Executive Summary

The Medway Local Aggregates Assessment is an annual report that monitors the supply and demand for aggregate in Medway. This is the eleventh Local Aggregate Assessment (LAA) produced for Medway, in line with the requirements set out in the National Planning Policy Framework (NPPF) and in accordance with the Planning Practice Guidance (PPG). This LAA is based on data reported for the 2022 calendar year.

Aggregate is essential to the functioning of society. Aggregate is used in the construction of buildings and infrastructure such as housing, roads, railways and flood defences. Monitoring the demand for, and supply of, aggregate is essential to ensuring that a 'steady and adequate supply' is maintained to meet current and future needs.

In preparing this LAA, the council has considered a range of data sources in compiling information on the demand for aggregates and supply options available; with the annual aggregate monitoring produced by the South East England Aggregates Working Party (SEEAWP) based on a survey of local operators being a key source of data. Due to the size of Medway and the limited number of minerals sites and wharves, there are some areas where it is not possible to publish sales data due to commercial confidentiality.

This report also takes account of the latest four yearly national Aggregate Monitoring Survey that took place in 2020 and surveyed aggregate sales in 2019.

A draft version of this LAA was circulated to the South East England Aggregates Working Party, Minerals Planning Authorities throughout the South East and neighbouring areas, industry representatives and other key stakeholders for comments.

Land-won Aggregate

Sharp sand and gravel is the only land-won aggregate actively being extracted in Medway. There are currently two permitted quarries for the extraction of sand and gravel in Medway, one inactive and the other commencing extraction in 2017, becoming fully operational in 2018.

Current permitted reserves of sand and gravel have decreased to 372,300 tonnes, but reduced sales have resulted in a slightly increased landbank of 5.1 years (based on an Aggregate Provision Rate equivalent to the 3-year average sales value). It is important to note that while the landbank calculation takes account of the reserves at the inactive site, the likelihood of these being worked is now uncertain due to a proposed development (granted outline planning permission in 2021) that could result in their sterilisation.

The emerging replacement Medway Local Plan will likely include Areas of Search for the extraction of land won sharp sand and gravel.

Recycled and Secondary Aggregate

Four sites produced recycled aggregate in 2022. A longstanding aggregate producer reported sales of recycled aggregate from its site for the first time in 2022 however it

appears that this may have been a one off event. A fifth site was granted permission in 2018 and was expected to start operations in 2022, however the site is still not operational. Returns from recycled aggregate producers and data obtained from the Environment Agency Waste Data Interrogator suggests around 20,000 tonnes of recycled aggregate was produced in 2022. A Waste Needs Assessment prepared in 2020 to support the emerging Medway Local Plan suggested that at that time the permitted capacity for recycled aggregates production in Medway was around 135,000tpa.

Marine-won sand and gravel

Medway's wharves continue to demonstrate their regional importance, reporting 1.893 Mt of marine-won sand and gravel sales in 2022, a slight increase on sales in 2021.

No sales of marine-won soft sand were reported in 2022 which has been the case since 2019.

Imported Crushed Rock

Imports of crushed rock to wharves increased to 1.414Mt, continuing at a level above the 10 year average and increasing to above the 3 year average.

Total annual sales of aggregates from wharves in 2022 (3.308Mt) exceeded that achieved in any one of the last fourteen years.

Demand

The council has analysed a range of sources to project any trends that may be emerging that would influence demand for aggregate. The population of Medway is projected to increase significantly. Medway experienced its highest rates of housing delivery in 2019/20, 2020/21 and 2021/22, at 1,130, 1,082 and 1,102 new homes, respectively. Housing delivery at this high level is expected to continue in the short to medium term. Nationally, house building is not expected to increase significantly beyond current levels in 2022 and 2023. A number of significantly large regional infrastructure projects are also expected to increase demand though recently announced delays to certain projects will mean the demand will not materialise as soon as expected. The UK economy is currently flatlining with little prospects for significant growth in the short term, in addition some major infrastructure projects have been delayed or cancelled which may mean there is unlikely to be any significant growth in the demand for aggregates at least in the short term.

Conclusion

Medway plays a strategic role in regional aggregates supply through the wharves located on the River Medway and the Thames estuary.

Land won reserves of sand and gravel are rapidly depleting, however this is more than compensated for by increased levels of imports at Medway's wharves.

The council will plan positively for the steady and adequate supply of aggregate through the emerging Local Plan in order meet the needs of the local and regional markets.

Summary – Medway Council (for the calendar year 2022)

Quarry Sales	2022 Sales (Mt) & Trend[1]	Average (10-yr) Sales & Trend[1]	Average (3-yr) Sales & Trend[1]	APR (Mt)[2]	Reserve (Mt)	Landbank (years)	Allocations (years)	Capacity (Mtpa)	Comments[3]
Soft Sand									No known reserves
Sharp Sand & Gravel	c	52,665 ⇧	72,587 ⇩	0.072 ⇩	0.372 ⇩	5.2 ⇧	n/a	>0.200	Two quarries, one inactive. APR taken as 3 year average in light of sales pattern. Reserves at inactive quarry may be sterilised in future.
All Sand & Gravel[4]	c	52,665 ⇧	72,587 ⇩	0.072 ⇩	0.372 ⇩	5.2 ⇧	n/a	>0.200	See above
Crushed Rock									No known reserves

Aggregate Infrastructure Sales	2022 Sales (Mt) & Trend[1]	Average (10-yr) Sales & Trend[1]	Average (3-yr) Sales & Trend[1]	APR[2] (Mt)	Reserve (Mt)	Landbank (years)	Allocations (years)	Capacity (Mtpa)	Comments[3]
Recycled / Secondary Aggregates	c	31,309 ⇩	8,053 ⇧	n/a				0.135	Established primary aggregate producer reported sales of RA for the first time.. Recycled aggregate also produced at demolition sites. Closed Kingsnorth Power has a stock of approx. 1.4mt m^3 coal derived fly ash
Marine Sand & Gravel	1.893 ⇧	1.616 ⇧	1.826 ⇧	n/a				4.3	Established importation and distribution facilities with potential for growth. The capacity is combined total for all wharves across all aggregate types
Rock Imports by Sea	1.415 ⇧	1.150 ⇧	1.355 ⇧	n/a				4.3	Established importation and distribution facilities with potential for growth. The capacity is combined total for all wharves across all aggregate types
Rail Depot Sales (Sand & Gravel)	c	n/a	n/a	n/a				0.56	Established aggregates rail depot linked to wharf used to export aggregate. Sand and gravel is not imported by rail
Rail Depot Sales (Crushed Rock)	c	n/a	0.000	n/a				0.100	Established aggregates rail depots linked to wharf used to export aggregate. Crushed Rock is not imported by rail

General Comments[6]

The supply of aggregates in Medway is currently sufficient, with the existing importation facilities providing a high percentage of aggregates for the wider London and South East area. Total annual sales of aggregates from wharves in 2022 (3.308Mt) exceeded that achieved in any one of the last fourteen years. A Waste Needs Assessment carried out in 2020 suggests there is 135ktpa recycled aggregate production capacity in Medway. Extraction of sand and gravel from the quarry at Kingsnorth has continued, though remaining reserves are limited. The relatively small reserve at the other permitted sand and gravel quarry may be sterilised by impending non mineral development. The Local Plan allows for additional reserves but no interest has been shown by industry for some time. The emerging Local Plan seeks to safeguard resources and infrastructure and identify Areas of Search for sand and gravel extraction.

In common with much of the South East, there is high demand for housing in Medway and there have been relatively high rates of delivery in recent years.

Other major construction projects proposed in the wider South East region which may place demands on aggregate supplied from Medway include Ebbsfleet Garden City, Lower Thames Crossing, Thames Tideway Tunnel, Crossrail 2, HS2 and Silvertown Tunnel.

Notes:

1. **Trend –** indicates whether the average sales are (compared with the previous year's LAA average sales) increasing (upwards arrow), declining (downwards arrow) or no change (level arrow).
2. **APR = 'Aggregate Provision Rate'** – The APR is the level of sales used to estimate future requirements and is based on historic sales and other relevant local information. The term 'LAA Rate' has previously been used for the Aggregate Provision Rate.
3. **Comments** – Comments explain possible anomalies e.g. peculiarities about current sales, landbank limitations, important infrastructure changes, soft sand sales at wharves, origins of aggregate imports by sea/rail etc.
4. **All sand and gravel** – soft sand and sharp sand and gravel taken together.
5. **Shading** applied where aggregate supply source is not relevant.
6. **General Comments** – this provides the overall picture with reference to demand, factoring in export requirements and sustainability of supply – landbank, allocations, infrastructure capacity – to meet this. This includes whether an appropriate contribution is being made to what are understood to be the aggregate supply that is required of the area and an analysis of the adequacy of the current local plan and whether this should be reviewed.
7. **'c'** denotes where sales data is not published due to commercial confidentiality.

1. Introduction

1.1. Aggregate minerals such as soft sand, sand and gravel and crushed rock are used as construction materials, and therefore are intrinsic to the nation's development, maintaining infrastructure and supporting economic growth. Local Aggregate Assessments (LAA) play an important role in the coordination of planning for the supply of minerals to meet the country's needs.

1.2. As the Mineral Planning Authority for Medway, Medway Council is obliged to prepare an LAA for its area in line with requirements set out in the NPPF (2021) (Paragraph 213) and the PPG.

1.3. Paragraph 213 of the NPPF states Minerals Planning Authorities should prepare: *'an annual Local Aggregate Assessment, either individually or jointly, to forecast future demand, based on a rolling average of 10 years' sales data and other relevant local information, and an assessment of all supply options (including marine dredged, secondary and recycled sources)'.* The LAA then needs to be submitted to the regional Aggregate Working Party which prepares an annual report for the National Aggregate Coordinating Group. The national group should consider whether the totals provided by the area Aggregate Working Parties make appropriate provision to maintain a steady and adequate supply of aggregate. This process seeks to ensure the coordination of minerals planning at a strategic level.

1.4. This is the eleventh LAA produced for Medway. Much of the data used in the preparation of this LAA comes from the annual monitoring of aggregates sales in Medway undertaken by Medway Council on behalf of the South East England Aggregate Working Party (SEEAWP). The annual Aggregate Monitoring (AM) survey collects sales data from active aggregate extraction sites, minerals wharves, minerals rail depots and recycled and secondary aggregate processing sites. Returns for 2022 were received from all the main aggregate producers in Medway.

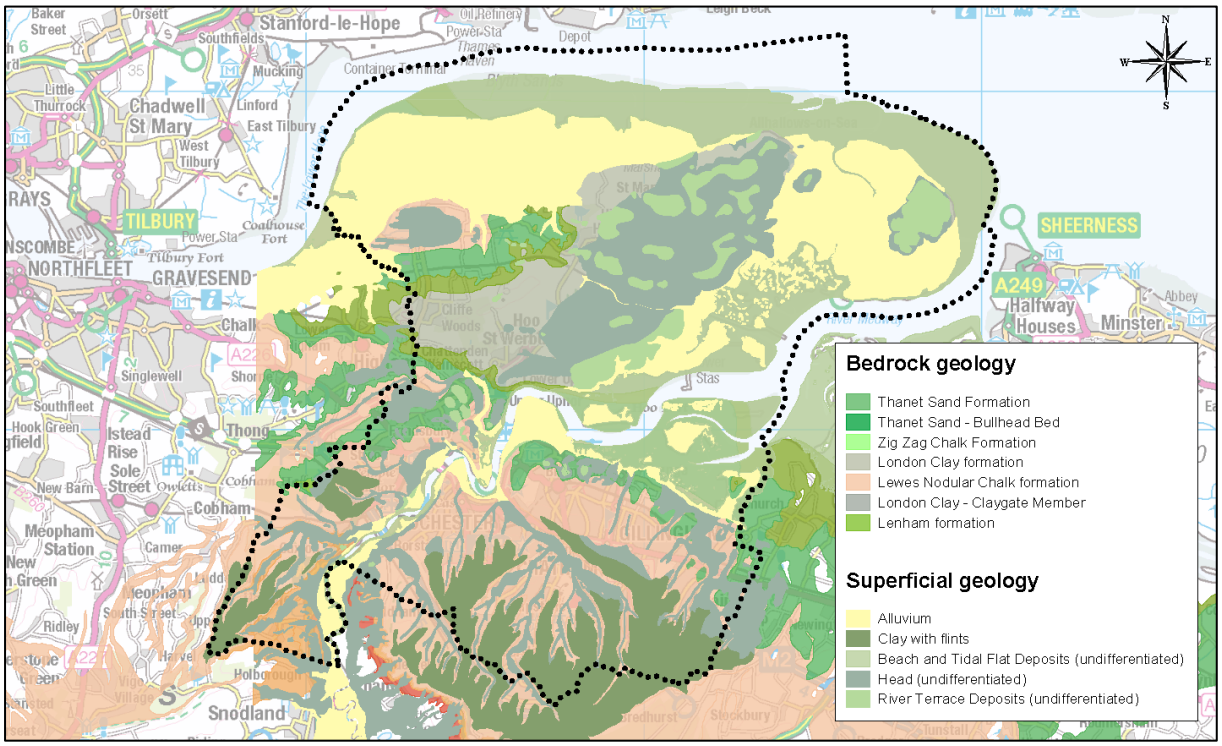
1.5. Due to the size of Medway, and the limited number of minerals sites, some sources of data are restricted and cannot be disaggregated to a Medway level due to agreements made with industry operators concerning commercial confidentiality. This is reflected in the data is presented in this report.

2. Land-won Aggregate

Geology of Medway

2.1. The sand and gravel deposits in the Medway area are primarily concentrated on the Hoo Peninsula as a result of post-glacial melt water outwash deposition found in a series of 'river terraces', trending roughly from north west to south east across the peninsula's ridge, and on the Isle of Grain. There are also more recent water-lain deposits covering areas of land on the eastern and north-western marshes of the peninsula that include some sand and gravel seams. The deposits have not been significantly reworked by natural processes since their deposition and have a sand to gravel ratio and particle characteristics that makes them generally attractive for high specification value added concrete production. An overview of Medway's geology is provided in Figure 1. Note that the sand and gravel deposits considered of economic interest are those shown as 'River Terrace Deposits (undifferentiated)'.

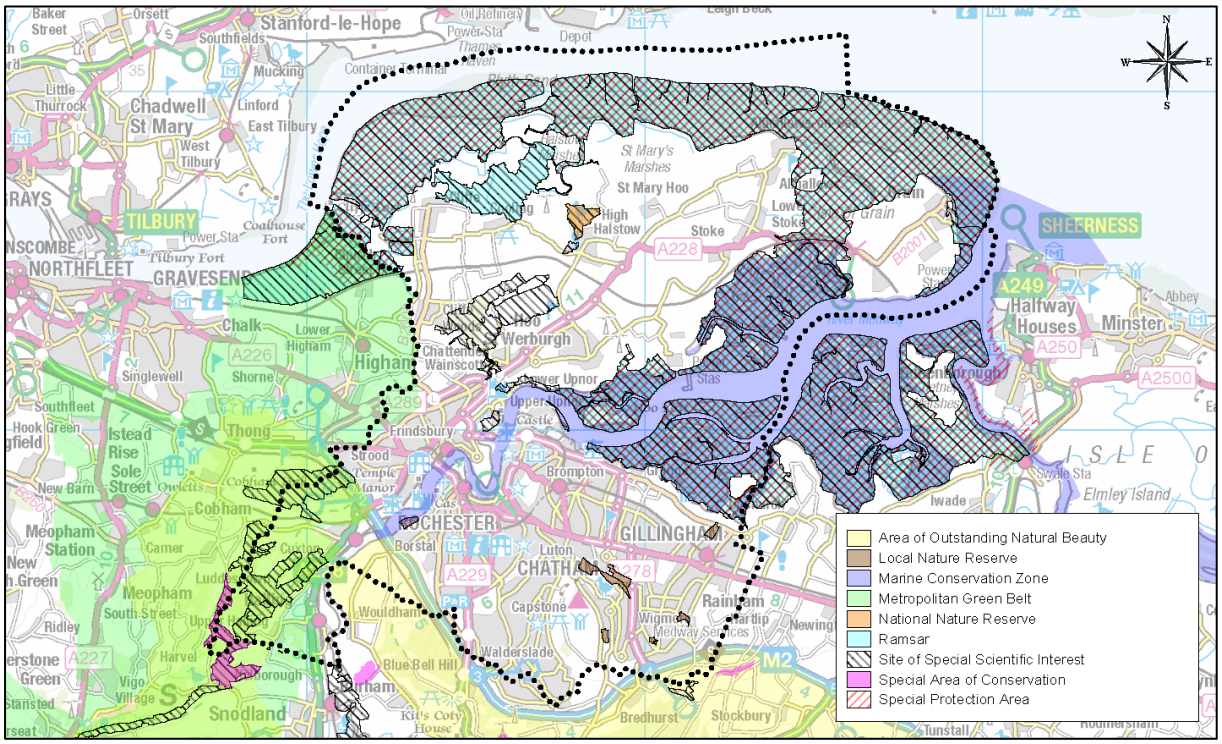
Figure 1: The Geology of Medway



Environmental and Landscape Designations

2.2. Medway covers an area of 26,886 hectares (including rivers and coastal areas), and within this area are several landscape and environmental designations that could constrain where minerals supply activities (including extraction) could take place. These designations include: Special Protection Areas; Ramsar sites; Special Areas of Conservation; Area of Outstanding Natural Beauty; Green Belt; Sites of Special Scientific Interest; Marine Conservation Zones; National Nature Reserves; Local Nature Reserves; and, Local Wildlife Sites. The extents of the environmental and landscape designations in Medway are provided in Figure 2.

Figure 2: Environmental and Landscape Designations in Medway



Extraction of Minerals

2.3. Within Medway's geology there are a range of minerals that have the potential to be economically viable for extraction. These deposits include sand and gravel, chalk, London clay and brick clay[1]. Extraction for these minerals has predominantly taken place around the river edge and across the Hoo Peninsula, but there have only been limited operations in recent years for the extraction of London clay and sand and gravel.

2.4. The present total remaining permitted reserve of sand and gravel for extraction in Medway is 0.372Mt. This is derived from Kingsnorth Quarry to the south east of the village of Hoo St Werburgh operated by Tarmac, and a small reserve at Perry's Farm in Grain, operated by J Clubb Ltd. The locations of the two permitted quarries are provided in Figure 3.

2.5. Kingsnorth Quarry is operated by Tarmac and includes a ready-mix concrete plant on site. Extraction commenced in 2017 and cumulatively 200,000 tonnes per annum of material can be removed from the site. It is currently the only operational quarry in Medway. It is anticipated that extraction at this site will be complete in the next few years.

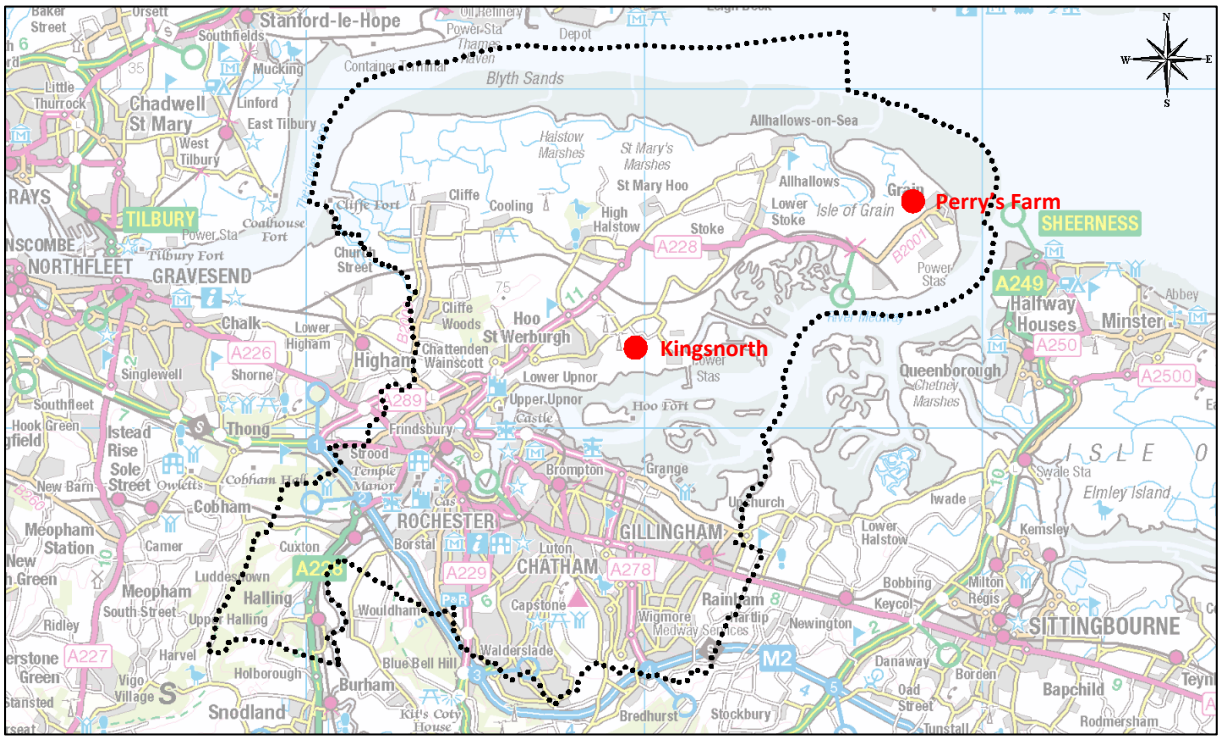
2.6. In 2021, outline planning permission was granted at Perry's Farm for development associated with an interconnector to create a link between the UK and German electricity networks. Unless prior extraction takes place, this

[1] London clay and brick clay are not aggregate minerals. Chalk may have uses as an aggregate but is generally not extracted for this purpose.

development will sterilise some, if not all of the mineral reserve associated with the quarry permission at the inactive Perry's Farm site.

2.7. Research to support mineral planning work in Medway has provided an indication of significant available resources in the area that could be exploited to help meet future demand.

Figure 3: Quarries in Medway



2.8. Due to the limited number of quarrying sites in Medway, it has not been possible to publish annual levels of sales of locally won sand and gravel. However, the council has been able to use data provided to the Aggregates Monitoring survey to produce a 3-year and 10-year average sales figure.

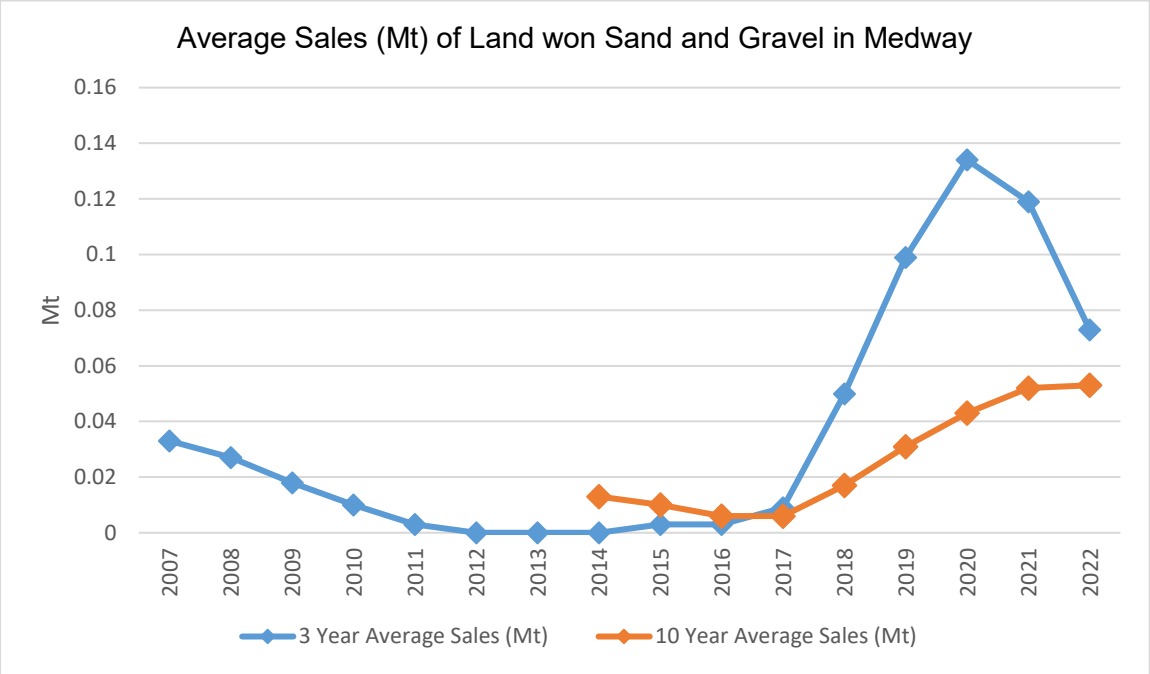
2.9. The current 10-year average sales for aggregates from quarries in Medway is 0.053 Mtpa and the 3-year average sales is 0.073Mtpa. The 3-year and 10-year average sales data for land-won aggregate since 2007 is presented in Table 1 and Figure 4.

Table 1: 3-year and 10-year average sales (Mt) for land-won aggregate in Medway

Year	3-year average sales (Mt)	10-year average sales (Mt)
2007	0.033	n/a
2008	0.027	n/a
2009	0.018	n/a
2010	0.010	n/a
2011	0.003	n/a

2012	0	n/a
2013	0	n/a
2014	0	0.013
2015	0.003	0.010
2016	0.003	0.006
2017	0.009	0.006
2018	0.050	0.017
2019	0.1	0.031
2020	0.134	0.043
2021	0.119	0.052
2022	0.073	0.053

Figure 4: Average Sales (Mt) of Land won Sand and Gravel in Medway



2.10. Table 1 and Figure 4 demonstrate how the 3-year average sales gradually decreased due to the decline in minerals extraction to 2014. More recent increases in the 3-year average sales to levels not seen for well over 10 years reflect the commencement of extraction at Kingsnorth Quarry in 2017. The last two years decrease in the 3 year average reflects a slow down in extraction from this site.

Landbank

2.11. Medway is required to maintain a 7-year land bank for sand and gravel. Permitted reserves are estimated to be 0.372 Mt. The current landbank, calculated using the 3-year average sales, is now 5.1 years. The landbank has increased since last year due to a decrease in the 3 year sales average. Using the 10-year average sales the landbank increases to 7 years. With the increased activity in extraction more recently, it is considered appropriate to use the 3-year average

sales to inform the Annual Provision Rate, as this better reflects the current supply and demand status of land-won aggregates in Medway.

2.12. Medway's geology means there are no soft sand or crushed rock resources and therefore, it is not possible to maintain separate landbanks for land-won crushed rock or soft sand.

2.13. Saved Policy CA6 in the Kent Minerals Local Plan Construction Aggregates (1993) identifies Areas of Search for the extraction of aggregate within which suitable sites for sharp sand and gravel extraction may be found. The emerging Local Plan for Medway is proposing several similar areas of search.

3. Recycled and Secondary Aggregates

3.1. Materials defined as recycled or secondary aggregates are derived from demolition and construction waste, industrial by-products such as power station ash, colliery spoil, and blast furnace slag and slate. These materials can be used as substitutes for aggregates, such as in concrete production, or as fill.

3.2. The use of recycled and secondary aggregates is critical to the sustainable management of primary mineral resources. In line with government policy to secure the valuable finite resources of materials required for development, Medway Council promotes the use of such alternatives in place of primary aggregates.

3.3. In 2022, recycled aggregate was reported as being produced from four sites in Medway. One of these is an established aggregates operator who reported sales of recycled aggregate from its site for the first time however it appears this may be a one off.. A fifth facility that was granted planning permission in 2018 is yet to start operating.

3.4. Operators of waste management facilities with an Environmental Permit are required to make returns of waste inputs and outputs from their sites to the Environment Agency. For some sites, the waste reported includes Construction and Demolition waste that is processed on site to produce recycled aggregate. The Environment Agency Waste Data Interrogator (WDI) is a database that reports all the waste returns and so can also be used to estimate the production of recycled aggregate. The WDI that includes 2022 data has recently been published. Returns made to the council as part of the AM survey suggest around 20,000 tonnes of recycled aggregate was produced in 2022.

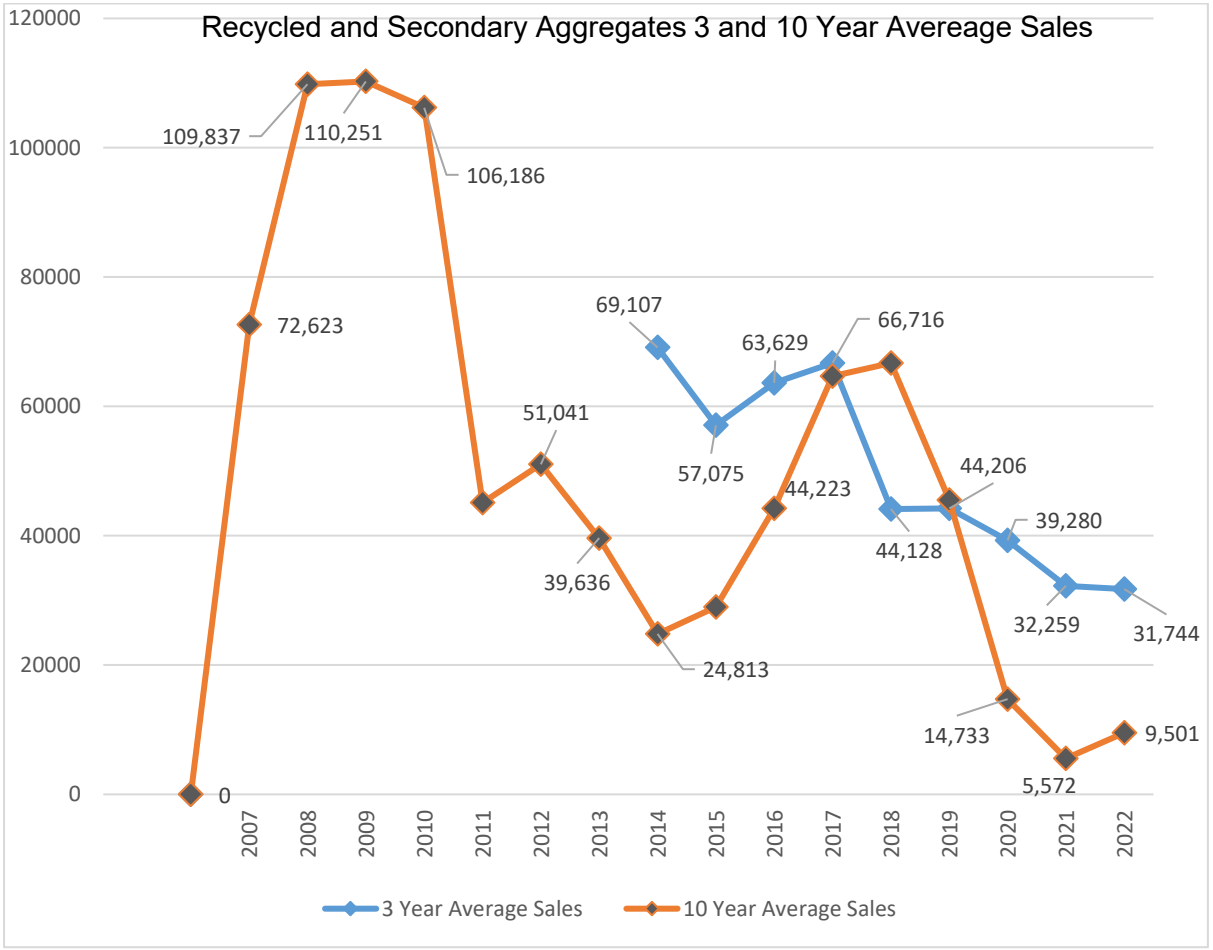
3.5. A Waste Needs Assessment prepared in 2020 to support the emerging Medway Local Plan suggests that the permitted capacity for recycled aggregates production in Medway is around 135,000tpa.

3.6. In 2022, the 3-year average sales have increased and the 10-year average sales have remained the same. Table 2 provides the average sales since 2007 and this is presented as a line chart in Figure 5.

Table 2: Sales (Mt) of recycled and secondary aggregate in Medway

Year	3-year average sales (Mt)	10-year average sales (Mt)
2007	0.073	n/a
2008	0.110	n/a
2009	0.110	n/a
2010	0.106	n/a
2011	0.045	n/a
2012	0.051	n/a
2013	0.040	n/a
2014	0.025	0.069
2015	0.029	0.057
2016	0.044	0.064
2017	0.065	0.067
2018	0.067	0.044
2019	0.046	0.044
2020	0.015	0.040
2021	0.006	0.032
2022	0.010	0.032

Figure 5: Average Sales (t) of Recycled and Secondary Aggregate in Medway



3.7. In addition to the above sales, significant amounts of recycled aggregate may arise from the operation of mobile plant, such as crushers and screeners, during demolition and construction activity within Medway.

3.8. The emerging Local Plan includes policies which allow new sites to be developed which involve the production of recycled aggregate and also safeguards existing ones.

3.9. Coal-derived fly ash is a secondary aggregate that can be used in various applications including those related to the construction of housing and infrastructure. A change to the National Planning Policy Framework in July 2021 recognised Coal-derived fly ash in single use deposits as a mineral resource of local and national importance. Approximately 1.4 million cubic metres of Coal-derived fly ash is present in a deposit at the disused Kingsnorth Power Station. From the mid 1990's, this material was sold as a secondary aggregate for use in breeze block manufacture and other construction products, though this practice ceased in 2014 soon after the closure of the power station in 2012. The UK Quality Ash Association has recognised the deposit at the disused Kingsnorth

Power Station as a potential future source of secondary aggregate[2]. While there are no plans to recover/use this material at present this may change in future.

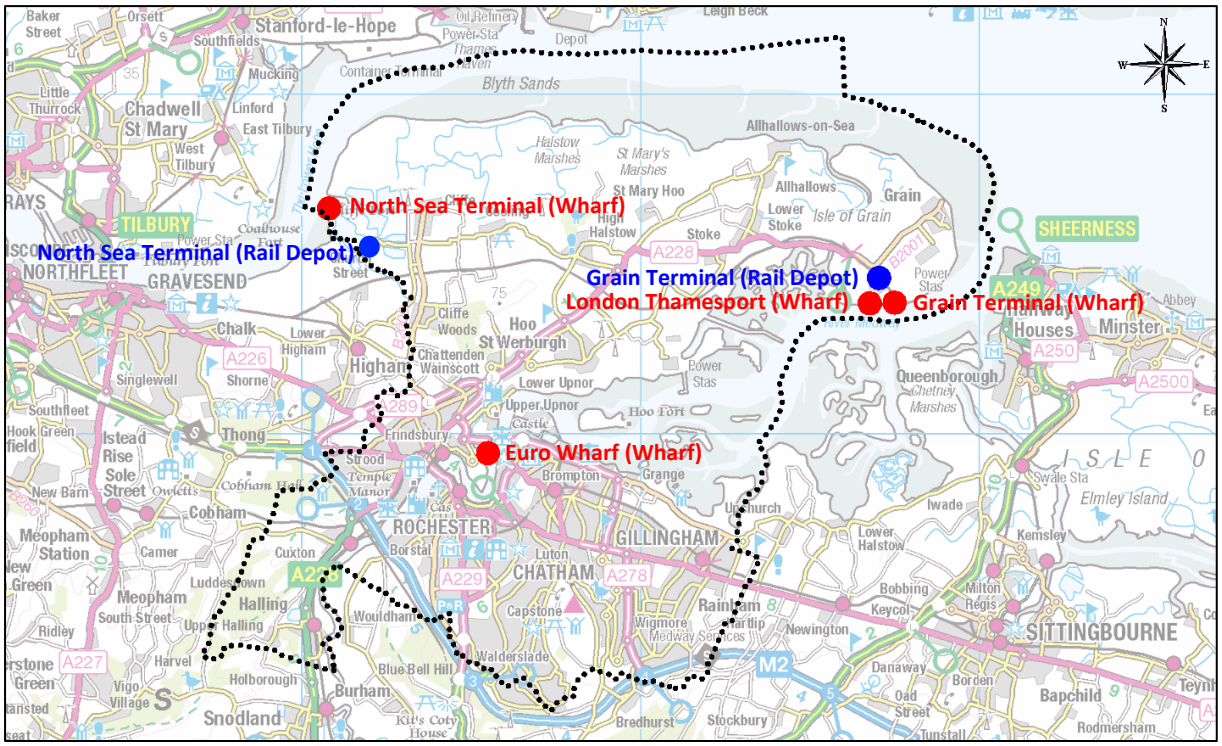
4. Wharves and Rail Depots

4.1. Medway makes a critical contribution to the South East's infrastructure for the importation of aggregates, particularly marine dredged sand and gravel. The scale of the importation makes Medway's wharves of regional and national significance. There are four wharves currently in operation:

- Grain Terminal, Isle of Grain (wharf and rail depot): operated by Aggregate Industries.
- North Sea Terminal, Cliffe, Rochester (wharf and rail depot): operated by Brett Aggregates.
- Euro Wharf, Frindsbury, Rochester: operated by Hanson Aggregates.
- London Thamesport, Isle of Grain: operated by Medway Aggregates.

The location of the wharves and rail depots in Medway is provided in Figure 6.

Figure 6: Wharves and Rail depots in Medway



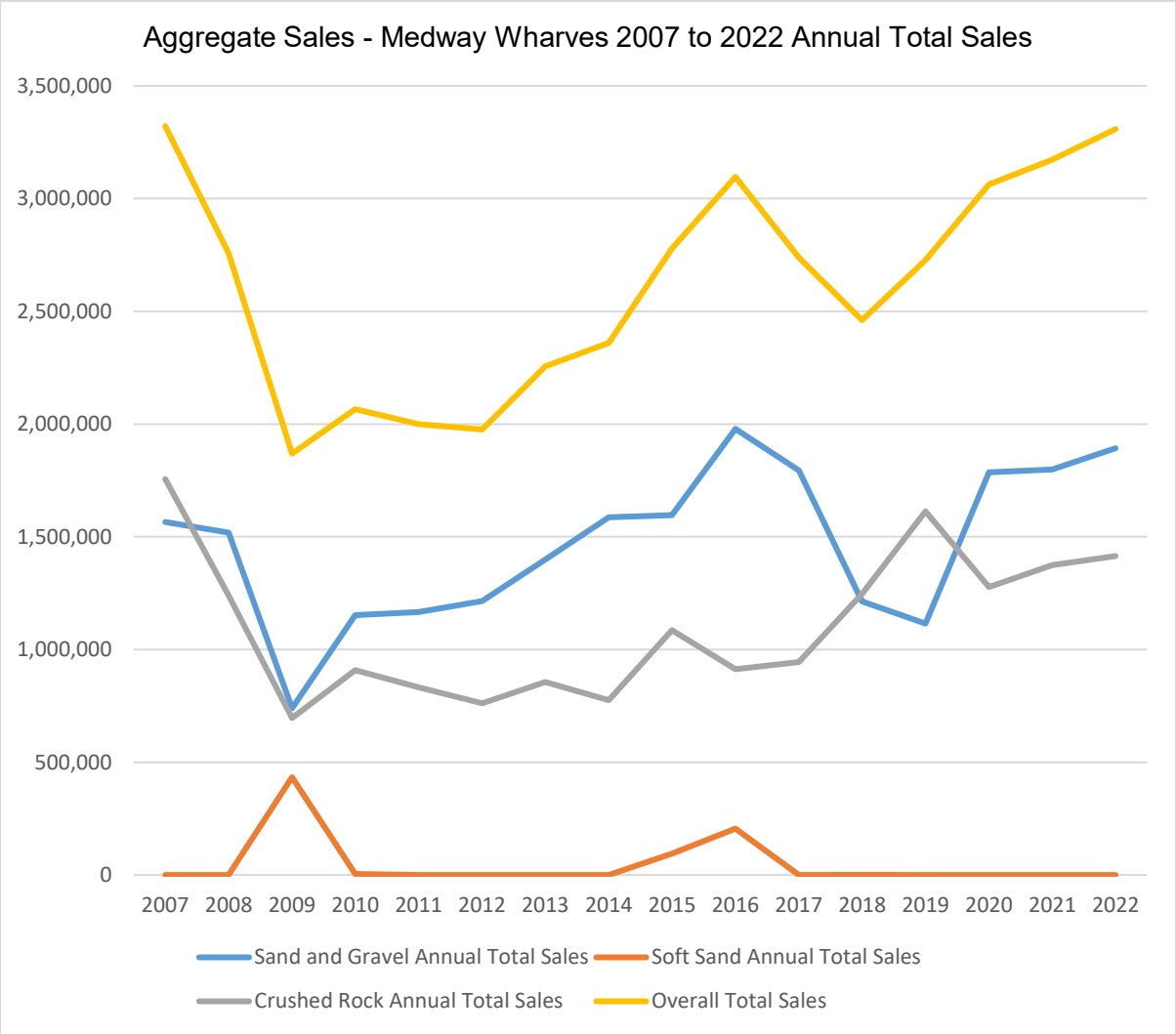
4.2. Collectively, these six facilities make a significant contribution to the importation of minerals into London and the south east.

4.3. Medway's wharves are amongst the largest in Kent and Medway, and have the greatest capacity (approximately 4.3 million tpa). The wharves are operating

[2] http://www.ukqaa.org.uk/wp-content/uploads/UKQAA_SECONDARY_MATERIAL.pdf

within their capacity levels and so offer the ability to increase production in response to market demand. Figure 7 shows sales at wharves since 2007.

Figure 7: Sales (t) of Aggregates through Wharves in Medway



4.4. The total sales of aggregates from wharves in 2022 was 3.308Mt which exceeded the level of sales achieved in any one of the last fourteen years. This was due to an increase in both sales of crushed rock and sand gravel in 2022.

4.5. The table below provides an indication of the role wharves in Medway play in the importation of aggregate to wharves in the south east.

Table 3: Marine aggregates sales and landings: 2022 (thousand tonnes)

Source: South East England Aggregates Working Party Annual Report 2022

Mineral planning authorities[3]	Sales 2022	Sales 10-year av.	Sales 3-year av.	Landings[4] 2022	Landings 10-year av	Landings 3-year average
Medway and Kent	3,799	3,277	3,489	TBC	TBC	TBC
East and West Sussex	1,613	1,588	1,641	TBC	TBC	TBC
Hampshire and Isle of Wight	907	1,592	1,849	TBC	TBC	TBC
South East England	6,319	6,457	6,979	TBC	TBC	TBC

[3] MPAs grouped to maintain confidentiality of an individual company's data.

[4] Landings data published by Crown Estate (to be added - not included in first draft of SEEAWP AM Report 2022)

Marine-won Sand and Gravel

4.6. Medway receives sand and gravel from several dredging regions; those located in British waters have their minerals rights owned by the Crown Estate. The region most proximate to wharves in Medway is the Thames region. In 2022 the Crown Estate reported[5] that the Thames dredging region currently has around 25 years of permitted aggregate production capacity.

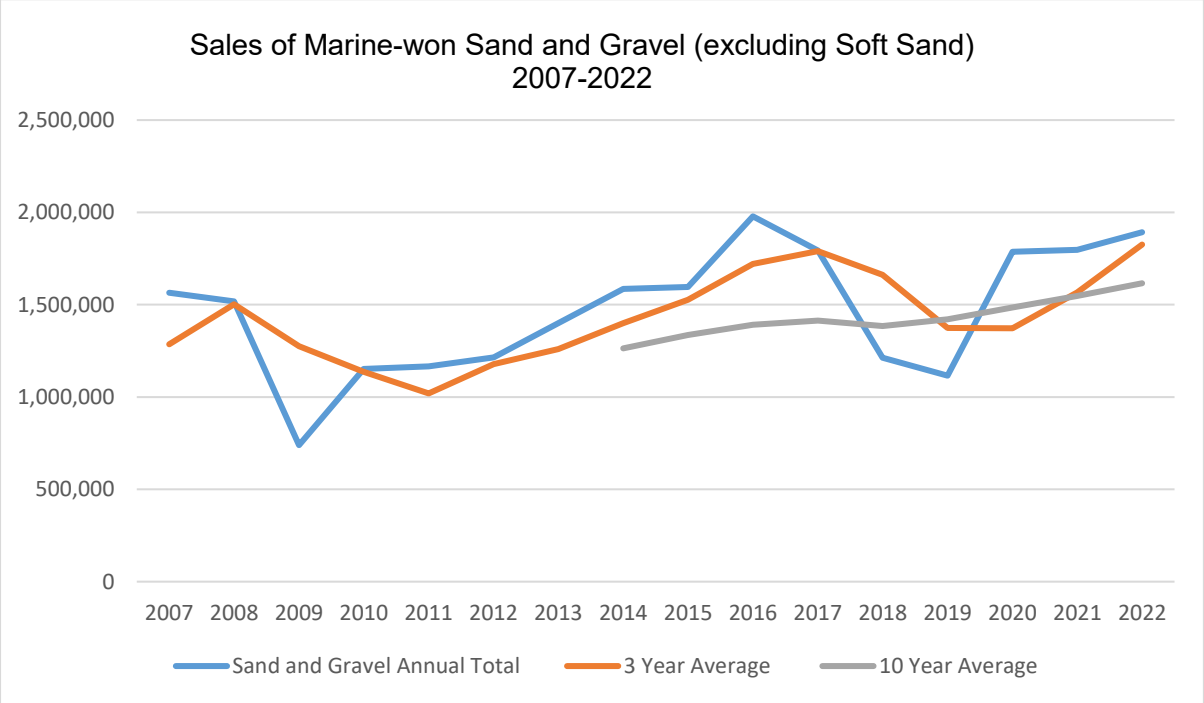
4.7. The sale of marine-won sand and gravel in Medway is presented in Table 4 and Figure 8. In 2022, the level of sales was recorded at 1.893Mt[6] which represents an increase on the previous year and is above both the 3-year and 10-year average sales. The level achieved was the second highest recorded in the last 16 years.

Table 4: Sales (Mt) of Marine-won Sand and Gravel at Wharves in Medway

Year	Annual sales (Mt)	3-year average sales (Mt)	10-year average sales (Mt)
2007	1.565	1.286	n/a
2008	1.518	1.502	n/a
2009	0.740	1.274	n/a
2010	1.152	1.231	n/a
2011	1.167	1.020	n/a
2012	1.215	1.178	n/a
2013	1.400	1.261	n/a
2014	1.586	1.400	1.264
2015	1.597	1.527	1.336
2016	1.978	1.720	1.392
2017	1.794	1.790	1.415
2018	1.213	1.662	1.384
2019	1.115	1.374	1.422
2020	1.786	1.372	1.485
2021	1.797	1.567	1.548
2022	1.893	1.826	1.616

[5] Crown Estate data for current estimates suggest there are 25 years of primary aggregates production permitted landings 2023-summary-statistics.pdf (thecrownestate.co.uk)
[6] Crown Estate data for landings of marine won aggregate indicates that 1,912,666 tonnes was landed in 2022. N.B. landings and sales are not the same. 2023-summary-statistics.pdf (thecrownestate.co.uk)

Figure 8: Sales (Mt) of Marine-won Sand and Gravel (ex soft sand) through Wharves in Medway



4.8. The 2019 national Aggregate Minerals Survey[7] states that in 2019, of all the marine won sand and gravel landed at wharves in South East, 23% was landed at wharves in Medway. Of the sand and gravel landed in Medway, 32% was utilised in Kent and Medway, 10% in the South East and 14% elsewhere (44% was not allocated a destination).

Marine-won Soft Sand

4.9. It is likely that the demand for soft sand in the South East will increasingly need to be met by imports into the area and from marine won sources due to its scarcity and moreover by constraints upon its extraction. To help provide a detailed analysis of soft sand supply in the region, sales figures of marine-won soft sand are separated out from those of marine-won sand and gravel.

4.10. Sales of marine-won soft sand from wharves in Medway since 2007 is shown in Figure 7. No soft sand sales were reported in 2022. Figure 7 shows that such sales have been sporadic and are at a relatively low level which may indicate that material is imported for a particular project or use where it is considered suitable to use marine-won soft sand in place of land-won material. Further

[7] https://www.gov.uk/government/publications/aggregate-minerals-survey-for-england-and-wales-2019

discussions with aggregates operators may provide insight into its use and the fluctuating nature of the sales data.

Crushed Rock

4.11. Medway does not have any natural hard rock resources and therefore relies on imports of crushed rock such as limestone and granite to meet demand for this type of aggregate. Other areas similarly rely on imports and Medway's wharves and rail depots help facilitate supply to them.

4.12. Crushed rock arrives in Medway mainly through the wharves. In the past imports of limestone from Torr Works Quarry in Somerset were received at the rail depot at Grain to support infrastructure projects around Medway. Granite arrives at the wharves from Scotland and Norway. Crushed rock is distributed to other areas beyond Medway, including London, by road and rail.

4.13. Due to commercial confidentiality, sales of imports from the rail depots cannot be broken down other than by a 3-year sales average. As records of sales began in 2014 it is possible, for the first time, to report a 10-year average sales value (8,725 tonnes). To avoid double counting of the supply of aggregates from Medway, the reported sales from rail depots relate solely to aggregate that has been imported by rail and not that which is exported from Medway as the sales have already been reported as landings at Grain and the North Sea terminal at Cliffe.

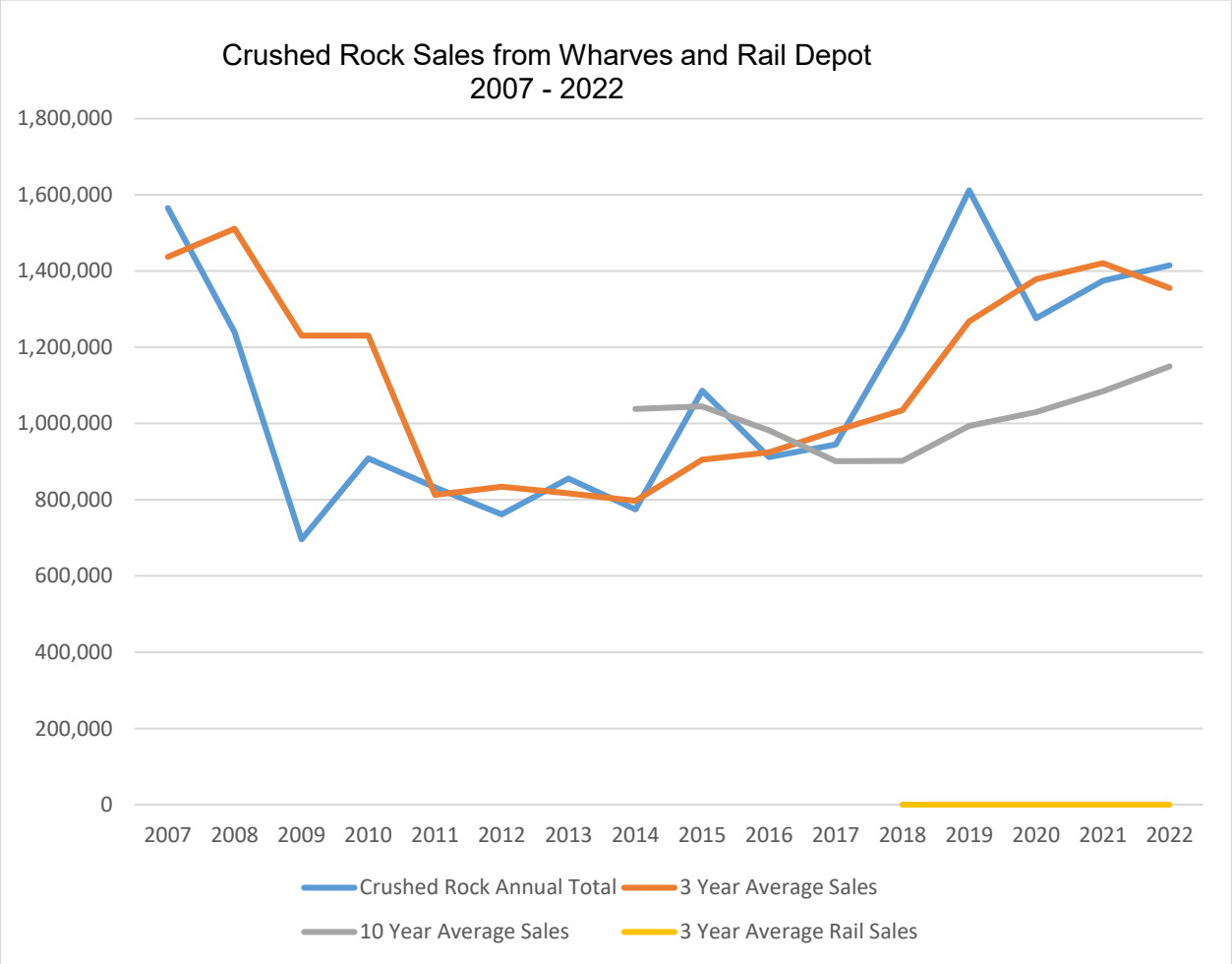
4.14. Sales data for crushed rock through wharves and the rail depot are presented in Table 5 and Figure 9. In 2022, sales of crushed rock through Medway's wharves were reported as 1.414 Mt; an increase on the sales recorded in 2021. The 2022 sales are lower than the average 3-year sales but higher than the 10-year average sales.

Table 5: Sales (Mt) of crushed rock through wharves and rail depot in Medway

Year	3-year average sales (Mt): Rail depot	10-year average sales (Mt): Rail Depot	Annual sales (Mt): Wharves	3-year average sales (Mt): Wharves	10-year average sales (Mt): Wharves
2007	n/a	n/a	1.756	1.437	n/a
2008	n/a	n/a	1.240	1.511	n/a
2009	n/a	n/a	0.696	1.231	n/a
2010	n/a	n/a	0.909	0.948	n/a
2011	n/a	n/a	0.833	0.813	n/a
2012	n/a	n/a	0.761	0.834	n/a
2013	n/a	n/a	0.856	0.817	n/a

2014	n/a	n/a	0.775	0.797	1.038
2015	0.056	n/a	1.086	0.906	1.045
2016	0.025	n/a	0.912	0.924	0.982
2017	0.005	n/a	0.945	0.981	0.901
2018	0.004	n/a	1.247	1.035	0.902
2019	0.003	n/a	1.611[8]	1.268	0.994
2020	0.002	n/a	1.277	1.379	1.030
2021	0.000	n/a	1.374	1.421	1.085
2022	0.000	0.008	1,414	1.355	1.150

Figure 9: Sales (Mt) of crushed rock through wharves and the rail depot in Medway



[8] Value taken from BGS AMS 2019

5. Overview of Aggregate Sales

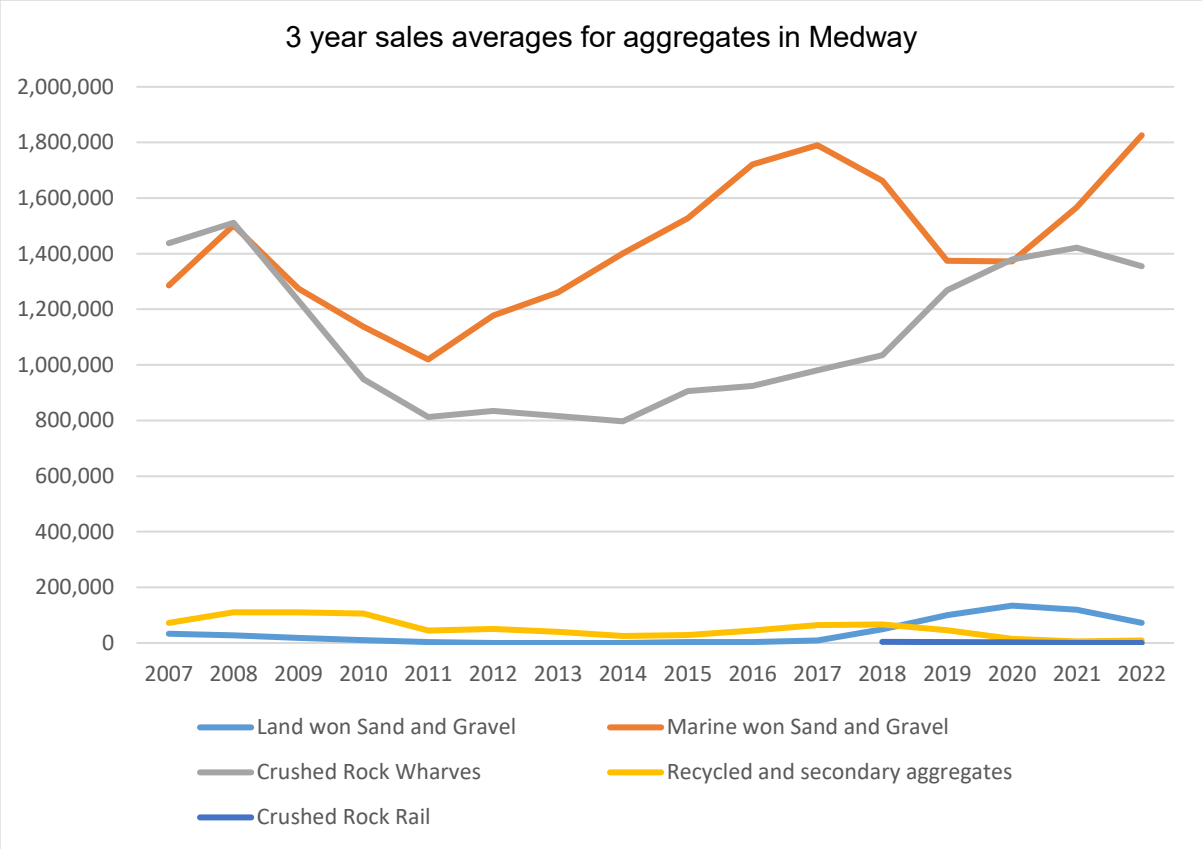
5.1. In order to provide an overview of aggregate sales, average 3-year sales of aggregates in Medway from all sources are presented in Figure 10 below.

5.2. Relatively low levels of sales of land-won sand and gravel decreased further past 2011 until 2015 when sales restarted; this upward trend continued with extraction at Kingsnorth Quarry, however this is not expected to continue as reserves become exhausted, indeed a decline the 3 year average has recently been observed.

5.3. While sales of marine won sand and gravel declined in 2018 and 2019, data for 2022 shows that sales have continued to rebound. Imports of crushed rock via wharves had increased steadily and now appear to be plateauing.

5.4. Recycled and secondary aggregate sales have made a steady but minor contribution to overall sales.

Figure 10: Amalgamated average 3-year sales (Mt) for aggregates in Medway



6. Future Aggregate Supply

Future Housing and Development

6.1. The government's assessment of Local Housing Need for Medway is 1,675 homes per year (based on the latest affordability ratio).

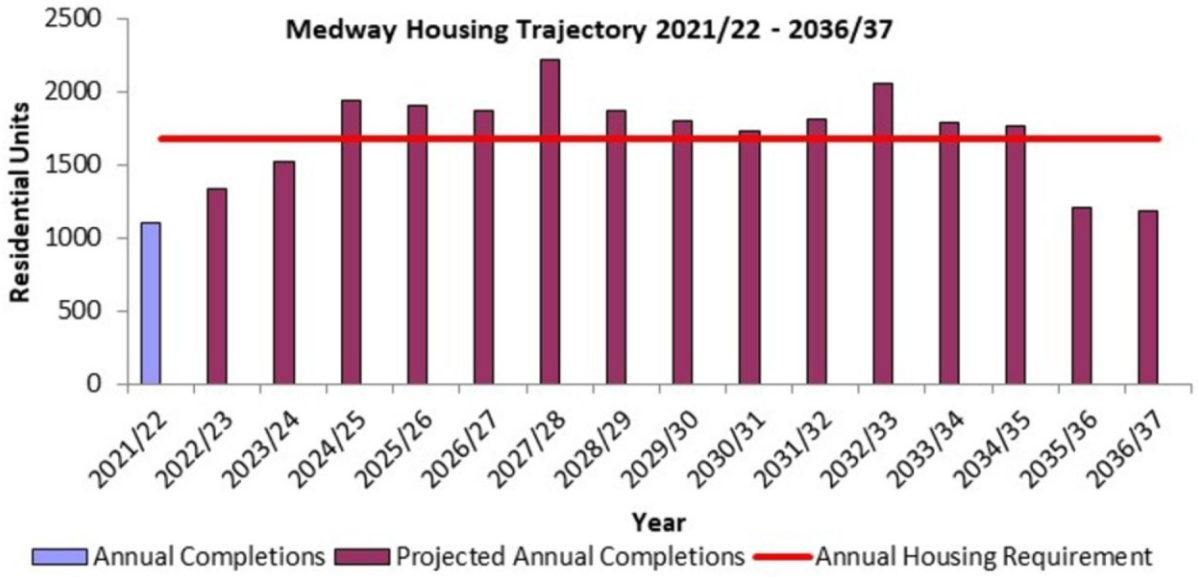
6.2. Although rates of housebuilding are currently below the level of identified housing need, there was a dramatic increase in 2019/20 when the net number of homes delivered increased from 647 in 2018/19 to 1,130, since then this increase has been sustained with 1,130 delivered in 2019/20, 1,082 in 2020/21 and 1,102 in 2020/21.

6.3. The latest Medway Housing Delivery Test Action Plan (July 2022) report suggests that, Medway experienced its highest rates of housing delivery in 2019/20 and 2020/21, at 1,130 and 1,082 new homes, respectively.

6.4. The Action Plan also reports that based on the housing trajectory published in the Council's Authority Monitoring Report (AMR) 2020/21, there is the potential to pass the Housing Delivery Test figure by 2025. However, this recognises the need to have a sustained increase in housing delivery to achieve this, as is currently proposed by developers. The report states that early signs for 2021/22 indicate delivery will again be above 1,000 units. The trajectory in the last AMR did reflect a slowdown in the number of homes in the next couple of years to reflect the impact of Covid-19 and uncertainty about how that would affect delivery in the medium to long term. However, it is clear that the efforts to permit larger greenfield sites has left Medway well placed to continue delivering new homes, even if at a slower rate and this has contributed to a step change in the number of homes being delivered each year.

6.5. Figure 11 shows projected housing completions of new homes in Medway to 2035/36.

Figure 11: Annual housing completions compared to annual housing requirement in Medway



Source: Medway Annual Monitoring Report 2022

6.6. In addition to housing, the North Kent Strategic Housing and Economic Needs Assessment indicates the scale of employment and retail needs in Medway over the plan period. This research showed a total need for:

- 50,000m^2 of B1 office space. 155,000m^2 of B2 industrial land and 165,000m^2 of B8 warehousing land.
- 44,000m^2 of comparison retail floor space and 13,000m^2 of convenience (supermarket) retail space up to 2031.

The new Local Plan will also identify supporting infrastructure needs.

6.7. Regionally, a number of planned infrastructure projects[9] are likely to put increased pressure on the supply of aggregates through Medway, including:

- **Lower Thames Crossing:** A 13-mile new road and bored tunnel crossing under the River Thames between the east of Gravesend and Tilbury.
- **Crossrail 2:** A proposed major new rail route through London between Surrey and Hertfordshire.
- **Thames Tideway Tunnel:** A 16-mile drainage and sewerage tunnel currently in construction under much of the tidal section of the River Thames through central London.
- **Silvertown Tunnel:** A new road tunnel beneath the River Thames between the Greenwich Peninsula and west Silvertown.

[9] Note the previous LAA included mention of 'The London Resort', which was a proposal for developing a 465-hectare brownfield site on the Swanscombe Peninsula between Dartford and Gravesend for a theme park and housing, as well as a hydrogen production facility on the Isle of Grain (Project Cavendish) however these developments are no longer being progressed.

- **High Speed Rail 2:** A high-speed rail link being constructed between London and Birmingham (Phase 1) and on to Manchester (Phase 2).
- **Housing and infrastructure delivery across Kent:** Includes in the region of 178,600 additional homes (2011-31) and the provision of 163 extra form entries for schools (2017-23). This includes development associated with Ebbsfleet Garden City.

6.8. In the past 12 months the Government announced changes and delays to certain infrastructure projects, including HS2 and the Lower Thames Crossing which means increases in demand for aggregate associated with these projects will take longer to materialise than originally envisaged.

6.9. In order to deliver the projects noted above, Medway will endeavour to maintain a landbank and ensure that infrastructure, essential for the import and distribution of aggregate, is safeguarded through the application of appropriate planning policy.

Economy

6.10. Economic forecasts are considered useful for providing an overall contextual picture and an indication of potential aggregate demand. This is because a growing economy is more likely to require greater supplies of aggregate (and vice versa).

6.11. The Office for Budgetary Responsibility (OBR) March 2023 forecasts for UK GDP until 2027 are[10] included in Table 5a below.

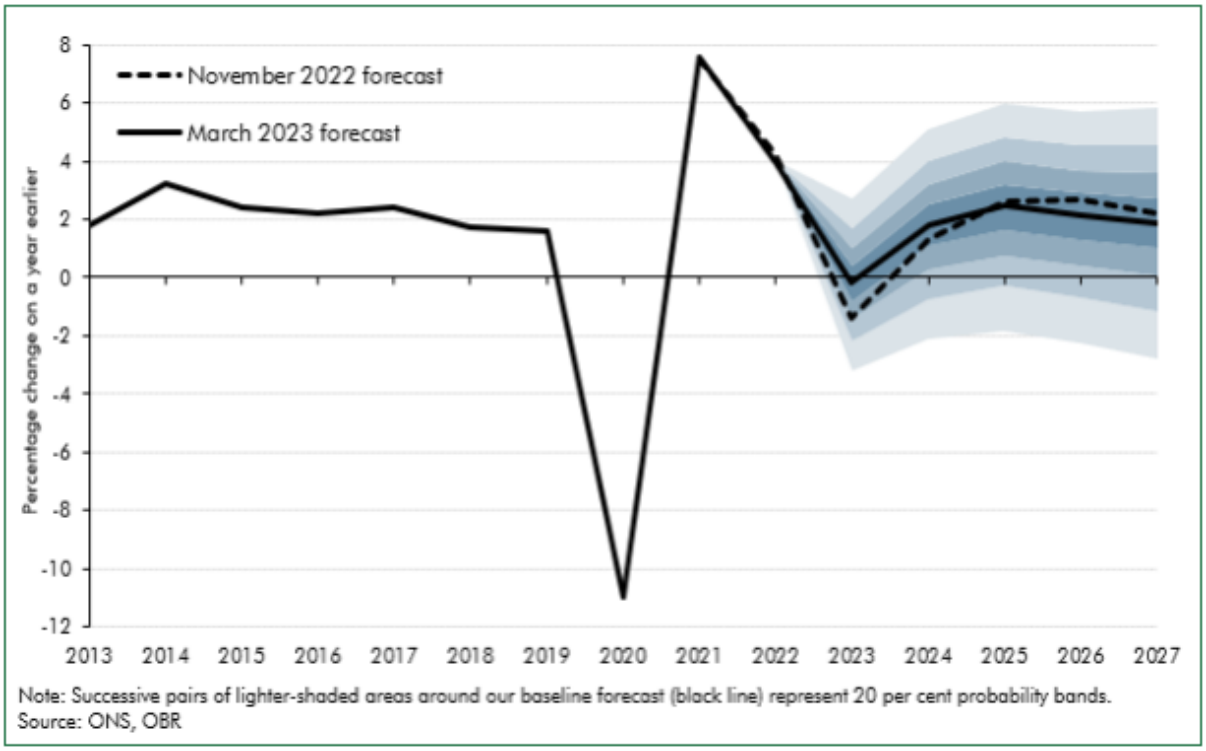
Table 5a OBR forecasts for GDP 2023-2027

	2023	2024	2025	2026	2027
GDP % growth forecast	-0.2	1.8	2.5	2.1	1.9

6.12. It is important to note that these forecasts were published in March 2023 after the full impact of the Coronavirus pandemic had been assessed. The Covid-19 outbreak resulted in a severe contraction of the UK economy in 2020. Figure 11a (below) shows the forecasts for GDP until 2027.

[10] Economic and Fiscal Outlook March 2023 (OBR): C2.13 and c2.14

Figure 11a Real GDP growth forecast[11]



Note: Successive pairs of lighter-shaded areas around our baseline forecast (black line) represent 20 per cent probability bands.
Source: ONS, OBR

6.13. Predictions for growth in GDP suggest it has, and will, effectively stall in the sort to medium term. Other economic factors which may affect demand for aggregate are as follows[12]:

- Inflation is falling more slowly than expected suggesting interest rates may still have further to rise.
- Higher borrowing costs are squeezing household incomes and worsening affordability in the housing market.
- Wages are continuing to rise well above "normal" levels, but individuals on average are still worse off as real earnings (adjusted for inflation) are falling and eroding purchasing power.
- A weak exports performance underlines the wide-reaching challenges facing the UK economy. UK export volumes, excluding precious metals, were more than 9% below their average in 2019.

6.14. The above information about the current and future performance of the economy does not suggest that demand for aggregate is likely to increase significantly in the short to medium term.

[11] Economic and Fiscal Outlook March 2023 (OBR): Chapter_2_charts_and_tables_March_2023.xlsx (live.com). C2.14.
[12] Note this section has been informed by information provided by the Mineral Products Association

Landbank

6.15. As reported in Section 2, the current landbank for land-won sand and gravel is 5.1 years, based on the 3-year sales average; this increases to 7 years when applying the 10-year sales average. The landbank shows a slight increase on 2021 but this is due to a decrease in the 3 year sales average (used as the APR) reflecting a lower rates of extraction observed at Kingsnorth Quarry in recent years.

6.16. Significant deposits of sand and gravel exist across the Hoo Peninsula; the council will actively plan to safeguard these areas through the emerging Local Plan in order to help ensure that a steady and adequate supply of aggregates is maintained. The emerging Local Plan also seeks to identify specific Areas of Search within which it may be possible to identify suitable sites for the working of sharp sand and gravel.

Capacity

6.17. The Aggregate Monitoring Survey includes a survey of site capacity to assist planning for future demand. Details of capacity against the recorded 3-year average sales are detailed in Table 6.

6.18. Sales against capacity data indicate sufficient headroom to accommodate a significant level of demand, with a capacity gap at the wharves of 34%. There is potential for capacity to be substantially increased with space available for additional wharf facilities at London Thamesport. A new wharf came into operation in 2017 which increased capacity by 150,000 tonnes per annum.

Table 6: Sales of aggregates (Mt) against capacity (Mt)

		2018	2019	2020	2021	2022
Land-won sand and gravel	**Average 3-year sales of land-won sand and gravel (Mt)**	0.05	0.1	0.134	0.119	0.072
Land-won sand and gravel	**Total annual capacity (Mt)**	>0.200	>0.200	>0.200	>0.200	>0.200
Land-won sand and gravel	**Percentage of sales against capacity (%)**	<25	<50	<67	<60	<36
Recycled and secondary aggregates	**Average 3-year sales of recycled and secondary aggregate (Mt)**	0.067	0.046	0.017	0.01	0.01
Recycled and secondary aggregates	**Total annual capacity (Mt)**	>0.075	>0.135	>0.135	>0.135	>0.135

Recycled and secondary aggregates	**Percentage of sales against capacity (%)**	<89	<35	<12	<8	<8
Wharves	**Sales through wharves (Mt)**	2.462	2.727	3.062	3.172	3.308
Wharves	**Total annual capacity (Mt)**	4.3	4.3	4.3	4.3	4.3
Wharves	**Percentage of sales against capacity (%)**	59	66	74	74	77
Rail Depot	**Average 3-year sales through rail depot (Mt)**	n/k	0.003	0.002	0.001	0
Rail Depot	**Total annual capacity (Mt)**	n/k	n/k	n/k	n/k	n/k
Rail Depot	**Percentage of sales against capacity (%)**	n/k	n/k	n/k	n/k	n/k

6.19. With regard to recycled and secondary aggregate, it is estimated that current permitted capacity for recycled aggregates production in Medway is around 135,000tpa. Capacity is anticipated to increase in the near future when a plant for producing 'Hydraulically Bound Material'[13] (HBM) from recycled aggregates begins production at Malmaynes Hall Farm, Stoke. The plant is expected to have an operational capacity of 0.075 Mtpa.

6.20. Exports of aggregate from the rail depot at the North Sea Terminal site at Cliffe suggest that the depot has capacity of at least 550,000tpa. However, this depot appears to be used exclusively for the export of aggregate landed at the associated wharf.

7. Conclusion

7.1. This LAA indicates that Medway continues to play an important strategic role in regional aggregates supply through the wharves located on the Medway and Thames. The ability to handle large vessels and their proximity to markets in the wider South East and London elevates the wharves' importance to a regional

[13] 'Hydraulically Bound Material' is a generic term referring to soil or aggregates that have been bound together with additives such as cement, lime-based binders, gypsum or fly ash, then hardened by a hydraulic reaction with water. HBM is used in several construction applications including pavement sub-bases.

level. Furthermore, the current surplus handling capacity allows for flexibility and provides assurance in their ability to respond to increased market demand.

7.2. A new Medway Local Plan is currently being prepared and is scheduled to be adopted in 2024. Draft policy approaches were consulted on throughout 2018 and will be used to inform the minerals policies in the new Local Plan. This, and previous LAAs are being used to inform the content of the Local Plan.

7.3. Although land won reserves of sand and gravel continue to deplete rapidly, it is considered that Medway is making sufficient provision to ensure a steady supply of aggregates. The Council will rigorously apply its mineral safeguarding policies to ensure that it can continue to make an effective contribution to meeting local and wider needs. The council will continue to actively participate in the work of SEEAWP and maintain cooperative working with neighbouring MPAs and industry operators.