soft Sand landbank as the resources can be classed as either Soft Sand or Silica.						

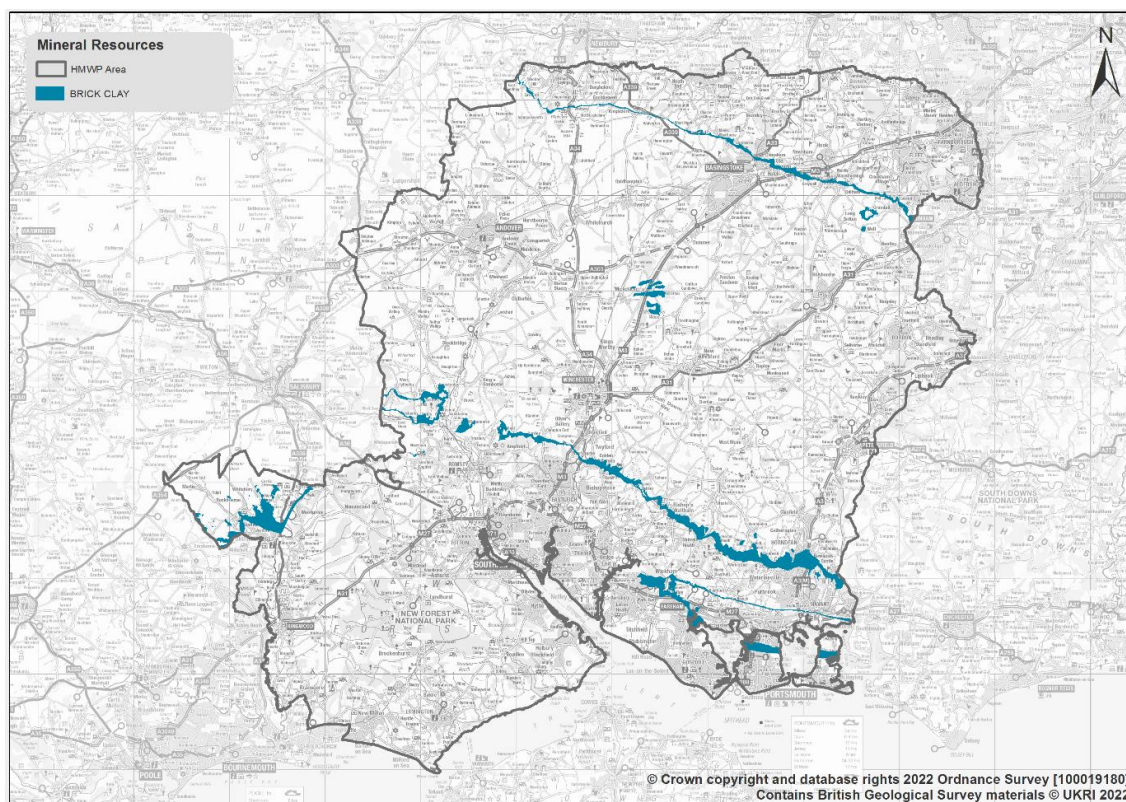
Non-Aggregates

- 5.125 Although sand and gravel are the main mineral produced in Hampshire, the demand for other minerals needs to be considered.

Clay

- 5.126 Clay is an important locally extracted mineral which in Hampshire primarily comprises brick clay. This is subsequently used in Hampshire as a source for the County's brickworks and has therefore been preserved for this purpose.
- 5.127 Clay reserves in Hampshire are shown on Figure 15.

Figure 15: Clay Reserves in Hampshire 2021



- 5.128 Although clay extraction has reduced significantly in Hampshire in recent years, Hampshire recognises the need to support its brick works with locally sourced clay.

Clay extraction

- 5.129 In the past, Hampshire had two brickworks using clay for making bricks and tiles; Michelmersh and Selbourne brickworks.
- 5.130 Operations at Selbourne brickworks have not been active since 2006. There are still clay reserves available, but the permission to extract them has lapsed. Operations at Michelmersh brickworks have continued, with permission granted in 2014 for an extension to the extraction at the site.
- 5.131 Historically, clay has been extracted at many locations in Hampshire. This has included extraction for the main purposes of local brick making within the: Hampshire Basin; London Basin; and Wealden Edge.
- 5.132 However, today clay extraction in Hampshire has reduced significantly within only one traditional brickworks now being operated within the County, at Michelmersh. Local sources of brick-making clay are used directly to supply the brickworks.
- 5.133 An extension at Michelmersh was allocated in the adopted Hampshire Minerals and Waste Plan (2013) and permission was granted in 2014. This permission gave the site an additional reserve estimated to be approximately 19 years of brick clay.
- 5.134 A further site was located at Selborne, though this brickwork has not been active since 2006 and planning permission has lapsed for extraction in this location. An extension was also allocated for Selborne under Policy 22 (Brick-making clay) of the adopted Hampshire Minerals & Waste Plan, but this has not been brought forward as the site is not operational.
- 5.135 A third brick-making clay site was also located at Search Field Farm, near Hale, Fordingbridge. This site is located within the New Forest National Park and was granted permission in 2000, before the establishment of the National Park. However, this permission was not implemented and has since lapsed.
- 5.136 Neither Selborne Brickworks nor Search Field Farm are safeguarded but the brick-making clay is safeguarded under Policy 15 (Safeguarding – mineral resources) in the adopted Hampshire Minerals & Waste Plan (2013).

- 5.137 Hampshire also has other resources of brick-making and other clay and there may be some circumstances where other extraction of clay may be required. This may include the extraction of clay for specific needs and uses such as: civil engineering uses, such as for landfill engineering; or incidental extraction alongside other forms of mineral extraction.

Future Provision

- 5.138 The NPPF requires that a steady and adequate supply of industrial minerals should be planned for including 25 years provision of brick-making clay for individual sites⁶².
- 5.139 As the allocation at Michelmersh has been permitted, this provided 188,000m³ reserves. At the time of the application the site used approximately 10,000m³ of clay a day, which gives a reserve of 19 years.
- 5.140 No additional brick-making clay sites were identified through the call for sites and therefore, future provision will need to depend upon the criteria set out in Policy 22.

Chalk

- 5.141 In Hampshire, chalk was of some local importance and the use of chalk for agricultural purposes dates back to Roman times.
- 5.142 The geological outcrops of chalk in Hampshire are plentiful, and although there is now only limited demand, there are a number of existing and active extraction sites.

Chalk extraction

- 5.143 There are currently two permitted chalk sites in Hampshire at Manor Farm, Monk Sherborne and Somborne Chalk Quarry, Winchester. Permission was granted for a new chalk quarry at Monk Sherborne⁶³ in 2018 to replace the existing Manor Farm quarry which is to be completed and restored by December 2021. The chalk will be extracted at the new quarry in Monk Sherborne at a rate not exceeding 25,000 tonnes per annum, a throughput similar to the operation at the existing site being restored.

⁶² National Planning Policy Framework (Para. 214 (c)):
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

⁶³ Chalk Quarry Application - <https://planning.hants.gov.uk/ApplicationDetails.aspx?RecNo=19053>

- 5.144 Somborne Chalk Quarry, which has been worked since 1860 has recently been sold and is currently mothballed for chalk production. Without the recently permitted quarry, existing contractors would have had to source chalk from alternative sites, mainly outside the County, which was not considered sustainable.
- 5.145 The chalk is extracted to provide agricultural lime. Information provided by the applicant for Manor Farm states that agricultural lime makes a significant difference to the productive potential of arable and grassland. It provides lime to the soil which improves soil aeration and helps to release soil nutrients. It contains calcium which is essential for plant development. It also restores the pH balance of acidic soils. It is a sustainable option for soil improvement. Specifically, it is natural product that optimises the plant's ability to utilise major and trace nutrients more efficiently⁶⁴.
- 5.146 It is recognised that markets change over time and therefore, the demand for chalk may increase during the Plan period. Monitoring extraction allows this to be reviewed.

Future provision

- 5.147 In recent years, chalk extracted in Hampshire has only been used in the production of agricultural lime rather than to supply a processing plant. As a result, there is no requirement to make 15 years provision of chalk (as cement primary) as outlined in the NPPF⁶⁵.
- 5.148 As such no allocations for chalk extraction are required to support the Draft Plan, and any future proposals can be determined using a general policy.

Oil and Gas

- 5.149 Oil and gas are nationally important mineral resources, and it is government policy that exploration should be supported, and resources exploited subject to environmental considerations.

Resources

- 5.150 Oil and gas resources (known as 'hydrocarbons') are classed as either 'conventional' or 'unconventional'. Conventional resources are situated in

⁶⁴ Regulatory Committee Report (July 2020) - <https://planning.hants.gov.uk/ApplicationDetails.aspx?RecNo=19053>

⁶⁵ National Planning Policy Framework (Para. 214 (c)): https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

relatively porous sandstone or limestone rock formations. Unconventional sources are found where oil and gas has become trapped within a non-traditional reservoir such as shale rock and require non-traditional methods of extraction.

- 5.151 As shale is less permeable (or easily penetrated by liquids or gases), significantly more effort is required to extract the hydrocarbons from the rock. However, recent technological advancements have resulted in horizontal drilling which has made tapping into shale deposits more financially viable.
- 5.152 Hydraulic fracturing (sometimes referred to as ‘fracking’) is a technique used in the extraction of oil or gas from shale rock formations by injecting water at high pressure. This process has caused some controversy.
- 5.153 In 2019, the Government announced that fracking will not be able to proceed in England due to the lack of technology to predict the probability or magnitude of earthquakes linked to fracking operations⁶⁶.
- 5.154 More recently, the government has formally lifted the moratorium on fracking stating that doing so will “bolster the UK’s energy security”⁶⁷.
- 5.155 Following adoption of the Hampshire Minerals & Waste Plan, Supplementary Planning Guidance was prepared on Oil and Gas Development in Hampshire⁶⁸.
- 5.156 A number of viable conventional resources of oil and gas have been identified and are being exploited in Hampshire, which are the result of considerable exploration activity in the last 25 years.

Oil and Gas Exploitation

- 5.157 Oil and Gas licences are the subject of a licensing system by the North Sea Transition Authority. Licences are granted by the Secretary of State for Business, Energy and Industrial Strategy and confer rights for persons to search for, bore and produce petroleum resources. It is important to note that the granting of a licence does not imply that planning permission would be granted for the extraction of the resource.

⁶⁶ Government Press Release: <https://www.gov.uk/government/news/government-ends-support-for-fracking>

⁶⁷ Government Press Release: <https://www.gov.uk/government/news/uk-government-takes-next-steps-to-boost-domestic-energy-production>

⁶⁸ Oil and Gas Development in Hampshire SPD (2016): <https://documents.hants.gov.uk/planning-strategic/HMWPOilandGasDevelopmentinHampshireSPDFinalFeb2016.pdf>

- 5.158 Oil and gas activity comprise a number of different stages including the exploration of oil and gas prospects, appraisal of any oil and gas found, production and distribution. The production and distribution of oil and gas usually involves the location of gathering stations which are used to process the oil and gas extracted. All stages require planning permission from the relevant minerals planning authority. The development of gathering stations requires more rigorous examination of potential impacts than exploration or appraisal.
- 5.159 Previously, licences were granted by the Oil and Gas Authority which would undertake licencing rounds. Hampshire has a number of licence areas which were issued through the licensing rounds⁶⁹. Licenced areas are an indication of Hampshire's potential oil and gas resources.
- 5.160 As a result of exploration activity, three productive oil and gas fields have been developed at South Wonston near Winchester, Humbly Grove near Alton and at Horndean. Gas is also stored underground at Humbly Grove

Future Provision

- 5.161 As stated above, the Government has recently lifted the ban on 'fracking' technology in England.
- 5.162 Conventional oil and gas has continued to be supported by Government and is seen as necessary to support the UK's transition to renewables. The Energy White Paper (2020)⁷⁰ sets out how the networks and markets will transform in a way which enables continued investment, set in the context of delivering the Government net zero target. The sector is already coming under significant pressure from investors and the public more widely to respond to the climate change challenges. Therefore, the Government's goal is to provide opportunities for oil and gas companies to repurpose their operations away from unabated fossil fuels to abatement technologies, such as carbon capture, utilisation and storage (CCUS) or clean energy production such as renewables and hydrogen.
- 5.163 The Energy White Paper also seeks to ensure that the licensing of domestic oil and gas exploration and production continues to be compatible with the climate change ambitions of the Government.
- 5.164 A key environmental consideration will be consideration of the contribution that fossil fuels make to climate change and the impacts of climate change. These

⁶⁹ Oil and gas licensing rounds: <https://www.gov.uk/guidance/oil-and-gas-licensing-rounds>

⁷⁰ Energy White Paper – Powering our Net Zero Future (2020) - https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/945899/201216_BEIS_EWP_Command_Paper_Accessible.pdf

downstream environmental impacts of the development should be fully assessed, either separately or as part of a wider environmental assessment (such as an Environmental Impact Assessment).

- 5.165 The issue of climate change and ‘downstream’ impacts on climate change has been the subject of recent case law regarding an oil and gas proposal in Surrey⁷¹. The Court of Appeal rejected a claim that it was unlawful for Surrey County Council, as mineral planning authority, not to require the environmental impact assessment (EIA) for a project of crude oil extraction for commercial purposes to include an assessment of the impacts of greenhouse gas emissions resulting from the eventual use of the refined products of that oil as fuel. However, it went on to conclude that *‘Whether the downstream greenhouse gas emissions were or were not to be regarded as indirect effects of the project was a question of judgment for [the Local Authority]’*.
- 5.166 Furthermore, the appellant did claim some reward in that they considered that the case did result in a *‘Court of Appeal authority that, when decision-makers come to consider granting planning permission for fossil fuel projects, they may be required by the law to assess the greenhouse gas emissions from the use of the extracted oil, coal or gas’*.

⁷¹ Finch On Behalf of the Weald Action Group, R (On the Application Of) v Surrey County Council & Ors [2022] - <https://www.bailii.org/ew/cases/EWCA/Civ/2022/187.html>

Appendix 1 - Future Aggregate demand

It is logical that future demand will at least in part be a function of one or more variables in overall construction or economic activity, and the following forecasts were considered as possible indicators which may be useful in determining aggregate demand:

- Construction Industry Forecasts;
- HM Treasury forecasts, as an indication of predicted general economic activity;
- Predicted housing completions and other developments planned in Hampshire and around Hampshire (including relevant projects in the National Infrastructure Plan).

National Demand Factors

The National Infrastructure Plan⁷² sets out the government's plans for economic, housing and social infrastructure over the next five years. The government is committed to investing over £100 billion by 2020-2021 into infrastructure projects such as transport, energy, communications, flooding and coastal, erosion, science and research, water and waste, housing and regeneration and social infrastructure (e.g. school, prisons and hospitals).

Economic and construction aggregate forecasts are considered to be useful for providing an overall contextual picture and an indication of anticipated aggregate demand. In summary, the findings are as follows:

- The Mineral Products Association produces a regular medium-term (three-year) market forecast for construction materials. In 2016, the forecasts suggest that by 2019, aggregate sales are likely to increase by 16% from 2015⁷³. However, in 2018, the Mineral Products Association suggested only a 4% increase in primary aggregates between 2018 and 2020 but an 8% increase from 2017 in building sand due to mortar sales⁷⁴.
- The Office for National Statistics Construction Output bulletin for February 2020⁷⁵ indicated that there had been a decline of 1.7% in construction output which could be partly attributed to adverse weather conditions (the wettest since records began).

⁷²National Infrastructure Delivery Plan 2016 – 2021:

www.gov.uk/government/uploads/system/uploads/attachment_data/file/520086/2904569_nidp_deliveryplan.pdf

⁷³ The Mineral Products Association - Industry at a Glance (2016):

www.mineralproducts.org/documents/Mineral_Products_Industry_At_A_Glance_2016.pdf

⁷⁴ The Mineral Products Association – Facts at a Glance (2018):

<https://mineralproducts.org/documents/Facts-at-a-Glance-2018.pdf>

⁷⁵Construction output in Great Britain: February 2020:

<https://www.ons.gov.uk/businessindustryandtrade/constructionindustry/bulletins/constructionoutputingreatbritain/february2020>

- The Office for Budgetary Responsibility (OBR)⁷⁶ forecasts for 2020 and 2021 are 1.1% and 1.8% respectively. These figures are below previous estimates due to the 'deterioration in the global outlook and the slowdown in UK growth at the end of 2019, which was likely partly due to ongoing Brexit-related uncertainty'.
- A review of GVA⁷⁷ as an economic indicator forecasts the South East to have the greatest growth between 2019 and 2029 outside of London at 1.6% (compared to London's 1.0%).

The forecasts indicate a variety of trends but on the whole one of slow growth. The forecasts have outlined that there is uncertainty over the impact of the United Kingdom leaving the European Union ('Brexit') on the economy and the effect on growth.

More recently, there has been concern over the impact of the national emergency to the Coronavirus (COVID-19) pandemic on the minerals industry. This is expressed clearly in the Minerals Products Association Press Release⁷⁸:

'Sales volumes of ready-mixed concrete and aggregates (crushed rock and sand & gravel), two materials that are used across most types of construction work, declined by 5.7% and 4.0% respectively over the quarter. For ready-mixed concrete, this follows three consecutive years of market declines since 2017, as Brexit-related uncertainties put a brake on commercial construction work, notably for offices, whilst housebuilding slowed in the capital. Housing and the commercial sectors have also been significantly impacted by the COVID-19 lockdown, with most major housebuilders having closed sites throughout the last week of March and April, and office construction impacted by the collapse in business and consumer confidence.

Simultaneously, mortar sales, which are primarily used in housebuilding, fell by a further 1.6% in the first quarter of 2020, after a 7.9% fall at the end of last year. The trend in mortar sales volumes has been subdued over the past 18 months, a clear indication of the underlying weaknesses in housebuilding even before accounting for the impact of the COVID-19 lockdown.'

The press release suggests that the impact of Brexit was already starting to have an impact at the start of 2020 on the construction industry which supports the OBR forecasts.

⁷⁶ Office for Budget Responsibility – Economic and Fiscal Outlook (March 2020): https://cdn.obr.uk/EFO_March-2020_Accessible.pdf

⁷⁷ Regional and County Indicators – UK Parliament (April 2020)

⁷⁸ Mineral Productions Association – Press Release (May 2020): <https://mineralproducts.org/20-release15.htm>

In 2017, the Mineral Products Association produced Long-term aggregates demand & supply scenarios, 2016-30⁷⁹. Whilst the scenarios are estimated national demands, it is considered that they most accurately reflect the situation in the south east.

The scenarios consider the baseline of demand using Construction Products Association, GDP and population forecasts as well as the potential for a drive for low material intensity (for example through the use of alternatives rather than primary materials). Supply issues such as resource availability, permitted reserves, the use of recycled and secondary aggregates, imports, transport and logistics and skills availability are also taken into consideration in the scenarios.

The four scenarios include:

- 1) 'No change in the current supply mix of aggregates, i.e. the split between primary aggregates reflect the 2014 shares for marine sand and gravel in total sand and gravel (20%) and for total sand and gravel in total primary aggregates (36%).
- 2) The availability of land-based sand and gravel becomes constrained over time, but there is sufficient marine sand and gravel to replace it.
- 3) Declining availability in land-won sand and gravel is fully made up by crushed rock substitution, as marine supplies are limited by wharf and dredger capacity.
- 4) Declining availability of land-won sand and gravel is made up by a combination of increases in both marine sand and gravel and substitution with crushed rock supplies'.

The Mineral Products Association raised a number of points in their conclusions that are relevant to future demand in Hampshire. It is suggested that even after projecting a further decline in material intensity, primary aggregate is likely to account for 60% of the sources for meeting aggregate demand. There are also suggestions that the declining trend in the use of land-won sand and gravel will continue with substitution by marine sand and gravel and crushed rock. Secondary and recycled materials are considered to continue making a significant contribution to supply (30%) although this is not expected to grow significantly.

The key likely demand-related factors for the longer term are considered to be population and activity in the construction industry. Construction of new homes, offices, industrial and other buildings and associated roads and other infrastructure requires large quantities of aggregates. For example, the Minerals Products

⁷⁹Long-term aggregates demand & supply scenarios, 2016-2030 (MPA, 2017):

http://www.mineralproducts.org/documents/MPA_Long_term_aggregates_demand_supply_scenarios_2016-30.pdf

Association⁸⁰ suggests that a house requires 200 tonnes of aggregate, a school may require 15,000 tonnes of concrete and a community hospital may require 53,000 tonnes of concrete. In addition, maintaining and improving the existing built fabric of the area can also requires large quantities of aggregate.

It should be noted that the scenarios were produced prior to the national emergency relating to COVID-19 which is likely to have a short-term impact on the scenarios.

Local Demand Factors

Infrastructure projects that are likely to place an additional burden of future aggregate demand in Hampshire relate to both housing and transport projects. There are over 120,000 new homes planned within the Hampshire area over the next 15 years⁸¹, of these some 6,000 homes are planned in the Welborne development in Fareham, 4,000 in the Whitehill & Bordon development in East Hampshire, and 3,850 in the Aldershot Urban Extension in Rushmoor.

Permission was granted in April 2021 for the Southampton Airport expansion. This includes a 164 metre runway extension, blast screen and 600 additional car parking spaces. Whilst a judicial review claim has been lodged as of July 2021⁸², the potential demand of this infrastructure project should it go ahead needs to be acknowledged.

Fawley power station is to be demolished and redeveloped to provide 1,500 homes. Whilst not large-scale development, the original turbine hall requires a great deal of infill material.

There are a number of bypass projects planned or under construction in Hampshire. In Fareham there is the £34 million Stubbington Bypass scheme in construction. In Eastleigh, Botley bypass is soon to start construction and is also expected to cost an estimated £20 million. Several major junction improvements are planned to the M27. To facilitate the Welborne development, Junction 10 of the M27 is being upgraded. Junction 9 improvements costing £19,800,000 are listed in the capital programme for delivery.

National Highways have a significant investment strategy for the strategic road network in Hampshire. There are significant upgrades underway to the M27 to convert the road into a smart motorway with the same now proposed for the M3. A Nationally Significant Infrastructure Project to Junction 9 of the M3 joining the A34 is proposed. Phase 2 of this investment strategy includes further schemes in

⁸⁰ The Mineral Products Industry at a Glance -

https://mineralproducts.org/documents/Mineral_Products_Industry_At_A_Glance_2016.pdf

⁸¹ Hampshire Strategic Infrastructure Statement (2019) -

[HampshireStrategicInfrastructureStatement.pdf \(hants.gov.uk\)](https://hants.gov.uk/media/10000/HampshireStrategicInfrastructureStatement.pdf)

⁸² Southampton Airport - [Runway - Support Southampton Airport | Southampton Airport](#)

Hampshire, including the A27, M27 to M271 junction and upgrading the A34 to motorway standard.

There is a county council major schemes highway improvement capital programme, with a forecast investment of more than £120 million planned and a further programme of smaller schemes totalling £12 million.

The Capital Programme⁸³ for Hampshire plans to deliver schemes totalling £386 million over the three years from 20120/21 to 2022/23. This follows a revised programme of £347 million for 2019/20, providing a total capital programme of £733 million over the four years, providing a big boost for the local economy through jobs and construction materials. This is a very significant investment in the infrastructure of Hampshire. It will provide:

- £94.8 million of investment in new and extended school buildings in Hampshire in the period 2020/21 to 2022/23 to ensure there is a school place for every child in Hampshire
- £115.8 million for structural maintenance and improvement of roads and bridges in Hampshire over the next three years
- £45.8 million for integrated transport schemes including over £10 million specifically focused on walking and cycling improvements
- £107.7 million for major improvement of school and other County Council buildings over the next three years.

There are two Development Consent Orders that affect Hampshire, which given the scale of the projects have the potential to place significant additional aggregate demands. The first is the permitted Esso to London oil pipeline, which includes numerous access roads and depot facilities. The second is awaiting determination but is the Aquind Interconnector⁸⁴ – a new subsea and underground electric power transmission link between the South Coast of England and Normandy, France and has the potential to require significant levels of aggregate.

All of these projects are of significant enough scale to require the future demand to be accounted for in future aggregate supplies, over and above the annual infrastructure delivery programme. The Hampshire Strategic Infrastructure Statement (2019) contains more information on the level of future development planned for the area, which cumulatively will place additional pressure on aggregate supplies.

In order to meet future aggregate demand, including the infrastructure projects discussed above, Hampshire needs to have a sufficient aggregate landbank and capacity available to import aggregate at rail depots and wharves. Greater emphasis

⁸³ Capital Programme 2020/21 to 2022/2023 Decision Day Report - [2018-02-05 Cabinet Capital programme 2018-19 to 2020-21 \(HF000015588356\) \(moderngov.co.uk\)](#)

⁸⁴ AQUIND Interconnector - [AQUIND Interconnector – Linking French & British Electric Power Grids](#)

should be placed on recycled and secondary aggregate sites to supply future demand.

To establish what impact future planned development is likely to have on aggregate demand and supply in Hampshire, figures for planned infrastructure have been reviewed.

Past housing completions have been compared with estimated housing projections⁸⁵. As can be seen from Table 21, house building in Hampshire decreased between 2011 and 2014. But since that time has steadily been increasing, until 2020 when completions fell.

Table 22 shows the estimated net number of dwellings as of 1 April 2020 for Hampshire. The data includes sites in adopted local plans as of 1 April 2020 but does not include those sites in emerging local plans, nor sites shown in SHLAAs/SHELAAAs. It also does not include the contribution that small housing sites (sites of less than 10) make. Reviewing the last 10 years of completions on small sites indicates that an additional 1,050-1,100 dwellings per annum could be reasonably included in addition to the figures given.

Whilst there is an overlap between the figures in Table 21 and Table 22 and it is yet to be seen what the effect of the pandemic and Brexit have had on the level of housing completions in recent years, it can be deduced that a sustained level of housebuilding is anticipated in the short-term until at least 2025. Evidence has shown that numbers in the trajectory usually peak a couple of years in the future from the base date, as sites currently under construction are likely to still be delivering. The 2021 update of these figures is currently in progress by the County Council Land Supply Team and will be useful to see the impact of the last few years emerging in the data.

Table 21: Estimated net housing completions for Hampshire 2011-2021

Year	2011 2012	2012 2013	2013 2014	2014 2015	2015 2016	2016 2017	2017 2018	2018 2019	2019 2020	2020 2021	Total 2011- 2021
Dwelling completed	4734	3758	3825	5271	6466	6515	7113	8126	8293	7036	61137

Table 22: Estimated number of dwellings and phasing 2020-36

NET AT 1ST APRIL 2020															
	2122	2223	2324	2425	2526	2627	2728	2829	2930	3031	3132	3233	3334	3435	3536
72,225	6,175	7,415	7,014	5,941	5,335	5,190	4,610	3,907	3,310	2,781	2,521	2,162	1,567	1,391	1,013

⁸⁵ Land Supply Hampshire County Council (2021): [Land supply | Hampshire County Council \(hants.gov.uk\)](https://hants.gov.uk/land-supply/)

In addition, a review has been undertaken of B1/B2/B8 Industry Office & Warehousing completions over the last 10 years. The results show a similar pattern to that of house completions, with decreasing levels to 2014, then a sustained uplift until 2018/2019. The levels in 2019/2020 were significantly lower which could be assumed to be the impact of the uncertainty surrounding Brexit and then the start of the pandemic. The Retail floorspace completions echo this trend.

The evidence reviewed shows that in the short-term future (5 years) it is anticipated that there will be a continuation of this higher level of demand, which is a significant uplift from the 10-year average of building in Hampshire (major projects excluded). The planned levels of infrastructure construction appear to be an uplift and therefore it should be anticipated that there will be a required increase in aggregate supply.

Economic Forecast

A range of growth forecasting approaches have been utilised to assess future demand. The data reported in this LAA has shown that the last two-year period between 2019 and 2020 has been that of uncertainty due to Brexit and the pandemic 2020. This has affected both the actual sales figures for a variety of reasons, such as site closures, delays to projects as well as the accuracy of data recorded during this period. A number of estimates are included for aggregates over this two-year period. In order to enable a robust forecast to be made sales data from 2018 has been used as a starting base point, from which to project forward.

The Mineral Products Association Sustainable Development Report 2019/2020⁸⁶ reported that construction activity and mineral products markets started to recover faster than the rest of the UK economy during summer 2020, operating under new Covid-secure Health and Safety guidance and were more resilient to renewed lockdown restrictions. Demand for mineral products also improved during the second half of the year, albeit from a low base, resulting in annual sales volumes for all mineral products markets monitored declining in 2020 compared to 2019.

Looking ahead, the report stated that construction output is expected to continue to recover in 2021, which should support further growth in mineral products demand. Construction output is expected to rise by 14% in 2021 and 4.9% in 2022 assuming effective vaccines are being rolled out as planned and restrictions are gradually eased from spring 2021. Housebuilding recovered quickly in 2020, and new infrastructure work has been the least impacted. These two subsectors should drive construction growth over the next two years, with significant contributions from repair and maintenance work. Activity in new commercial buildings however is expected to see a much slower recovery due to uncertainty about long-term shifts in consumer

⁸⁶ Mineral Products Association Sustainable Development Report 2019/2020 - [MPA_SD_Report_2020.pdf \(mineralproducts.org\)](https://www.mineralproducts.org/MPA_SD_Report_2020.pdf)

spending habits affecting retail, and the potential implications of a long-term shift to working from home for offices.

Together these construction projects will require a range of aggregates amounting to on-going and increasing demand that will need to be met through the supply of sand and gravel, crushed rock and recycled aggregates in the years ahead.

Glossary and Abbreviations

Aftercare: Action necessary to bring restored land up to the required standard for an agreed after-use such as agriculture, forestry or amenity.

Afteruse: The use that land, used for minerals working or waste uses, is put to after restoration.

Aggregate Monitoring (AM) survey: The aggregate minerals survey provides information on the national and regional sales, inter-regional flows, transportation, consumption and permitted reserves of primary aggregates in England. The surveys cover both land-won and marine dredged aggregates.

Aggregate recycling site: Facilities where hard, inert materials are crushed and screened (filtered) to produce recycled/secondary aggregate of various grades. Aggregates may be produced from construction, demolition, and excavation (CDE) waste, or incinerator bottom ash (IBA) from energy recovery facilities.

Alternative aggregates: A grouping of secondary and recycled aggregate

Amenity: Something considered necessary to live comfortably.

Apportionment: National government set a figure for the production of aggregates, usually expressed as an annual figure, which a mineral planning authority has to take account of and provide for in their minerals planning documents.

Area of Outstanding Natural Beauty (AONB): Areas of countryside considered to have significant landscape value and protected to preserve that value. Originally identified and designated by the Countryside Commission under Sections 87 and 88 of the National Parks and Access to the Countryside Act 1949. Natural England is now responsible for designating AONBs and advising Government and other organisations on their management and upkeep.

Armourstone: Stones of different sizes and irregular shape which are used in hydraulic protection and regulation structures.

Associated British Ports (ABP)

Brick-making clay: Clay which is specifically used for brick or tile making. Brick making clay is associated with Hampshire's brickworks.

Brickworks: A factory or plant where bricks are made.

British Geological Survey (BGS): The British Geological Survey focuses on public-good science for government, and research to understand earth and environmental processes. It provides objective and authoritative geoscientific data, information and knowledge.

Chalk: A soft white rock primarily formed from the mineral calcite. One of the uses of this mineral is in agriculture.

Clay: A fine-grained, firm earthy material that is plastic when wet and hardens when heated, consisting primarily of hydrated silicates of aluminium, and widely used in making bricks, tiles, and pottery.

Climate change: The significant and lasting change in the distribution of weather patterns over periods ranging from decades to millions of years and the implications on the environment and community.

Coated roadstone plant: A facility which uses sand and aggregates, bound together either bitumen or tar, to manufacture asphalt concrete (coated roadstone) used in highway construction.

Construction & Demolition (C&D) waste: Waste generated by the construction, repair, maintenance and demolition of buildings and structures. It mostly comprises brick, concrete, hardcore, subsoil and topsoil but can also include timber, metals and plastics.

Conventional hydrocarbons (oil and gas): Oil and gas where the reservoir is sandstone or limestone.

Department for Levelling Up, Housing and Communities (DLUHC): The UK Government department which invests in local areas to drive growth and create jobs, delivers the homes, supports community and faith groups, and oversees local government, planning and building safety.

Department of energy and climate change (DECC): The UK Government department which works to make sure the UK has secure, clean, affordable energy supplies and promotes international adaptation and mitigation to climate change. DECC issues licences for oil and gas development in the UK.

Dormant sites: A site where planning permission for mineral extraction was granted and implemented prior to, and on or subsequent to, the 1 July 1948 and respectively, at which no mineral working has been carried out to any substantial extent. It is unlawful to carry out mineral working on a dormant site until full modern planning conditions have been approved by the relevant Minerals Planning Authority.

Emissions: In the context of the HMWP, emissions are gases released into the atmosphere as a result of human activity. A prominent greenhouse gas is carbon

dioxide which arises from the combustion of fossil fuel and consequently contributes to climate change.

Energy security: The uninterrupted availability of energy at an affordable price.

Environment Agency: A public organisation with the responsibility for protecting and improving the environment in England and Wales. Its functions include the regulation of industrial processes, the maintenance of flood defences and water resources, water quality and the improvement of wildlife habitats.

Existing mineral site: Site which has planning permission for minerals uses. The majority of existing mineral sites are also safeguarded through 'Appendix B – List of safeguarded minerals and waste sites'. This list will be updated through the annual monitoring of the Plan.

Exploration: The stage at which developers search potential areas for hydrocarbon (oil and gas) resources. This may involve exploratory drilling to locate oil for instance. Should resources be found, further permissions will be required in order to progress to the next stages of development – such as appraisal or production.

Extension (minerals site): This involves either the lateral expansion or deepening of the quarry to extract additional resources.

Gas: Is a hydrocarbon (*see 'Hydrocarbons'*). Gas is a non-renewable resource.

Geology: The science that deals with the physical structure and substance of the earth, including the history and the processes that impact upon them.

Green Belt: An area designated in planning documents, providing an area of permanent separation between urban areas. The main aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open; the most important quality of Green Belts is their openness. There is one Green Belt located in Hampshire, in the south west of the county.

Greenhouse gas (GHG): Gases resulting from various processes which, when emitted into the atmosphere, trap heat from the sun causing rises in global temperatures – a process often referred to as the greenhouse effect.

Hampshire Authorities: The Hampshire Authorities comprises Hampshire County Council, Southampton City Council, Portsmouth City Council, the New Forest National Park Authority and the South Downs National Park Authority who have worked in partnership to produce the Hampshire Minerals and Waste Plan.

Hampshire County Council: The county council that governs the county of Hampshire in England. The authority is one of the partners in the Hampshire Minerals and Waste Plan.

Hampshire Minerals and Waste Core Strategy: The Hampshire Minerals and Waste Core Strategy was adopted in 2007. The strategy included an 'over-arching' strategic approach to development. It was produced jointly by Hampshire County Council, Portsmouth and Southampton City Councils and the New Forest National Park Authority.

Hoggin: Unwashed or as-raised sand and gravel containing clay content which helps act as a binding agent. Commonly used as construction fill material and resurfacing tracks and paths.

Hydrocarbons: Hydrocarbon comprising petroleum (oil and gas natural liquids) and gas are fossil fuels that occur concentrated in nature as economic accumulations trapped in structures and reservoir rocks beneath the earth surface. They are principally valued as a source of energy.

Importation: In relation to *Policy 17 (Aggregate supply)*, importation is the transportation of aggregates sourced outside of the county into Hampshire.

Incinerator Bottom Ash (IBA): The coarse residue left on the grate of waste incinerators.

Incinerator Bottom Ash Aggregate (IBAA): Processed IBA to standardise the material and remove contaminants so that it can be used as an aggregate.

Landbank: A measure of the stock of planning permissions in an area showing the amount of un-exploited mineral, with planning permissions, and how long those supplies will last at the locally apportioned rate of supply.

Land-won: Mineral/aggregate excavated from the land.

Local Aggregate Assessment (LAA): The National Planning Policy Framework identifies that mineral planning authorities should produce Local Aggregate Assessments (LAAs) to support the preparation of Mineral Local Plans and act as a Monitoring Report. The LAA should include an estimate of what will constitute a steady and adequate supply of aggregates and should be used as a basis for the provision for aggregate supply made in a Local Plan. The LAA also provides a basis for assessing the need for minerals supply infrastructure such as marine aggregate wharves, recycling facilities and rail depots.

Local Aggregate Assessment (LAA) Rate: The annual rate of provision expected in the LAA (can also referred to as Annual Provision Rate (APR)).

Low carbon technologies: These are a range of technologies developed to specifically reduce the amount of carbon dioxide (CO₂) released into the atmosphere.

Managed Aggregate Supply System (MASS): A system of addressing the spatial imbalances in aggregate supply and demand. MASS is used by government to secure adequate and steady supplies of minerals needed by society and the economy without irreversible damage, within the limits set by the environment and assessed through sustainability appraisals.

Marine-won: Sand and gravel that is suction-dredged from the seabed.

Million tonnes (mt)

Million tonnes per annum (mtpa)

Mineral: Limited and finite natural resources which can only be extracted where they are found geologically.

Minerals and Waste Consultation Area (MWCA): An area identified to ensure consultation between the relevant district or borough planning authority, the minerals industry and the Minerals and Waste Planning Authorities before certain non-mineral planning applications made within the area are determined. The Hampshire Mineral Consultation Area covers the same areas as the Mineral Safeguarding Area.

Mineral Products Association (MPA): The Mineral Products Association is the trade body for the UK's aggregates, cement and concrete industries

Mineral resources: Mineral aggregates and hydrocarbons, which naturally occur in geological deposits in the earth.

Mineral Safeguarding Area (MSA): The MSA is defined by minerals and waste planning authorities. They include viable resources of aggregates and are defined so that proven resources of aggregates are not sterilised by non-mineral development. The MSA does not provide a presumption for these resources to be worked.

Minerals Planning Authority: See '*Minerals and Waste Planning Authorities*'.

Minerals and Waste Planning Authorities: The Local Planning Authorities (County and Unitary Councils) responsible for minerals and waste planning. In Hampshire, Hampshire County Council, Portsmouth and Southampton City Councils, the New Forest National Park Authority and South Downs National Park Authority are minerals and waste planning authorities.

Ministry of Housing, communities and local government (MHCLG): The UK Government department for housing, communities and local government in England (now '*Department for Levelling Up, Housing and Communities*').

Monitoring: Minerals and waste developments are monitored to ensure that they comply with the policies of the plan and planning conditions attached to their permissions. The Plan will also be subject to monitoring.

National Park: These are large areas of countryside which have been designated, and therefore protected by law in order to conserve their natural scenic beauty, wildlife and cultural heritage for future generations. There are two national parks in Hampshire. These are the New Forest National Park and the South Downs National Park. Each National Park is managed by its own National Park Authority.

National Planning Policy Framework (NPPF): First published in March 2012, the NPPF sets out the Government's planning policies for England and how these are expected to be applied.

National Planning Policy for Waste (NPPW): Published in October 2014, the NPPW sets out the Government's detailed waste planning policies.

New Forest National Park: The New Forest National Park was created in March 2005. The National Park lies mainly in south-west Hampshire – from east of the Avon Valley to Southampton Water and from the Solent coast to the edge of the Wiltshire chalk downs.

New Forest National Park Authority (NFNPA): The New Forest National Park Authority took up its full planning powers in April 2006. Its purposes are to conserve and enhance the natural beauty, wildlife and cultural heritage of the park, to promote opportunity for understanding and enjoyment of its special qualities and to seek to foster the social and economic well-being of local communities within the park. The authority is one of the partners in the Hampshire Minerals and Waste Plan.

Oil: Is a hydrocarbon (see 'Hydrocarbons'). Oil is a non-renewable resource.

Oil and gas: A hydrocarbon (see 'Hydrocarbons'). Oil and gas are non-renewable resources.

Permitted capacity: Mineral reserves with planning permission for future extraction.

Planned development: Known areas of non-minerals or waste development e.g. major housing developments identified in Hampshire. This includes development identified in adopted or emerging Local Plans.

Planning application: Operators proposing a new minerals or waste development need to apply for permission from the relevant planning authority in order to be allowed carry out their operations.

Planning permission: Once planning applications have been reviewed by the relevant planning authority, permission may be granted – i.e. consent for the proposed development is given. Permissions may have certain conditions or legal agreements attached which allow development as long as the operator adheres to these.

Portsmouth City Council (PCC): The city of Portsmouth is administered by Portsmouth City Council, a unitary authority. The authority is one of the partners in the Hampshire Minerals and Waste Plan.

Primary aggregate: These are aggregates produced from naturally occurring mineral deposits, extracted specifically for use as aggregate and used for the first time. They are produced either from rock formations that are crushed to produce 'crushed rock' aggregates, or from naturally occurring sand and gravel deposits.

Quarry: These are open voids in the ground from which minerals resources are extracted.

Rail depot: A railway facility where trains regularly stop to load or unload freight (goods). It generally consists of a platform and building next to the tracks providing related services.

Recycled aggregate: Products manufactured from recyclables or the by-products of recovery and treatment processes, e.g. recycled concrete aggregates from CDE waste.

Restoration: Process of returning a site to its former use or restoring it to a condition that will support an agreed after-use such as agriculture or forestry.

Roadstone: A general term for any type of stone or stone product, such as shingle, flints, crushed stone, used as a construction material for building roads.

Safeguarding: The method of protecting needed facilities or mineral resources by preventing inappropriate development from affecting it. Usually, where sites are threatened, the course of action would be to object to the proposal or negotiate an acceptable resolution.

Safeguarded site: Safeguarding protects minerals and waste sites from development pressures and inappropriate encroachment from nearby developments, preventing the unnecessary sterilisation of their associated resources and infrastructure.

Secondary aggregate: Materials that do not meet primary aggregate (e.g. sand/gravel and crushed rock) specifications but which can be used instead of them. Secondary aggregates are by-products of other processes, including the production of primary aggregates.

Shale gas: A natural gas (predominantly methane) which is found in shale rock. Natural gas produced from shale is often referred to as unconventional

Sharp sand and gravel: Coarse sand and gravel suitable for use in making concrete.

Silica sand: Also known as industrial sand, contains a high proportion of silica in the form of quartz. It is produced from unconsolidated sands and crushed sandstones and is used for applications other than as construction aggregates.

Site allocations: Specific sites are identified for minerals and waste activities in the Plan where there are viable opportunities, have the support of landowners and are likely to be acceptable in planning terms.

Soft Sand: Fine sand suitable for use in such products as mortar, asphalt and plaster.

Southampton City Council (SCC): The city of Southampton is administered by Southampton City Council, a unitary authority. The authority is one of the partners in the Hampshire Minerals and Waste Plan.

South Downs National Park: The National Park was formally established on 1 April 2011 and includes areas in the Hampshire County Council boundary.

South Downs National Park Authority (SDNPA): The South Downs National Park Authority took up its full powers in April 2011 and is responsible for all planning in the South Downs National Park. The authority is one of the partners in the Hampshire Minerals and Waste Plan.

Sterilisation: When a change of use, or the development, of land prevents possible mineral exploitation in the foreseeable future.

Tonnes per annum (tpa)

Unconventional hydrocarbons (oil and gas): Refers to oil and gas which comes from sources such as shale or coal seams which act as the reservoirs (see '*shale gas*').

Wharf: A landing place or pier where ships may tie up and load or unload.

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