Northfleet Harbourside

MINERALS INFRASTRUCTURE ASSESSMENT - RESPONSE

AUGUST 2023

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NORTHFLEET CENTRAL 1 LIMITED

ROBINS WHARF, NORTHFLEET

MINERALS INFRASTRUCTURE ASSESSMENT - UPDATE

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NORTHFLEET CENTRAL 1 LIMITED

ROBINS WHARF, NORTHFLEET

MINERALS INFRASTRUCTURE ASSESSMENT - UPDATE

AUGUST 2023

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1 INTRODUCTION

1.1.1 This report has been prepared in accordance with instructions from Northfleet Central 1 Limited in the context of a planning application that has been submitted to Gravesham Borough Council (Ref. 20221064) for a proposed major mixed-use development on land at Northfleet, Swanscombe, Kent. Wardell Armstrong has previously prepared a Minerals Infrastructure Assessment (MIA) in support of the planning application. The application site boundary is identified at Drawing ST19719-001.

1.1.2 As part of the planning application process, responses have been received from statutory consultees and interested parties. These have been in respect of the overall proposals, but also specifically with regards to concerns over loss of the eastern-most element of the site which includes Robins Wharf. The wharf and associated land comprise of around 3.85 hectares in area leading up to the edge of the River Thames (the overall application area is c.19 hectares). We provide greater detail below on the context and existing function of the wharf.

1.1.3 It was previously outlined and agreed that the initial MIA would not address minerals safeguarding given the urban nature of the site (this is addressed separately in the planning statement submitted as part of this application). The focus of this assessment is therefore on the proposed loss of the wharf and its functionality. As the wharf has been safeguarded by Kent County Council in its adopted Minerals & Waste Local Plan 2013-30, it is against these Policies and other materials considerations that any assessment should be made. This report seeks to address those specific concerns and provide further justification in respect of loss of the existing functionality of the wharf.

1.1.4 The application site comprises part of a wharf that has been safeguarded in the Kent Minerals and Waste Local Plan, known as Robins Wharf, and associated readymix concrete and asphalt plants. Where added value plants such as readymix concrete plants and asphalt plants are located in a safeguarded wharf, those plants are also afforded the protection of safeguarding during the life of the safeguarded host facility.

1.1.5 As previously indicated in the Minerals Infrastructure Assessment, Kent County Council has confirmed during pre-application discussions with the developer that a Minerals Resource Assessment is not required. Given the current urban nature of the proposed development site, safeguarded minerals have been addressed in the Planning Statement rather than in a separate report on the basis that the site's

location within the designated Urban Area nullifies the designation. Consequently, the scope of this report is limited to a mineral infrastructure assessment only.

1.2 Site Location

1.2.1 The site is located approximately 1.5km north-east of Swanscombe. The site consists of c.19 ha including Robins Wharf at its eastern edge. The application (red line) boundary includes land to the wharf edge but excludes the water-borne elements including part of the landing crane and landing stage.

1.2.2 The site is shown on drawing ST19719 – 002. Existing access to Robins Wharf is via Grove Road off the A226 London Road.

1.2.3 The area of the site that this report focusses on comprises of the wharf (with jetty extending into the Thames), receptor/ open storage areas for materials and processing/ bagging areas. The materials receiving area for water-borne deliveries, is confined to the front part of the wharf.

1.3 Proposed Development Site in Relation to Robins Wharf

1.3.1 The proposed development site is bound to the north-west by Lower Road and the Northfleet Industrial Estate and to the south-east by Grove Road. To the south, the site straddles the A266 and is bounded by the railway (as shown on drawing ST19719 – 001). To the north, the boundary extends to the River Thames and includes Robins Wharf. The wharf and associated operational areas extend to approximately 3.85 ha of the total application site area. Adjacent to the wharf is Robins Creek and Northfleet Harbour.

1.4 Description of Development

1.4.1 The proposed development is submitted in outline with all matters reserved (apart from access into and out of the site) to allow the demolition of all existing buildings and structures and the phased construction of a mixed use development comprising residential units, a hotel, a new football stadium with associated business and leisure facilities, a range of commercial, business and service uses including retail and food and beverage uses, community uses and a range of sui generis uses, with associated public realm and hard and soft landscaping, highways works, car parking, access and servicing arrangements, infrastructure and ancillary works and associated works.

2 PRINCIPAL MINERAL INFRASTRUCTURE ISSUES AS PER OBJECTIONS

2.1.1 It is acknowledged that various objections and comments have been received in relation to the proposed mix-use development in respect of loss of the wharf. The development would involve the demolition of all buildings and structures within the redline boundary (drawing ST19719 – 001) including the loss of operations concerned with the safeguarded wharf and all of the associated minerals related activity, readymix concrete and asphalt plants. The wharf's landing stage is not within the red line and therefore it is unclear on whether this will be retained although the current function would clearly be redundant.

2.1.2 A summary of the main concerns which relate to the loss of the wharf is provided below:

- Whether the proposed development complies with the requirements of the adopted Minerals Strategy in the Kent Minerals and Waste Local Plan (KMWLP) particularly Policy DM8;
- Whether the proposed development complies with the requirements of the National Planning Policy Framework;
- Whether the proposed development complies with the requirements of the Gravesham Local Plan and the allocations for strategic development;
- Whether the proposed development complies with the policies of the South East Inshore Marine Plan as this was not referred to;
- Whether sufficient evidence has been provided to justify the loss of Robins Wharf; and
- That certain assertions are out of date due to an earlier version of the Local Aggregates Assessment being used;

2.1.3 Ultimately, the decision of whether the loss of Robins Wharf and its associated infrastructure is acceptable is planning-policy based. As such, it is essential in this report to identify relevant mineral infrastructure related planning policies and guidance and to appraise the potential loss of Robins Wharf against them. Again, matters of planning balance are detailed elsewhere in the planning submission outside of this report.

3 SITE HISTORY

3.1 Historical Use

3.1.1 As indicated elsewhere in this application, within the Heritage Chapter and Heritage Statement, the use of the site as a wharf is historic, with the pier elements being introduced into the channel in the late Victorian era. The site was use as part of a broader Portland cement operation which included a large cement works and associated infrastructure. In the early part of the 20th Century, the site was rail-linked with trackways leading to and from the wharf, linking to the railway to the west.

3.1.2 Those tracks have long since been removed from the site and the potential for connection to the railway has been severed by intervening development and highways infrastructure. In general, the area changed to includes various structures and buildings of varying scale in what become a more commercial/ industrial area with land-based activities (car garages, depots, offices etc) becoming more prevalent.

3.1.3 Robins Wharf has continued to function as an importing point for materials, including marine-dredged sands and gravels.

3.2 Current Mineral Operators

3.2.1 Robins Wharf is occupied by Brett Aggregates and Aggregate Industries. For the purpose of this report both parties shall be referred to jointly as the "Operator". The wharf is a shared facility jointly used by the Operator for the importation of aggregates for direct sale or supply into added value products. At this location the Operator's tenants, CPI Mortars and North Kent Roadstone, produce readymix concrete and asphalt for sale into local markets.

3.2.2 Much of the c.3.8 ha of Robins Wharf is given over to the storage and processing of the materials. The wharf is relatively limited in size at around 100 metres.

4 SITE DESCRIPTION

4.1 Mineral Operators

4.1.1 Robins Wharf is occupied by Brett Aggregates and Aggregate Industries. For the purpose of this report both parties shall be referred to jointly as the "Operator". The wharf is a shared facility jointly used by the Operator for the importation of aggregates for direct sale or supply into added value products. At this location the Operator's tenants, CPI Mortars and North Kent Roadstone, produce readymix concrete and asphalt for sale into local markets.

4.1.2 Aggregates, concrete and asphalt are transported to the end user by Heavy Goods Vehicles which utilise the local and strategic road network to arrive at their location.

4.2 Wharf Throughput and Capacity

4.2.1 Kent County Council's Local Aggregate Assessment 2022 confirms that the County has a total of 12 safeguarded wharves (drawing ST19719 – 003) under Policy CSM6 of the Kent Minerals and Waste Local Plan 2013-2030, of which 9 are active/semi active. Policy CSM6 of the local plan lists 12 safeguarded wharves alongside rail depots (we detail the Policy later in this report). It is noted that an importance is placed on safeguarding wharves given the decreasing reliance on land-won sharp sands and gravels.

4.2.2 Data obtained from the Port of London Authority Terminal Maps (see Table 1 below) indicates that all wharves in proximity to Robins Wharf (see drawing ST19719 – 004 and Port of London Maps at Appendix 3) have similar characteristics in terms of the number of available berths, between 1 and 2, access to the surrounding highway and motorway network. Robins Wharf is one of smaller wharves with a length of 100m. The other wharves range in length from 149m to 298m. We note that wharves further along the Thames may be less than 150m as a general rule.

4.2.3 Wharf capacity in adjoining Counties falls outside the scope of this assessment which relates purely to wharf capacity in Kent as this is considered to be the most appropriate basis for Policy assessment (the policy relates to safeguarded ports in Kent). However, it should be noted that there are also minerals wharves elsewhere on the Thames, in Essex and certain London Boroughs. Kent wharves are also located on the Channel coast (e.g. Ramsgate) and along the Medway Estuary. This is an indication that there are a number of other opportunities for any increase in throughput particularly from marine-based aggregates without reliance on Kent wharves or on the Northfleet stretch alone.

Table 1. Wharf characteristics in proximity to Robins Wharf (source Port of London Authority Terminal Maps)

Wharf	Berths	Length	Depth of Water (MHWS)	Access	Material
Robins Wharf	1	100m	9.01m	A2/M25	Aggregates
Northfleet Wharf	1	100m	10.21m	A2/M2/M25	Aggregates (sand, gravel and marine)
42 North Terminal	1	298m	16.06	A2/M25	Bulk Powder & Cement
Clubb's Marine Terminal	2	100m	11.41	A2/M2/M25	Aggregates (marine)
Johnson's wharf	1	n/a	11.16m	A2/M2/M25	Aggregates (marine)
North Sea Terminal	1	149m	11.4m	A2/M2/M25	Aggregates (marine)
Red Lion Wharf	1	240m	14.06m	A2/M25	Aggregates & Type 1
Tower Wharf	2	200m	17.61m	M25	All products. Aggregates not specified.

4.2.4 The MIA previously estimated that the throughput for Robins Wharf was c.284,848 tonnes based on an estimated proportion of total throughput of 712,121 tonnes at the Northfleet wharves. This figure was derived from published data within the "Marine Aggregates, The Crown Estate Licences Summary of Statistics 2021". That report was updated in 2022 (see Appendix 1) and provides information on the regional landing statistics via wharves, broken down by region, county and individual wharf (it groups the Northfleet wharves together - Northfleet, Robins Wharf and Brett Northfleet).

4.2.5 The report states that in 2022 Kent imported 1,747,263 tonnes of marine aggregate via its wharves (this is a slight increase on the 1,694,537 tonnes in 2021). Northfleet has also seen a slight increase in tonnages from 712,121 tonnes in 2021 to 757,895 tonnes in 2022. Based on the previous estimate, the throughput at Robins Wharf is considered to be 303,158 tonnes. It should be noted that this throughput is part of a much wider throughput for the Thames Estuary as a whole, which is stated as being 7.89mt. This includes 1.5mt at Cliffe (in Kent), 2.1mt at Dagenham and 1.9mt through the Greenwich Wharves.

4.2.6 The Kent Local Aggregate Assessment (LAA) 2022 (see Appendix 2) indicates that Kent's wharf capacity 'remains substantial' with the total capacity for aggregate importation per annum at 5.6 million tonnes in 2020 increasing to 6.34mt in 2021. It then states that the theoretical capacity is recorded at 7.3 million tonnes. The report indicates that Kent's wharves were operating at 61% capacity rising in 2021 (this was previously recorded as 54% in the previous LAA).

4.2.7 The report states that, "Kent still has significant unused capacity in its wharfage, as it is operating at approximately 60% capacity at the end of 2021 (leaving 40%

headroom). However, loss of any wharf site will be, largely, irreplaceable and so others will need to increase their throughputs." The report indicates that there is a need to safeguard wharves as, "*Difficulties such as shipping availability, navigation maintenance, facility repair and renewal considerations all could combine to exert stress on a wharf importation system trying to operate at a higher rate*". This importance in safeguarding is acknowledged, but the assertion is that the existing facilities would not be able to increase due to limitations on infrastructure. It is our understanding that the trend in terms of shipping, for instance, will be a move to larger vessels to increase efficiency. An example of this is the Hanson Thames, which is a brand new marine aggregates dredger that is 103.5 metres in length.

4.2.8 The two aggregates companies that comprise the Operator at Robins Wharf have other operations in Kent and the wider Thames Estuary. It is understood that there is capacity at these other safeguarded locations including in Kent. Table 2 lists the safeguarded wharves and the operators. Brett Aggregates operates from 4 out of 12 of the safeguarded wharves, Aggregate Industries from 2.

Table 2. Safeguarded Wharves and Operators (Kent Minerals and Waste Local Plan 2013 to 2030).

Wharf Name	**Operator**
Ridham Dock	Brett and Tarmac
Johnsons Wharf	Lafarge
Robins Wharf	Aggregate Industries and Brett
Clubbs Marine Terminal	Clubb
East Quay, Whitstable	Brett
Red Lion Wharf	Stema Shipping
Ramsgate Port	Brett
Dunkirk Jetty, Weston Docks	Brett
Wharf 42	Lafarge
Northfleet Wharf	CEMEX
Sheerness	Aggregate Industries
Old Sun Wharf*	Fleetmix Ltd.

*Old Sun Wharf – unable to locate any information via Port of London Authority

4.2.9 It was previously asserted that Robins Wharf is at a slight disadvantage over neighbouring wharves in terms of length and depth of water, mean high water springs (MHWS). As indicated above, it has one of the shorter lengths and shallowest MHWS. We note from the Port of London response that they hold data on vessels visiting the dock and as part of this assessment, we do not claim to be experts in tidal patterns and berthing limitations. Our previous assertions were simply that, when compared with other wharves in the vicinity and the wider Thames Estuary, there are better

equipped wharves that are capable of accommodating larger vessels on a more frequent basis (we comment on this later in the report).

5 MINERALS PRODUCTION

5.1 Source

5.1.1 Kent has demand for soft sand, sharp sand and gravel and hard rock. The latest data is provided by the Kent County Council's Local Aggregate Assessment 2022.

5.1.2 These materials are supplied from land-won and marine-won sources or imported by road or via wharves and railheads. There are two hard rock quarries in Kent and a number of sharp sand and soft sand quarries.

5.2 Supply

5.2.1 The Local Aggregate Assessment 2022 provides the most recent data on the County's demand for and the supply of aggregates. The report states that demand for aggregates is met from both imported aggregate (rail and marine) and land-won sources within the County.

5.2.2 The general trend indicates increases in the import of sharp sands & gravel and crushed hard rock (via wharves) and a general decrease in landwon material. The tonnages of material produced in Kent are significantly dependant on importation of material.

Figure 11: Total Primary Aggregate Production in Kent during 2012-2021 (tonnes)

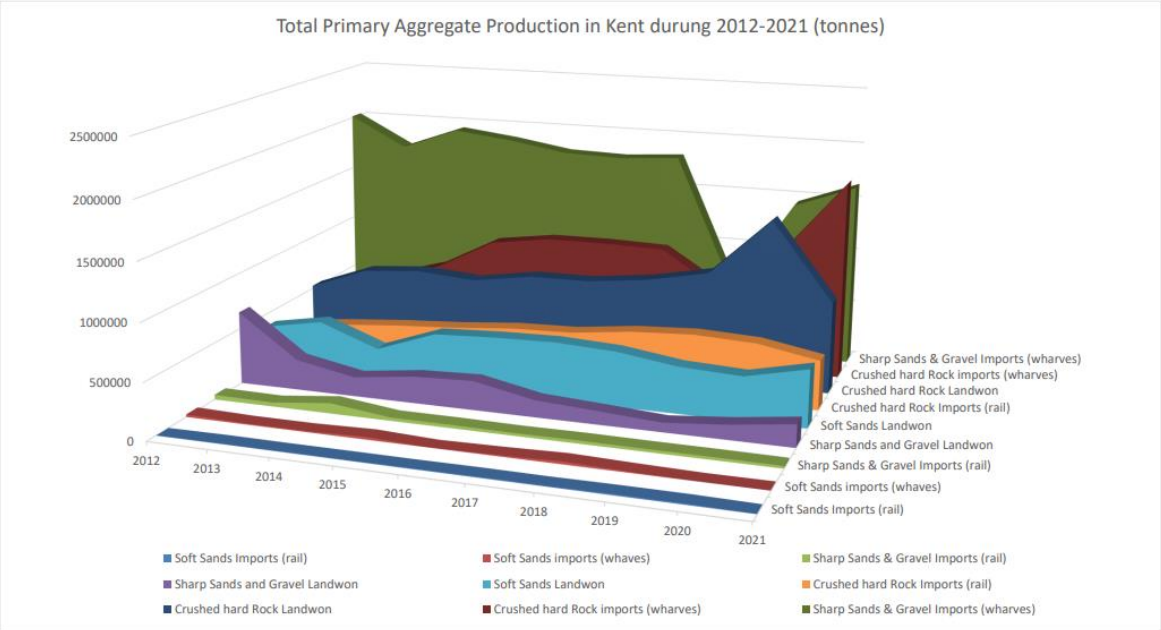


Figure 1 Total Primary Aggregate Production in Kent during 2012-2021 (tonnes) (KCC LAA 2022)

5.2.3 The LAA 2022 states that the trends may be linked to,

"*The economic uncertainty caused by the UK's exit from the European Union (EU) may explain why in 2019 aggregate importation and the utilisation of recycled and secondary aggregates experienced contraction. This appears to be reversing given the 2020 and 2021 sales data. Landwon soft sand sales also experienced contraction, but of a lower degree of magnitude, and are now showing some recovery. The landwon sales of crushed rock, for the reasons given above, were the beneficiary of very local circumstances in Kent, and have returned to a more historical level of sales" (p46)*.

5.2.4 Whilst is has been questioned in the letters of objections whether the assertion in the MIA that there is capacity that can be utilised, can be substantiated, the latest LAA is clear that there is **substantial** capacity and that the need for safeguarding of wharves relates more to concerns over the capacity for the existing infrastructure to handle increases in throughput.

5.2.5 It remains our assertion that between Kent's 9 active/semi active (a total of 12 safeguarded wharves under Policy CSM 6) there is sufficient capacity within the County to absorb aggregate imports of c.304,000 tonnes which would result from the loss of Robins Wharf.

5.2.6 At current rates of importation via wharves there is surplus capacity to land aggregates of between 2.57 to 3.36 million tonnes (Table 3).

Table 3. Kent's 10-Year average Aggregate Production in tonnes, importation via Wharves, Wharf Capacity and Surplus Capacity.

10-Year Aggregate Production (excludes recycled aggregate)	10-Year Average import via Wharves: Crushed Rock, Sand and Gravel*	Kents's Wharf Capacity (million tpa)	Surplus Wharf Capacity (million tpa) at 61% Capacity
4,734,210	3,180,000	6.34 to 7.3 Mt	2.47 to 2.85 Mt

***Note**: the figures do not include imports of cement

5.3 Future Trends

5.3.1 The LAA 2022 identifies that there is future planned housing and infrastructure growth in Kent (excluding Medway) that will drive demand for aggregates. It does caveat that there is not a direct relationship in one Minerals Planning Authority between sales of materials and construction, but this can provide an indication of future growth demands and need for minerals production. The most recent Housing LED Forecast 2021 (Kent Analytics, Kent County Council) predicts the between 2020-40 190,398 homes will be required. It indicates that this represents a fall-off of housing requirements based on analysis of the demographic data from the Office of National Statistics (ONS). It notes that, in addition, Ebbsfleet Garden City exists within Kent

which is a planned development of up to 15,000 homes and 45,000m2 of commercial floor space.

5.3.2 It is noted that there are a number of other significant developments currently being considered within the planning system, many of which will be incorporated within the above forecasts.

5.3.3 Marine won aggregates continue to form a key part of supply across the UK, but certainly in the Thames Estuary region including Kent. A report produced by The Crown Estate and the British Marine Aggregate Producers Association titled "The area involved – 24th annual report - Marine aggregate extraction 2021" identifies areas of dredging and tonnages and the relevance of this by identified region.

5.3.4 The Thames Estuary relates to dredging in a licensed area of c.130 km2. 85.7% (1.37 mt) was delivered to the Thames Estuary from the licensed area with 9% delivered to mainland Europe and the remainder to south and east coastal areas.

5.4 Potential Limitations of Future Use

5.4.1 There is an indication of future increase in requirements for marine won aggregates to meet Kent and the wider Thames Estuary requirements. There has been a move to larger dredging vessels to meet the increased demand. An example of this is the Hanson Thames, which is a brand new marine aggregates dredger that is 103.5 metres in length. The vessel has a draught of 5 metres. The increased size of dredger will create limitations on those smaller wharves that will not be able to accommodate the length. The depth of water will also be crucial to accommodate berthing of the vessels. We note comments from the Port of London that certain larger vessels have been recorded at Robins Wharf and we do not claim to be experts in this regard. Our assertion is that there are other, better equipped wharves in Kent with surplus capacity.

5.4.2 Robins Wharf is limited in its length (c.100m) and the channel depths adjacent to the jetty. There would potentially be a pressure on a need for a further extension to the jetty into the main channel of the Thames, which may not be possible at this point on the river. It may also not be feasible. We note the concerns here in the LAA on the capability of older infrastructure being able to increase productivity.

5.4.3 In addition it is not clear whether the current throughput could be increased and indeed whether any increase would materially enhance the wharf and meet the more macro import/ construction requirements across the Estuary region. It is likely that increases can be met by the larger wharves elsewhere.

5.4.4 There has also been a comment made in respect of sustainability. It is not clear what the specific point being made means, as all marine won material will be brought from the channel into the estuary. Where it is landed is less relevant. The key is how the material is then transported from the wharf. An increase in throughput will mean an increase in landside vehicle movements. Whether this is from Robins Wharf or if these movements are displaced to other wharves is immaterial. Furthermore, we would assert that if there is an increase in throughput, that this should be directed to those facilities that have rail linked capabilities or where processed material could be shipped elsewhere.

6 MINERALS INFRASTRUCTURE GUIDANCE AND POLICY

6.1.1 As mentioned in Section 5 of this report, the decision as to whether the loss of Robins Wharf would be acceptable will be guided by National and Local planning policies and other relevant material considerations. All relevant policies relating to minerals infrastructure for this development/ site are outlined in full below.

6.2 National Planning Policy Framework (NPPF) (adopted July 2021)

6.2.1 The National Planning Policy Framework sets out government's planning policies for England and how these are expected to be applied.

6.2.2 Paragraph 210 (e) of the NPPF states that planning policies should 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.

6.3 Gravesham Local Development Plan

6.3.1 The Development Plan for Gravesham currently consists of:

- Gravesham Local Plan Core Strategy and Local Plan Policies Map (2014)
- Gravesham Local Plan First Review (1994) – saved Policies
- Kent County Council Minerals and Waste Local Plan 2013-30 (2020)

6.3.2 Although it is not part of the adopted development plan, Gravesham Borough Council also takes account of the South East Marine Plan policies when determining planning applications that fall within the marine plan area.

Gravesham Local Plan Core Strategy (adopted September 2014)

6.3.3 The Local Plan Core Strategy is the main document in the Gravesham Local Plan. Its role is to:

- Set out a long-term vision for the future of Gravesham based on evidence of need to support communities and outline what makes Gravesham a distinctive and attractive place to live and work;
- support and inform; sustainable development via investment in infrastructure, economic development, and regeneration proposals within the borough, while promoting healthy communities;
- provide a consistent basis for planning application decisions.

6.3.4 Policies of relevance from the Core Strategy include:

Policy CS03 - Northfleet Embankment and Swanscombe Peninsula East Opportunity Area

The Northfleet Embankment and Swanscombe Peninsula East Opportunity Area is a substantial opportunity for major riverside regeneration in Gravesham. Development will bring significant benefits to existing adjoining residential communities and the Borough as a whole through the delivery of new housing and jobs whilst achieving environmental improvement, especially in air quality, and a high standard of design.

Any future proposals for the Swanscombe Peninsula East Undeveloped Area will be subject to a comprehensive masterplan approach which deals with the issues of flood risk, transport and access, ground conditions, proximity to existing industrial uses, air quality, biodiversity, utilities, navigation and the presence of the HS1 railway line.

The Swanscombe Peninsula East Riverside Industrial Area, Kimberly Clark Site and Imperial Business Estate will be retained in employment use. The Council will support proposals which expand and support their operation.

The Council will support the regeneration for residential and employment uses of the Grove Road and Lower Ebbsfleet Area taking into account the ground conditions and existing uses.

Development of the Key Sites will lead to the provision of around 980 dwellings and around 133,500 sq m gross employment floorspace. Development on the Key Sites will be in accordance with the principles set out below.

Land East of Grove Road and Robin's Creek Key Site (within sub-area 1.3)

This will provide a residentially led mixed use development with the potential to create around 200 dwellings. Such development will be expected to: improve and enhance Robin's Creek and the Ebbsfleet stream; improve greenspace; and reduce heavy commercial traffic and parking on Grove Road.

6.3.5 The loss of existing commercial wharves shown on the Policies Map and other land-side supporting infrastructure will not be supported unless a study and supporting evidence shows that they are no longer viable for marine related employment purposes or are incapable of being made so at reasonable cost, and it has been shown that there is no demand for them through an appropriate marketing exercise carried out in accordance with Council guidance, or appropriate alternative provision is

available or will be provided as part of the rationalisation of facilities that, as a minimum, maintains capacity and provides equivalent or better facilities.

6.3.6 The Gravesham Local Plan Core Strategy outlines how the Grove Road and Lower Ebbsfleet Area (sub-area 1.3), within which Robins Wharf is located, consists of a number of separate sites that have regeneration potential. Paragraph 4.4.7 of the Core Strategy recognises the potential for residential-led regeneration to complement the proposal to extend the existing residential development in sub-are 1.4 and this is identified a key site. Initial estimates suggest that this area could deliver around 200 new homes. Such development would be expected to: improve and enhance Robin's Creek and the Ebbsfleet stream; improve the greening of this area; and reduce the heavy commercial traffic and parking on Grove Road.

Policy CS07: Economy, Employment and Skills

In conjunction with the private sector and its regeneration partners, the Council will seek to secure the delivery of around 186,490 sq m gross new employment floorspace over the plan period focusing on the following:

- a major new B1/office employment centre as part of a wider mixed use sustainable development of Ebbsfleet;
- office, industrial and warehousing facilities on Key Sites in the Swanscombe Peninsula and Northfleet Embankment Opportunity Area;
- office development in Gravesend Town Centre as well as retail, culture and leisure (see Policy CS05);
- office, industrial and warehousing development on Key Sites in the Gravesend Riverside East and North East Gravesend Opportunity Area; and
- office and light industrial development in the form of an enterprise centre/ incubation space on greenfield land South of Coldharbour Road, Northfleet.

Proposed office development, in addition to that allocated elsewhere within this plan, will be directed in the first instance to Gravesend Town Centre, and then to edge of centre locations, including sites within 500 metres walking distance of Gravesend Railway Station and Ebbsfleet Station, in accordance with the NPPF sequential test. Only if suitable sites are unavailable in these locations, will consideration be given to out of centre locations.

Proposals for office development exceeding 2,500 sq m floorspace which lie outside Gravesend Town Centre and are not identified elsewhere in this Core Strategy, will be subject to an impact assessment in line with the NPPF.

The Council will work with its partners and landowners at Swanscombe Peninsula East to deliver additional employment-led mixed use development subject to a comprehensive masterplan approach.

In considering development proposals, particular support will be given to schemes incorporating small and flexible industrial and/or office workspaces of high quality intended to support the start-up and expansion of small and medium sized enterprises. The Council will also support the refurbishment and upgrading of existing industrial and commercial premises and improvements in information and communications technology to facilitate more flexible working practices and the changing economic needs of the Borough.

Development resulting in the loss of B class employment floorspace will not be supported unless otherwise allowed for by policies set out in the Core Strategy or where:

- the proposal will deliver at least an equivalent number of new jobs on-site or elsewhere within the Borough and the proposed use is consistent with other policies set out in this plan; or
- the existing premises are no longer suited for employment purposes or are incapable of being made suitable at reasonable cost and it has been shown that there is no demand for them through an appropriate marketing exercise carried out in accordance with Council guidance (Appendix 5); or
- the existing premises have an unacceptable environmental impact on the area within which they are situated and this is incapable of reasonable mitigation or the environmental benefit that would arise from the existing use stopping would outweigh the potential loss in employment.

Development proposals facilitating the expansion of river-related employment will be supported, particularly where these involve the use of the river for transport and/or provide specialist training or other facilities intended to support the continued use of the River Thames as a major commercial waterway.

The loss of existing commercial wharves shown on the Policies Map and other land-side supporting infrastructure will not be supported unless a study and supporting evidence shows that they are no longer viable for marine related employment

purposes or are incapable of being made so at reasonable cost, and it has been shown that there is no demand for them through an appropriate marketing exercise carried out in accordance with Council guidance (Appendix 5), or appropriate alternative provision is available or will be provided as part of the rationalisation of facilities that, as a minimum, maintains capacity and provides equivalent or better facilities.

The Council will support proposals that promote the appropriate expansion and diversification of the rural area economy. Support will be given to the conversion of rural buildings to employment use/live-work units where it is compatible with national policies for protecting the Green Belt and where it accords with policies in this plan, in particular relating to Green Infrastructure.

The Council will work with its regeneration partners to enhance opportunities for all local people to access the greater range of higher skilled jobs that will arise as a result of the policies above. Support will be given to upgrading educational and training facilities and major development projects will be expected to contribute (either directly or through other agencies) towards the delivery of skills training, the promotion of apprenticeships and work placements.

6.3.7 The loss of existing commercial wharves shown on the Policies Map and other land-side supporting infrastructure will not be supported unless a study and supporting evidence shows that they are no longer viable for marine related employment purposes or are incapable of being made so at reasonable cost, and it has been shown that there is no demand for them through an appropriate marketing exercise carried out in accordance with Council guidance (Appendix 5), or appropriate alternative provision is available or will be provided as part of the rationalisation of facilities that, as a minimum, maintains capacity and provides equivalent or better facilities.

6.3.8 The Council will support proposals that promote the appropriate expansion and diversification of the rural area economy. Support will be given to the conversion of rural buildings to employment use/live-work units where it is compatible with national policies for protecting the Green Belt and where it accords with policies in this plan, in particular relating to Green Infrastructure.

6.3.9 The Council will work with its regeneration partners to enhance opportunities for all local people to access the greater range of higher skilled jobs that will arise as a result of the policies above. Support will be given to upgrading educational and training facilities and major development projects will be expected to contribute (either

directly or through other agencies) towards the delivery of skills training, the promotion of apprenticeships and work placements.

Policy CS11: Transport

New developments should mitigate their impact on the highway and public transport networks as required. As appropriate, transport assessments and travel plans should be provided and implemented to ensure the delivery of travel choice and sustainable opportunities for travel. Transport assessment work is required to be undertaken in accordance with national and local policy guidance, and to identify detailed highway and public transport network requirements and management arising from the development.

Sufficient parking in new development will be provided in accordance with adopted parking standards which will reflect the availability of alternative means of transport and accessibility to services and facilities.

The Council will support proposals which improve public transport provision and facilities in the Borough. In particular, it will:

- seek to maintain and expand, where justified, segregation lanes for Fastrack and existing bus priority measures elsewhere;
- require Key Sites to include provision for buses;
- support the development of transport hubs at Gravesend Town Centre and Ebbsfleet (in Dartford Borough Council area) to provide high quality interchange facilities between bus, rail, walking and cycling; and
- Ensure an adequate supply of public car parking.

The Council will seek improvements to walking and cycling facilities and networks in the Borough including provision in new development as appropriate. These should provide improved access to Gravesend Town Centre and Ebbsfleet and to other services and facilities in the Borough. In particular, the Council will seek the provision of pedestrian and cycle links between Northfleet and Ebbsfleet stations and along the River Thames, as part of the proposed Thames Estuary Path.

Land required for the possible future extension of Crossrail and to protect the High Speed 1 (HS1) railway is safeguarded on the Policies Map and proposals that would prejudice these will be refused.

The Council will support proposals which improve the efficiency of freight transport and provide opportunities for alternatives to road transport where possible. The Council will safeguard wharves, as shown on the Policies Map, subject to the provisions of paragraph 5.1.36 of Policy CS07 (Economy, Employment and Skills).

The Council will support proposals which facilitate the use of the River Thames for passenger transport and enable cruise liners to visit the Borough.

6.3.10 Gravesham's location on the River Thames means that river transport has historically been important and some riverside sites provide navigational sight lines and installations. There are a number of commercial wharves on the riverside at Gravesend and Northfleet.

Kent Minerals and Waste Local Plan 2013-30 (adopted September 2020).

6.3.11 Kent County Council are the minerals and waste planning authority for Kent, and plan for waste management capacity and mineral supply through their Minerals and Waste Local Plan. The plan includes strategic policies for minerals and waste development as well as development management policies used to determine planning applications.

6.3.12 Policies of relevance from this plan include:

Policy CSM 6 – Safeguarded Wharves and Rail Depots

Safeguarded Wharves and Rail Depots

Planning permission will not be granted for non-minerals development that may unacceptably adversely affect the operation of existing, planned or potential sites, such that their capacity or viability for minerals transportation purposes may be compromised.

The following sites, and the allocated sites included in the Minerals Sites Plan, are safeguarded:

1. Allington Rail Sidings
2. Sevington Rail Depot
3. Hothfield Works
4. East Peckham
5. Ridham Dock (both operational sites)
6. Johnson's Wharf, Greenhithe

7. **Robins Wharf, Northfleet (both operational sites)**
8. Clubbs Marine Terminal, Gravesend
9. East Quay, Whitstable
10. Red Lion Wharf, Gravesend
11. Ramsgate Port
12. Wharf 42, Northfleet (including Northfleet Cement Wharf)
13. Dunkirk Jetty (Dover Western Docks)
14. Sheerness
15. Northfleet Wharf
16. Old Sun Wharf, Gravesend

Their locations are shown in Figure 13: Minerals Key Diagram in Chapter 2 and their site boundaries are shown in Chapter 9: Adopted Policies Maps.

The Local Planning Authorities will consult the Minerals Planning Authority and take account of its views before making a planning decision (in terms of both a planning application and an allocation in a local plan) for non-mineral related development (other than that of the type listed in policy DM 8 (clause 1) on all development proposed at, or within 250m of, safeguarded minerals transportation facilities.

Policy CSM 7 – Safeguarding Other Mineral Plant Infrastructure

Facilities for concrete batching, the manufacture of coated materials, other concrete products and the handling, processing and distribution of substitute, recycled and secondary aggregate material in Kent are safeguarded for their on-going use.

Where these facilities are situated within a host quarry, wharf or rail depot facility, they are safeguarded for the life of the host site. Where other development is proposed at, or within 250m of, safeguarded minerals plant infrastructure, Local Planning Authorities will consult the Minerals Planning Authority and take account of its views before making a planning decision (in terms of both a planning application and an allocation in a local plan).

6.3.13 Policy CSM 7 addresses the need to safeguard mineral production infrastructure, while being flexible to the needs of the industry by enabling the loss of capacity (potentially required for the industry to remain competitive and viable) provided there is replacement capacity available elsewhere of a type that is at least equal to that provided by the original facility.

Policy DM8 – Safeguarding Minerals Management, Transportation Production & Waste Management Facilities

Planning permission will only be granted for development that is incompatible with safeguarded minerals management, transportation or waste management facilities, where it is demonstrated that either:

1. it constitutes development of the following nature: advertisement applications; reserved matters applications; minor extensions and changes of use and buildings; minor works; and non-material amendments to current planning permissions; or
2. it constitutes development on the site that has been allocated in the adopted development plan where consideration of the other criteria (1, 3-7) can be demonstrated to have taken place in formulation of the plan and allocation of the site which concluded that the safeguarding of minerals management, transportation production and waste management facilities has been fully considered and it was concluded that certain types non-mineral and waste development in those locations would be acceptable; or
3. replacement capacity, of the similar type, is available at a suitable alternative site, which is at least equivalent or better than to that offered by the facility that it is replacing; or
4. it is for a temporary period and will not compromise its potential in the future for minerals transportation; or
5. the facility is not viable or capable of being made viable; or
6. material considerations indicate that the need for development overrides the presumption for safeguarding; or
7. It has been demonstrated that the capacity of the facility to be lost is not required.

Replacement capacity must be at least equivalent in terms of tonnage, accessibility, location in relation to the market, suitability, availability of land for processing and stockpiling of waste (and materials/residues resulting from waste management processes) and minerals, and:

- in the case of wharves, the size of the berth for dredgers, barges or ships
- in the case of waste facilities, replacement capacity must be at least at an equivalent level of the waste hierarchy and capacity may be less if the development is at a higher level of the hierarchy

There must also be no existing, planned or proposed developments that could constrain the operation of the replacement site at the required capacity.

Planning applications for development within 250m of safeguarded facilities need to demonstrate that impacts, e.g. noise, dust, light and air emissions, that may legitimately arise from the activities taking place at the safeguarded sites would not be experienced to an unacceptable level by occupants of the proposed development and that vehicle access to and from the facility would not be constrained by the development proposed.

Further guidance on the application of this policy will be included in a Supplementary Planning Document.

6.3.14 Policy DM8 sets out the circumstances when safeguarded minerals and waste development may be replaced by non-waste and minerals uses. This includes ensuring that any replacement facility is at least equivalent to that which it is replacing and it specifies how this should be assessed.

6.3.15 In the case of mineral wharves the factors to be considered include the depths of water at the berth, accessibility of the wharf at various states of the tide, length of the berth, the size and suitability of adjacent land for processing plant, weighbridges and stockpiles, and existing, planned or proposed development that may constrain operations at the replacement site at the required capacity.

6.3.16 There also are circumstances when development proposals in the vicinity of safeguarded facilities will come forward. The need for such development will be weighed against the need to retain the facility and the objectives and policies of the development plan as a whole will need to be considered when determining proposals. Policy DM8 sets out the circumstances when development may be acceptable in a location proximate to such facilities. The policy recognises that the aim of

safeguarding is to avoid development which may impair the effectiveness and acceptability of the infrastructure.

South East Inshore Marine Plan

6.3.17 Published June 2021 the South East Inshore Marine Plan provides guidance for sustainable development from Felixstowe in Suffolk to near Folkestone in Kent. Policies of relevance from the South East Inshore Marin Plan are:

SE-INF-2

(1) Proposals for alternative development at existing safeguarded landing facilities will not be supported.

(2) Proposals adjacent and opposite existing safeguarded landing facilities must demonstrate that they avoid significant adverse impacts on existing safeguarded landing facilities.

(3) Proposals for alternative development at existing landing facilities (excluding safeguarded sites) should not be supported unless that facility is no longer viable or capable of being made viable for waterborne transport.

(4) Proposals adjacent and opposite existing landing facilities (excluding safeguarded sites) that may have significant adverse impacts on the landing facilities should demonstrate that they will, in order of preference:

a) avoid

b) minimise

c) mitigate - adverse impacts so they are no longer significant.

6.4 Updated Mineral and Waste Safeguarding Supplementary Planning Document (adopted March 2021)

6.4.1 Kent County Council has produced an "Updated Mineral and Waste Safeguarding Supplementary Planning Document" which was adopted in March 2021 and is to be read alongside the Kent Minerals and Waste Local Plan 2013-30.

6.4.2 This document sets out how the relevant policies are applied in respect of the safeguarding of minerals infrastructure and land within 250m of safeguarded sites that is subject to a proposal for non-minerals related development. The information requirements for planning applications affecting safeguarded minerals infrastructure are also set out in the SPD.

6.5 Thames Vision 2050

6.5.1 The Port of London Authority alongside a range of stakeholders and interested parties have come together to promote '*a shared vision of how the Thames can be a greater resource for local communities and better serve the nation as a global maritime centre'*.

6.5.2 A report produced as part of formulating the vision by Oxford Economics (Future trade through the Port of London (May 2021)) identifies that, "*historic aggregates volumes carried along the Thames have been heavily influenced by major projects*". The report indicates that where a product is linked to construction activity, it will be volatile over a period of time, indicating a likely general growth trend up to 2050.

6.6 Summary

6.6.1 Robins Wharf is clearly afforded a degree of protection by being safeguarded in the Minerals and Waste Local Plan. The safeguarding appears to have a level of conflict in the Gravesham Local Plan which promotes significant development. Whilst it is a for a development to provide sufficient mitigation to protect against harm under the 'agent of change' principle, contrasting land uses must be carefully managed.

6.6.2 We consider the proposals against the planning policy below.

7 APPRAISAL AGAINST PLANNING POLICY

7.1.1 Section 38(6) of the Planning and Compulsory Purchase Act 2004 states that, "*If regard is to be had to the development plan for the purpose of any determination to be made under the planning Acts the determination must be made in accordance with the plan unless material considerations indicate otherwise*". The planning case for the wider development is made elsewhere within the Planning Statement and other supporting documents. It is not the intention of this report to set out in detail any planning balance.

7.1.2 This report is focussed on the proposed redevelopment of part of the application site that currently functions as a wharf in use for minerals importation.

7.1.3 In accordance with paragraph 210 of the National Planning Policy Framework 2021, Kent County Council has identified in its Minerals and Waste Local Plan, a number of safeguarded wharves including Robins Wharf in Northfleet. The site is subject to a range of planning policies within the Minerals Local Plan, particularly DM8. In considering this, it is also relevant to consider other statutory development plans that may affect sites alongside other material considerations.

7.2 *Gravesham Local Plan & Gravesham Local Plan Core Strategy*

7.2.1 As indicated above, the Development Plan for the application site includes the Gravesham Local Plan Core Strategy Policy CS03 – Northfleet Embankment and Swanscombe Peninsula East Opportunity Area which designates the land within the safeguarded Robin's Wharf as an Opportunity Area, more specifically, the land falls within sub-area 1.3 – Land East of Grove Road and Robin's Creek Key Site.

7.2.2 The designation of this site along with the text provided in the Council's Core Strategy suggests that this is an area that should be developed. It is recognised that the key site, Robins Creek, does not form part of the land within the application site, however, the policy wording does not specify that any development of this sub-area should be focused entirely within the key site. As such, the Policy CS03 covers the entirety sub-area 1.3.

7.2.3 The Core Strategy emphasises how development of this sub-area should be a residentially led mixed -use development and how a development of this nature would enhance Robin's Creek and the Ebbsfleet Stream by improving greenspace and reducing heavy commercial traffic and parking on Grove Road.

7.2.4 The Policy CS07 – Economy, Employment and Skills and further text within the Core Strategy demonstrates that the Council realise that the development opportunity

areas may result in the loss of existing commercial wharves and landside supporting infrastructure but state that their loss will not be supported unless:

- a study and supporting evidence shows they are no longer viable for marine related employment purposes or
- they are incapable of being made so at reasonable cost, and it has been shown that there is no demand for them through market research or
- appropriate alternative provision is available or will be provided as part of the rationalisation of facilities that, as minimum, maintains capacity and provides equivalent or better facilities.

7.2.5 As such, providing one of the above-mentioned pieces of evidence is evidenced to support the loss of Robins Wharf, the proposals would accord with the requirements of Policies CS03 and CS07.

7.2.6 It is concluded in Section 5 of this report that there is sufficient capacity in the existing wharves in Kent (currently at 61% capacity) and that the loss of the individual site capacity of Robins Wharf (c.304,000 tonnes) can be accommodated by the other safeguarded wharves.

7.2.7 As such, it is concluded that available alternative provision for aggregate importation is available in nearby wharves and that the Policy requirements of CS03 and CS07 can be met.

7.3 ***Kent Minerals and Waste Local Plan 2013-30 (adopted September 2020).***

7.3.1 Policy CSM 6 - Safeguarded Wharves and Rail depots states that proposals for non-minerals development will not be permitted should said development unacceptably adversely affect safeguarded minerals infrastructure facilities. Robins Wharf, Northfleet is identified as a safeguarded wharf.

7.3.2 Policy CSM 7- Safeguarding Other Mineral Plant Infrastructure states that added value plant such as concrete and coated materials plant are safeguarded for ongoing use where situated in a safeguarded wharf for the life of the host site. The Operators Tenant's readymix concreting plant and asphalt plant are therefore safeguarded by Policy CSM7 for the lifetime of Robins Wharf.

7.3.3 Policy DM 8: Safeguarding Minerals Management, Transportation Production & Waste Management Facilities states that proposals for development that are incompatible with safeguarded minerals management facilities will only be granted planning permission where it is demonstrated that either:

i. the proposal constitutes minor applications; reserved matters, change of use etc; or
ii. the proposal is allocated in the adopted development plan; or
iii. a suitable alternative minerals infrastructure site has been identified; or
iv. the proposed development is for a temporary period; or
v. the existing facility is not viable; or
vi. the need for the proposed development overrides the presumption for safeguarding; or
vii. the capacity of the minerals infrastructure facility to be lost is not required.

7.3.4 Policy DM8 is clear that only **one** of the specified criterion needs to be satisfied; they are expressed as being 'either/or' requirements.

Policy *DM 8: Criterion 6 – whether the need for the proposed development overrides the presumption for safeguarding*

7.3.5 The demolition of all existing buildings and structures, including Robins Wharf would facilitate the construction of a significant mixed-use development. This development would comprise of residential units, a hotel, a new football stadium with associated business and leisure facilities, a range of commercial, business and service uses including retail and food and beverage uses, community uses and a range of sui generis uses, with associated public realm and hard and soft landscaping, highways works, car parking, access and servicing arrangements, infrastructure and ancillary works and associated works.

7.3.6 The socio-economic assessment of the proposed scheme has identified a number of benefits arising from the scheme, which are in addition to the much needed supply of housing given the Council's undersupply and pressures within north-Kent arising from nitrate neutrality matters. The benefits of the proposed development are discussed further within the planning statement accompanying the application, but are in summary:

- During construction, the Proposed Development is expected to generate at least:
  - 6,755 person years of employment
  - …which is equivalent to an average of 846 Full Time Equivalent jobs sustained for the entire duration of the build (estimated at 8 years)
  - An additional 820 indirect and induced jobs (FTE) – created / supported within the construction supply chain and in the wider economy for the duration

  - Approx. 120 apprenticeship starts and other on-the-job training opportunities
  - £429m in Gross Value Added for the regional economy
- On completion, it is expected to generate a minimum of:
  - 2,250 direct jobs across a wide range of sectors – a net increase of around 1,750 on the estimated number of jobs currently based on site
  - 925 net additional jobs for local (Gravesham) residents, taking into account leakage, displacement and multiplier effects
  - £69m per annum in additional local (Gravesham) GVA
  - £20m per annum in resident retail and leisure expenditure
  - £5.6m per annum in additional council tax receipts, plus an uplift of c. £1.1m per annum in business rates compared with existing uses

7.3.7 It is anticipated that the proposed development would provide significant benefits to the area and local communities, including funding for school places, Health Service, the regeneration and improvement of public spaces and access affordable and family housing. Consequently, the benefits of the proposed development should be carefully weighed against Policy DM 8: Criterion 6.

7.3.8 It is considered that whilst there is a need to safeguard existing wharves to allow for future minerals import to serve the needs of Kent, the above significant benefits may act as a material consideration in the planning balance. It is not for this report to advocate the planning balance as this is contained in the wider planning submission package and for others to run the argument. However, in the context of this report, it is our firm assessment that there are significant material benefits that may outweigh the harm, that would satisfy Criterion 6.

Policy DM 8: Criterion 7 – whether the capacity of the minerals infrastructure facility to be lost is required

7.3.9 There are a number of wharves in close proximity to Robins Wharf, listed in Table 1 of this document. In the absence of published importation and sales figures for this facility, it is not possible to determine the exact proportion of aggregate imported and its importance and individual contribution to the overall tonnage of aggregate imported via Kent's safeguarded wharves.

7.3.10 The estimated throughput for Robins Wharf represents a relatively small proportion of the total throughput in Kent and the wider Thames Estuary. It is asserted that there are better equipped wharves that have the capacity to increase production and to

improve existing infrastructure to meet future demand. This includes where wharves are rail-linked for more sustainable exportation.

7.3.11 Criterion 7 can therefore be satisfied.

7.4 *South East Inshore Marine Plan*

7.4.1 The landing facility at Robins Wharf will remain in situ and is not included within the red line boundary of the Site. The proposed development would be undertaken on land adjacent and opposite the landing facility.

7.4.2 It is recognised that the proposed development would result in a significant adverse impact on an existing safeguarded facility through the loss of the functionality of Robins Wharf, however, that loss is considered to be outweighed by the significant socio-economic benefits that the proposed mix-use development presents. Again, it is asserted that the loss of the individual site capacity of Robins Wharf can be accommodated by the other safeguarded facilities within close proximity.

8 CONCLUSION

8.1.1 The proposed non-minerals development would include the total loss of all mineral facilities at Robins Wharf.

8.1.2 The proposal should be considered against the development plan and in particular KMWLP Policy DM8, and specifically in this case against criteria 6 and 7. The development will also be considered against the Gravesham Local Plan. A full exposition of the need for the development and the benefits arising from it is contained within the Planning Statement submitted in support of the application.

8.1.3 Detailed consideration has been given to the objections that have been raised alongside other comments. We have revised the assumptions based on the latest available data.

8.1.4 It remains our firm assertion that there remains significant underused capacity evidenced in the other safeguarded wharves and that whilst there is a planning balance to be ultimately made in the context of the overall scheme, that loss of Robins Wharf can be mitigated through diversion of capacity elsewhere to existing wharves, particularly where the existing infrastructure and future potential for improvements to infrastructure can be accommodated.

8.1.5 The proposals meet the requirements of both criteria 6 and 7 within Policy DM8.

APPENDICES

Appendix 1: Marine Aggregates The Crown Estate Licences Summary of Statistics 2022

MARINE AGGREGATES

THE CROWN ESTATE LICENCES

SUMMARY OF STATISTICS 2022

I N D E X

NC Non confidential

ACCOMPANYING NOTES

1. These statistics refer to removal of sand and gravel from the bed of the English and Welsh Territorial Sea and Continental Shelf, under licence from The Crown Estate Commissioners. Removals from areas not in The Crown Estate ownership are not included in these statistics, nor are dredged materials removed purely for navigational reasons and not used beneficially.

2. All the statistics relate to royalty returns for the 2022 calendar year.

3. All permitted and actual extraction figures are expressed in metric tonnes. A conversion factor of 1.73 for aggregate and 1.5 for sand, has been applied where necessary, to convert cubic metres to metric tonnes.

4. The reported permitted removal tonnages shown within this report refers to the tonnage permitted within The Crown Estate production agreement. This is correct as at 31 December 2022.

5. The tonnages exclude corrections relating to late declarations and those identified during the audits.

6. The regional landing statistics totals will not equate to the amount dredged from each region, due to the presence of the export market and movement of aggregate to meet differing home market demands.

7. The county landing statistics for England are based on ceremonial counties and preserved counties for Wales.

8. An Official Port Listing is included (pages 17-18), which illustrates the individual landing locations (current and historic) and the standard name used within this document.

Summary 2022

1. Regional Dredging Statistics

Licences to Dredge Marine Minerals

Dredging Area	Permitted Removal *[1]	Primary Aggregates	Rivers and Miscellaneous	Secondary Aggregates		Total Removal
				Beach Nourishment	Reclamation Fill	
Humber	6,875,000	3,691,629	-	690,437	-	4,382,066
East Coast	7,125,000	3,598,657	-		-	3,598,657
Thames Estuary	4,350,000	1,694,808	-		-	1,694,808
East English Channel	9,916,667	4,536,225	-	77,264	-	4,613,489
South Coast	8,125,000	3,652,781	-	20,408	-	3,673,189
South West	2,799,998	1,295,116	-	45,829	-	1,340,945
North West	700,000	217,884	-	976,539	-	1,194,423
Total	**39,891,665**	**18,687,101**	**-**	**1,810,477**	**-**	**20,497,578**

2. Regional Landing Statistics

Humber / North East	1,281,774
East Coast	443,773
Thames Estuary	7,886,432
East English Channel	655,872
South Coast	2,214,928
South West	1,293,147
North West	217,884
Export	4,693,291
Primary Aggregates Total	18,687,101
Beach Nourishment / Reclamation Fill / Rivers and Misc	1,810,477
TOTAL LANDED	**20,497,578**

3. National Landing Statistics - Primary Aggregate

England	13,354,514
Wales	639,296
Belgium	1,441,622
France	166,648
Netherlands	3,085,021
Primary Aggregates Total	**18,687,101**

**[1] Relates to Average Annual Tonnages (total tonnage / term).This does not include specific permitted tonnages for Secondary Aggregates only.*

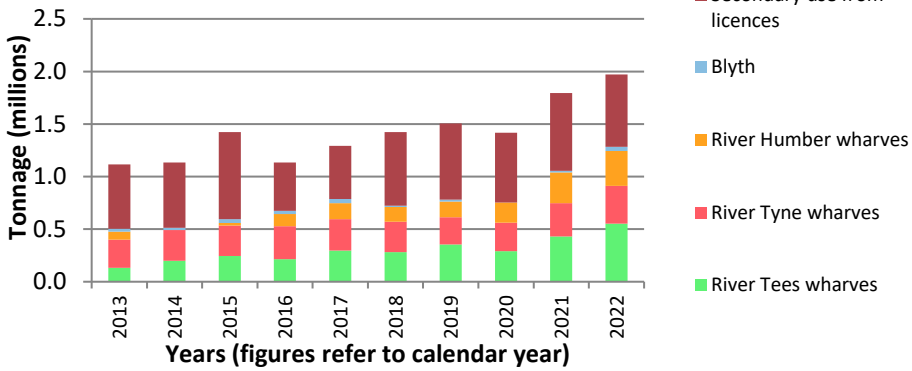
Tonnages exclude corrections. See note 5 on page 1.

The Humber region

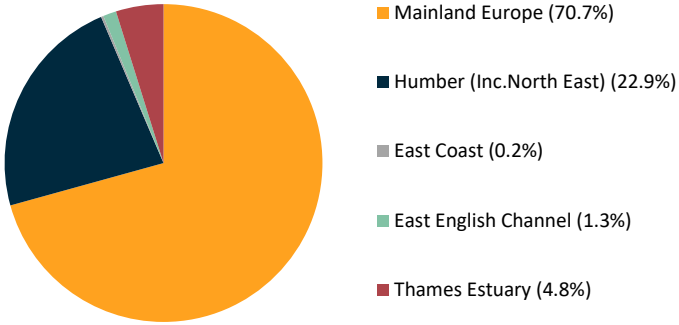
Tonnage delivered to landing locations in the region

Landing locations	2022 tonnages
Blyth	38,748
River Humber Wharves	330,575
River Tees Wharves	553,842
River Tyne Wharves	358,609
Humber / North East Total	**1,281,774**

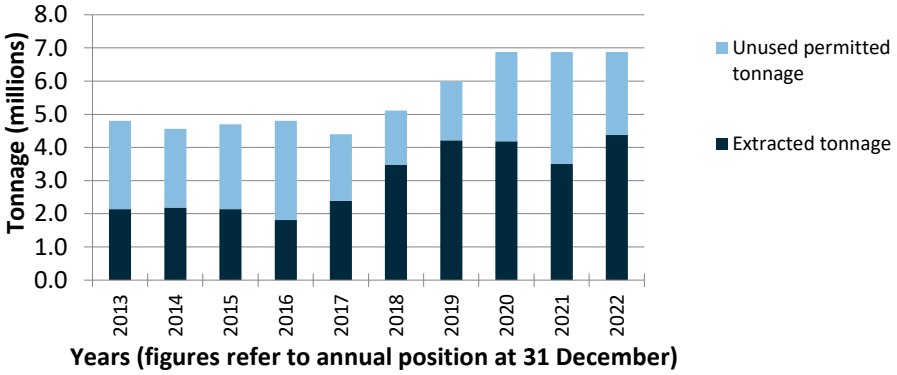
Delivery of marine aggregates to the region



During 2022 material extracted from the region was delivered to:



Permitted and extracted tonnage



3.69
million tonnes of primary aggregate were extracted out of the permitted **6.87 million tonnes** from **10 licences***

0.69
million tonnes of aggregate were extracted for **Beach Nourishment**

16
Current estimates suggest there are **16 years** of primary aggregate production permitted *

1
Current application for a licence could, if approved **increase** the permitted tonnage by **0.5 million tonnes** annually *

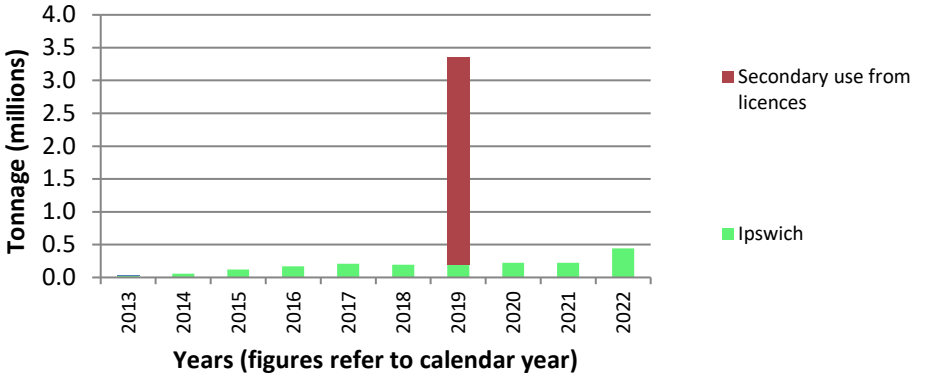
* As at March 2023

The East Coast region

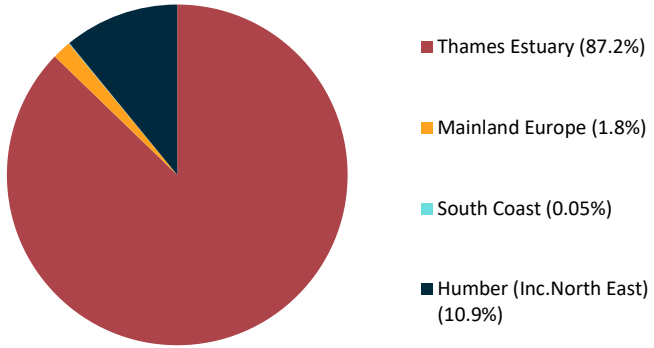
Tonnage delivered to landing locations in the region

Landing locations	2022 tonnages
Ipswich Wharves	443,773
East Coast Total	**443,773**

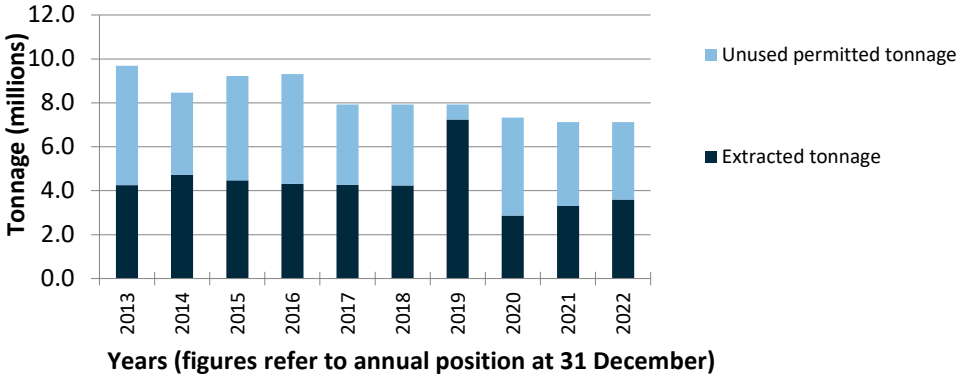
Delivery of marine aggregates to the region



During 2022 material extracted from the region was delivered to:



Permitted and extracted tonnage



3.6

million tonnes of primary aggregate were extracted out of the permitted **7.1 million tonnes** from **11 licences***

No marine aggregate was extracted for **Beach Nourishment**

10

Current estimates suggest there are **10 years** of primary aggregate production permitted *

1

Current application for a licence could, if approved **increase** the permitted tonnage by **0.65 million tonnes** annually*

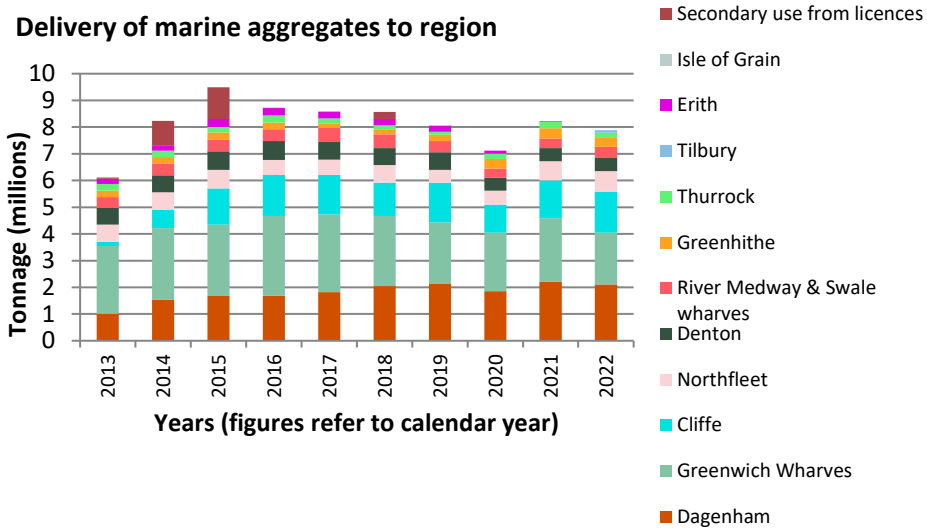
* As at March 2023

The Thames region

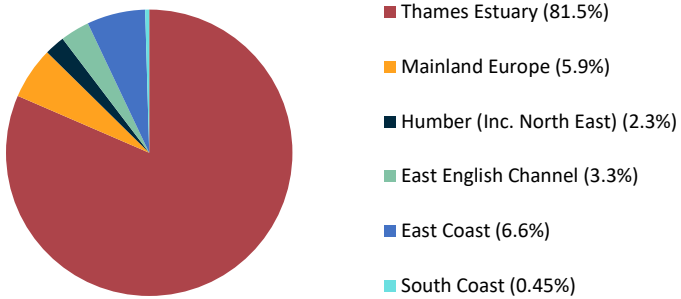
Tonnage delivered to landing locations in the region

Landing locations	2022 tonnages
Cliffe	1,533,384
Dagenham	2,112,314
Denton	491,161
Greenwich Wharves	1,943,207
Greenhithe	367,126
Northfleet	757,895
River Medway Wharves	379,282
Swale Wharves	41,191
Thurrock	163,334
Tilbury	97,540
Thames Estuary Total	**7,886,432**

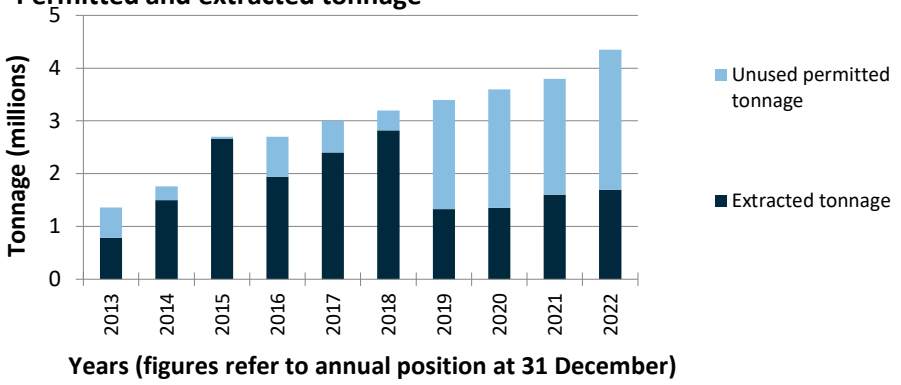
Delivery of marine aggregates to region



During 2022 materials extracted from the region was delivered to:



Permitted and extracted tonnage



1.7

million tonnes of primary aggregate were extracted out of the permitted **4.35 million tonnes** from **8 licences***

No marine aggregate was extracted for **Beach Nourishment**

25

Current estimates suggest there are **25 years** of primary aggregate production permitted *

1

Current application for a licence could, if approved **increase** the permitted tonnage by **0.5 million tonnes** annually*

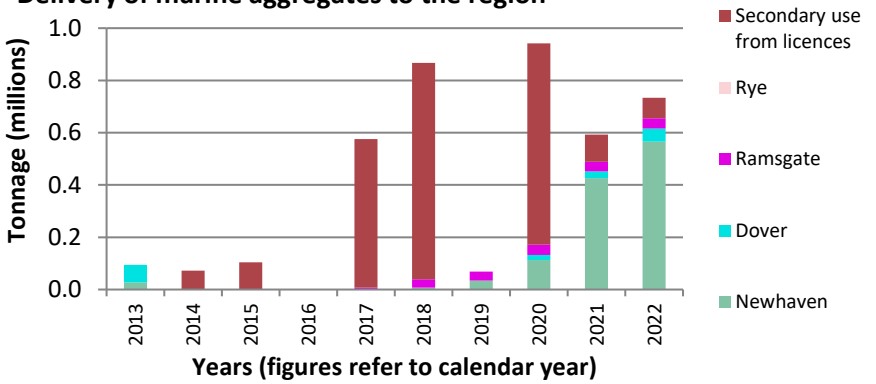
* As at March 2023

The East English Channel region

Tonnage delivered to landing locations in the region

Landing locations	2022 tonnages
Dover	49,686
Newhaven	565,982
Ramsgate	40,205
East English Channel Total	**655,872**

Delivery of marine aggregates to the region



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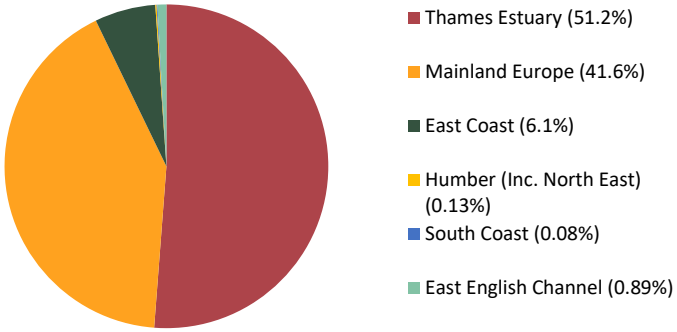
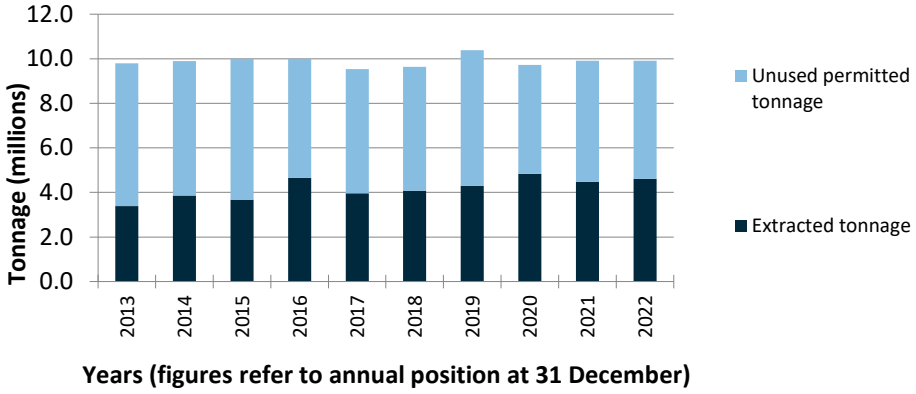


Permitted and extracted tonnage



4.5

million tonnes of primary aggregate were extracted out of the permitted **9.1 million tonnes** from **9 licences***

0.07

million tonnes of aggregate were extracted for **Beach Nourishment**

36

Current estimates suggest there are **36 years** of primary aggregate production permitted *

5

Current application for a licence could, if approved **increase** the permitted tonnage by **3.4 million tonnes** annually *

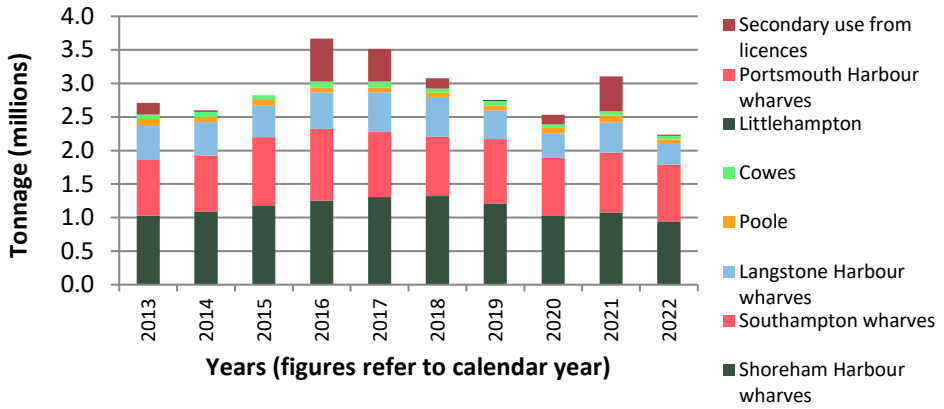
* As at March 2023

The South Coast region

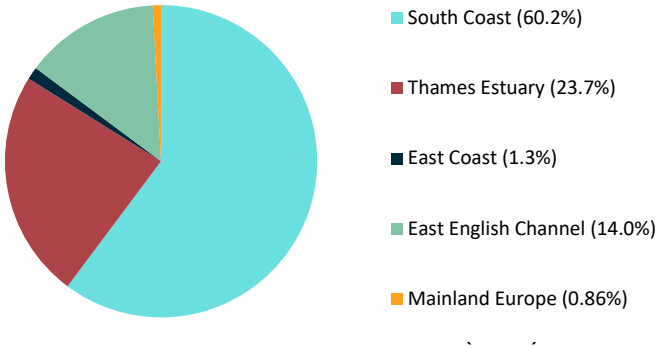
Tonnage delivered to landing locations in the region

Landing locations	2022 tonnages
Cowes	48,734
Langstone Harbour Wharves	309,089
Poole	67,357
Shoreham Harbour Wharves	945,182
Southampton Wharves	844,565
South Coast Total	**2,214,928**

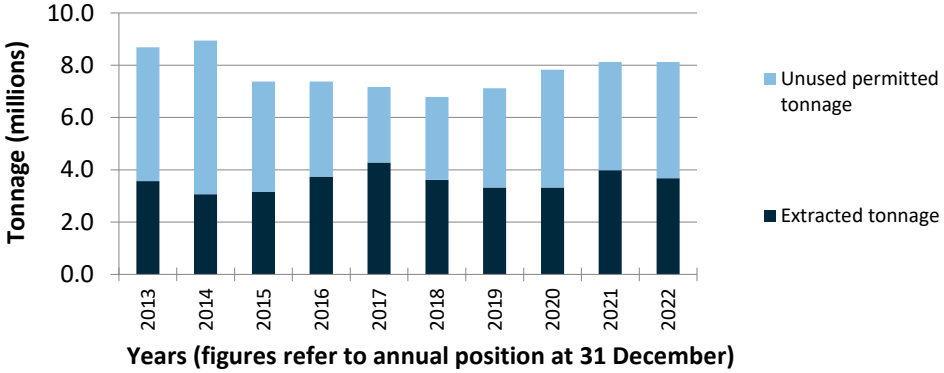
Delivery of marine aggrgeates to the region



During 2022 material extracted from the region was delivered to:



Permitted and extracted tonnage



3.65

million tonnes of primary aggregate were extracted out of the permitted **8.13 million tonnes** from **15 licences***

0.02

million tonnes of aggregate were extracted for **Beach Nourishment**

21

Current estimates suggest there are **21 years** of primary aggregate production permitted *

0

There are currently **no applications** for new licences on the South Coast *

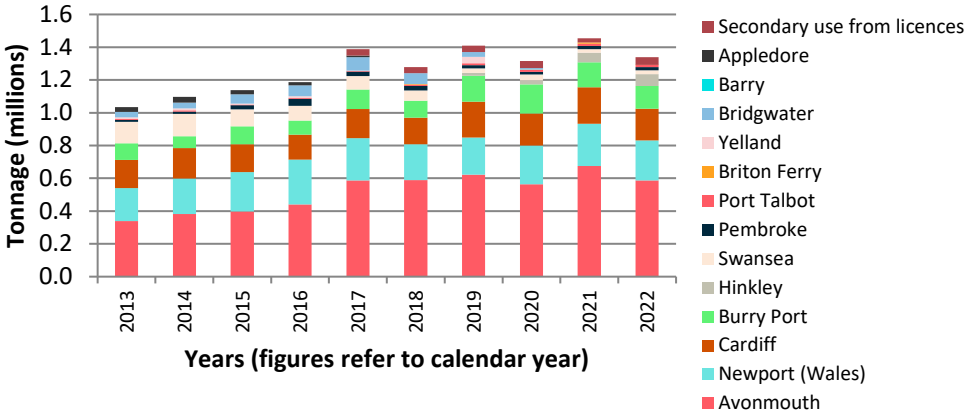
* As at March 2023

The South West region

Tonnage delivered to landing locations in the region

Landing locations	2022 tonnages
Avonmouth	587,665
Briton Ferry	1,105
Burry Port	138,261
Cardiff	193,044
Hinkley	72,490
Newport	243,633
Pembroke	19,562
Port Talbot	13,121
Swansea	24,266
South West Total	**1,293,147**

Delivery of marine aggregates to the region



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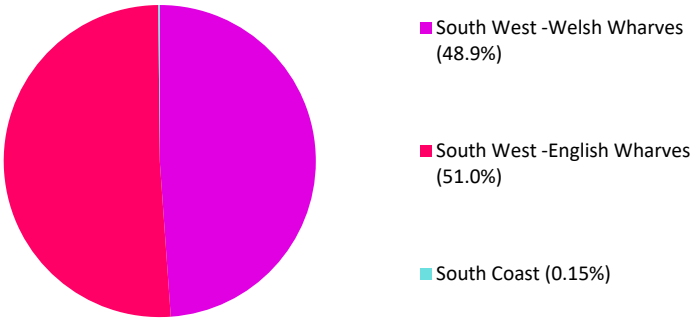
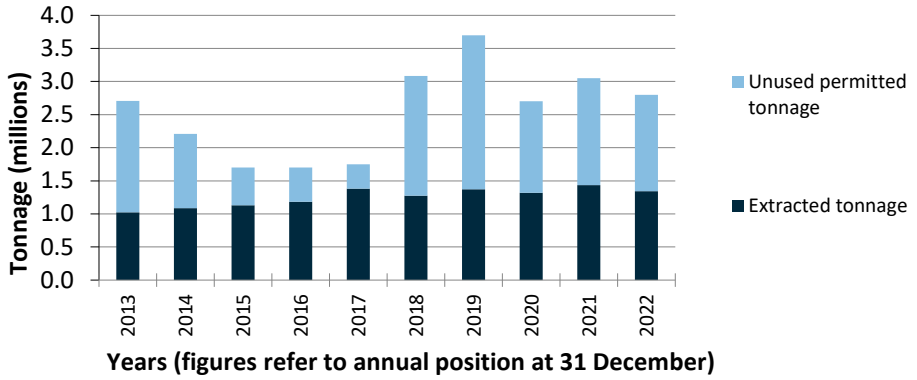


Permitted and extracted tonnage



1.3
million tonnes of primary aggregate were extracted out of the permitted **2.8 million tonnes** from **9 licences***

0.04
million tonnes of aggregate were extracted for **Beach Nourishment**

24
Current estimates suggest there are **24 years** of primary aggregate production permitted *

0
There are currently **no applications** for new licences in the South West *

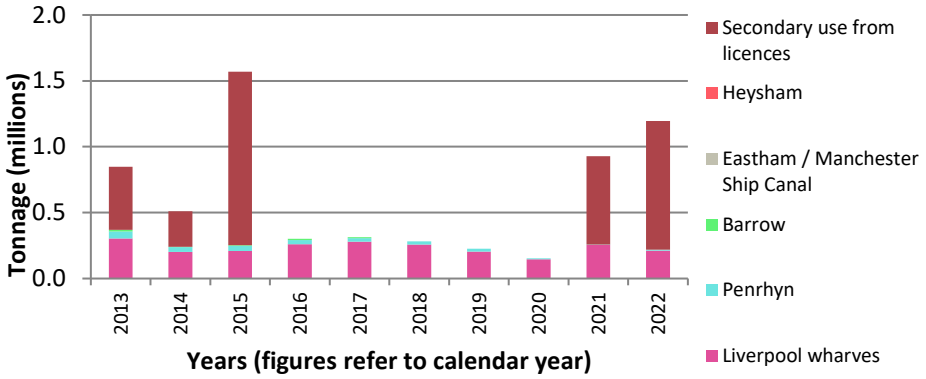
* As at March 2023

The North West region

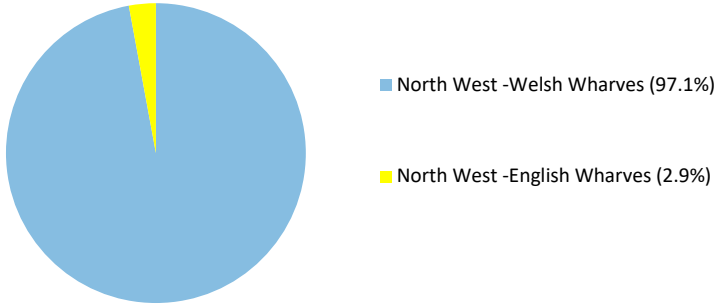
Tonnage delivered to landing locations in the region

Landing locations	2022 tonnages
Liverpool Wharves	211,580
Penrhyn	6,304
North West Total	**217,884**

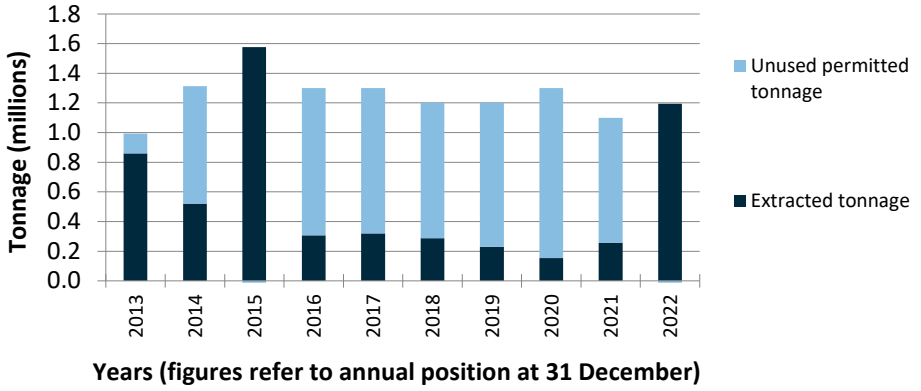
Delivery of marine aggrgates to the region



During 2022 material extracted from the region was delivered to:



Permitted and extracted tonnage



0.2
million tonnes of primary aggregate were extracted out of the permitted **0.7 million tonnes** from **2 licences***

0.98
million tonnes of aggregate were extracted for **Beach Nourishment**

33
Current estimates suggest there are **33 years** of primary aggregate production permitted *

1
Current application for a licence could, if approved **increase** the permitted tonnage by **0.5 million tonnes** annually *

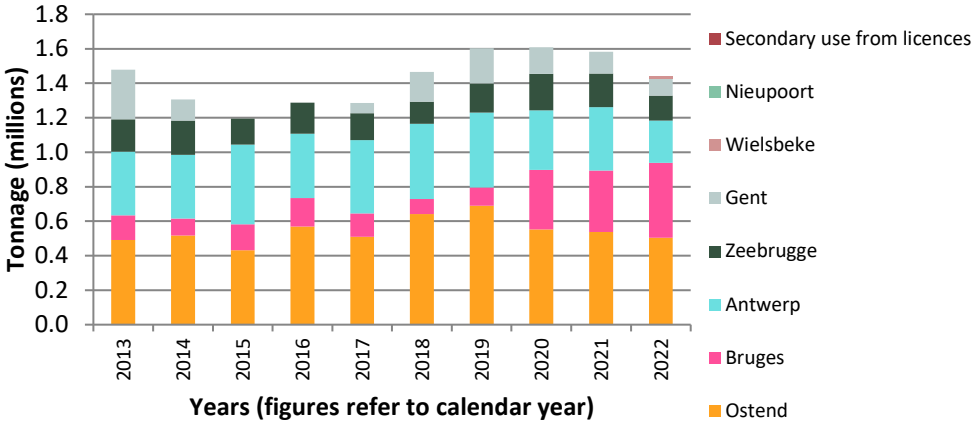
* As at March 2023

Exports

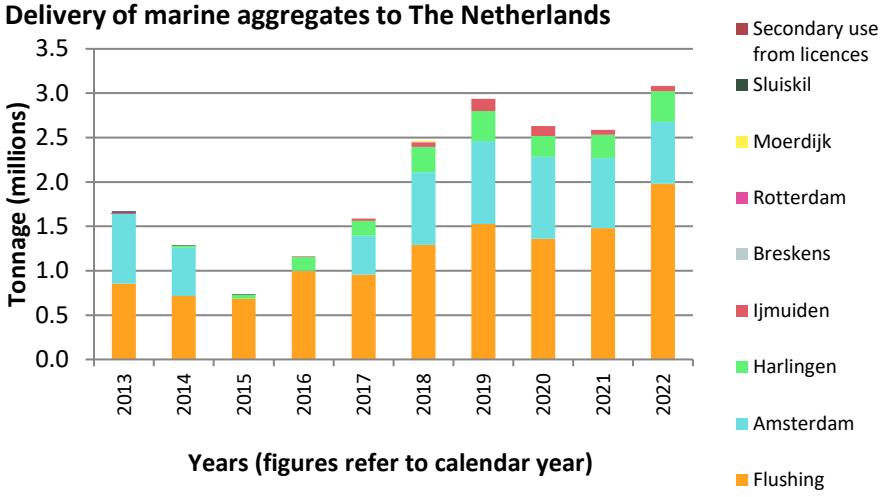
Tonnage delivered to landing locations in the region

Landing locations	2022 tonnages
Amsterdam	696,087
Antwerp	244,772
Breskens	3,338
Bruges	433,183
Dunkirk	124,983
Fecamp	34,808
Gent	99,106
Harlingen	346,333
Ijmuiden	57,870
Le Havre	6,857
Ostend	504,829
Vlissingen	1,981,394
Wielsbeke	14,294
Zeebrugge	145,438
Export Total	**4,693,291**

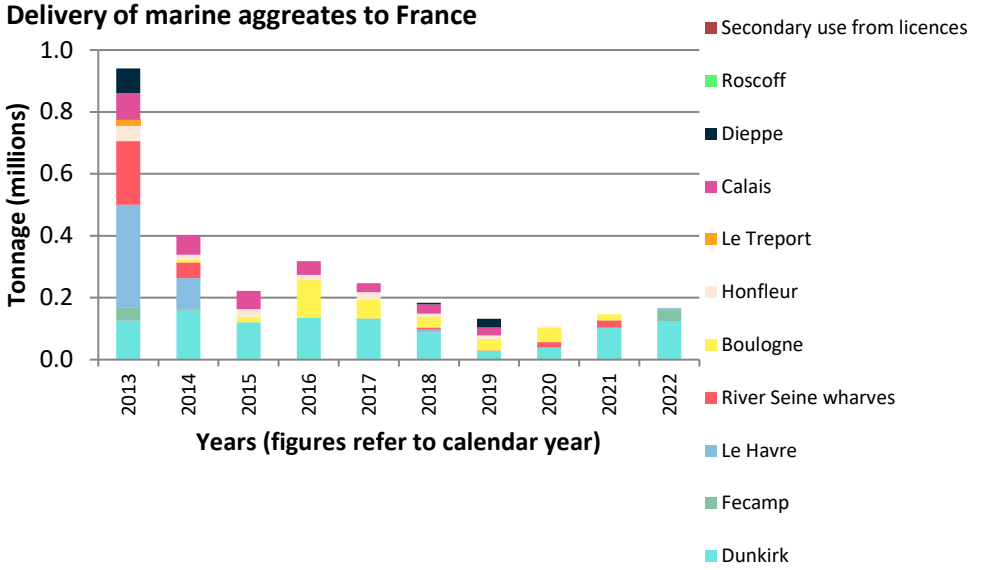
Delivery of marine aggregate to Belgium



Delivery of marine aggregates to The Netherlands



Delivery of marine aggreates to France



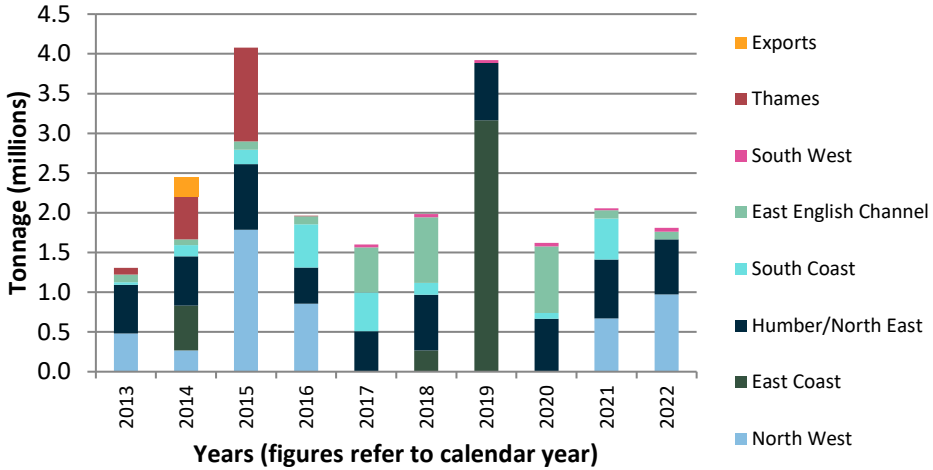
Secondary use aggregate

Beach nourishment/reclamation fill/rivers and miscellaneous

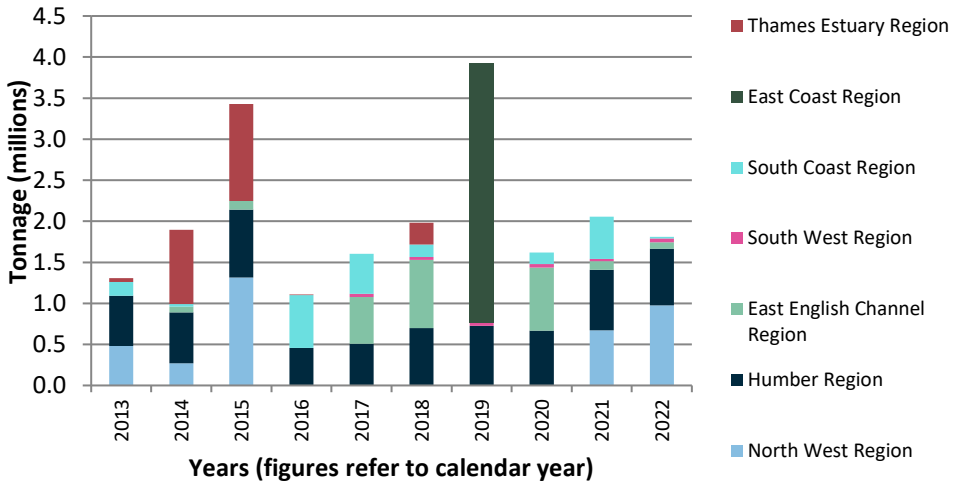
Secondary use aggregate delivered to landing locations

Landing locations	2022 tonnages
Colwyn Bay	973,871
Eastbourne	11,517
Lincshore	690,437
Lydd	77,264
Pevensey Beach	8,891
Yelland	48,497
Beach Nourishment Total	**1,810,477**

Secondary use aggregate was delivered to these regions:



Secondary use aggregate was extracted from these regions:



Delivery by region/country

Reserves and Resources

Region	Total current primary reserves	10-year average annual offtake	3-year average annual offtake	Peak annual offtake during 10-year period*	Annual permitted offtake (as March 2023)	Regional reserve life @ 10-year average annual offtake
		Primary (construction aggregate)				
Humber	40.57	2.47	3.57	3.69	6.88	16.46
East Coast	38.97	4.01	3.26	4.72	7.13	9.71
Thames Estuary	35.78	1.44	1.55	1.94	4.35	24.93
East English Channel	146.80	4.08	4.36	4.65	9.92	36.02
South Coast	70.65	3.39	3.61	3.99	8.13	20.86
South West	29.41	1.25	1.34	1.43	2.80	23.61
North West	8.75	0.27	0.21	0.38	0.70	32.77
TOTAL	**370.93**	**16.89**	**17.90**	**18.10**	**39.89**	**21.96**

All figures are in millions of tonnes

*Totals are national peaks, not the sum of regional figures

Reserves and Resource

The PERC code defines "**reserves"** as the proportion of a mineral "**resource**" that can be mined for economic purposes

22

Current national estimates suggest there are **22 years** of primary marine aggregate production permitted

371

Million tonnes estimated national primary reserve

SUMMARY OF NATIONAL LANDING STATISTICS FOR MARINE DREDGED PRIMARY AGGREGATES - 2022

Landing Locations		2022 Tonnage
England	Avonmouth	587,665
	Blyth	38,748
	Cliffe	1,533,384
	Cowes	48,734
	Dagenham	2,112,314
	Denton	491,161
	Dover	49,686
	Greenhithe	367,126
	Greenwich Wharves	1,943,207
	Hinkley	72,490
	Ipswich Wharves	443,773
	Langstone Harbour Wharves	309,089
	Liverpool Wharves	211,580
	Newhaven	565,982
	Northfleet	757,895
	Poole	67,357
	Ramsgate	40,205
	River Humber Wharves	330,575
	River Medway Wharves	379,282
	River Tees Wharves	553,842
	River Tyne Wharves	358,609
	Shoreham Harbour Wharves	945,182
	Southampton Wharves	844,565
	Swale Wharves	41,191
	Thurrock	163,334
	Tilbury	97,540
	England Total	**13,354,514**

SUMMARY OF NATIONAL LANDING STATISTICS FOR MARINE DREDGED PRIMARY AGGREGATES - 2022

Landing Locations			2022 Tonnage
Wales	Briton Ferry		1,105
	Burry Port		138,261
	Cardiff		193,044
	Newport (Wales)		243,633
	Pembroke		19,562
	Penrhyn		6,304
	Port Talbot		13,121
	Swansea		24,266
		Wales Total	**639,296**
Belgium	Antwerp		244,772
	Bruges		433,183
	Gent		99,106
	Ostend		504,829
	Wielsbeke		14,294
	Zeebrugge		145,438
		Belgium Total	**1,441,622**
France	Dunkirk		124,983
	Fecamp		34,808
	Le Havre		6,857
		France Total	**166,648**
Netherlands	Amsterdam		696,087
	Breskens		3,338
	Harlingen		346,333
	Ijmuiden		57,870
	Vlissingen		1,981,394
		Netherlands Total	**3,085,021**
	Total		**18,687,101**

SUMMARY OF COUNTY LANDING STATISTICS FOR MARINE DREDGED PRIMARY AGGREGATES - 2022

LANDING LOCATIONS		2022 Tonnage
ENGLAND	Bristol	587,665
	Dorset	67,357
	East Riding of Yorkshire	305,233
	East Sussex	924,123
	Essex	163,334
	Greater London	4,153,060
	Hampshire	1,153,654
	Isle of Wight	48,734
	Kent	1,747,263
	Lincolnshire	25,342
	Medway	1,912,666
	Merseyside	211,580
	Middlesbrough	39,913
	North Yorkshire	513,929
	Northumberland	38,748
	Somerset	72,490
	Suffolk	443,773
	Tyne & Wear	358,609
	West Sussex	587,040
	England Total	**13,354,514**
WALES	Carmarthenshire	138,261
	Gwent	243,633
	Gwynedd	6,304
	Pembrokeshire	19,562
	South Glamorgan	193,044
	West Glamorgan	38,492
	Wales Total	**639,296**

OFFICIAL PORT LISTING

Region	Landing Port (Standard Name)	Wharves/Alternative Names
North East	Blyth	Blyth
Humber	Immingham	Immingham
	Lincshore	Lincshore
	River Humber Wharves	Goole, Grimsby, Howden, Hull, Hull N&Y, Hull Northern Aggregates, Pyewipe, St Andrew's Quay, Stema Hull
	River Tees Wharves	Able Tees, Billingham, Middlesbrough, Tees, Tees Sand, Seaton, Middlesbrough Dawsons, TCP East Quary (Shire Aggregates)
	River Tyne Wharves	Gateshead, Jarrow, Tyne, Jarrow Wharf (Cemex)
	Sunderland	Hendon, Hendon Dock, Sunderland
East Coast	Bacton	Bacton
	Ipswich	Hanson/ARC Ipswich, Ipswich, East Coast Marine Aggregates
	Lowestoft	Lowestoft
Thames Estuary	Barking	Barking, Docklands Wharf
	Cliffe	Alpha Wharf, Cliffe, North Sea Terminal
	Dagenham	Hanson/ARC Dagenham, Dagenham, Dagenham Deport (Cemex)
	Denton	Denton, Denton B.A.D, Denton Sand, J Clubbs
	Erith	Erith, Pioneer Wharf
	Felixstowe	Felixstowe
	Greenhithe	Greenhithe, Hanson Greenhithe
	Greenwich Wharves	Angerstein, Blackwall Wharf, Charlton, Delta Wharf, Greenwich, Murphy's Wharf, Phoenix Wharf, Victoria Deep Wharf
	London Docklands Wharves (mostly disused)	Canning Town, Cargo Fleet Wharf, Clarence Wharf, East India Dock, Heron Quay, Millwall, Orchard Wharf, Peruvian Wharf, Rotherhithe, Silvertown, Thames Wharf, Thamesmead, Union Wharf, Victoria Wharf
	Northfleet	Northfleet, Northfleet Brett, Robin's Wharf
	River Medway & Swale Wharves	Queenborough, Ridham, Rochester, Rochester Hanson, Sheerness
	Swale Wharves	Ridham, Queenborough
	Tilbury	Tilbury Stema
	Thurrock	Purfleet, Purfleet PAL, Thurrock, West Thurrock
East English Channel	Dover	Dover
	Hythe	Hythe
	Lydd	Lydd
	Newhaven	Newhaven, Cemex Newhaven
	Ramsgate	Ramsgate
	Rye	Rye
South Coast	Cowes	Cowes, East Cowes, IOWA/Isle of Wight Aggregates, Kingston Wharf, Medina Wharf, Cemex/SCS West Cowes, TMD/UMD West Cowes, West Cowes
	Eastbourne	Eastbourne Beach
	Elmer	Elmer Beach
	Langstone Harbour Wharves	Bedhampton, Havant, Kendall's Wharf, Langstone, TMD/UMD Bedhampton/ Portsmouth
	Littlehampton	Littlehampton, TMD/UMD Littlehampton
	Newport, Isle of Wight	Blackhouse Quay (disused), Newport IoW, Solent Services, West Medina Mills (disused)
	Pevensey	Pevensey Beach
	Plymouth	Millbay, Plymouth, Stonehouse
	Poole	Poole
	Portsmouth Harbour Wharves	Fareham, Gosport, LRA Tipner, LRA Upper Wharf, Portsmouth
	Shoreham Harbour Wharves	Hanson/ARC Shoreham, Hall's Wharf, Hiedelberg Portslade, Kendall's Wharf Shoreham, Portslade, Cemex/SCS Shoreham, Shoreham, Shoreham Ferry Wharf, TMD/UMD Shoreham
	Southampton Wharves	Burnley Wharf, Dibles Wharf, Eling Wharf, JP Marks, JPM Super Wool, Leamouth, LRA Marchwood, Marchwood, Cemex/SCS Southampton, Southampton, Southampton (Fawley), Spitfire Wharf, Totton, TMD/UMD Burnley Wharf, Woolston
	Southsea	Southsea
Channel Islands	Guernsey	Guernsey, St Sampson

OFFICIAL PORT LISTING

Region	Landing Port (Standard Name)	Wharves/Alternative Names
South West	Appledore	Appledore, Appledore Evans, Bidna
	Avonmouth	Avonmouth, BCA Avonmouth, Cemex/BDL Avonmouth, Hanson Avonmouth, Remix Avonmouth, TMD/UMD Avonmouth
	Barnstaple	Barnstaple
	Barry	Barry
	Bridgwater	Bridgwater, Dunball Wharf
	Briton Ferry	Briton Ferry, Cemex Briton Ferry, Giant's Wharf, Hanson Briton Ferry, Ironworks, Riverside Wharf, Tarmac Briton Ferry
	Burry Port	Burry Port
	Cardiff	Cardiff, TMD Cardiff, Cemex Cardiff, Hanson Cardiff, Empire Wharf, Roath Dock
	Hinkley	Hinkley Jetty
	Newport, Wales	Alexandra Dock, Hanson/ARC Newport, East Bank/Ferry Terminal, Eastern Wharf, Newport, Newport (Wales), Newport 2
	Pembroke	Pembroke
	Port Talbot	Port Talbot
	Swansea	Prince of Wales Dock, Cemex/BDL Swansea, Swansea
	Yelland	Yelland
North West	Barrow	Barrow
	Eastham	Eastham
	Glasson	Glasson
	Heysham	Heysham
	Liverpool Wharves	Albert Dock, Birkenhead, Bramley Moore Dock, Garston, Liverpool, Mersey Wharf, Mostyn
	Penrhyn	Penrhyn
Northern Ireland	Belfast	Belfast
Continental Europe	Amsterdam	Amsterdam, Amsterdam AGM, Amsterdam PAES, Hanson/CM/Hiedelberg Amsterdam, Steen Korrel
	Antwerp	Antwerp, Hanson/CM Antwerp, Kallo, Antwep Sands
	Breskens	Breskens
	Boulogne	Boulogne, Boulogne-sur-mer
	Bruges	Alzagri, Bruges, Brugge, Hanson/CM Brugge
	Caen	Caen
	Calais	Calais
	Dieppe	Dieppe
	Dunkirk	Hanson/CM Dunkirk Sand, Dunkerque, Dunkirk, Dunkirk Gravel, Dunkirk Sand, Mardyck
	Fecamp	Fecamp, Fecamp Mercier
	Flushing	Flushing, Vlissingen
	Gent	Gent, Kluizendok
	Harlingen	Harlingen
	Honfleur	Honfleur
	Ijmuiden	Ijmuiden
	Le Havre	Le Havre, Treguier
	Le Treport	Le Treport
	Moerdijk	Moerdijk
	Nieupoort	Nieupoort
	Ostend	Ostend, Ostend ISG
	River Seine Wharves	Lillebonne, Rouen, St Wandrille, Vatteville, Vattewille-la-Rue
	River Somme Wharves	Vattier
	Roscoff	Roscoff
	Rotterdam	De Hoop Rotterdam, Europoort, Rotterdam, Schiemond
	Sluiskil	NL Sluiskil, Sluiskil
	Terneuzen	Terneuzen
	Thyboron	Thyboron
	Zeebrugge	Zeebrugge, Zeebrugge DVSII, Zeebrugge Hanson

Appendix 2: Kent Local Aggregate Assessment (LAA) 2022

Kent County Council Local Aggregate Assessment 2022

November 2022

Contents

Dashboard Summary - Kent County Council LAA 2022 (using data for the calendar year 2021 data)

Aggregate Mineral Type (and origin: land-won, marine dredged and imports)	2021 Sales in tonnes or mt	Average (10 yr.) Sales in tonnes or mt	Average (3 yr.) Sales in tonnes or mt	Trend (10 yr. sales)	Trend (3 yr. sales)	LAA Rate or APR mtpa	Assumed Reserve (as per end of 2021) in tonnes or mt	LAA or APR Rate based Landbank	Productive Capacity	Local Plan Allocations	Notes
Soft Sand (excluding silica sand)	594,099	456,345	467,992	⇧	⇧	456,345	6,224,773	6.223/0.456=13.65 years	1.045mtpa (as reported)	Chapel Farm Lenham 3.2mt	
Sharp Sand & Gravel (including Hoggin etc for construction fill)	202,022	228,526	139,321	⬇	⬇	228,526	2,564,000	2.564/0.228=11.24 years	0.75mtpa (as reported)	Moat Farm Tonbridge 1.5mt Stonecastle Farm Tonbridge 1.0mt	

All Sand & Gravel (landwon including Hoggin and that used for construction	858,452	691,452	628,090	⇩	⇧	691,452	8,788,773	8.789/0.691=12.71 years	1.79 mtpa (excluding hoggin) overall the productive capacity is considered to be under reported as this was not always provided on survey returns .		
Crushed Rock (landwon)	814,859	856,686	1,126,297	⇧	⇩	0.857	16.10mt	16.10/0.857=18.8 years	2.0mtpa		
Recycled and Secondary Aggregates	992,218	834,281	937,208	⇧	⇧	N/A	N/A	N/A	1.834mtpa recycled and 50ktpa secondary Total 1.884mtpa as reported		Poor participation in AM2021 survey Indicates that the productive capacity reported in 2020 of 3.46mtpa is thought to be probably more accurate and the past 4.0mtpa AM reports estimate is considered more realistic still

Marine Imported Sand & Gravel (including land-won and marine dredged)	1.642mt	1.66mt	1.23mt	⬇	⬇	N/A	N/A	N/A	Theoretical maximum wharf capacity for all aggregates is approx. 7.30mtpa according to the 2010 joint Medway and Kent study, while the recorded 2021 capacity is reported as 6.34mtpa is assumed unchanged		
Marine Imported Crushed Rock	1.770mt	0.940mt	1.199mt	⬇	⇧	N/A	N/A	N/A			
Rail Depot Sales (Sand & Gravel)	21,747	35,120	23,860	⇧	⬇	N/A	N/A	N/A	2.225mtpa (essentially no change from previous reported capacity)		

Rail Depot Sales (Soft sand)	2,890	6057	7,778	⬇	⬇	N/A	N/A	N/A	2.225mtpa (essentially no change from previous reported capacity)		
Rail Depot Sales (Crushed Rock)	441,084	437,004	513,760	⇧	⬇	N/A	N/A	N/A			

Commentary		The **soft sand** reserves have been re-evaluated downwards; the 2020 data was an over estimation that has now been more accurately evaluated. The LAA/APR rate has slightly increased, and this will require further reserves (as anticipated from the allocation in the adopted Kent Mineral Sites Plan, Chapel Farm 3.2mt) in order to maintain supply over the remaining adopted Plan period (to 2030). **Landwon sharp sand and gravels**, as previously reported, remain a depleting resource in Kent. The reduction in the LAA/APR rate has the effect of apparently increasing the landbank. However, as sites 'go offline', supply to meet demand will be increasingly met by importation, including by road, that is not captured by AM surveys. Thus, as the landbank of 12.71 years does not truly represent consumption in Kent, it is being 'extended' by a low and decreasing LAA Rate/APR as sales decrease giving the impression of an adequate landbank exits, while the reality is that this resource in Kent is in depletion. Productive capacity in 2021 is now less than 0.75mtpa, lower than the recorded 0.85mtpa in 2020, and 1.150mtpa in 2018 (unrecorded in 2019). This illustrates the decline of this sector in its importance. The 2.50mt allocations in the adopted Mineral Local Plan will, if permitted, make a significant contribution to meeting that need identified from Kent's landwon resources, though this is unlikely to change the growing importation reliance in Kent. **Landwon crushed rock** was previously a matter that remained confidential in terms of sales and available reserves; however, the operator has waiving confidentiality to ensure that the matter of hard rock supply over the remainder of the adopted Plan period can be fully considered by the impending Full Plan review. The operator has undertaken a re-evaluation of the available reserves. The permitted landbank of 16.10mt is estimated to be just sufficient over the adopted Plan period. **Marine importation of sand and gravels** remain an essential part of overall supply; the 2019 fall off in sales was reversed in 2020 and in 2021 sales increased again, towards historic levels of sales of between 2.0-1.5mt. Overall productive capacity remains essentially the same. **Rail depot sales**, continues to remain relatively insignificant in overall supply terms. The hard rock rail imports fell in 2021 to below 0.5mpta. Overall r**ecycled and secondary aggregate** productive capacity remains the same; sales that fell off in 2019 and recovered in 2020 increased in 2021 to almost 1.0mtpa. Due to poor survey returns, this sector of supply is considered to have a greater productive capacity than that reported and so the value for 2020 has been assumed though this is less than a theoretical maximum value of 4.0mtpa.

Executive Summary

This is the tenth Local Aggregate Assessment (LAA) Kent County Council has produced based on monitoring data for the year 2021. Some data for LAA 2020 (2019 data) was extrapolated using 2018 data as the complete data set was not, (and is still not) at that time available being part of a national survey conducted by the British Geological Survey (BGS).

In the case of both landwon soft sands and the sharp sands and gravel it is considered that the appropriate 'LAA Rate' or 'Annual Provisional Rate (APR)' for Kent remains that of the recorded 10-year sales average. Any estimated increases above this figure are not easily derived due to the inherent limitations in forecast modelling at the county council scale. Moreover, the use of the 10-year average as a main determinate for calculating landbanks and future aggregate requirements is in accordance with the National Planning Policy Framework (NPPF).

As in previous LAA reports, this report demonstrates that aggregate supply in Kent is provided by both imports and indigenous landwon materials. However, unlike the sharp sands and gravels, the soft sands (Folkestone formation crustal geological unit) that are predominantly a landwon resource, cannot easily be substituted by recycled or secondary materials. It also appears that little supply can be expected in the short to medium term from marine resources, as this has again demonstrated itself as only a small element of the overall marine won supply. Therefore, Kent will likely remain a significant supplier of landwon soft sands to markets within and, to an extent, beyond Kent. Reserves have decreased though the productive capacity is not significantly altered. Sufficient reserves exist to meet the anticipated reviewed and extended Kent Minerals and Waste Local Plan's (KMWLP) requirements. With a technical shortfall only at the end of this period (end of 2037). Given a reduced predicted housing trajectory to 2040, and the current economic slowdown, seeking to identify additional soft sand local plan allocations for a shortfall that does not become apparent until after the mid 2030's is considered premature at this time.

With regard to the landwon sharp sands and gravel resource, the evidence continues to demonstrate that these superficial deposits are depleting, the reserves are not being replenished and productive capacity has fallen. Therefore, there is a correspondingly limited potential for Kent to meet the demand from landwon resources of this aggregate type. The apparently extended life of the landbank is more a consequence of reduced sales depressing the Local Aggregate Assessment Rate/Annual Proportional Rate (LAARate/APR)[1] than that of a landbank meeting needs into the future. The replenishment of 2.50 mt from the Minerals Sites Plan

[1] The Kent LAARate/APR is the 10-year sales averages for all the landwon primary aggregates sold in Kent

allocations (subject to gaining planning permission) would make a contribution to the need although it is not anticipated that this will reverse the trend towards a greater reliance on importation of this land-won aggregate mineral.

Hard rock supply from the landwon resource in Kent is significant. The current reserves and their depletion rate were subject to confidentiality; however, this has been waived by the operator to allow for the matter of the supply of this aggregate to be discussed in the public domain. The lowering of the estimated and accurately monitored reserves and high recent rates of extraction has led to the County Council concluding that additional resources, as potential allocations in a review of the Mineral Sites Plan, it justified. The Kent Minerals and Waste Local Plan 2013-30 (KMWLP) is currently being updated this is reflected in its amended content.

Importation of sands and gravels from marine resources showed a marked decline in 2019, then a recovery in 2020 that has continued into 2021, this was also a pattern displayed by hard rock supply imported to wharves. However, this pattern was not shown by rail depot importation, that showed some reduction in primary aggregates importation. The rail importation, despite significant capacity being unused, remains relatively insignificant in overall supply terms, though hard rock is of more prominence than other aggregate types. Available wharf capacity is significant and has not materially altered, however it remains vulnerable to losses as their locations often coincide with competing regeneration initiatives.

Recycled and secondary aggregates showed a marked reduction in 2019, falling to under 0.5 mt of sales, then recovering again in 2020 to 0.90mt and in 2021 to almost 1.0 mt (13.2% of all aggregate sales in 2021). This pattern of sales, a marked fall in 2019 and a recovery in 2020 and 2021, is consistent with the pattern displayed by marine imported primary aggregates. Hard crushed rock wharf importation is at a record high (over the last 10 years 2012-21) of 1.77mt, almost matched by 1.64mt of marine dredged sand and gravel imports over wharves. The marine importation sector is increasing in importance.

It remains the County Council's view that growth predictions in housing and infrastructure delivery and maintenance are only indicative at best in terms of forecasting aggregate demand. The data demonstrates that overall construction aggregate demand has increased. It is considered that any attempt to model changes to aggregate demand based on predictions in housing and infrastructure development would be unreliable. Moreover, housing growth in Kent, based on the Kent local authorities objectively assessed needs are now showing an overall decline to 2040 compared to previous trajectories. Irrespective of what level of growth occurs in Kent and within its neighbouring areas that are also supplied by Kent, it will necessitate a robust safeguarding regime of importation facilities if a steady and adequate supply of aggregates to meet the objectively assessed needs is to be maintained.

1.0 Introduction

1.1 The purpose of this Local Aggregate Assessment (LAA) report for 2022 (including 2021 data) is to detail the current and predicted situation in Kent with respect to all aspects of aggregate supply. This is Kent County Council's tenth LAA and the fifth since the adoption of the Kent Minerals and Waste Local Plan 2013-30 (KMWLP or the Plan) in July 2016. The KMWLP provides the main strategic objectives for minerals (and waste) planning policy in Kent until 2030. It has reached the 6th year since adoption and is in the process of being reviewed, a Regulation 18 formal public consultation on possible modifications was held in late 2021. This demonstrated that further amendment of the Plan was necessary, a second Regulation 18 public consultation is anticipated in late 2022. The Kent Mineral Sites Plan, that identified landwon mineral sites (one soft sand and two sharp sand and gravel sites) to deliver the adopted Plan's supply objectives was adopted in September 2020. The Full Review KMWLP may result in this plan requiring review also, as a corollary effect on further clarification of the landwon aggregate mineral supply policy review.

1.2 The adopted Plan set out the quantities of aggregates to be provided over the period of the entire Plan in policy, this inevitably is subject to change as more recent monitoring data, as reported in the annual LAAs, that is relevant to an understanding of supply and demand. Monitoring data is used to estimate the quantities required to maintain landbanks of 'at least 7 years' for landwon sand and gravel and 'at least 10 years' for landwon hard, crushed rock at any one time in the 2016 adopted Plan period (2013 t0 2030), as require by the National Planning Policy Framework (NPPF, 2021). It is important to recognise that the data available to the County Council is that which represents past sales and available reserves. The future predictions of need to meet the NPPF's requirements, as based on this data that is subject to variation through time, given that there are unknowns in terms of potential future permitted reserve re-evaluations and changes to production (sales) rates.

1.3 It is also important to note that the collected data used in the preparation of this report, from the Annual Monitoring (AM) of aggregates sales by Kent County Council, is conducted on behalf of the South East England Aggregate Working Party (SEEAWP) for sales data in 2021. The AM survey collects annual sales data from operators of active mineral extraction sites, minerals wharves, minerals rail depots and recycled and secondary and recycled aggregate processing sites in the county of Kent. Where there are less than three operational sites supplying a particular type of mineral, as in the case of Kent's landwon hard rock (when crushed is a useable aggregate) quarries, commercial confidentiality normally prevents the reporting of sales or reserves. However,

given the need to understand hard (crushed) supply over the remaining Plan period, and into the anticipated future of the review of the Plan.

2.0 Aggregate Forming Minerals

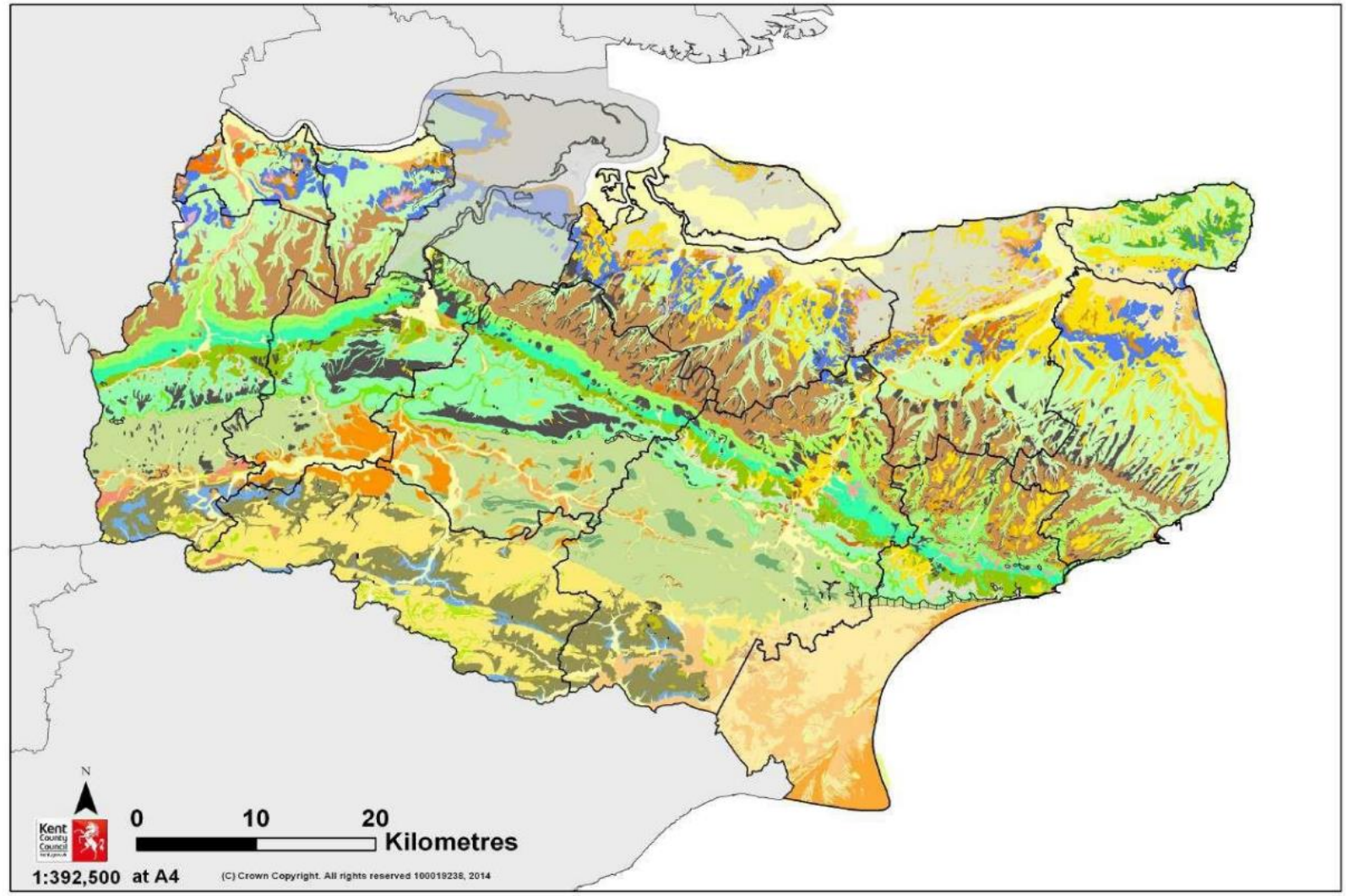
Geology of Kent

2.1 The geology of Kent is a complex array of solid crustal and superficial geological units that are generally well mapped and understood due to previous work by the BGS, see Figure 1. Kent has several economically important naturally occurring aggregate forming mineral deposits. The most recent of which is the post glacial (Pleistocene epoch of some 10,000 years ago) outwash (alluvial) river valley and terraced sand and gravel deposits inland. The coastal processes of deposition form storm beach sands and gravels (significantly, but not limited to, those found in the area around Lydd and the cuspate foreland of Dungeness) that were deposited on land, and once sea levels rose at the end of the last glaciation, they became 'active' again in the sedimentary basin of the North Sea/English Channel areas. The extensive 'soft' sand (and pure silica sands) ancient beach deposit (the Folkestone Beds) is somewhat older, being part of the Lower Greensand Group of the Lower Cretaceous epoch (that are between 100-140 million years old).

2.2 The soft sands (so called for their high degree of roundness and consistent size of the sand particulates) are found in the Folkestone Formation. A significant crustal unit, it is characterised as a well sorted, medium to coarse grained weakly cemented sandstones. It is considered that it is a shallow beach setting marine deposit. The formation outcrops at Folkestone and runs along the base of North Downs landscape feature in an east west trend, being part of the northern slopes of the Wealden Basin. The formation passes by the main settlements of Ashford, Maidstone and Sevenoaks before running into East Sussex.

2.3 Important and extensive deposits of hard rock are also present in Kent, in the form of a significant thickness of a complex estuarine limestone formation. This rock (Kentish Ragstone) can yield important building materials and when crushed it can be used as an aggregate. This material is also part of the Lower Greensand Group, forming part of what is called the Hythe Formation which was laid down prior to the Folkestone Formation, though still being within what is called the Lower Cretaceous epoch. In the east of the county there is also the deep Carboniferous Limestone and coal measures, the coal (a carbonaceous deposit) mining ended in 1989. The associated limestone could, theoretically, also be mined as an aggregate forming mineral. However, this would require very significant investment that would likely to be unviable at a local scale, very possibly requiring a national and/or international market.

Figure 1: Geology of Kent both Solid and Superficial

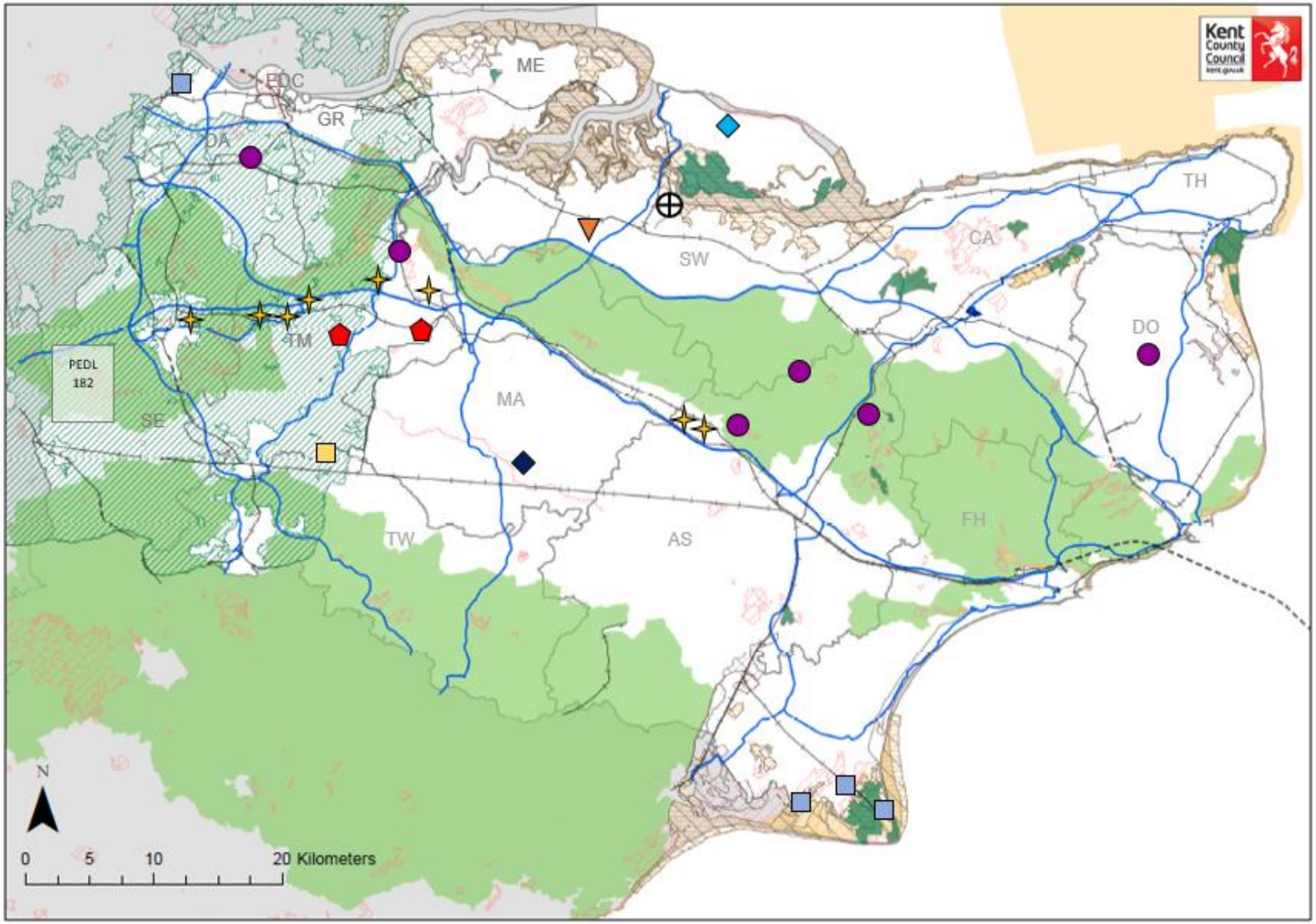


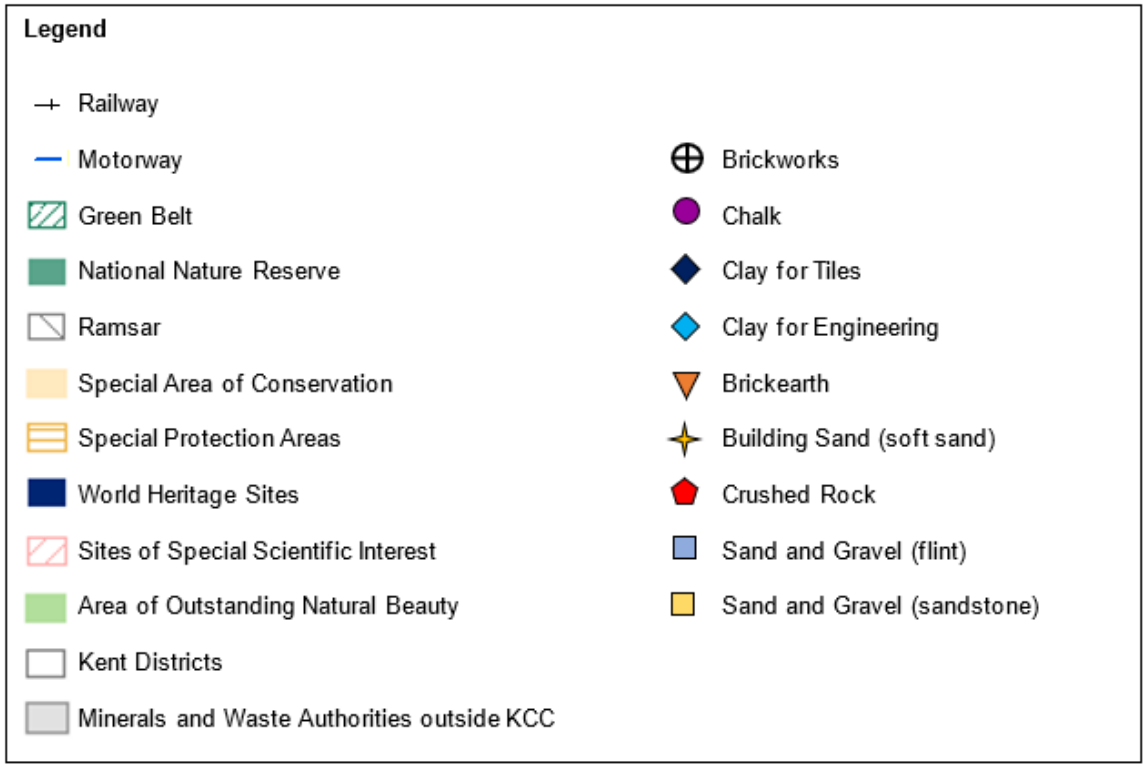
Legend: Geology of Kent

3.0 Permitted Sites Producing Aggregates in Kent

3.1 Historically much of Kent's landwon aggregate production has come from its main river valleys (they are the Medway, Great Stour and Darent) and the cuspate foreland close to Lydd and at Dungeness for sharp (concreting) sand and gravel supply. While the area around Maidstone has historically supplied much of the crushed hard rock materials. The soft (and industrial grade pure silica) building sand (mainly used in mortar production) supply is associated with the Folkestone Formation, this significant unit traverses the county from east to west following the northern slopes of the Wealden basin. Figure 2 shows the indicative location of the county's active quarries in in 2021 able to supply primary landwon aggregates.

Figure 2: Location of Active Quarries in 2022





3.2 Kent currently has two active hard rock quarries producing crushed hard rock aggregate from the Hythe Formation (Kent Ragstone), five soft sand quarries winning material from the Folkestone Beds and five sharp sand and gravel quarries (only three of which were operational in 2021). The latter are generally extracting materials from the river terrace deposits that are associated with the county's main river valleys, though the cuspate foreland (storm beach) deposits at Lydd and Dungeness also provide a source of supply as of 2021. Table 1 overleaf details these sites.

Table 1: Permitted Aggregate Quarries in Kent 2021

Site	Operator	*Sand & Gravel*	*Soft Sand*	Hard Rock	Status
Hermitage Quarry, Maidstone	Gallagher Aggregates Ltd	-	-	Yes	Active
Blaise Farm Quarry, West Malling	Hanson Aggregates Ltd	-	-	Yes	Active
Stone Castle Farm, Whetsted	*Lafarge Aggregates Ltd*	*Yes*	-	-	*Inactive*
Lydd Quarry, Lydd	Brett Aggregates Ltd	Yes	-	-	Active[2]
Allens Bank, Lydd	*Brett Aggregates Ltd*	*Yes*	-	-	*Inactive*
Conningbrook Quarry	Brett Aggregates Ltd	Yes	-	-	*Closed*
Highstead Quarry, Chislet	*Brett Aggregates Ltd*	*Yes*	-	-	*Inactive*
Denge Quarry, Lydd	Cemex UK	Yes	-	-	Active
Darenth & Joyce Green Quarry, Dartford	J Clubb Ltd	Yes	-	-	Active
East Peckham Quarry, East Peckham	J Clubb Ltd	Yes	-	-	Active
Joyce Green Quarry, Dartford	*Ingrebourne Valley Ltd*	*Yes*	-	-	*Inactive*[3]
Aylesford Quarry, Aylesford	*Aylesford Heritage Ltd*	-	*Yes*	-	*Inactive* [4]
Addington Sand Pit (Wrotham Quarry)	Fern Aggregates	-	Yes	-	Active
Borough Green Sand Pit, Sevenoaks	Borough Green Sandpits Ltd	-	Yes	-	Active
Burleigh Farm, Charing	Brett Aggregates Ltd	-	Yes	-	Active[5]
Charing Quarry, Charring	*Brett Aggregates Ltd*	-	*Yes*	-	*Inactive*
Ightham sandpit (H&H Celcon)	*H&H Celcon*	-	*Yes*	-	*Inactive*
Lenham Quarry, Maidstone	*Brett Aggregates Ltd*	-	*Yes*	-	*Inactive*
Nepicar Sand Quarry, Wrotham	J Clubb Ltd	-	Yes	-	Active
Greatness Farm, Sevenoaks	Tarmac Ltd	-	Yes	-	Active[6]

[2] Extraction has moved into East Sussex, the processing of material and some reserves remained in within Kent in 2021
[3] Planning permissions to erect a new plan site and to extend the life of the extraction site until 2024 were granted planning permission subject to pre-commencement conditions in 2018, the site is inactive as of 2021
[4] No off-site sales in 2021 of soft sand
[5] Inactive in 2018, early 2019 became active remains so in 2021
[6] The site also produces sharp sand and gravel, though predominantly soft sands from the Folkestone Formation

4.0 Primary Landwon Aggregate in Kent

Sharp Sand and Gravel

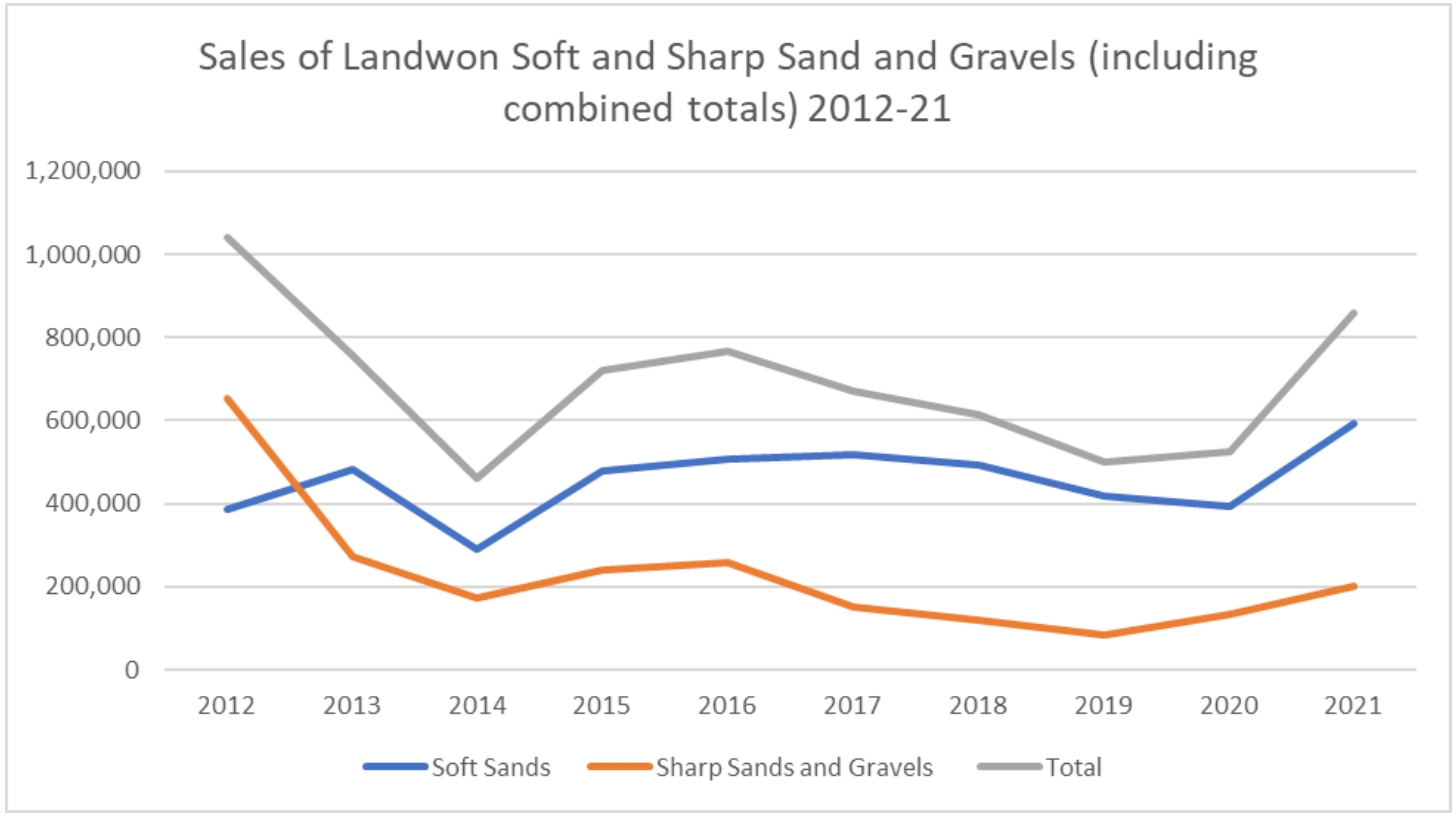
4.1 The sales of landwon sharp sand and gravel and soft sand in Kent since 2012 are shown in Table 2 and graphically in Figure 3 below. The overall, long-term trend for landwon sand and gravel aggregate is a reduction in recorded sales, though this is significantly more pronounced for the sharp sand and gravels, that are more widely depleted than the soft sands, as will be discussed and illustrated later.

Table 2: Landwon Soft Sand and Sharp Sand and Gravel Sales in Kent, 2012-2021 (tonnes)

Year	Soft Sand Tonnes	Sharp Sands and Gravel Tonnes	Totals
2012	387,746	652,285	1,040,031
2013	483,165	273,000	756,000
2014	289,087	172,672	461,759
2015	480,215	239,550	719,581
2016	506,663	259,550	766,213
2017	519,414	151,165	670,579
2018	493,179	119,259	612,438
2019	417,027	83,709	500,736
2020	392,850	132,231	525,081
2021	594,099	202,022	858,452
Last 3-year average (2019-21)	**467,992**	**139,321**	**628,090**
Last 10-year average (2012-21)	**456,345**	**186,150**	**691,087**

Source: Aggregate Monitoring Surveys, 2012-2021

Figure 3: Sales of landwon Soft Sand and Sharp Sand and Gravel 2012-21 (Tonnes)



4.2 There was a marked fall off in sales in 2014, with sales recovering in 2015 and 2016. This recovery stalled during 2017 and has recovered marginally in 2020 and 2021. The soft sand displayed sales in the 0.50mtpa level until 2018, slumped in 2019 and 2020 and recovered to 0.50+mtpa levels in 2021. However, the sales of the sharp sand and gravel sales have shown a dissimilar overall pattern, with a marked decline in 2014 and then a marginal recovery that then declined again into 2019, a marginal recovery occurred in 2020-21. In 2011 sales were 0.62mt, this declined to less than 0.20 mt in 2017/18. The sales in 2019 markedly fell to just 0.083 mt (lowest in the last 10-year period) and marginally recovered to 0.132mt in 2020 and increased again to 0.202mt in 2021. Probable reasons for the decline in 2019 will be discussed later in this report. However, there is no indication of a return to the 10-year average sales of around some 0.50mtpa observed in 2018. The sales curve is clearly one of

a general decline only marginally reversed in 2020-21 caused by resource depletion in the sharp sand and gravels, as will be discussed latter.

Sharp Sand and Gravel

4.3 The sharp sand and gravel landbank based on local requirements is calculated at 4.23 years (based on the adopted Plan Policy CSM 2 requirements for a 5.46mt as a 7-year maintained landbank), which is below the 7-year NPPF requirement of the adopted Plan's 10-year average of 0.78mt times 7 years (giving the 5.46mt). The recently monitored reserves (2,564,000mt) in 2021 divided by the recent 10-year (2012-21) average sales data (used to define the LAA/APR rate of 0.228 mt) indicates that there is sufficient reserve for 12.71 years.

4.4 However, whatever yearly drawdown figure is used, it is considered that the landbank figures for the landwon sharp sands and gravels, are definitively demonstrating a decline in available reserves (and replenishing resources) based on geological scarcity and what can be sustainably sourced in the county. New reserves, that would replenish the landbank for this aggregate mineral, are not coming forward as new planning permissions, this has been the case for some years, and, while development of sites allocated in the Mineral Sites Plan (2.50mt) would improve supply, this would only partially mask the established declining resource pattern. Output from one significant Kent quarry had been zero since 2015 given that extraction had moved into East Sussex, with apparently its last practicable reserves in Kent being exploited in 2020, when it was decided to count 50% of its sales as Kent sales serving the established Kent market. However, as this site will soon be worked out, it will be entirely lost to the consideration of Kent's overall landwon sand and gravel aggregate supply assessment.

4.5 The actual Kent overall consumption of the sharp sands and gravel material though, remained unrecorded by the AM process as the actual areas where the materials are used are not recorded by the general AM process. More detailed analysis is periodically undertaken that looks at imports and exports across the SEEAWP area that demonstrates where consumption has occurred. Therefore, the LAA Rate/APR Rate (now 0.228mtpa) for this material is currently not fully reflective of the demand in Kent for landwon sharp sand and gravel. This metric is, in all probability, too low in that it is giving an 'inflated' landbank duration based on lowering sales that is likely to be unrelated to the true demand, which is being increasingly met by importation. However, given that the estimate of supply requirements in the currently adopted Policy CSM 2 is caveated with "…. *of at least seven years supply……will be maintained* ***while resources allow***" this is not an unexpected conclusion. The policy wording is an explicit acknowledgment of the geological scarcity of this type of aggregate deposit in Kent, coupled with material planning

considerations that determine what level of resources can be sustainably allocated for future supply in local plans, that mean the landbank cannot be maintained in line with the NPPF requirements.

4.6 The potential for Kent to be able to provide additional reserves of this aggregate type is a matter that was considered during the independent examination of the Mineral Sites Plan. The adopted (September 2020) Mineral Sites Plan identifies two sites for allocation (Moat Farm and Stonecastle Farm extension) which together could not provide sufficient future reserves to maintain an at least 7-year landbank over the Plan period. This position has not materially altered. Alternatives, to the land won supply are anticipated to continue to significantly come from (but not limited to) the imported marine dredged aggregate sector.

Soft Sands

4.7 Table 3 below shows the total current (2021 data) permitted reserves, landbank and recorded sales for the period 2012-21 for the soft sands.

Table 3: Landwon Soft Sand Sales and Reserves and Landbank in Kent, 2012-2021 (tonnes)

Year	Soft Sand Tonnes	Reserves as of end of 2021 (tonnes)
2012	387,746	
2013	483,165	**6,224,773**
2014	289,087	
2015	480,215	
2016	506,663	
2017	519,414	
2018	493,179	
2019	417,027	**Landbank life based on 10-year sales average is 13.64 years**
2020	392,850	
2021	594,099	
Last 3-year average (2019-21)	**467,992**	
Last 10-year average (2012-21)	**456,345**	

5 Source: Aggregate Monitoring Surveys, 2012-2021

4.8 In 2021, data shows that for soft sand this position has, to a limited extent, reversed. The 10-year average sales value (LAA Rate/APR) has marginally increased, while the permitted reserves have shown a decrease from the 9.34mt recorded in 2020 to 6.225mt in 2021. Apparently, a re-evaluation error in 2020 led to an inflated overall reserve figure for that year. Moreover, the continued decline in production observed, that has led to a reduction of the 10-year average from 0.542mtpa in 2018 and 0.417mt in 2019 to 0.441mtpa in 2020, came to a halt in 2021 which showed an increase to 0.456mtpa. While the slight increase in sales average is important, the lowering of the reserve bases is more significant. The landbank of 21 years at the end of 2020 (when applying the 10-year averaged sales data (the LAA Rate/APR) has now commensurately reduced to 13.64 years. The necessity for the soft sand reserves to accord with the NPPF's requirement to have a landbank of "*at least 7 years*" is met at this time. The adopted Plan requirement spans to 2030, by which time the landbank may only be at 5.56 years, however the allocation in the adopted Kent Mineral Sites Plan (2020), of 3.2mt (at Chapel Farm), provides some certainty that the appropriate life of the landbank will be maintained thus ensuring a '*steady and adequate'* supply of this adopted Plan period.

Crushed Rock (Hythe Formation)

4.9 Of the two hard rock resources in Kent (the other being the Carboniferous Limestone) only one of which has given rise to crushed rock aggregates, this being the Hythe Formation (Kentish Ragstone). This has traditionally been quarried in the Maidstone area, though not exclusively so. There are only two active sites in Kent and in the past confidentiality prevented a detailed report of sales. Therefore, the proxy of 0.78mtpa has been used in past LAAs and during the formulation and examination of the adopted KMWLP Plan, as this was the figure derived for the now revoked South East Plan. The operator has now relaxed their wish to maintain confidentiality. The reserves of this material were significantly boosted by the addition of planning permission for 16 million tonnes of Ragstone (Hythe Formation limestone) in a westerly extension of Hermitage Quarry close to Maidstone in 2013. This reserve, in addition to reserves currently available at Blaise Farm Quarry, are counted as the landwon hard rock in Kent available to meet the NPPF requirement of maintaining an at least 10 years crushed rock landbank for the Plan period.

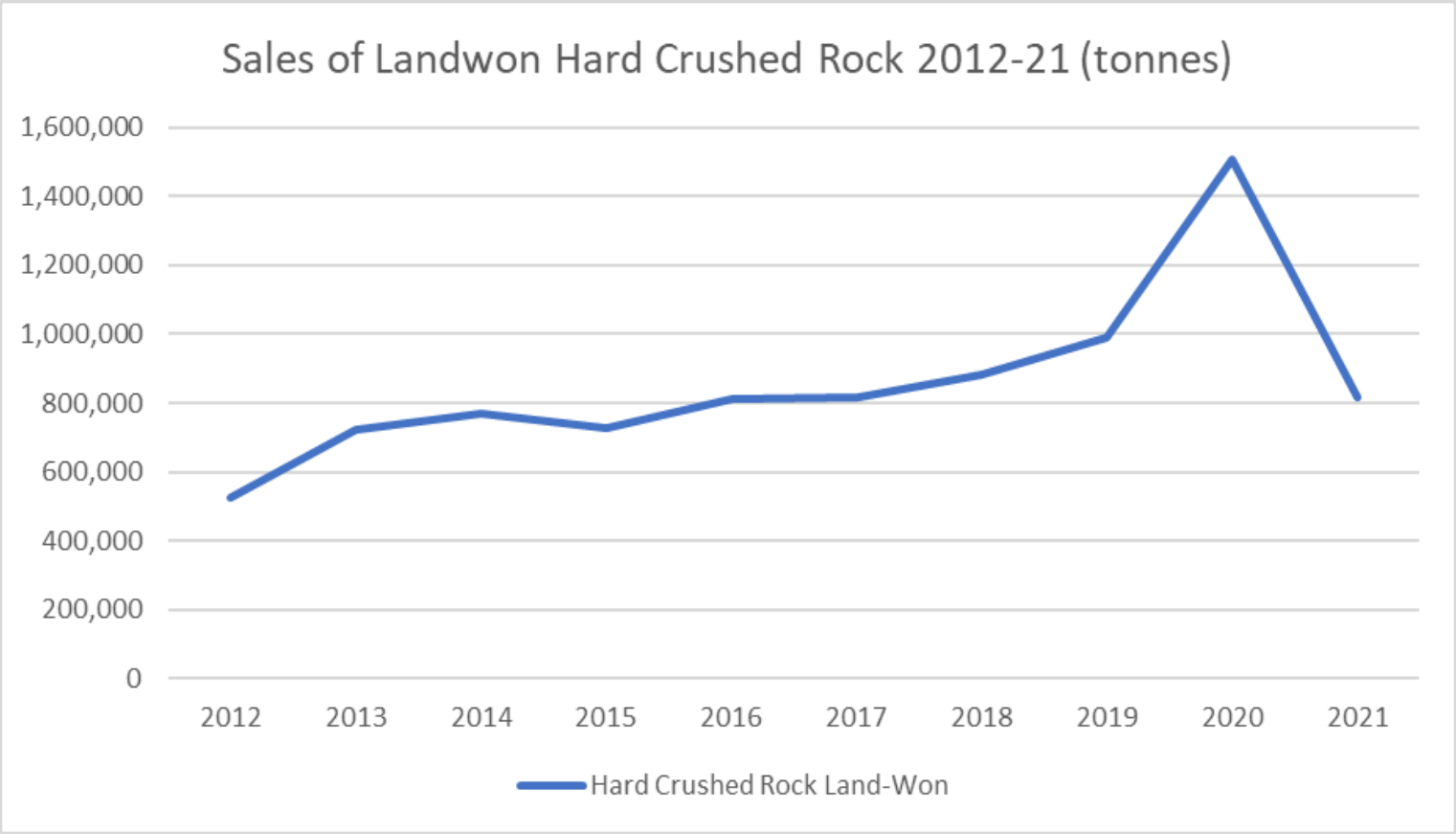
4.10 Table 4 and Figure 4 below shows the monitoring data for landwon crushed rock sales graphically. The pattern is one of significantly increasing demand since 2012; peaking in 2020 at an unusually high level of 1.5mtpa, with sales falling back in 2021 to the levels more recently recorded in the 0.80mtpa range.

Table 4: Landwon Hard Rock Sales in Kent, 2012-2021 (Million tonnes)

Year	Tonnes
2012	526,281
2013	722,985
2014	767,198
2015	727,272
2016	811,935
2017	817,437
2018	880,063
2019	990,590
2020	1,508,239
2021	814,859
Last 3-year average (2019-21)	**856,686**
Last 10-year average (2012-21)	**1,104,563**

Source: Aggregate Monitoring Surveys, 2012-2021

Figure 4: Kent Sales of Landwon Crushed Rock 2012-2021 (tonnes)



4.11 Sales of hard crushed rock were not represented in previous LAA's given the need to maintain confidentiality where sales occur from less than three sites. Reserves of the two operational sites have been re-evaluated to be lower than anticipated to be at this point, and to help inform future provision and policy relating to the supply of this material the single operator has waived confidentiality for hard rock sales in Kent.

4.12 The reserves for the end of 2021 are estimated as 16.1mt by the operator using three-dimensional modelling. The LAA Rate/APR is 0.857mtpa and so an 'at least 10-year landbank' supply exists over the adopted Plan period until 2031, after which

the 10-year maintained landbank is not attained, and total exhaustion occurs in 2042. The hard crushed rock supply position is being reviewed as part of the Plan's wider Full Review, as formally required at the 5th year mandatory review of the Plan and is more fully discussed later in this document.

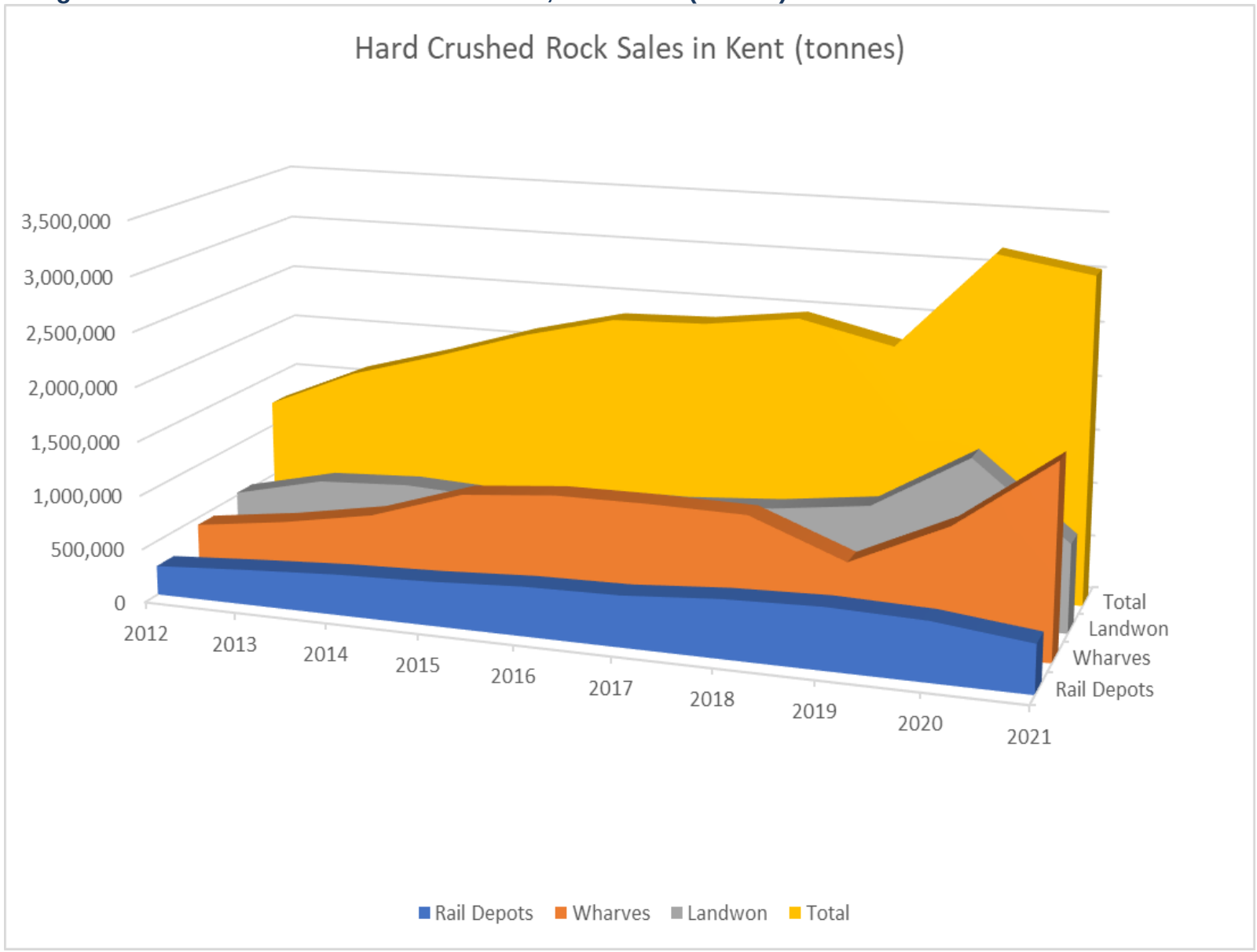
4.13 The AM2021 data (reporting 2021 sales) shows that the LAA Rate/APR (taken as the 10-year sales average) has decreased from the high in 2020 when sales had reached some 1.5mt. At present, based on three-dimensional modelling, it is estimated that the available remaining reserves are 16.1mt[7]. On this basis, the permitted LAA Rate/APR landbank is 18.78 years. This is just sufficient for the remaining adopted Plan period of 18 years ((2022-2030 (8 years) plus 10-year end of Plan maintained landbank). While the apparent reduction of available overall reserves, from previous estimates, does not currently appear to endanger the ability of the Mineral Planning Authority to ensure a steady and adequate supply of land-won hard rock, if sales increase again then this position would likely change. Table 5 (and Figure 5) below demonstrates the importance of this reserve to the supply of crushed hard rock in Kent, and how the landwon supply is supplemented by importation via wharves and railheads.

Table 5: Hard Rock Sales in Kent 2012-2021 (tonnes)

	Wharves	Rail Depots	Landwon	Total
2012	432,677	270,586	526,281	1,229,544
2013	546,541	326,578	722,985	1,596,104
2014	697,421	375,938	767,198	1,840,557
2015	975,875	405,331	727,272	2,108,478
2016	1,052,971	452,751	811,935	2,317,657
2017	1,057,785	468,785	817,437	2,344,007
2018	1,043,721	533,110	880,063	2,456,894
2019	708,751	561,738	990,590	2,261,079
2020	1,119,202	538,458	1,508,239	3,165,899
2021	1,770,068	441,084	814,859	3,026,011
Total	**9,405,012**	**4,370,038**	**8,299,346**	**22,074,396**
3-year average	**1,199,340**	**513,760**	**1,104,563**	**2,817,663**
10-year average	**940,501**	**437,004**	**856,686**	**2,234,623**

[7] The reserves value is dependent on planning permission controls and other matters to do with the nature of the resource, rock density ratios of hard rock to Hassock [clay layers].

Figure 5: Hard Crushed Rock Sales in Kent, 2012-2021 (tonnes)



Crushed Rock (Carboniferous Limestone)

4.14 Carboniferous limestone is the most extensively used crushed rock aggregate geology in England. It possesses the physical and chemical characteristics that make it a high-quality material which is used in both concreting aggregate and roadstone. In Kent carboniferous limestone occurs below the overlying Chalk and Lower Cretaceous rocks. The BGS commissioned report CR/02/125N Minerals Resource Report (Kent [comprising Kent, Medway and London Borough of Bexley and Bromley])[8] states that the 'top' of this geological unit is some 300m below the land surface (in the Richborough area) and 500m below land contours is considered the maximum 'mineable' depth of this material. Undoubtedly, this resource is one that could be technically accessible, and would provide an alternative source of high-quality crushed rock aggregate not only for Kent but for a wider regional/national market. While there has been no apparent progress in advancing the potential for this material, it remains a possible option for the future, and one that the adopted Plan allows for.

Aggregate Reserves and Landbanks

4.15 Table 6 details the hard (crushed) rock, sharp sand and gravel, and soft sand available reserves and landbanks that are derived from the AM2021.

Table 6: Kent Landwon Aggregate Reserves and Aggregate Landbank as of 2021

Landwon Aggregate Primary Minerals	Permitted Reserve (mt) at end of 2021	Landbank based upon 10yr average sales (LAA Rate) between 2012-2021 (years)	Landbank based upon 3yr average sales between 2019-2021 (years)	Landbank based upon 2021 sales alone (years)
Soft Sand	**6.225**	6.225/0.456 = **13.56 years**	6.225/0.468 = **13.30 years**	6.225/0.594 = **10.48 years**

[8] https://www2.bgs.ac.uk/mineralsuk/download/england/kent.pdf

Sharp Sand & Gravel	**1.384**	1.384/0.228 = **6.07 years**	1.384/0.139 = **9.96 years**	1.384/0.202 = **6.85 years**
Hard Rock	**16.10**	16.1/0.857 = **18.78 years**	16.1/1.104 = **14.58 years**	16.1/0.815 = **19.75 years**

Chalk

4.16 There were no sales of chalk as a graded aggregate in Kent in 2021.

Recycled/Secondary Aggregates

4.17 Data pertaining to sales of recycled or secondary aggregates is collected annually as part of the surveys carried out by Mineral Planning Authorities. Figures 6 and 6a shows the location of current active recycled sites (and wharf and rail depot locations) in operation in Kent that produce secondary and recycled aggregates.

4.18 The sales figures of the recycled and secondary aggregate in Kent are shown in Table 7. Kent has 22 permitted sites engaged (some inactive in 2021) in producing recycled aggregates from the construction, demolition and excavation waste stream and secondary aggregates from industrial by-products. As was the case for AM2020, a significant number of producers of recycled/secondary aggregate did not participate in the survey. As a result, the reported sales data is likely to be significantly lower than actual sales that occurred in 2021, this is not a unique position for AM2021. It is reasonable to assume that sales of materials from the recycled and secondary aggregate sector in Kent are likely to be over 1.0mtpa at this time. Moreover, the combined recycled/secondary sector has a reported productive capacity of 1.884mtpa (AM2021 data), in 2020 this was given as 3.41mtpa for the recycled aggregates and 50Ktpa for the secondary aggregates, a total of 3.46mtpa. The reduced capacity value derived from AM2021 is highly likely a result of under-reporting rather than cessation of operations and so the 3.46mtpa to 4.0mtpa value is used in this LAA as a more reliable overall estimate for the productive capacity of the combined recycled/secondary aggregates sector.

Figure 6: Location Map of Active Recycled and Secondary Aggregate Sites in Kent

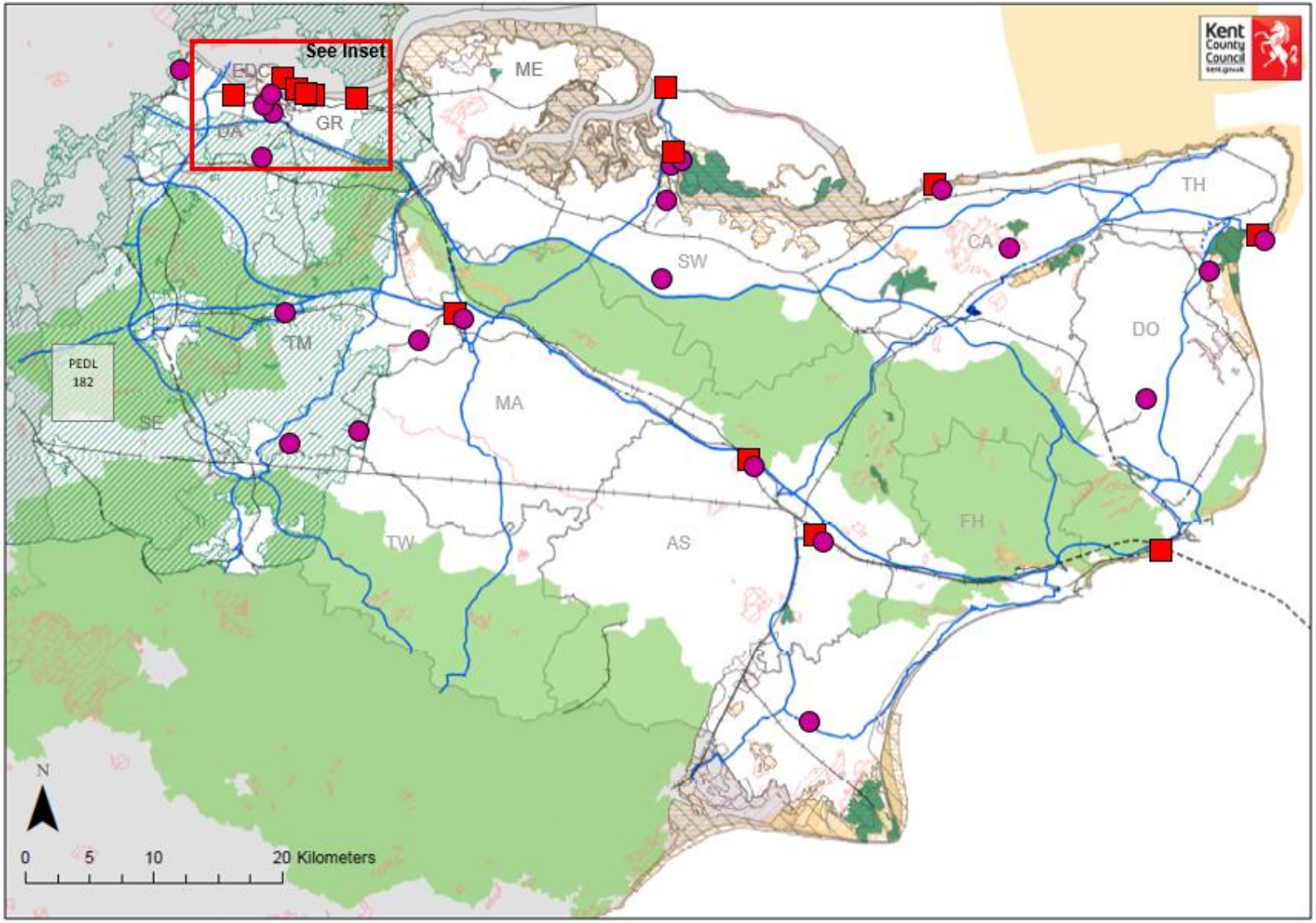
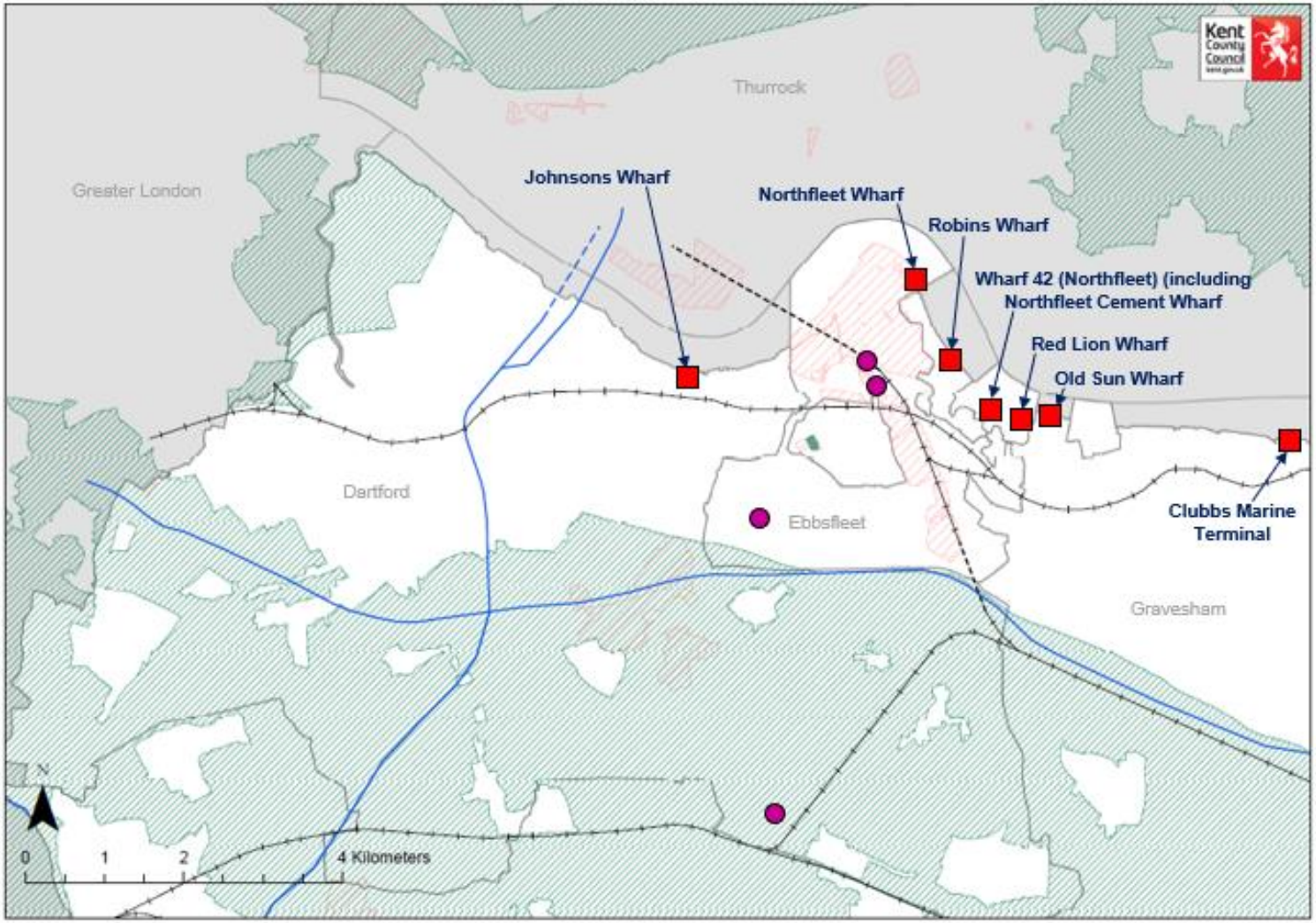


Figure 6a: Location Map of Active Recycled and Secondary Aggregate Sites in Northwest Kent



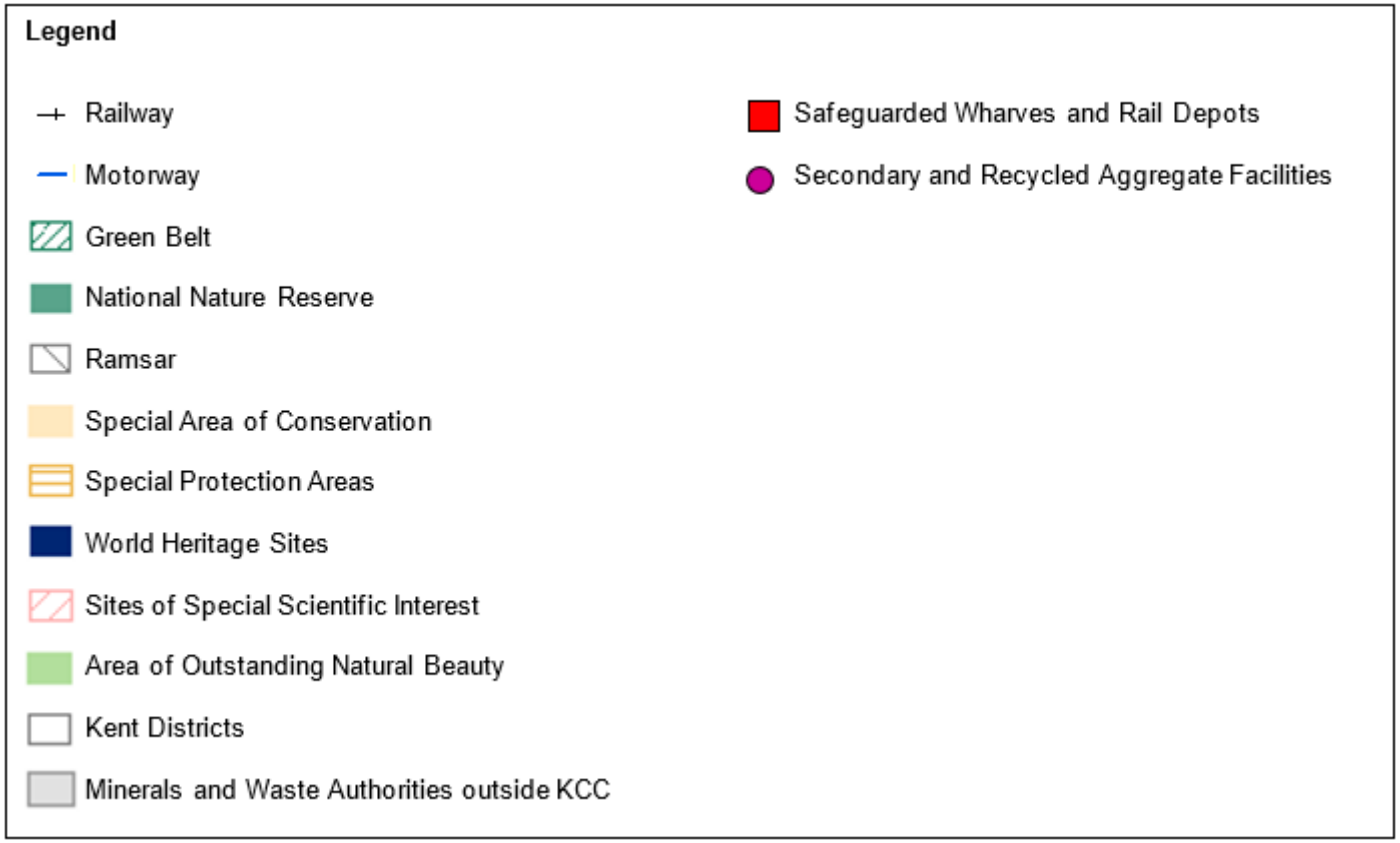

Legend
Railway
Motorway
Green Belt
National Nature Reserve
Ramsar
Special Area of Conservation
Special Protection Areas
World Heritage Sites
Sites of Special Scientific Interest
Area of Outstanding Natural Beauty
Kent Districts
Minerals and Waste Authorities outside KCC
Safeguarded Wharves and Rail Depots
Secondary and Recycled Aggregate Facilities

Table 7: Recycled and Secondary Aggregate Sales in Kent, 2012-2021 (Million tonnes)

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	3-year average	10-year average
0.688	0.836	0.729	0.845	1.029	0.906	0.757	0.419	0.909	0.992	**0.937**	**0.834**

Source: Aggregate Monitoring Surveys, 2012-2021

4.19 Sales of secondary/recycled aggregates combined account for 15.2% (0.992mt) of the total production and importation in the County of all types of aggregate. This is an increase to that recorded in AM2020 (2020 data) where the recycled and secondary aggregate share of the overall aggregate supply market was 14.97%. The 0.992mt is an increase in production that reflects a continued recovery to the levels seen in 2017 (1.03mt). This essentially affirms that this sector of supply is increasing in importance, though it is not considered to be being reliably reported due to poor survey participation. It should also be recognised that this sector of supply will be contingent on the supply of materials from the construction, demolition and excavation (C, D&E) waste stream. This will be unlikely to simply increase through time, as the material arises in response to other, wider, economic factors and not due to a simple demand for secondary and recycled aggregates derived from this material.

5.0 Aggregate Importation

Marine and Landwon Sand and Gravel

5.1 Kent has 9 active/semi-active wharves out of a total of 12 safeguarded wharves[9] located on its coast as shown in Figure 6 and 6a above that supply the bulk of sand and gravel (marine dredged) imports, rail depots deliver considerably less (see Fig 11 on page 38). Dunkirk Jetty at Dover Western Docks had been completely decommissioned (as reported first in AM2016) and but has become active again in 2021. The level of marine-won sand and gravel (including some marine soft sand) sales at wharfs in Kent is shown in Table 8 below (and graphically in Figure 8).

[9] By virtue of Policy CSM 6: Safeguarded Wharves and Rail Depots of the Kent Minerals and Waste Local Plan 2013-30

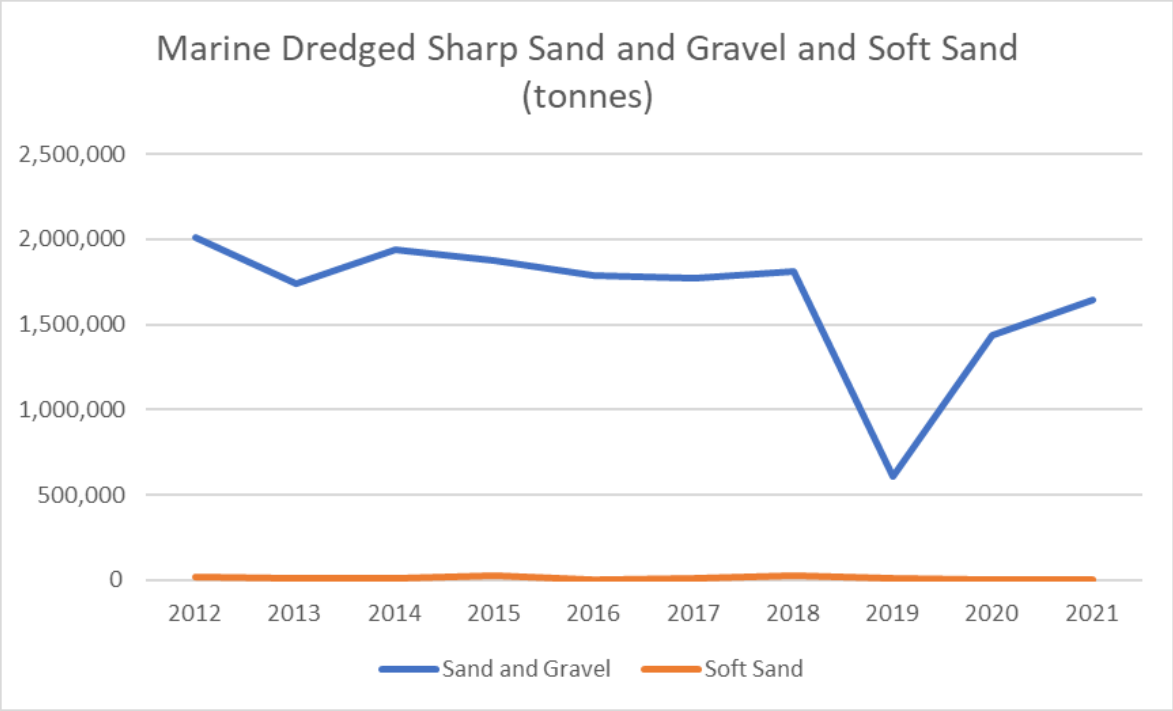
Table 8: Marine Sand and Gravel Sales in Kent, 2012-2021 (Million tonnes)

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	3-year average	10-year average
Sales	2.014	1.743	1.938	1.874	1.788	1.773	1.809	0.608	1.440	1.644	**1.230**	**1.663**

Source: Aggregate monitoring surveys, 2012-2021

5.2 Kent's wharf capacity remains substantial: It was reported to be 5.60mtpa in 2020, increasing to a reported 6.34mtpa in 2021. Theoretically it is understood to be 7.30mtpa. Sand and gravel imports via the wharves showed a marked decline in 2019, then a recovery to 1.44mtpa in 2020 and 1.642mtpa in 2021. It is assumed that the uncertainty surrounding the UK's exit from the European Union was responsible for this observed rapid decline and recovery. The bulk of the sand and gravel imports are marine dredged in origin; landwon sand and gravel is also imported but in relatively limited quantities. Given that landwon supply of essentially similar resource is rapidly depleting in Kent this importation source will, it is assumed, continue to be the main source of supply of this type of aggregate into the future.

Figure 7: Marine Dredged Sharp Sand and Gravel and Soft Sand 2012-21



5.3 The marine sand and gravel deposits are mainly found in the English Channel and North Sea. These are defined sedimentary basins that are not being actively replenished by aggregate inputs, though they have a significant but finite, resource. The Crown Estate are responsible for licensing extraction from the seabed. It stated in 2012 (to the then Mineral Sites Plan, Preferred Options Consultation May 2012) the following:

- *Over 900 million tonnes of marine sand and gravel (aggregate) has been dredged from offshore seabed over the last 50 years and at least 1,250 million tonnes is available for sustainable supply of construction aggregate over the next 50 years and beyond. Currently marine sand and gravel supply some 20% of the country's demand.*

- *The marine aggregate resource available in the East Coast, Thames Estuary and East English Channel areas and which are used to supply Kent wharves is 994 million tonnes of which 31.25 million tonnes is permitted for extraction per annum. Kent wharves only received some 1.3 million tonnes (4.2% of total permitted per annum) in 2010 but increased in 2011 with 1.55 million tonnes (5%). There is therefore a long term viable and sustainable supply of marine dredged aggregate both for construction uses and for direct beach nourishment by vessel delivery.*

- *The current rate of extraction by all companies to all marine aggregate wharves in the UK and on the European mainland is some 45% of the quantities permitted per annum thus reinforcing the sustainability and long-term viability and requirement of marine aggregate wharves in Kent.*

5.4 The area of the overall resource that supplies Kent, was estimated as 99mt in 2011, and remains probably in the order of 87.31mt as of 2021 given the recorded landings in previous aggregate monitoring returns. The resource, therefore, is of a sufficient magnitude to supply Kent into the foreseeable future.

Crushed Rock Importation

5.5 Landwon sales of crushed rock overtook importation via wharves in 2021. The increase in landwon sales is thought to be due to local high demand associated with the construction of HGV parking areas close to the Port of Dover which formed part of preparations for the UK's exit from the European Union. The last three-year sales average value of 1.0+mtpa is not considered to represent a long-term trend, as sales have fallen back to the 0.8+mtpa levels which are more typical of those observed in the past.

5.6 Though sales via rail depots declined in 2021 to 0.441mt from over 0.50mt in 2020, there has been a more moderate increase overtime and it is considered likely that sales will remain in the order of the 0.40-0.50mtpa into the future. The data shows that landwon and wharf importation remain the dominant forms of hard crushed rock supply at this time.

Landwon Aggregate Importation

5.7 Table 9 clearly demonstrates that the vast majority of imported landwon aggregate is supplied via wharves, and far less via rail depots, with an exception for hard crushed rock. It is highly likely that in the future even more aggregate will be supplied via this route as landwon sources in Kent become depleted, emphasising the need to safeguard both wharves and rail depots.

However, both soft sand and sharp sand and gravel that is landwon in other areas also enters Kent via rail depots (see Figure 9 below for the location of the rail depots [4 in total] in Kent). Table 9 below illustrates the sales of imported landwon aggregate that have occurred since 2012.

Table 9: Landwon Aggregate Importation to Rail Depots and Wharves in Kent, 2011-2021 (Million tonnes)

Year	Soft Sands (Rail)	Sharp Sands and Gravel (Rail)	Crushed Hard Rock (Rail)	Crushed Hard Rock (wharf)	Totals
2012	894	41,234	270,586	432,677	745,391
2013	6,128	35,702	326,578	546,541	914,949
2014	4,591	92,095	371,617	697,421	1,165,724
2015	5,567	29,064	405,331	975,875	1,415,837
2016	5,370	29,118	452,751	1,052,971	1,540,210
2017	8,212	24,214	468,785	1,057,785	1,558,996
2018	6,477	28,194	533,110	1,043,721	1,611,502
2019	10,222	24,917	561,738	708,751	1,305,628
2020	10,222	24,917	538,458	1,119,202	1,692,799
2021	2,890	21,747	441,084	1,770,068	2,235,789
Last 3-year average	**7,778**	**23,860**	**513,760**	**1,199,340**	**1,744,739**
Last 10-year average	**6,057**	**35,120**	**437,004**	**940,501**	**1,418,682**

Source: Aggregate Monitoring Surveys, 2012-2021

5.8 The main type of landwon aggregate imported into Kent is crushed hard rock; predominantly via wharves though rail is significant as well. Importation represents an insignificant form of supply of landwon sands and gravels. Figure 8 below shows the sales of imported landwon primary aggregate between 2012-2021 graphically.

Figure 8: Landwon Aggregate Sales from Rail Depots and Wharves in Kent, 2012-2021 (Million tonnes)

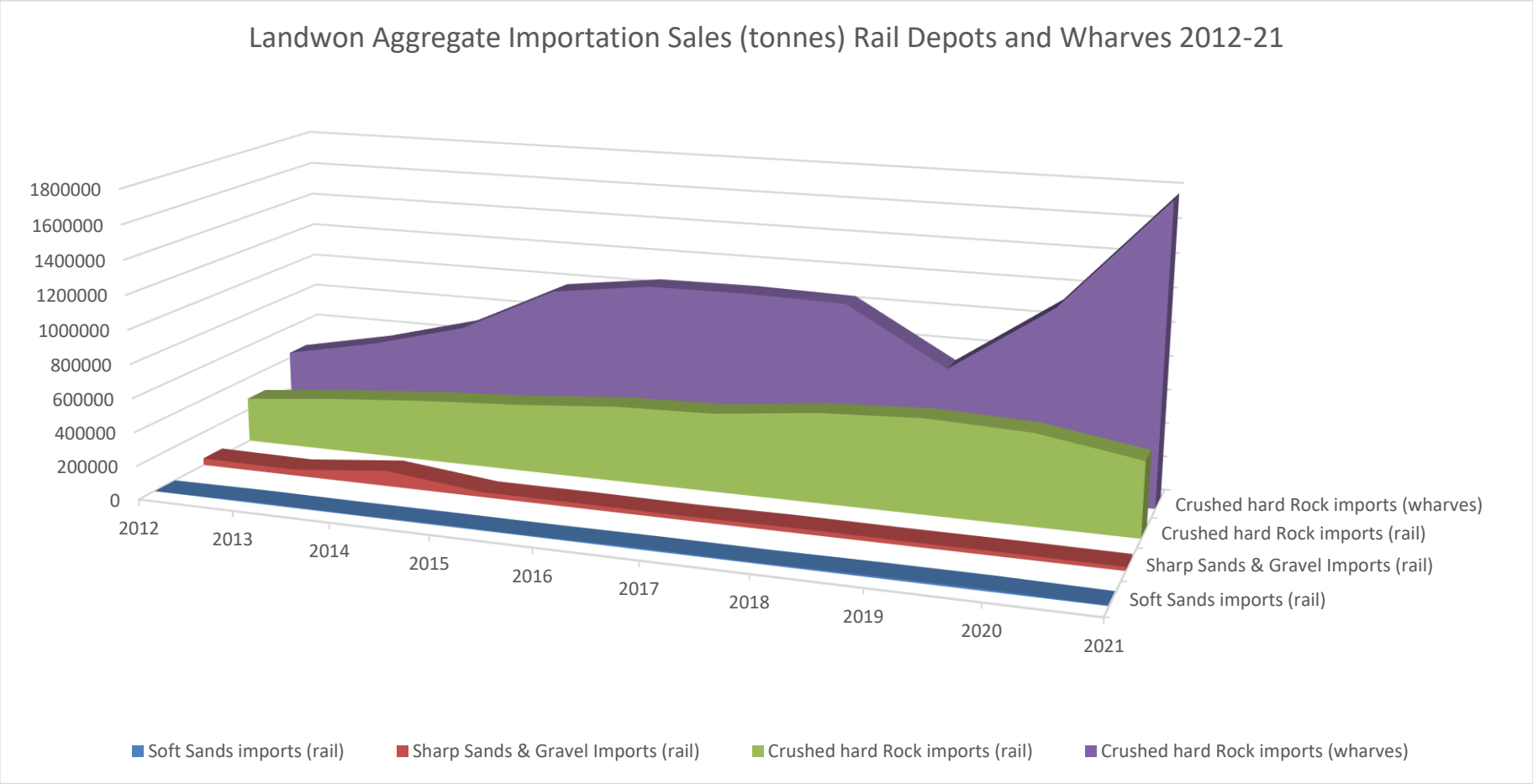
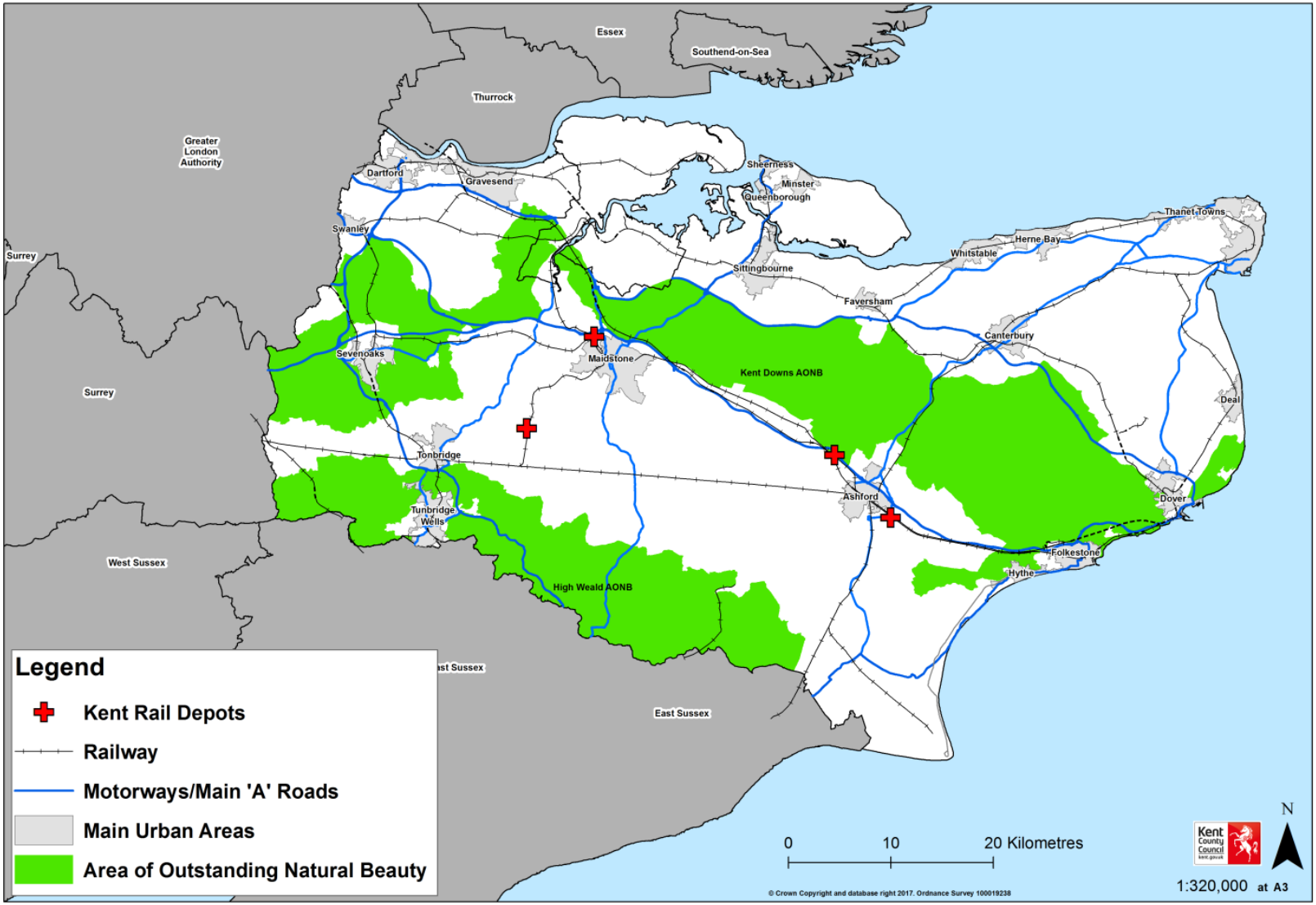


Figure 9: Location Map of Active Rail Depots in Kent



6.0 Total Aggregate Production in Kent in 2012-2021

6.1 During 2021 the total primary and recycled/secondary aggregate production (sales) (including imports) in Kent were as shown in Table 10 below. The landwon sand and gravel 'hoggin' type material sales for construction fill are not included in Table 10, though are in the Dashboard on pages iii to vii, resulting in a slightly lower overall sales figure.

Table 10: Total Aggregate Production in Kent during 2012-2021 (Million tonnes)

Year	Soft Sands Landwon (indigenous) *	Soft Sands Imports	Sharp Sands & Gravel Land-won (indigenous) *	Sharp Sands & Gravel Imports $	Crushed Rock landwon (indigenous)	Crushed Rock Imports	Secondary/ Recycled Aggregates	Totals
2012	0.39	0.0230	0.65	2.18	0.53	0.70	0.67	**5.40**
2013	0.48	0.0152	0.27	1.77	0.72	0.87	0.84	**5.00**
2014	0.29	0.0098	0.17	1.97	0.77	1.07	0.73	**5.02**
2015	0.48	0.0288	0.24	2.06	0.73	1.38	0.84	**5.77**
2016	0.51	0.0079	0.26	2.05	0.81	1.50	1.03	**6.14**
2017	0.52	0.0098	0.15	2.19	0.82	1.53	0.91	**6.09**
2018	0.49	0.0326	0.12	2.07	0.90	1.58	0.76	**5.83**
2019	0.42	0.0100	0.08	0.633	1.00	1.27	0.42	**3.61**
2020	0.39	0.0100	0.13	1.442	1.51	1.66	0.91	**5.32**
2021	0.59	0.0050	0.20	1.663	0.81	2.21	0.99	**6.47**
Total 2012-21	**4.56**	**0.1521**	**2.27**	**18.03**	**8.56**	**13.77**	**8.10**	**10-year average 5.46**
Last 3-year average	**0.466**	**0.0083**	**0.136**	**1.246**	**1.10**	**1.713**	**0.77**	**3-year average 5.134**
Last 10-year average	**0.456**	**0.0152**	**0.228**	**1.803**	**0.86**	**1.377**	**0.81**	

Source: Aggregate Monitoring Surveys, 2012-2021. $ denotes marine dredged and landwon sands and gravels via railheads and wharves. * denotes any sales for constructional fill not included.

6.2 The data in Table 10 does not demonstrate actual consumption of aggregates within Kent, as it is a reasonable assumption that a degree of exportation out of Kent occurred to other areas. In addition, importation by road is not picked up by the AM surveys conducted by MPA's during this period. Comprehensive surveys of imports and exports undertaken by BGS, that can reveal aggregate consumption (to a reasonable degree of accuracy), were completed in in 2009, 2014 and most recently in 2019. The 2014 study confirmed that Kent and Medway are the most significant in terms of sales from wharfs and are particularly dominant with regard to imported crushed rock.[10]

6.3 The BGS 2019 data showed that Kent consumes typically 80-90% of all the aggregate produced in Kent (both as land-won and the imports of sand and gravel and crushed rock) and 10-20% of materials were exported to the wider South East. The data did not disaggregate between soft sand and sharp sands and gravels and thus cannot be used to determine how these different materials serve distinctly different markets. However, due to the relative scarcity of sharp and gravel reserves in Kent it is highly likely that exports of soft sand exceed those of any exports of land won sharp sand and gravel. The BGS 2019 data has been used to inform a national aggregate monitoring report in which Kent's role in supply beyond its boundaries is demonstrated.

6.4 Imports of sharp sand and gravel in 2021 (1.663mt) increased again, though they remain below the 10-year average of 1.803mt. Imports of crushed rock in 2021 (2.21mt) were greater again than the 10-year average (1.37mt). The important observation is that, apart from soft sands, all sales of primary aggregates imported into Kent are increasing.

6.5 Soft sand imports (either marine or landwon) remain insignificant. Landwon soft sand supply from Kent has increased, though reserves have contracted, the 10 and 3-year sales averages are still generally comparable. Overall landwon sand and gravel is in depletion and landwon crushed rock sales have contracted from 1.5mtpa in 2020 to a more historically representative level of 0.815mtpa. The 3-year average (a slight contraction to 1.104mtpa) is significantly greater than the 10-year sales average of 0.857mtpa.

[10] https://documents.hants.gov.uk/see-awp/SEEAWP-annual-report-2018.pdf

6.6 Similarly, recycled/secondary aggregates sales showed a significant increase to 0.91mtpa in 2020, well above the 10-year average of 0.688mtpa.

6.7 Importation across all primary aggregate types has increased again to 3.88mtpa in 2021. Indicating an increasing importance in this form of supply.

6.8 Imports of sharp sand and gravel in 2020 (1.442mt) grew in 2021 to 1.663mt, though the 10-year average (1.803mt) slightly decreased. However, importation remains the dominant form of sand and gravel supply. This is not anticipated to change, in fact due to the landwon sector being ii obvious decline, it is anticipated to increase into the future, particularly the marine dredged sector. In 2021 overall aggregate sales in Kent were 6.47mt, up from 5.32mt in 2020. The marked recovery from the dip in sales in 2019 is continuing.

6.9 Figure 10 shows total aggregate (all types) sales and Figures 11 and 11a below illustrates the separate primary aggregate type sales in Kent from 2012 to 2021 graphically.

Figure 10: Total Aggregate Production (Sales) in Kent during 2012-2021 (tonnes)

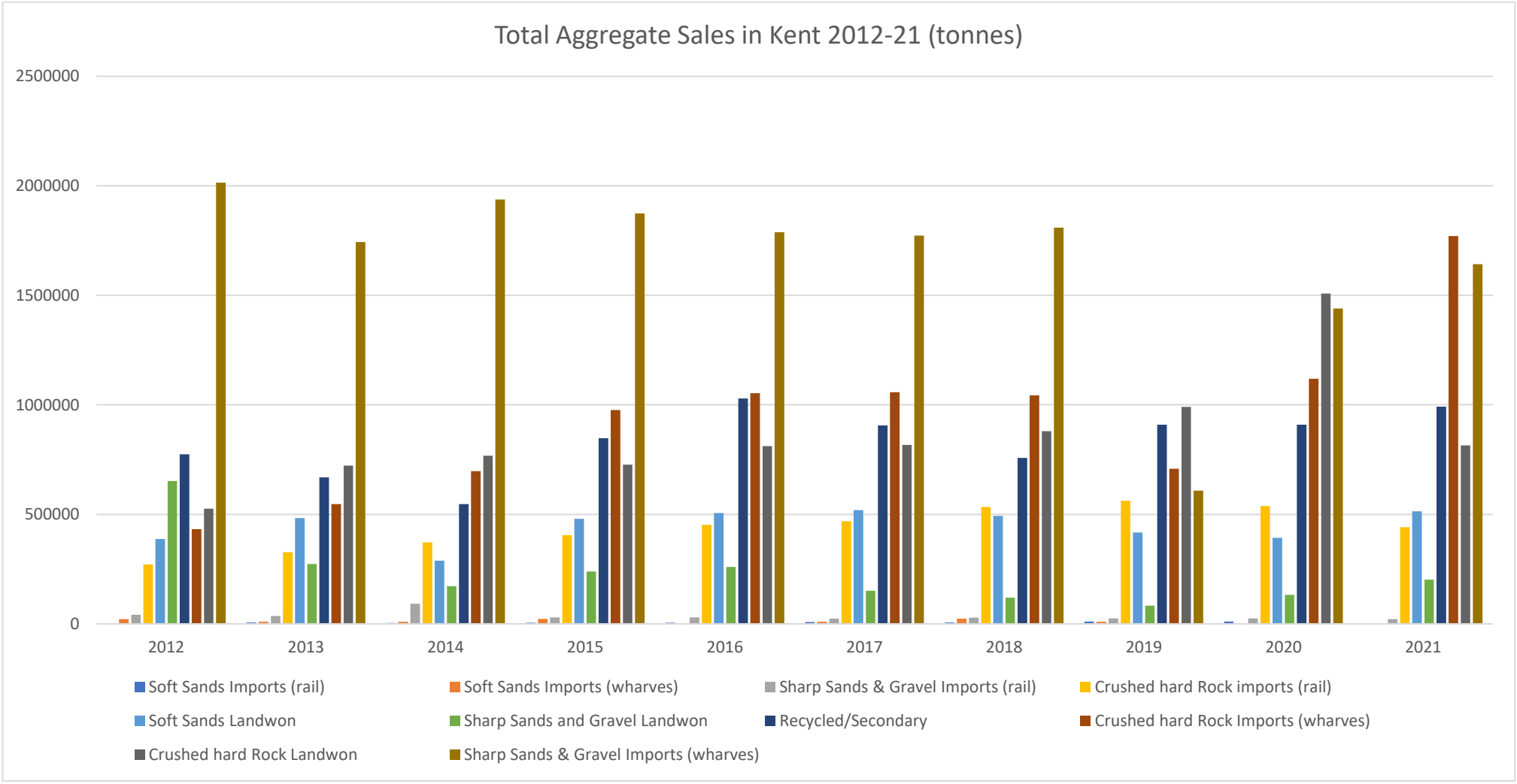


Figure 11: Total Primary Aggregate Production in Kent during 2012-2021 (tonnes)

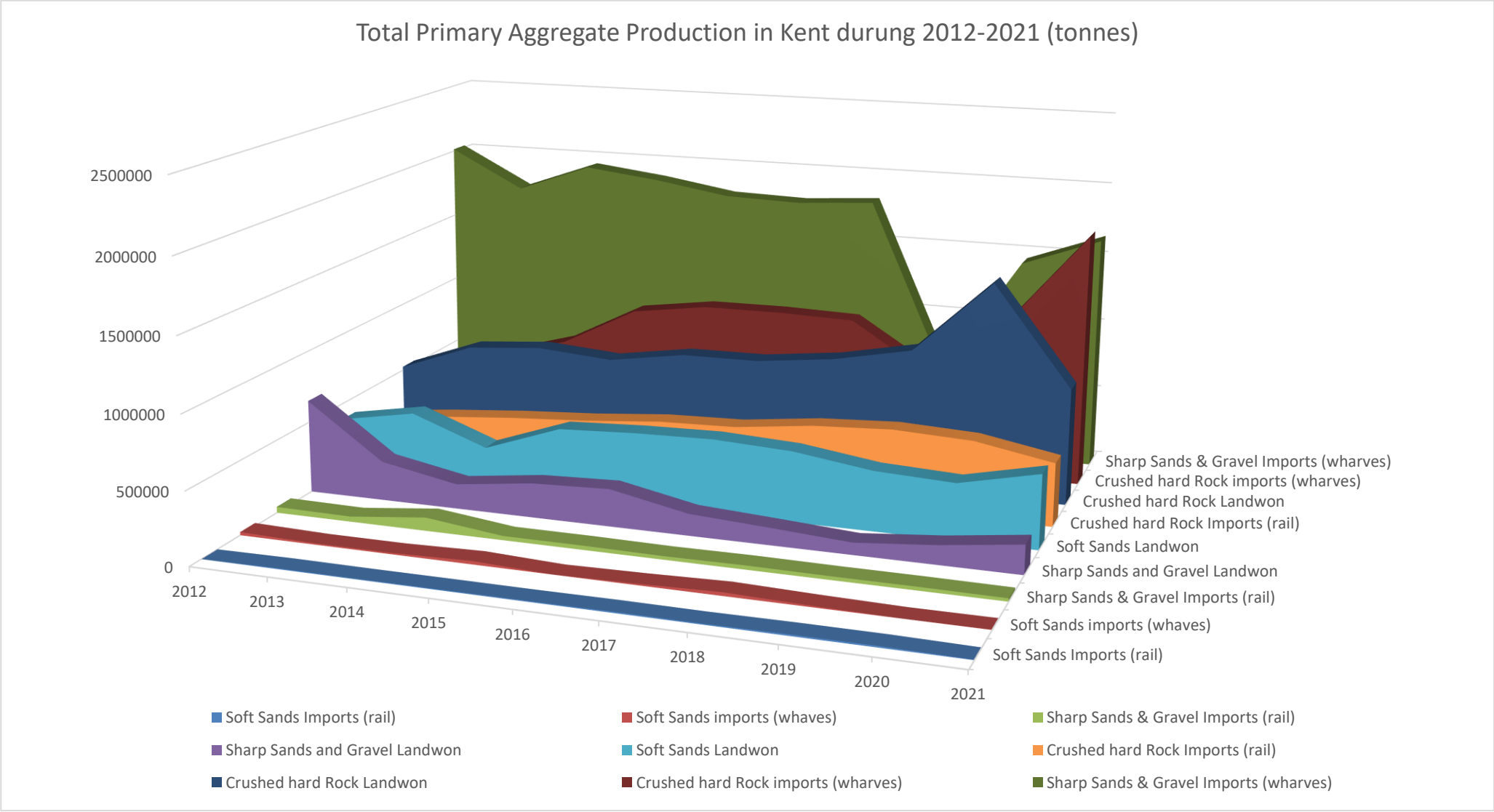
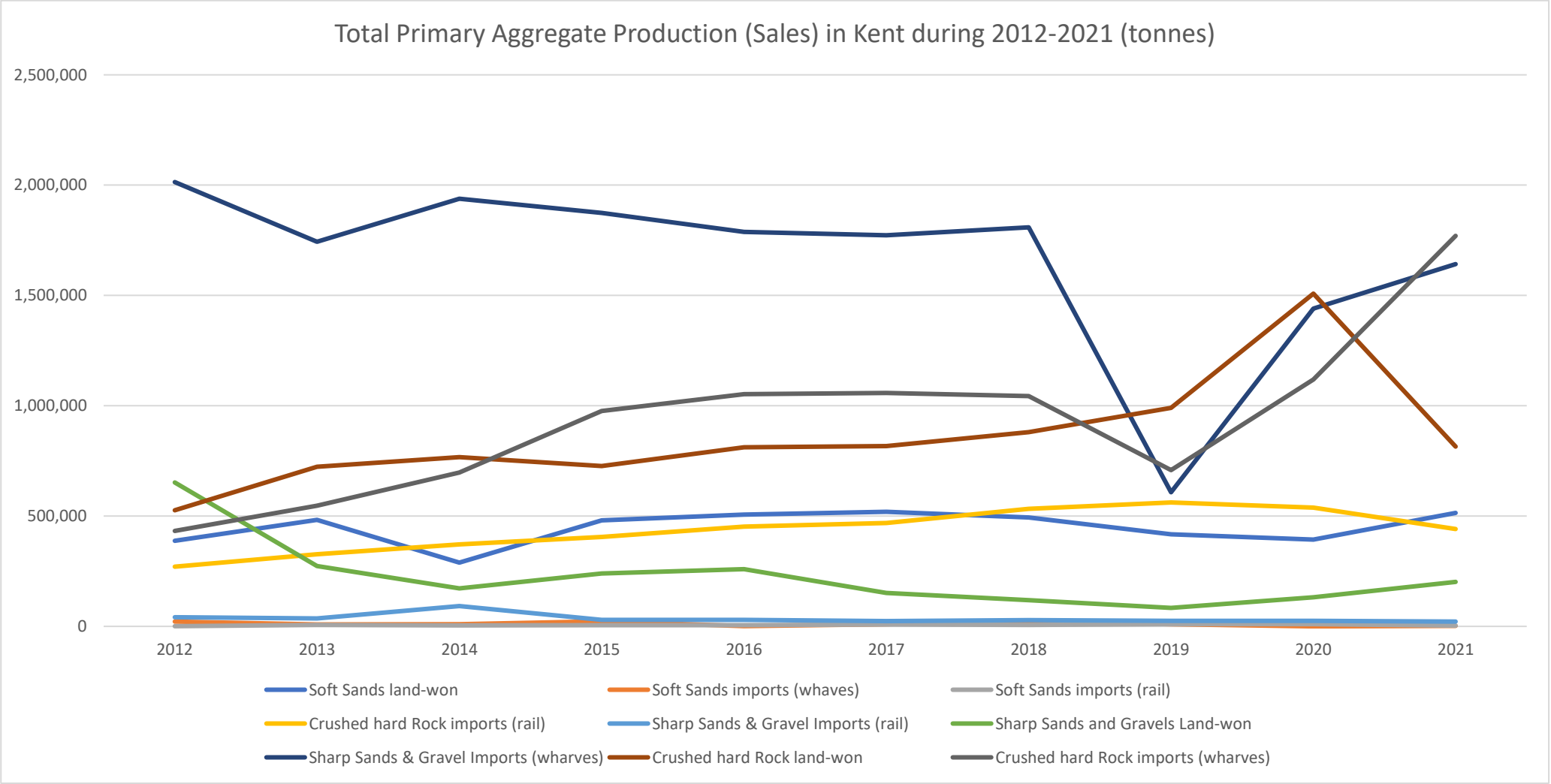


Figure 11a: Total Primary Aggregate Production in Kent during 2012-2021 (tonnes)



6.10 The economic uncertainty caused by the UK's exit from the European Union (EU) may explain why in 2019 aggregate importation and the utilisation of recycled and secondary aggregates experienced contraction. This appears to be reversing given the 2020 and 2021 sales data. Landwon soft sand sales also experienced contraction, but of a lower degree of magnitude, and are now showing some recovery. The landwon sales of crushed rock, for the reasons given above, were the beneficiary of very local circumstances in Kent, and have returned to a more historical level of sales.

7.0 Future Aggregate Supply

7.1 Such matters as housing supply and other development are linked to aggregate requirements, as are infrastructure projects and infrastructure maintenance. Though a direct relationship between sales and construction in one Mineral Planning Authority (MPA) area is unlikely to be probable, given imports and exports into and out of any given MPA also occur. Though an examination of the main construction predictions can possibly *indicate* whether aggregate needs are likely to grow or decline, over any given Plan period. The 2021 housing targets and infrastructure projects (anticipated until 2040) are shown on Table 11 below.

Table 11: Levels of Planned Housing and Infrastructure in Kent excluding Medway

Demand Generation	**Approximate Timelines**
Dwellings	In LAA2018 it was reported that in Kent **178,600** additional homes between 2011-2031 or 8,930 per annum. This was revised by a 'Housing Trajectory' based on information provided by each local authority in Kent in November 2019. It concludes that there is to be **217,030** dwellings built between 2018 and 2038 in Kent and Medway, or 10,851 per annum. This was revised in November 2020 and increased to **225,000** dwellings to be required between 2019 and 2039, 11,250 per annum. An increase of 3.5% over the 2019 estimation. The most recent Housing Led Forecast 2021 (by Kent Analytics, Kent County Council) predicts the between 2020-40 **190,398** homes will be required. This represents a fall off of housing requirements based on analysis of the demographic data from the Office of National Statistics (ONS). However, in addition, Ebbsfleet Garden City exists within Kent which is a planned development of up to **15,000** homes and 45,000m^2 of commercial floor space.

<table>
<tr><td>Education</td><td><table>
<tr><td>2020-24

Primary 12.8FE

Secondary 58 FE</td><td>2024-28

Primary 26.6 FE

Secondary 21 FE</td><td>2028-30

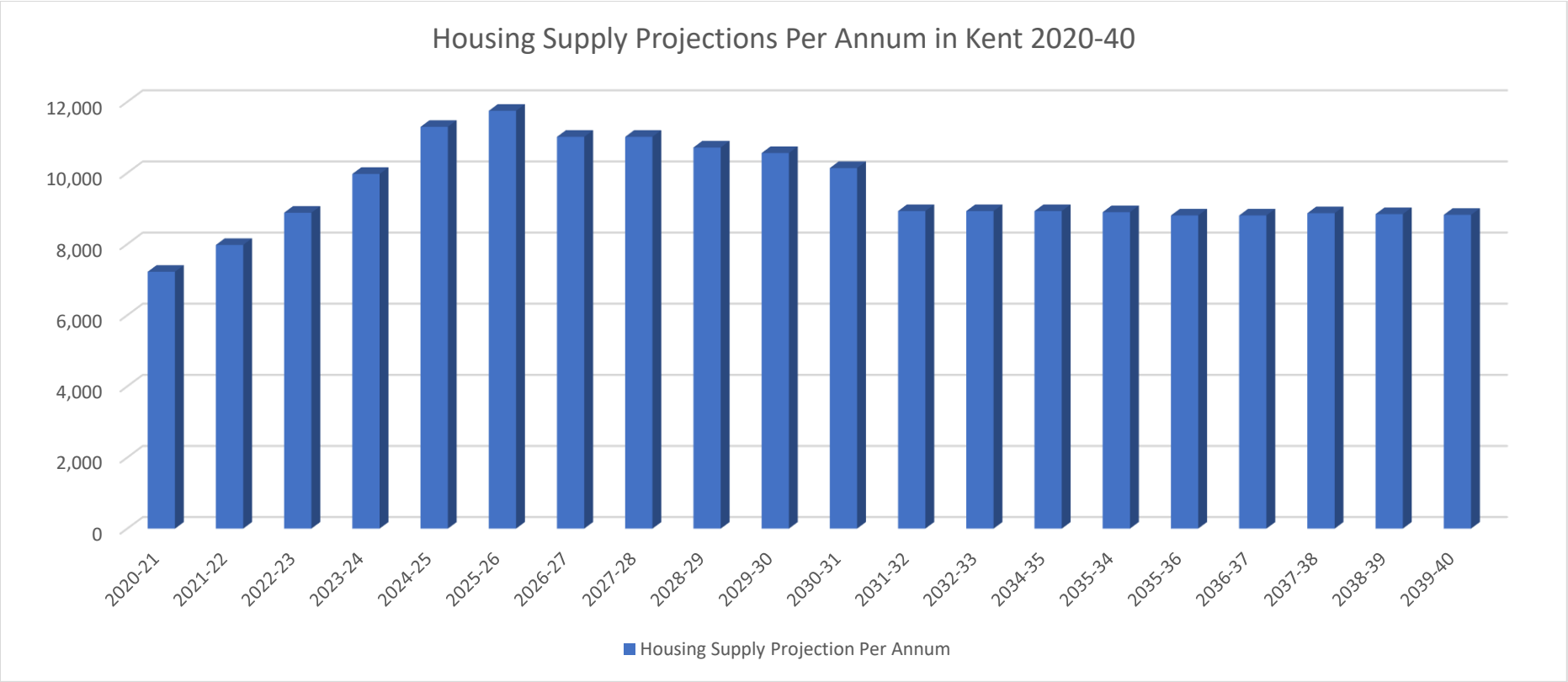
Primary 11 FE

Secondary 8 FE</td><td>2030-38

No data</td></tr>
</table></td></tr>
<tr><td>Infrastructure</td><td>Significant Infrastructure Up to 2030 in Kent
A2 Bean and Ebbsfleet Junctions
Lower Thames Crossing
Motorway Junction Improvements (M20 Junctions 3-5, 10a, M2 Junctions 5,7)
Bifurcation of Port Traffic and Ports Expansion (Dover Western Docks significantly, including potentially Large Local Major (LLM) funding schemes for A229
Solution to Operation Stack and Overnight Lorry Parking
Rail improvements to Thanet
Crossrail Extension</td></tr>
</table>

7.2 The planned level of dwellings to 2040 has decreased since LAA2021 from 225,000 to 190,398. Figure 12 below shows the latest per annum (pa) predicted requirements. Essentially the pressure on housing growth, while evident to 2026 then starts to fall markedly to just above 8,000 pa 2031 and remains at this level to the 2040 horizon.

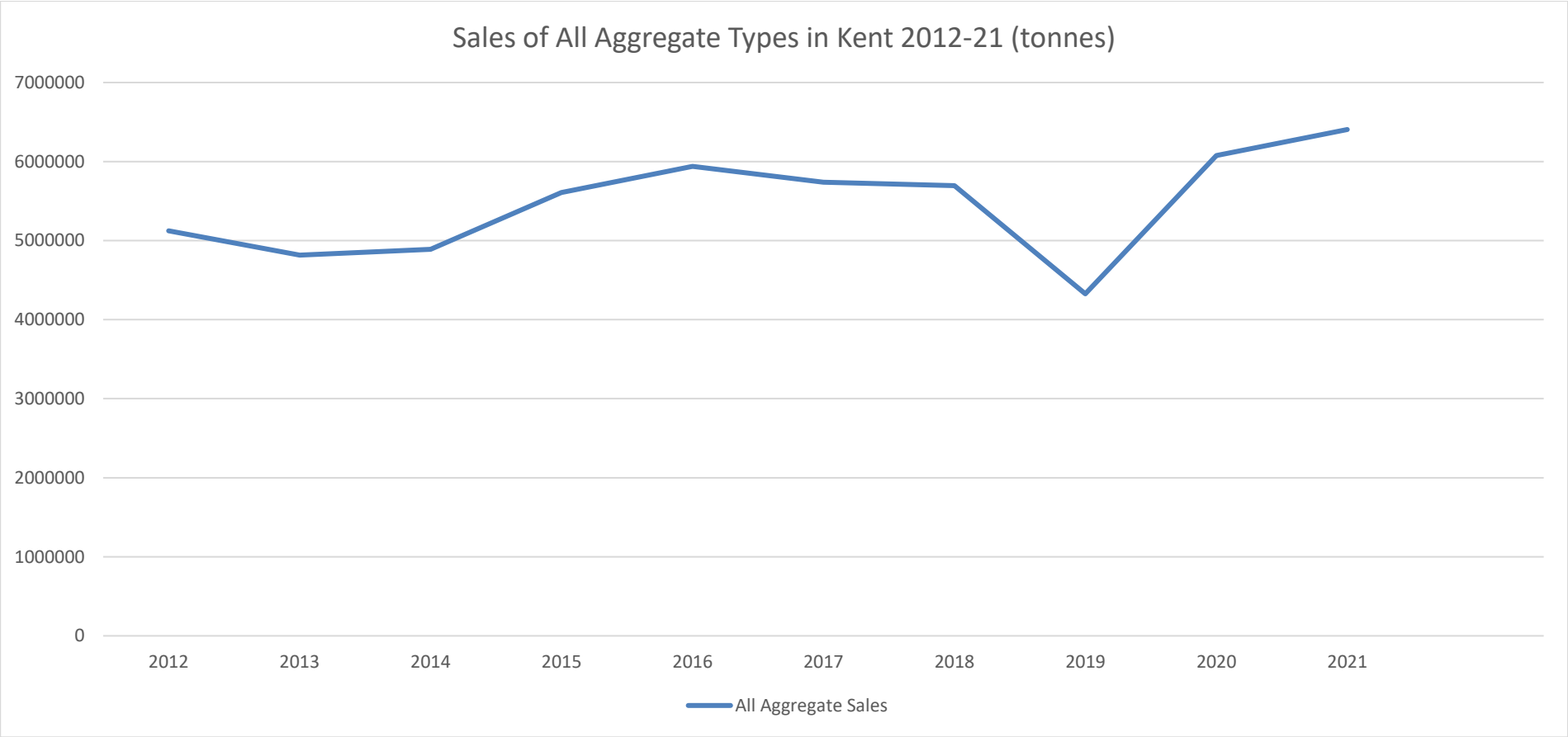
Figure 12: New Housing Growth Per Annum Requirement Predictions in Kent 2020-40



7.3 In addition to the above the Ebbsfleet Garden City (a planned development) will add a further 15,000 homes to the overall total that will require an increase in overall aggregate supply. However, the overall magnitude of housing growth compared to previous monitoring periods is now one of predicted decline over the entire period 2020-40. This will have a corresponding reduction in aggregate material demand, given that aggregates are still significantly used in the construction (and maintenance) of the housing stock.

7.4 The demand projections in infrastructural development, as reported in LAA2020 have not significantly altered. They include port expansion, east Kent rail connections and major highway schemes (A2 and motorway junction improvements) additional to the planned Lower Thames Crossing. As stated in previous LAA monitoring reports, infrastructure maintenance would have to be commensurate with needs to maintain the network and ensure new schemes coming on stream by 2030-32 are also integrated and maintained. The demand for aggregates overall in Kent for house building, construction and concrete products for infrastructure development and maintenance and major projects is showing a marked recovery from a 2019 fall off of sales of most aggregate types. Though the gradient in the sales data from 2020 to 2021 has slightly reduced (as shown in Figure 16) as it is showing an increase in sales but of a lower intensity than between 2019 to 2020. Thus, the characteristic of a marked steep recovery from the recorded exceptionally low level of sales during 2019 showed a levelling off in 2021. While it is concluded that there are no local construction indicators, such as housing etc described above that indicate a likelihood of significant increases in the demand for construction aggregates above the 5-6.0mtpa levels observed in the past, this is not a conclusion that can be removed from a consideration of the wider regional growth estimates, that will affect aggregate demand. For example, although housing supply is estimated to grow, then fall and level off in 2031, and be below the levels of the 2020 projections, this indicator may change again. Growth, over the long term can be reasonable anticipated in the South East that will include Kent.

Figure 13: Total Aggregate (Primary and Secondary) Sales in Kent 2012-2021



7.5 Figure 13 essentially demonstrates that the low sales recorded during 2019 was an 'exceptional' and temporary event, with sales falling to just under 4.0mtpa, most probably due to pre-Brexit trading uncertainty. The rapid recovery in 2020 back to 6.0mtpa may be representing how this 'uncertainty' dissipated once the nature of the UK's departure from the European Union was made more definitive in late 2019. It is of note that landwon crushed rock did not 'suffer' this uncertainty. Sales in 2021 are showing a 'levelling off' possibly due to continue a degree of uncertainty caused by Covid 19 pandemic, though this is more speculative.

7.6 Continued monitoring will demonstrate if sales of all aggregate types fall again to under 6.0mtpa again in Kent. For the future, and the remainder of the currently adopted Plan period, it is considered that use of predictive modelling to predict the actual quantum of demand from this sales recovery upturn is unreliable at the County Council scale. The observed 'uncertainty due to Brexit' effect in 2019 and the ongoing Covid 19 pandemic effects that are possibly still working their way through the economy, that can be observed in the last three years of monitored sales data, are considered unreliable indicators of future demand. It remains the County Council's position that the use of the latest 10-year sales averages is the most reliable metric for considering demand over the remaining Plan period, as this will continue to average out the inevitable fluctuations in overall supply that have occurred and will continue to occur.

Available Permitted Reserves and Landbanks

7.7 The 2021 data (AM2021) collected for Kent shows the reserves for the following aggregate mineral types *as of the end* of 2021:

- Soft sand markedly reduced from 9,341,000 tonnes to 6,224,773 tonnes; due to an error in reserve re-evaluations in 2020;
- Sharp sands and gravel reduced from 2,779,500 tonnes to 2,564,000 tonnes which was predominantly a result of re-evaluation of reserves, as sales remain essentially low;
- Hard rock, confidentiality has been waived in LAA2021 by the operator, the overall estimation of permitted reserves (two sites, Blaise Farm and Hermitage Quarry) (now accurately modelled using 3-dimensional software surveying techniques) is 16,097,250 tonnes.

7.8 These reserves are the estimates of all the respective aggregate mineral sites (soft sand, sharp and gravel, hard rock), operating in Kent, for the end of 2021. Therefore, it is recognised that the data in 2021 needs to be recast to reflect almost another year of production that has occurred when looking forward and estimating aggregate requirements. The magnitude of which will not be known until the data for 2022 is collected by AM2022. In the meantime, the reserves can be approximated for planning policy formulation purposes and determining planning applications and appeals by further reducing reserves by assuming at least the most recently recorded sales figures and the last 10-year averages.

Soft Sands

7.9 With regard to the soft sands landbank, the 2012-2021 ten-year sales average is 456,345 tonnes per annum, up slightly (3.34%) from 441,038 tonnes per annum in 2020. The three-year sales trend has increased from 434,352 tonnes per annum to 467,992 tonnes per annum in 2021. The 10-year average (Kent's LAA/APR Rate) gives a landbank of 13.6 years based on a reserve of 6.2 million tonnes. The recorded sales since 2012 are shown on Table 12 below.

7.10 Soft sand sales in 2021 were 594,099 tonnes, an increase compared to a recorded low of 392,850 tonnes in 2020 (a low level of extraction not seen since 2012 when 387,746 tonnes of sales were recorded). It may be that sales are returning to the 0.5mtpa mark seen between 2015 to 2018. However, a combination of the previous uncertainty regarding the UK's exit from the European Union and in early 2020 cessation of construction activity during the Covid-19 pandemic 'lock downs' (March to June 2020), are still recent impacts. Current economic predictions are for the UK to experience low growth (possibly negative) of gross domestic product (GDP). This coupled with lower housing projections to 2040 than 2020 forecasts may limit the need for substantial increased supply of soft sand over the adopted Plan period and beyond to 2040. Further monitoring will determine if higher levels of demand returns, and sales regain the levels seen in 2015-2018. Table 12 below details the soft sand sales 2012-2021.

Table 12: Landwon Aggregates Sales - Soft Sands 2012-21

Year	Sales (Tonnes)
2012	387,746
2013	483,165
2014	289,087
2015	480,215
2016	506,663
2017	519,414
2018	493,179
2019	417,027
2020	392,850
2021	594,099

Sales Averages
10-year Sales Average (2012-21) 0.456mtpa
3-year Sales Average (2012-21) 0.468mtpa

Sharp Sands and Gravel

7.11 The marked decline in overall reserves from 3.18mt in 2019, to 2.78mt tonnes in 2020 to just 1.38mt in 2021 demonstrates the decreasing importance of this form of supply. In 2021 there was again no replenishment in the form of additional planning permissions. Correspondingly available reserves are set to continue to decline.

7.12 Recorded sales in 2021 were 202,022 tonnes, a significant increase from 2020 when 132,231 tonnes were sold. The ten-year sales average decreased to 228,526 tonnes from 270,309 tonnes in 2020. The landwon sharp sand and gravel landbank based on the last 10-year sales (the Kent LAA/APR Rate) average is currently only 6.05 years. Given that this is a depleting resource, this landbank is a reflection of declining sales rather than one that is with almost sufficient to meet 'at least' 7-year landbank level. The reality is that supply of this type of aggregate is increasingly being met by imports. Table 13 shows recorded tonnages of sales of landwon sharp sand and gravel since 2012-21.

Table 13: Landwon Aggregates Sales Sharp Sands and Gravels 2012-21

Year	Sales (Tonnes)
2012	652,285
2013	273,000
2014	172,672
2015	239,366
2016	259,550
2017	151,165
2018	119,259
2019	83,709
2020	132,231
2021	202,022

Sales Average last 10-years (2012-21)	**228,526**
Sales Average last 3-years (2019-21)	**139,321**

Crushed Rock

7.13 Hard (crushed) rock sales records were restricted given that Kent production from the landwon resource is represented by only two sites and the SEEAWP protocol required at least three sites to aggregate sales and reserves and maintain confidentiality. The operator has waived that requirement in order for the matter of future supply to be fully understood. The sales shown in Table 14 below detail the history of landwon crushed rock sales for only the second time in an LAA report. They significantly increased to 2020, when 1.5mt was sold, far more than in any year since 2012. However, in 2021 sales have reverted to the more typical 0.8+mtpa level. The reason for the 2019-20 'high' in sales may well be due to very local circumstances that exit in Kent. The need to supply crushed rock to construct HGV parking areas in the proximity of the Port of Dover in preparation for the UK's exit from the European Union probably potentially explains these sales increases. The apparent reversion to more historical rates of sales 0.80+mt to per annum range will be revealed by future monitoring.

7.14 The (crushed) hard rock permitted landbank has been more reliably modelled using three-dimensional analysis confirming a 16.1mt total available at Hermitage Quarry and Blaise Farm Quarry combined. The use of the LAA/APR Rate of 0.856mtpa (the 10-year average) gives a NPPF maintained landbank of between almost 19 years. Essentially sufficient to meet the adopted Plan's needs to 2030 (plus 10 years) from 2021. Table 14 details the crushed (hard) rock sales 2012-2021.

Table 14: Landwon Aggregates Sales Crushed Rock 2012-21

Year	Sales (Tonnes)
2012	526,281
2013	722,985
2014	767,198
2015	727,272
2016	811,935
2017	817,437
2018	880,063

2019	990,590
2020	1,508,239
2021	814,859
Average last 10-years (2012-21)	**856,686**
Average last 3-years (2019-21)	**1,104,563**

Future Potential Requirements and Resources

7.15 The County Council adopted the Mineral Sites Plan in September 2020. It identifies the required future resources to ensure a steady and adequate supply of minerals (in the form of 7- and 10-year aggregate landbanks for sands and gravels and crushed (hard) rock respectively) until 2030. There was a Call for Sites exercise in late 2016 into early 2017 that resulted in several sites coming forward (though none for hard rock that could be crushed to give rise to a graded aggregate). The County Council proceeded on the basis that there was a requirement to identify additional potential reserves of soft sand and sharp sand and gravel, but not hard crushed rock reserves. The latter were determined to have sufficient reserves for the remainder of the Plan period and beyond. The County Council initially assessed the sites promoted that accord with the objectives of the adopted Kent Minerals and Waste Local Plan 2013-30. This exercise identified those sites that could go forward to a Mineral Sites Plan Options (Regulation 18) public consultation (19th December 2017 to 29th March 2018).

7.16 The nine sites that were part of the Regulation 18 Options consultation (two for soft sands and seven for sand and gravels, as set out on Table 12 below) were then subject to a Detailed Technical Assessment process. The findings of which informed the Pre-submission Mineral Sites Plan Regulation 19 publication and consultation in early 2019. Three sites were subsequently allocated in the Submission Kent Mineral Sites Plan in 2019 and were included as allocations in the Kent Mineral Sites Plan subsequently adopted in 2020. Table 15 overleaf details the sites considered by this local plan process.

Table 15: Mineral Sites Plan (adopted 2020) Sites for Landwon Aggregates

Site	Amount (mt)	Aggregate	Proposed Allocation in Kent Mineral Sites Plan	Allocated in adopted Kent Mineral Sites Plan
Chapel Farm, Lenham	**3.2**	**Soft Sand**	**Yes**	**Yes**
West Malling Sandpit, Ryarsh	3.1	Soft Sand (and 0.5mt of Silica sand)	No	No
Central Road, Dartford	0.9	Sharp Sand and Gravel	No	No
Joyce green Quarry, Dartford	1.5	Sharp Sand and Gravel	No	No
Lydd Quarry and Allen's Bank Extension, Lydd	3.1	Sharp Sand and Gravel	No	No
Moat Farm, Five Oak Green, Capel	**1.5**	**Sharp Sand and Gravel**	**Yes**	**Yes**
Postern Meadows, Tonbridge	0.23	Sharp Sand and Gravel	No	No
Stone Castle Farm Quarry Extension, Hadlow/Whetsted	**1.0**	**Sharp Sand and Gravel**	**Yes**	**Yes**
The Postern, Capel	0.5	Sharp Sand and Gravel	No	No

7.17 The Mineral Sites Plan was subjected to Independent Examination by an Inspector of the Planning Inspectorate; this included hearings during October 2019. A number of Main and Additional Modifications were promoted and consulted[11] upon as part of the Mineral Sites Plan examination. The Mineral Sites Plan was not modified to include any additional sites or any further reduction in sites from the three allocations proposed as shown on Table 12 above. The Inspector's report was received by the County Council in the Spring of 2020, with full adoption by the County Council occurring in September 2020. None of the sites allocated have yet received planning permission, nor have any applications been lodged for their development to date.

[11] https://www.kent.gov.uk/about-the-council/strategies-and-policies/environment-waste-and-planning-policies/planning-policies/minerals-and-waste-planning-policy#tab-2

Sharp Sand and Gravel

7.18 With regard to the sharp sands and gravel, it is recognised that the landbank is under the NPPF 7 year minimum. The observed fall in sales since 2016 was significantly due to the production from a notable site moving over the Kent administrative boundary into East Sussex. Production continued and served both the Kent and East Sussex markets, and now the AM returns for 2020 and 2021 reflects that actuality, though for several AM monitoring reports this fact was not recorded. However, the matter is now somewhat academic. Total reserves are 1.384 million tonnes, and the real rate of need is, in all probability higher than the LAA Rate of 0.228mtpa based on the 10-year sales average. Therefore, it remains the case that the need to plan for additional resources is justified. However, it should also be noted that the requirements of the adopted Kent Minerals and Waste Local Plan (Policy CSM 2), that were to be addressed in the Kent Mineral Sites Plan, require significantly greater quantities of sharp sand and gravel aggregates than the combined reserves of 2021 and the sites allocated in the Mineral Sites Plan, though only *"…while resources allow*."

7.19 This position is due to the recognition that the landwon sands and gravels are a depleting resource in Kent. Therefore, the additional 2.5 million tonnes (two sites) that were allocated in the Mineral Sites Plan would not meet the KMWLP identified needs over the remaining Plan period, and the remaining shortfall is to be made from alternative resources such as secondary and recycled material and marine dredged supply. The reasons for non-allocation of all the promoted Option sites (including those promoting sharp sand and gravel) are detailed in the Mineral Sites Plan-Site Assessment Document (document ref. KCC/SP41). The essential position considered by the Independent Examination of the Mineral Sites Plan has not altered, that as the landwon sharp sand and gravel resources are further depleted, other resources (mainly marine dredged and recycled and secondary aggregate materials) will now increasingly become more important in the overall supply mix to meet need.

Soft Sands

7.20 Existing reserves of soft sand have undergone further re-evaluation and are (end of 2021) reduced to 6.22mt. This compares to those reported in 2020 as having increased to 9.34mt from 7.8mt reported in 2019. The 10-year sales average has slightly increased, this and the reduced reserve base means that there are insufficient reserves to meet the KMWLP soft sand requirements (to 2030 + 7 years). However, the soft sand requirements should be considered in the context of:

a. the allocated site that has 3.2mt of potential reserves (Chapel Farm) and
b. the update of the Kent Minerals Local Plan 2013-30 that involves a new 15-year Plan period from 2023 to 2038.

7.21 The following soft sand requirements for the anticipated change in plan period are calculated below:

- Estimated reserves at the end of 2021 (the latest AM/LAA unpublished figure) are now 6,224,773
- 10-year sales average is 0.456mtpa (the LAA/APR rate)
- Plan period (2023 to 2038) is 15 years plus 7 for the maintained 7-year land bank at the end of the Plan period, total time = 22 years

Reserves at the beginning of 2023 will be:

- At end 2022 (i.e. beginning of 2023): 6.225mt - 0.456mt = 5.769mt

Plan requirement over the plan period 2023 to 2038 + 7 (15 + 7 = 22 years) equates to (22 x 0.456 = 10.032mt) 10.032mt.

Therefore, the shortfall over the Plan period of 2023 to end of 2037 + 7 years is the permitted, and thus available, reserves (beginning 2023) of 5.769mt minus 10.032mt (the requirements) = - 4.263mt.

Adding 3.2mt (Chapel Farm in 2029 when the reserves fall below the 7-year landbank minimum of 3.192mt) of soft sand resources reduces the **anticipated shortfall to 1.063mt over the anticipated Plan period**.

The reserve draw down is illustrated as follows:

Year	**Reserves in beginning of year mt**	**Drawdown 10-year sales average**
2023	5.769	5.769-0.456=5.313
2024	5.313	5.313-0.456=4.857
2025	4.857	4.857-0.456=4.401
2026	4.401	4.401-0.456=3.945

2027	3.945	3.945-0.456=3.489
2028	3.489	3.489-0.456=3.033
2029	3.033+3.20[12]=6.233	6.233-0.456=5.777
2030	5.777	5.777-0.456=5.321
2031	5.321	5.321-0.456=4.865
2032	4.865	4.865-0.456=4.409
2033	4.409	4.409-0.456=3.953
2034	3.953	3.953-0.456=3.497
2035	3.497	3.497-0.456=3.041
2036	3.041	3.041-0.456=2.585
2037 end of Plan period, at year end	2.585	2.585-0.456=2.129 [shortfall of 1.063]
2038	2.129	2.129-0.456=1.673
2039	1.673	1.673-0.456=1.217
2040	1.217	1.217-0.456=0.761
2041	0.761	0.761-0.456=0.305
2042	0.305	0.305-0.456= -0.151
2043	0 (Reserves fully depleted)	
2044 end of Plan period +7	0	
2045		

7.22 The anticipated extended Plan period ceases to have a 7-year landbank minimum in year 2036 and the resulting deficit of 1.063mt of the overall requirements occurs at the end of 2037; the end of the anticipated extended Plan period.

Crushed Hard Rock

7.23 As the consented reserves of hard (crushable) rock of the Hythe Formation in Kent were considered as being extensive there was no need for a consideration of any future supply needs in the Mineral Sites Plan that was adopted in 2020. However, since then, the extent of the reserve base, in terms of its recent marked decline, has been clarified. There has also been a significant increase in sales. The implications of this and the extended Plan period are considered below.

[12] Chapel Farm = 3.2mt

7.24 The adequacy of the calculated landbank over the anticipated extended Plan period as assessed as follows:

- Estimated reserves at end of 2021 are 16,097,250 tonnes or 16.10mt
- 10-year sales average is 0.857mtpa
- Plan period of 15 years plus 10 for the maintained 10-year land bank at the end of the Plan period, total time = 25 years

Plan hard crushed rock requirement is therefore 0.857 x 25 = 21.425mt

Reserves at the beginning of 2023 will be:

- At the end of 2021: 16.10mt
- At the end of 2022 (beginning 2023): 16.10mt-0.857mt (the 10-year average draw down figure) = 15.243mt

The Plan requirement over 2023 to end of 2037+10 (15+10 =25 years) is 21.425mt overall (25 x 0.857=21.425mt).

Therefore, reserves of 15.242mt in 2023 minus 21.425mt (the requirement) reveals a shortfall of 6.182mt over the entire Plan period of 2023 to 38+7 years.

This 6.182mt shortfall is smaller than the current remaining total permitted reserves at Hermitage Quarry of 8.25mt, as of end of 2021.

The reserves required to maintain a 10-year landbank based on a 10 year sales average is 8.57mt

The maintained 10-year landbank ceases in 2031, with total exhaustion in 2041

The following tabulation illustrates this using the current 10-year sales average as the yearly drawdown proxy for sales:

Year	Reserves in the beginning of year mt	Drawdown 10-year sales average
2023	15.243	15.243-0.857=14.386
2024	14.386	14.386-0.857=13.529
2025	13.529	13.529-0.857=12.672
2026	12.672	12.672-0.857=11.815
2027	11.815	11.815-0.857=10.958
2028	10.958	10.958-0.857=10.101
2029	10.101	10.101-0.857=9.244
2030	9.244	9.244-0.857=8.387
2031	8.387	8.387-0.857=7.530
2032	7.530	7.530-0.857=6.673
2033	6.673	6.673-0.857=5.816
2034	5.816	5.816-0.857=4.959
2035	4.959	4.959-0.857=4.102
2036	4.102	4.102-0.857=3.245
2037 end of Plan period, at end of year	3.245	3.245-0.857=2.388 [shortfall of 6.182mt]
2038	2.388	2.388-0.857=1.531
2039	1.531	1.531-0.857=0.674
2041	0.674	0.674-0.857= -0.183
2042	0 (Reserves fully depleted)	
2043	0	
2044	0	
2045	0	
2046	0	
2047 end of plan period +10	0	

7.25 Given the anticipated extended Plan length (until end 2037 plus 10 years) there are compelling grounds for identification of further hard rock resources. The review of the Mineral Site Plan (anticipated in 2025) should include allocations for hard (crushed) rock to enable a steady and adequate supply of hard (crushed) rock over the anticipated extended KMWL Plan period. This would enable the County Council to ensure landwon hard crushed rock is in sufficient supply to meet objectively assessed needs into the future.

Productive Capacity

7.26 The monitoring survey undertaken in 2022 (AM2021 to gather 2021 data) included productive capacity of aggregate supply facilities. The understanding of capability of sites, through capacity, is a tool to be used to assist planning for future changes in demand. The latest reported productive capacities are shown in Table 16 below.

Table 16: Total Sales and Estimated Production Capacity 2021 (million tonnes per annum)

For year 2021	Sales (mt)	Productive Capacity (mtpa)	% Sales/ Production Capacity (reported)
Landwon Aggregate			
• *Soft Sands*	0.594	1.045mtpa	57%
• *Sharp Sands and Gravels*	0.202	0.75mtpa	27%
• *Crushed Rock*	0.815	2.0mtpa	41%
Wharves	3.414	5.6mtpa	61%
Rail Depots	0.466	6.34mtpa	7%
Recycling/Secondary	0.992	4.0mtpa (the reported 1.88mtpa of AM2021 is considered unrepresentative)	25%

Source: Aggregate Monitoring Survey, 2021 and previous wharf capacity work (2010) undertaken to support the adopted Plan

7.27 It is recognised that capacity information will become increasingly important in future years, particularly in relation to wharves and rail depots. The 2017 study[13] by the Mineral Products Association into future aggregate requirements suggests that nationally there could be a decrease in the demand for landwon aggregates over time. However, as the landwon resource depletes (as is currently occurring for sharp sand and gravels within Kent) and is substituted significantly by marine-won aggregates, productive capacity of importation facilities both individually and in total, will be increasingly important indicators of the resilience of supply, analogous to landbanks within the landwon sector. Kent still has significant unused capacity in its wharfage, as it is operating at approximately

[13] Long-term aggregates demand & supply scenarios 2016-30, Mineral Products Association (2017)

60% capacity at the end of 2021 (leaving 40% headroom). However, loss of any wharf site will be, largely, irreplaceable and so others will need to increase their throughputs. Ignoring this issue as an unimportant matter neglects the consideration of the difficulties in operating facilities at a higher level of throughputs in a consistent manner. Difficulties such as shipping availability, navigation maintenance, facility repair and renewal considerations all could combine to exert stress on a wharf importation system trying to operate at a higher rate. Safeguarding of the existing wharf infrastructure will therefore remain a central requirement to maintain supply as the landwon sand and gravel sector eventually becomes irrelevant.

7.28 Although rail importation has even more potential to increase throughput, with some 93% of available capacity being apparently unused, rail connectivity remains, like wharf location, somewhat fixed. Though their full potential is underutilised they are in Kent's hinterland and play a role in providing importation, particularly hard rock, away from the coastal locations. Therefore, rail depots in Kent should continue to be safeguarded, such that their operational capacity can ramped up as necessary to compensate for declining landwon supplies and allowing for importation to occur in Kent's hinterland.

7.28 The secondary and recycled aggregates are showing another decrease in sales, and there is significant capacity to be further utilised if sufficient market demand ramps up production in this sector.

7.29 Landwon soft sand extraction capacity remains below its full productive potential by 43%, this shows that the sector, can still increase supply if this important mineral resource is required to respond to any uplift in future demand. Though, how far this will need to realised, given a potential slowdown in the economy and lower housing growth projections to 2040, is a matter of conjecture at this time. Further monitoring will establish how this aggregate supply responds to demand.

7.30 Landwon hard crushed rock extraction has returned to its below stated productive capacity levels. This will enable the landwon hard rock sector to again increase throughputs if demand were to rise to exceptional levels seen in 2019-20. The reserve levels are now becoming more attenuated and maintaining a steady and adequate level of supply is less to do with productive capacity than it is related to availability of reserves.

8.0 Overall Conclusions of the Local Aggregate Assessment

8.1 This LAA is based upon data for 2021. It highlights that Kent is producing slightly more aggregate overall in 2021, at 6.47mt, than 2020 (5.32mt). This increase indicates the sector continued to recover from the low recorded in 2019 (3.61mt).

8.2 The landwon sharp sands and gravels continue to decline as a share of overall supply, and the importance of importation, primarily via wharves, appears now set to be the pattern for future supply of this type of material, as marine dredged sands and gravels are largely (if not exactly in particulate size distribution) like landwon deposits. As they are part of an active and dynamic sedimentary basin, rather than as laid down fixed deposits at the end of the last (Pleistocene epoch) glaciation.

8.3 The landwon soft sands have remaining capacity headroom and the reserves have contracted on revaluation. Thus, if sales again increase to be substantially above the 0.50mtpa the sector can respond, though there is a predicted shortfall over the anticipated extended KMWLP Plan period (to 2038). However, this is at the end of this plan period. This together with the anticipated economic slowdown seen in low GDP growth at present, and lower than previously forecast housing projections, may act to depress demand. Therefore, further monitoring of the soft sand supply sector will demonstrate if any further allocations will be required by the time the existing provision for soft sand in the Kent Minerals Sites Plan (adopted in 2020) will have to be formally reviewed in 2025. At present there is no compelling requirement to conduct an early partially review of the Mineral Sites Plan for further soft sand allocations.

8.4 Landwon hard (crushed rock) has undergone a marked change from the position reported in previous LAAs. The landbank has significantly reduced to 16.10mt. The rate of extraction in 2019 and into 2020 that had significantly increased, has fallen back to more historically recognisable levels of 0.80+mtpa. However, it is clear now that there are insufficient reserves for the remaining KMWLP period or indeed the anticipated extended Plan period. Further resources are required as allocations in a revised Mineral Sites Plan in order to maintain a steady and adequate supply of hard crushed landwon aggregate in accordance with NPPF requirements to 2037/8.

8.5 The recycled and secondary aggregates that demonstrated a marked fall in sales in 2019 and had recovered by 2020 are now almost 1.0mtpa as of 2021. Indicating the growing importance of the sector, that is considered ‘under reported’ in aggregate

monitoring. Productive capacity is thought also to be relatively poorly reported and is probably in the 4+ mtpa range. Any significant increase of supply from this sector, however, is also contingent in a commensurate increase in suitable materials arising from the C, D & E waste stream. This is by no means a certainty and is related to matters of the UK's economy rather than a known resource as is the case for primary aggregate provision. Therefore, it may be that the around 1.0mtpa level of sales (as reported though this is considered an under estimation as a result of poor survey participation) is what will be generally available, and increases may be marginal. Also, it is also possible that this level of provision may decline through time as construction technology changes and the availability of suitable aggregate forming material declines. The continuing monitoring of this sector will demonstrate what is occurring in this sector of overall aggregate provision.

8.6 The importance of safeguarding wharves (significantly for marine dredged sand and gravel supply that is supplanting landwon resources) and rail depots (particularly for hard rock but apparently far less important for sand and gravel supply) as they remain an important element in maintaining overall supply into the future. This is particularly the case with the landwon sharp sands and gravels that have now, to all intents and purposes, have become of minor importance in overall supply terms in Kent into the future, marine dredged imports via Kent's wharves now being of far greater importance for this aggregate type. Future security of supply of this aggregate will increasingly be via imports, of which, wharfage remains the dominant importation mode. The rail depots are also of importance as they have significant underused capacity and would supply Kent's interior demand more efficiently but are fewer in number and the overall capacity is lower than that of the wharves along Kent's coast, that has a significant clustering in the lower reaches of the river Thames .

Appendix 3: Port of London Authority Maps

Get Directions

Clubb's Marine Terminal

Berths
2 including:

New transhipment berth available for delivery of all grades of finished aggregates in barges and coasters with loading capacity of 600 tonnes per hour shore to ship automatic conveyor. Ideal for delivery of aggregates to London wharves or coastal locations and major city projects. The sustainable alternative to road deliveries by HGV.

Length
100 metres.

Depth of Water
11.41 metres MHWS (5.1 metres at Chart Datum).

Cargo Accommodation
Bulk storage of aggregates - 30,000 tonnes.

Access
A2 / M2 / M25.

HM Revenue & Customs Sufferance
Limited Approval.

Specialisation
Sea-Dredged Aggregates.
Self-discharge vessels only - ship to shore conveyor.

(01322) 225431
(01322) 289932
sales@jclubb.co.uk
http://www.jclubb.co.uk

Chadwell St Mary
Grays
Grays Town Park
The Bull Thurrock
The Gateway Academy
Gravesend
Asda Tilbury Superstore
Grays Beach Riverside Park
Amazon LCY2
Tilbury
Tilbury Sewage Treatment Works
Hyundai
Tilbury Fort
East Tilbury
Coalhouse Fo
River Thames
Lidl Northfleet Regional Distribution...
Asda Gravesend Superstore
Gravesend Promenade
Northfleet
Gravesend
MILTON
Metropolitan Police Specialist Training...
Milton Rifle Range
Siri Guru Nanak Darbar Gurdwara
Gravesend Grammar School
Mayfield Grammar School
Kent Police
North Kent College Gravesend
SPRINGHEAD
PERRY STREET
Woodlands Park
Shornem

Johnson's Wharf

Berths - 2 Dolphins
1 - Dedicated to own dredgers.

Depth of Water
11.16 metres MHWS (4.6 metres at Chart Datum).

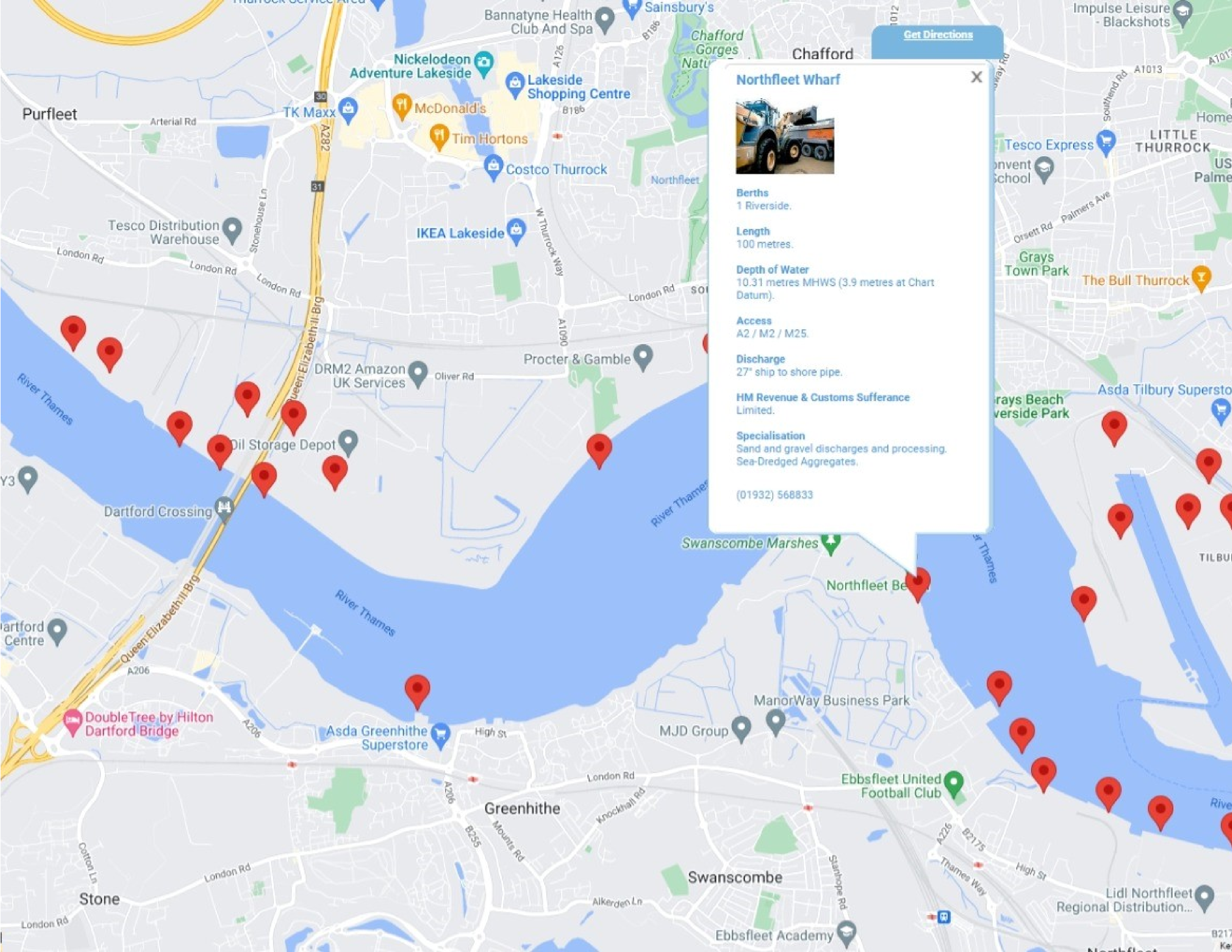
Cargo Accommodation
Marine Aggregates only.

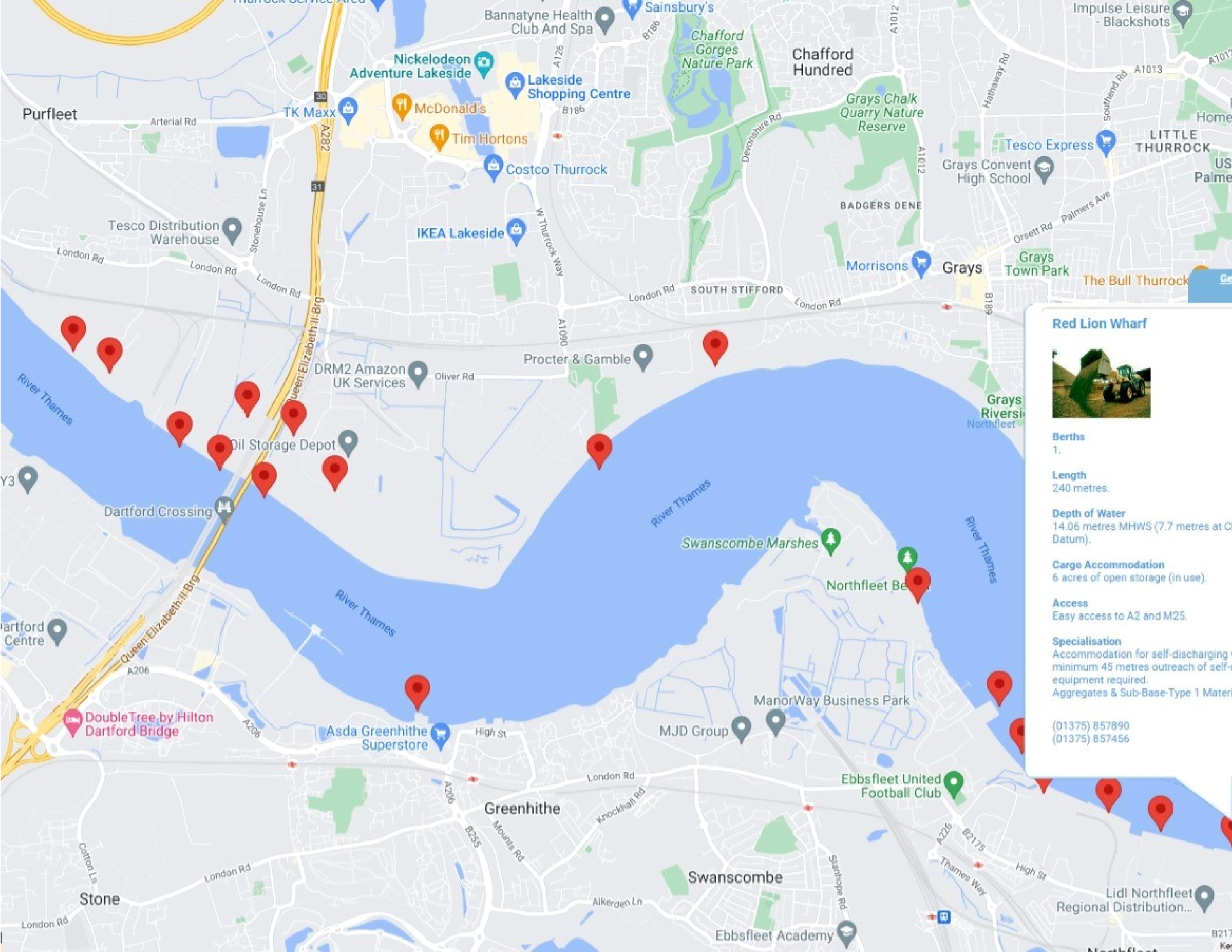
Access
Connection to national road system A2 / M2 / M25.

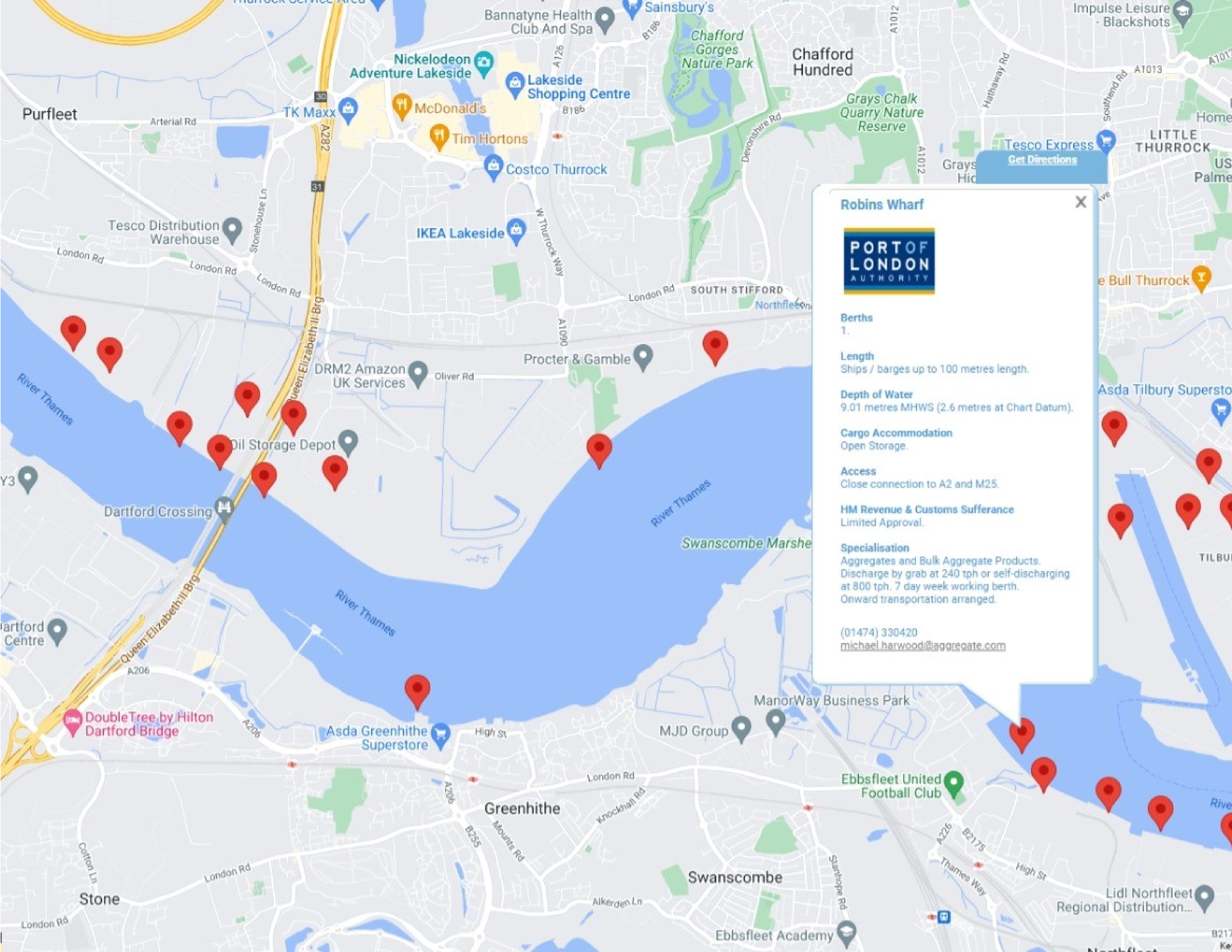
HM Revenue & Customs Sufferance
Limited Approval.

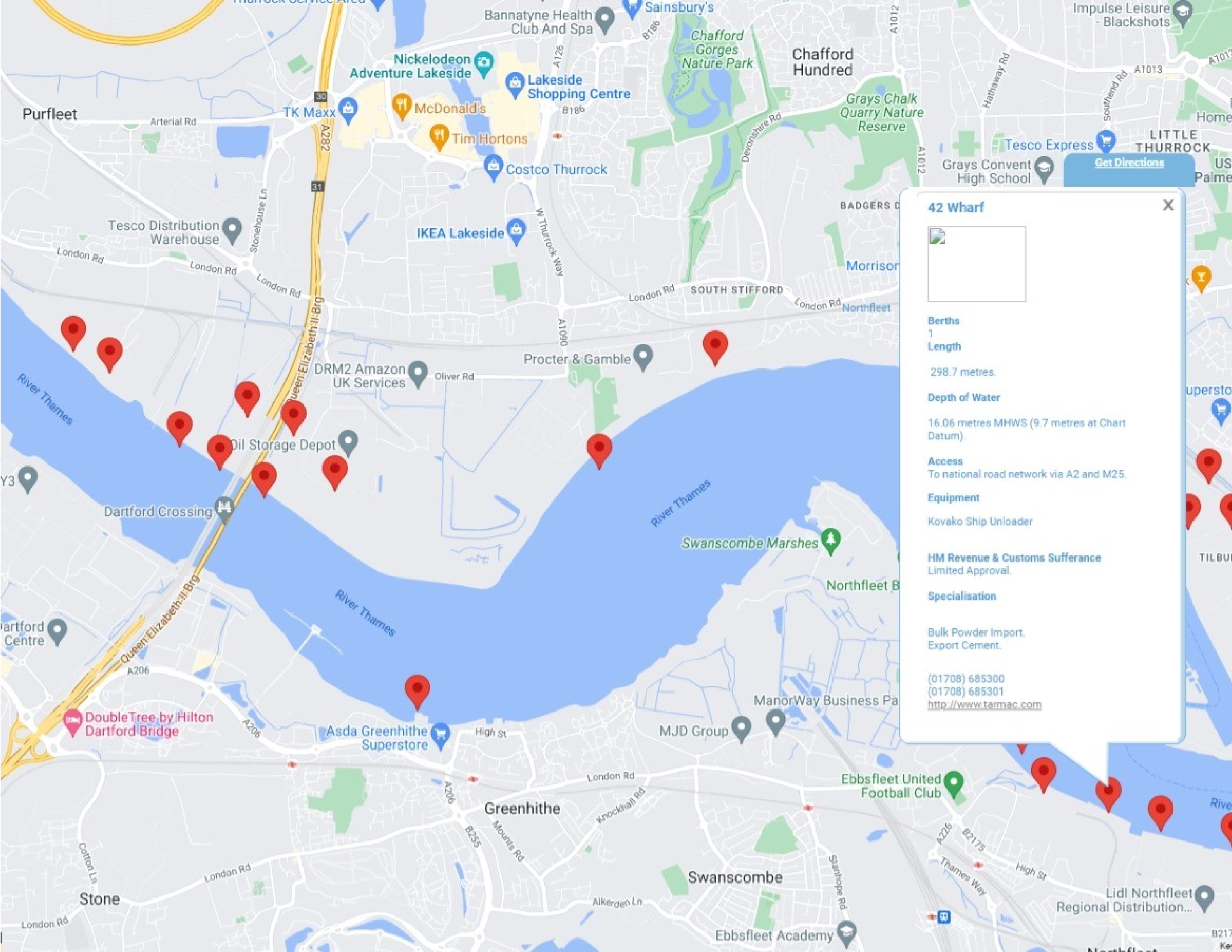
Specialisation
Marine Aggregates dredging and processing. 2 Receiving hoppers and 2,000 t.p.h. discharge conveyors for self-discharging vessels.

(01322) 386561
(01322) 381189
http://www.hanson.co.uk


Get Directions
Northfleet Wharf
Berths
1 Riverside.
Length
100 metres.
Depth of Water
10.31 metres MHWS (3.9 metres at Chart Datum).
Access
A2 / M2 / M25.
Discharge
27" ship to shore pipe.
HM Revenue & Customs Sufferance
Limited.
Specialisation
Sand and gravel discharges and processing.
Sea-Dredged Aggregates.
(01932) 568833
Purfleet
Chafford
Bannatyne Health Club And Spa
Sainsbury's
Impulse Leisure - Blackshots
Nickelodeon Adventure Lakeside
Lakeside Shopping Centre
TK Maxx
McDonald's
Tim Hortons
Costco Thurrock
IKEA Lakeside
Tesco Distribution Warehouse
Tesco Express
LITTLE THURROCK
Grays Town Park
The Bull Thurrock
Procter & Gamble
DRM2 Amazon UK Services
Oil Storage Depot
Dartford Crossing
River Thames
Swanscombe Marshes
Asda Tilbury Superstore
DoubleTree by Hilton Dartford Bridge
Asda Greenhithe Superstore
ManorWay Business Park
MJD Group
Ebbsfleet United Football Club
Greenhithe
Swanscombe
Stone
Ebbsfleet Academy
Lidl Northfleet Regional Distribution...

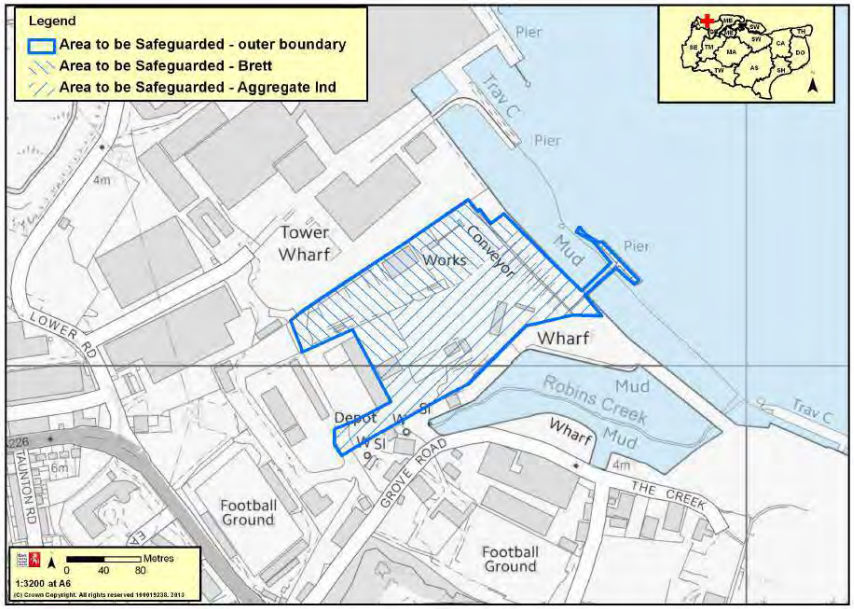

Purfleet
Bannatyne Health Club And Spa
Sainsbury's
Chafford Gorges Nature Park
Chafford Hundred
Impulse Leisure - Blackshots
Nickelodeon Adventure Lakeside
Lakeside Shopping Centre
TK Maxx
McDonald's
Tim Hortons
Costco Thurrock
Grays Chalk Quarry Nature Reserve
Tesco Express
LITTLE THURROCK
Grays Convent High School
BADGERS DENE
Tesco Distribution Warehouse
IKEA Lakeside
Morrisons
Grays
Grays Town Park
The Bull Thurrock
SOUTH STIFFORD
London Rd
Procter & Gamble
DRM2 Amazon UK Services
Oliver Rd
Oil Storage Depot
River Thames
Dartford Crossing
Queen Elizabeth II Brg
Swanscombe Marshes
Northfleet
Asda Greenhithe Superstore
High St
MJD Group
ManorWay Business Park
Ebbsfleet United Football Club
DoubleTree by Hilton Dartford Bridge
Greenhithe
Swanscombe
Stone
Ebbsfleet Academy
Lidl Northfleet Regional Distribution...
Red Lion Wharf
Berths
1.
Length
240 metres.
Depth of Water
14.06 metres MHWS (7.7 metres at C
Datum).
Cargo Accommodation
6 acres of open storage (in use).
Access
Easy access to A2 and M25.
Specialisation
Accommodation for self-discharging
minimum 45 metres outreach of self-
equipment required.
Aggregates & Sub-Base-Type 1 Materi
(01375) 857890
(01375) 857456


Robins Wharf
PORT OF LONDON AUTHORITY
Berths
1.
Length
Ships / barges up to 100 metres length.
Depth of Water
9.01 metres MHWS (2.6 metres at Chart Datum).
Cargo Accommodation
Open Storage.
Access
Close connection to A2 and M25.
HM Revenue & Customs Sufferance
Limited Approval.
Specialisation
Aggregates and Bulk Aggregate Products.
Discharge by grab at 240 tph or self-discharging at 800 tph. 7 day week working berth.
Onward transportation arranged.
(01474) 330420
michael.harwood@aggregate.com
Get Directions
Purfleet
Bannatyne Health Club And Spa
Sainsbury's
Chafford Gorges Nature Park
Chafford Hundred
Impulse Leisure - Blackshots
Nickelodeon Adventure Lakeside
Lakeside Shopping Centre
TK Maxx
McDonald's
Tim Hortons
Costco Thurrock
Grays Chalk Quarry Nature Reserve
Tesco Express
LITTLE THURROCK
Tesco Distribution Warehouse
IKEA Lakeside
SOUTH STIFFORD
Procter & Gamble
DRM2 Amazon UK Services
Oil Storage Depot
Dartford Crossing
River Thames
Swanscombe Marshes
Asda Tilbury Superstore
Dartford Centre
DoubleTree by Hilton Dartford Bridge
Asda Greenhithe Superstore
ManorWay Business Park
MJD Group
Ebbsfleet United Football Club
Greenhithe
Swanscombe
Stone
Ebbsfleet Academy
Lidl Northfleet Regional Distribution...
Queen Elizabeth II Brg
London Rd
Arterial Rd
High St
Oliver Rd

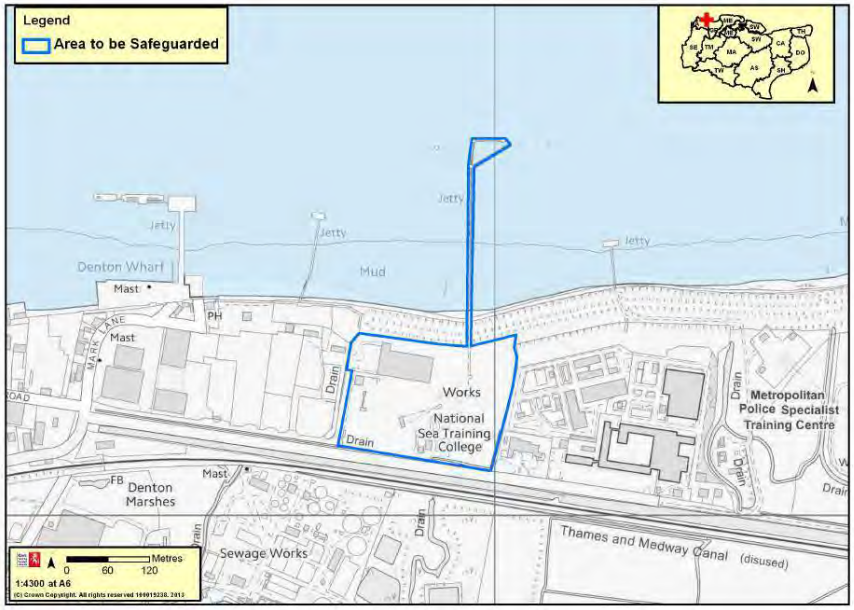

42 Wharf
Berths
1
Length
298.7 metres.
Depth of Water
16.06 metres MHWS (9.7 metres at Chart Datum).
Access
To national road network via A2 and M25.
Equipment
Kovako Ship Unloader
HM Revenue & Customs Sufferance
Limited Approval.
Specialisation
Bulk Powder Import.
Export Cement.
(01708) 685300
(01708) 685301
http://www.tarmac.com
Get Directions
Purfleet
Chafford Hundred
Chafford Gorges Nature Park
Grays Chalk Quarry Nature Reserve
Lakeside Shopping Centre
Nickelodeon Adventure Lakeside
IKEA Lakeside
Costco Thurrock
Tesco Distribution Warehouse
DRM2 Amazon UK Services
Procter & Gamble
Oil Storage Depot
Dartford Crossing
River Thames
Swanscombe Marshes
SOUTH STIFFORD
LITTLE THURROCK
Greenhithe
Swanscombe
Stone
Asda Greenhithe Superstore
DoubleTree by Hilton Dartford Bridge
Ebbsfleet United Football Club
Ebbsfleet Academy
MJD Group
ManorWay Business Pa
Lidl Northfleet Regional Distribution...
Grays Convent High School
Tesco Express
Queen Elizabeth II Brg

DRAWINGS

Site G: Robins Wharf, Northfleet



Site H: Clubbs Marine Terminal



DO NOT SCALE FROM THIS DRAWING

Site boundary
(19,0 Ha)

Structures to be demolished
(4.02 Ha)

Robins Wharf and Associated Mineral Infrastructure - Approximate Area

Lower Rd

Northfleet Industrial Estate

Galley Hill Rd

A226

Stonebridge Rd

Grove Rd

B2175

A226

REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D

CLIENT

FOMTERV

PROJECT

NORTHFLEET PARAMETER PLAN
NORTHFLEET, LONDON

DRAWING TITLE

DEMOLITION PLAN

DRG No.		REV	SUIT. CODE
ST19719-001			
DRG SIZE	SCALE	DATE	
A1	1:1500	28/09/2022	
DRAWN BY	CHECKED BY	APPROVED BY	
GP	SW	SW	

wardell armstrong

N:\ST\ST19719 - NORTHFLEET MRA\03 - DESIGN\AUTOCAD\ST19719-001 - NORTHFLEET MRA_NPA-UNS-MAST-DR-1002_PLUS-PDF_GP_28-09-2022.DWG

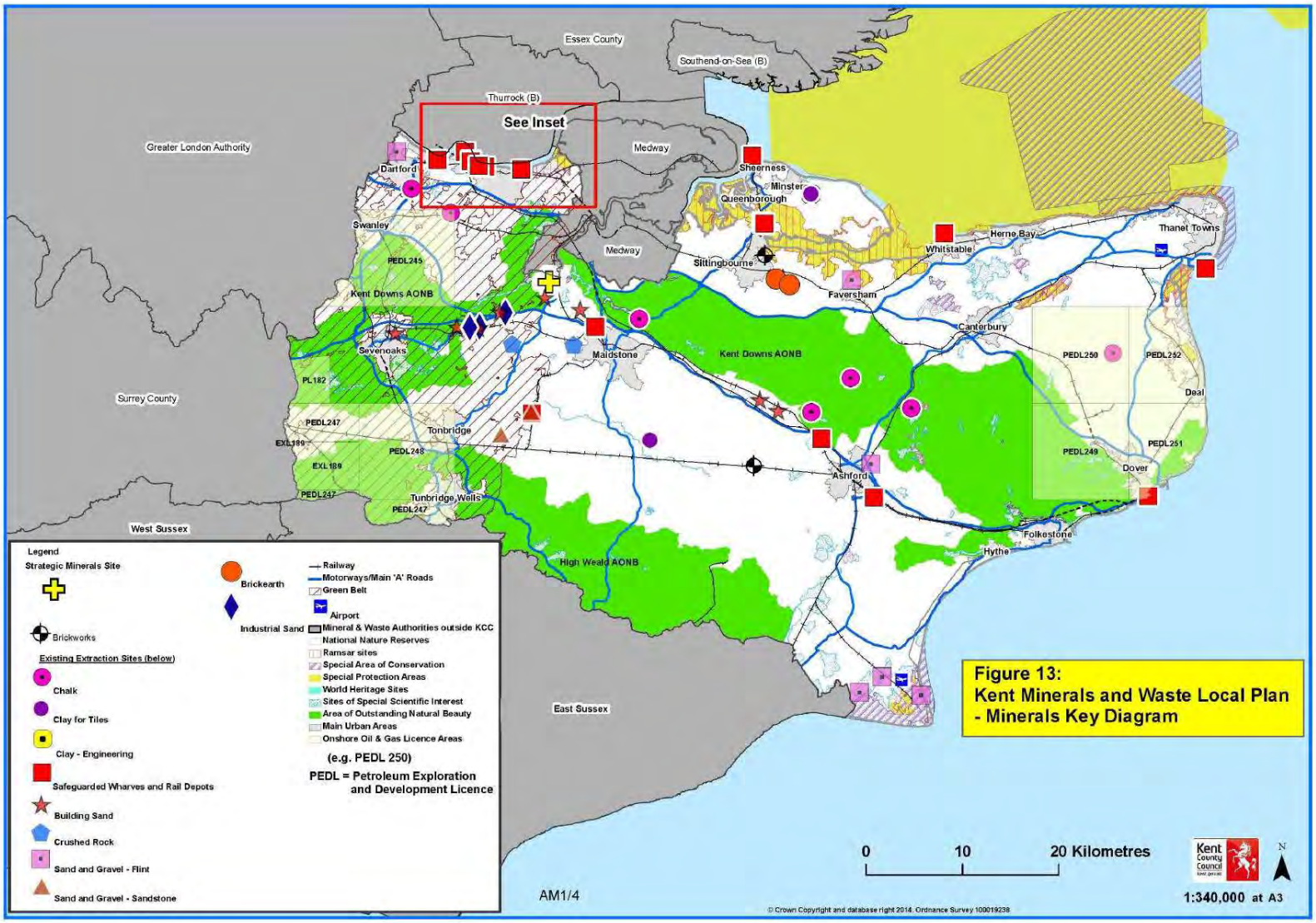


Figure 13:
Kent Minerals and Waste Local Plan - Minerals Key Diagram

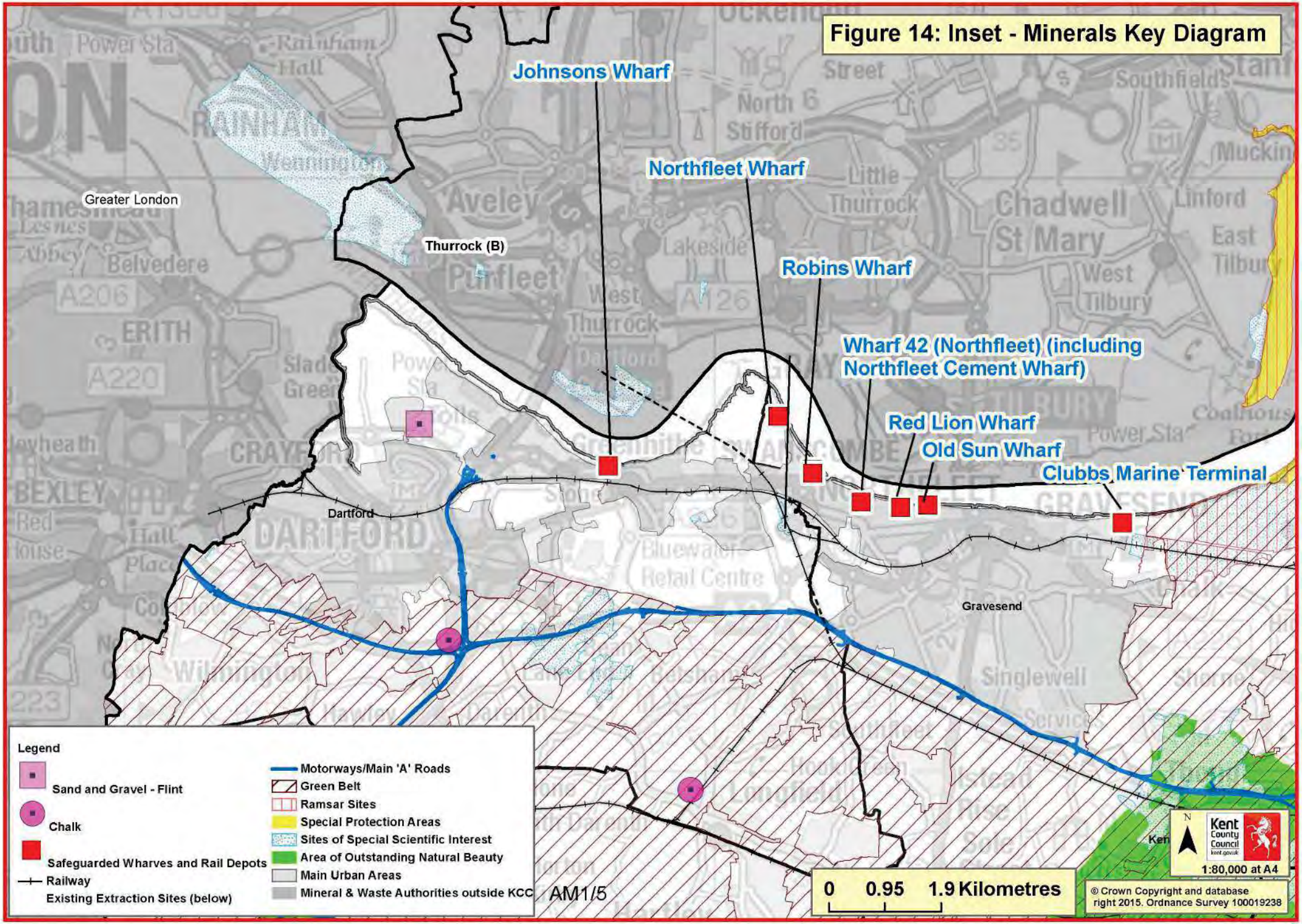


Figure 14: Inset - Minerals Key Diagram
Johnsons Wharf
Northfleet Wharf
Robins Wharf
Wharf 42 (Northfleet) (including Northfleet Cement Wharf)
Red Lion Wharf
Old Sun Wharf
Clubbs Marine Terminal
Greater London
Thurrock (B)
Dartford
Gravesend
Legend
Sand and Gravel - Flint
Chalk
Safeguarded Wharves and Rail Depots
Railway
Existing Extraction Sites (below)
Motorways/Main 'A' Roads
Green Belt
Ramsar Sites
Special Protection Areas
Sites of Special Scientific Interest
Area of Outstanding Natural Beauty
Main Urban Areas
Mineral & Waste Authorities outside KCC
AM1/5
0 0.95 1.9 Kilometres
1:80,000 at A4
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STOKE-ON-TRENT
Sir Henry Doulton House
Forge Lane
Etruria
Stoke-on-Trent
ST1 5BD
Tel: +44 (0)1782 276 700

BIRMINGHAM
Two Devon Way
Longbridge Technology Park
Longbridge
Birmingham
B31 2TS
Tel: +44 (0)121 580 0909

BOLTON
41-50 Futura Park
Aspinall Way
Middlebrook
Bolton
BL6 6SU
Tel: +44 (0)1204 227 227

BRISTOL
Temple Studios
Temple Gate
Redcliffe
Bristol
BS1 6QA
Tel: +44 (0)117 203 4477

BURY ST EDMUNDS
Armstrong House
Lamdin Road
Bury St Edmunds
Suffolk
IP32 6NU
Tel: +44 (0)1284 765 210

CARDIFF
Tudor House
16 Cathedral Road
Cardiff
CF11 9LJ
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Burgh Road Industrial Estate
Carlisle
Cumbria
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14 Links Place
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Tel: +44 (0)131 555 3311

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24 St Vincent Place
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Tel: +44 (0)141 428 4499

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Leeds
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London
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NEWCASTLE UPON TYNE
City Quadrant
11 Waterloo Square
Newcastle upon Tyne
NE1 4DP
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TRURO
Baldhu House
Wheal Jane Earth Science Park
Baldhu
Truro
TR3 6EH
Tel: +44 (0)187 256 0738

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ALMATY
29/6 Satpaev Avenue
Hyatt Regency Hotel
Office Tower
Almaty
Kazakhstan
050040
Tel: +7(727) 334 1310

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