Essex County Council

Greater Essex LAA 2022

(Covering the calendar year of 2021)

Executive Summary

This Local Aggregate Assessment (LAA) has been produced on behalf of the Greater Essex authorities[1], reflecting the position at the end of 2021. The annual Aggregate Survey is the source of primary data for all sales and reserves information. This year, this survey was undertaken during March to May 2022. During this time, 92.9% of sites provided a response.

Extraction and Processing Facilities within Greater Essex

There are 37 sand and gravel quarries in Greater Essex, 22 of which were active. Of the 14 inactive sand and gravel quarries, four are considered as long term 'dormant'[2] and 10 are permitted, but not actively extracting, as of 31 December 2021. A single active quarry closed during 2021. As of 31 December 2021, there was at least 3.23Mtpa potential sand and gravel production capacity at these sites, based on a survey response rate of 58.3% to this question: Not all sites that provided reserve and sales data also provided a potential maximum annual throughput. However, any greater potential production capacity cannot be inferred from the proportion of survey returns as this will differ from site-to-site based on the scale of each quarry and any locally imposed conditions.

In addition, at the end of December 2021, the potential for extraction at a further five sites was pending determination and/or Legal Agreements. A single site ceased mineral extraction/closed in 2021.

There are no hard-rock quarries, and one further quarry produces sand and gravel as well as silica sand. Greater Essex also has two brick clay quarries and a single chalk quarry. These latter two types are not reported on through the Local Aggregate Assessment as they are not classed as aggregates. There were 50 processing facilities that add value to mineral products co-located with mineral and transhipment facilities.

Sand & Gravel Sales

Sales increased between 2012 and 2021, from 2.96 million tonnes (Mt) to 3.64Mt. Within this time, the highest sales were in 2014 (4.37Mt) and lowest in 2012 (2.3Mt). The ten-year average sales (2012 to 2021) figure (3.35Mt) and the three-year sales (2019 to 2021) average (3.26Mt) are below the apportioned tonnage of 4.45 Million tonnes per annum (Mtpa) provision made in the adopted Development Plan. There have been no years where the actual sales have exceeded the annualised plan provision (Apportionment). The last three years of sales show an increase from 3.17Mt in 2019 to 3.64Mt in 2021.

Sand and Gravel Permitted Reserves & Landbank

Permitted reserves were 33.86Mt in December 2021. The apportionment[3] landbank increased to 7.61 years at the end of 2021, whilst the ten-year sales average landbank stands

[1] Essex County Council, Southend-on-Sea Borough Council and Thurrock Council.

[2] Sites can be classified as 'Dormant' under the terms of the Planning & Compensation Act 1991 and the Environment Act 1995. Dormant sites cannot be worked until new schemes of conditions have been determined and, therefore, are omitted from the landbank and permitted preserve calculations.

[3] CLG (2009) National and regional guidelines for aggregates provision in England 2005-2020. The Apportionment figure is that used to calculate the landbank in adopted EMLP (2014) and the Thurrock Core Strategy and Policies for Management of Development (2015). The figure is 4.45Mtpa across both authorities.

at 10.12 years; a reduction compared to the 2020 value. Therefore, the landbank is above the seven-year requirement set out in the NPPF[4]. As of 31 December 2021, there were five pending permissions across Greater Essex, which would permit the working of 10.57Mt of sand and gravel which, if granted and/or all legal agreements are signed, would further increase the landbank.

Marine-Won Sand and Gravel

Mineral landed in Greater Essex is sourced from the Thames and East Coast dredging regions. There is, however, no requirement for wharves to record the sales destination so it is uncertain how much is used in Greater Essex or subsequently sold elsewhere. These areas had a total of 5.42Mt of material removed from the seabed from these areas in 2021. This is an increase of 0.12Mt compared to the 4.35Mt removed in 2020. Licenses have been granted that permit the extraction of a total of 10.88Mt per annum from the Thames and East Coast regions combined. At this rate, current estimates suggest that there are 24 years of primary marine aggregate permitted for extraction in the Thames Estuary, whilst concurrently there is 12 years aggregate permitted for extraction within the East Coast region.

The Marine Plan covering this area of sea is the Southeast Marine Plan, which was adopted in June 2021.

Imports and Exports

Across Greater Essex, there were seven wharves (of which four were inactive in 2021, and a further 'potential' wharf[5]) and eight rail (two of which were inactive in 2021) mineral transhipment facilities[6] up to 31st December 2021. The National Aggregate survey 2019, provides the most robust data regarding importation and exportation, as in 2020 and 2021 there were not enough operators who responded to the regional surveys in those years to allow for the publication of data whilst still being able to maintain commercial confidentiality. In total, 0.55Mt of sand and gravel was exported from Greater Essex, whilst a total of 1.29Mt of sand and gravel was imported. In addition, 1.58Mt of crushed rock was imported into Greater Essex.

In 2021, through the aggregate survey, there was reported to be a potential maximum throughput at aggregate transhipment sites of 2.93Mtpa, although this is considered to be an under-representation as this metric had a response rate of only 60.0%[7]. However, any greater potential production throughput cannot be inferred, as this is solely based on a case-by-case basis, often limited by the scale of the facility and/ or planning permission conditions.

[4] NPPF Paragraph 213, f.

[5] Parkeston Quay (East) in Harwich has been identified as potentially providing a large new aggregate import in the form of a marine wharf, although this proposal has, to date, not materialised. As specified in the Essex MLP (2014, pg. 72)

[6] This consists of both rail and wharf transhipment facilities.

[7] Within the survey, this potential maximum annual output (tonnes p.a) is for crushed rock and marine and land-won sand and gravel (incl. non-aggregate use) or estimate from the Rail Depot taking into account plant capability & planning restrictions e.g., tonnage limits, working hours & lorry restrictions.

Secondary and Recycled Aggregate

Supporting evidence to the Essex and Southend-on-Sea Waste Local Plan 2017 (WLP)[8] stated that it is not known whether secondary aggregates are produced in any significant quantity in the joint Essex and Southend-on-Sea Plan area. It however considered that the lack of heavy industry suggests that there will be little.

Since the production of the previous LAA, a guidance note has been prepared to assist with planning for recycled aggregate production. Using this new standardised methodology, it has been established that in 2021 there were 86 Greater Essex aggregate recovery facilities (both co-located with other mineral related activities and stand-alone facilities) which produced an estimated 0.88Mt of recycled aggregate product. It is noted that a concentration of this type of facility is in the southern part of Greater Essex. Also in 2021, by way of a different methodology, (based solely on the aggregate survey returns) reported a potential maximum recycled aggregate production of 0.83Mtpa at facilities that are co-located with other mineral activities (e.g. extraction and transhipment facilities) and does not include estimated maximum production rates at standalone CD&E inert recovery facilities. On the face of it, maximum potential recycled aggregate throughput has been exceeded. However, the above stated maximum potential recycled aggregate throughput of 0.83Mtpa is considered to be low; firstly because the aggregate survey does not include the stand alone facilities that can recycle aggregate and secondly of those that responded to the overall aggregate survey, only had a response rate of only 50.0%. This would suggest that there is more potential capacity, although this cannot be reliably estimated. This is because capacity varies widely on a case-by-case basis, and therefore robust assumptions cannot be made.

2021 Headline Figures

	Performance in 2021	Comparison with 2020
Land-won sand & gravel sales (Million tonnes (Mt))	3.64Mt (↑ 22.7%)	2.96Mt
Potential maximum production capacity at sand and gravel extraction facilities (Mtpa) (2021 Response Rate = 58.3%)	3.23Mtpa (↓ 10.4%)	3.60Mtpa
Permitted reserves of sand and gravel at end of year (Mt)	33.86Mt (↑ 0.8%)	33.51Mt
Landbank based on apportionment (years)	7.61 years (↑ 0.8%)	7.55 years

[8] ECC/BPP (December 2015) SD 20 - Topic Paper 1 - Waste Capacity Gap Update

	Performance in 2021	Comparison with 2020
Ten-year rolling annual average sales (Mt) (Ten-year period 2012 – 2021)	3.35Mt (↑ 2.6%)	3.26Mt
Landbank based on ten-year rolling average sales (years)	10.12 years (↓ 1.7%)	10.30 years
Three-year rolling average sales (Mt) (Three-year period 2019 – 2021)	3.26Mt (↑ 0.8%)	3.23Mt
Wharf depot imports (Hard rock)	2.29	1.62
Wharf depot exports (Sand & Gravel)	0.25	Unable to disclose due to commercial confidentiality
Potential maximum throughput at transhipment facilities (Mtpa) (2021 Response Rate = 60.0%)	2.93Mtpa	Unable to disclose due to commercial confidentiality
Recycled Aggregate Sales (Mt)[9]	0.88Mt (↑ 5.6%)	0.83Mt
Potential Maximum Annual Aggregate Recovery Throughput (Mtpa) (2021 Response Rate = 50.0%)	0.83Mtpa (↑ 335.8 %)	0.74Mtpa

Source: Essex County Council (2022).

[9] Based solely on the aggregate recycling facilities co-located with mineral extraction and/or transhipment sites. It does not include stand-alone or aggregate recycling facilities co-located with other waste sites.

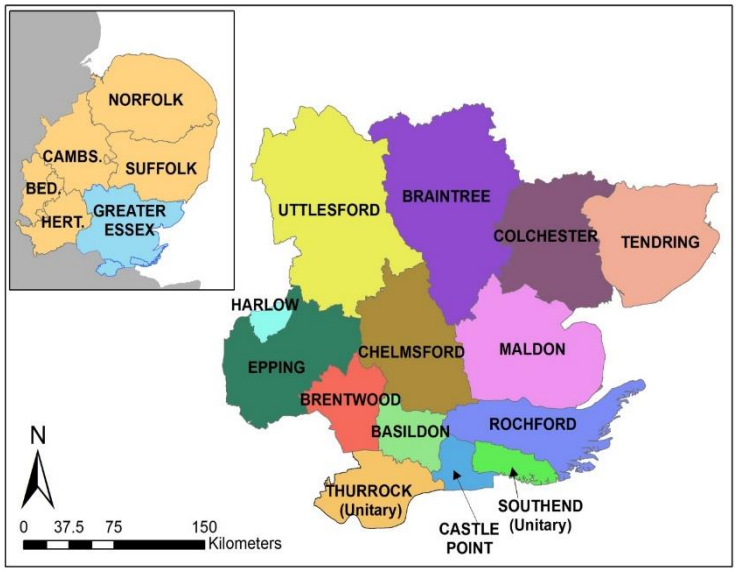
CONTENTS

1. Introduction

1.1. Background

1.1.1. Mineral Planning Authorities (MPAs) are required[10] to produce a Local Aggregate Assessment (LAA) annually to ensure a steady and adequate supply of aggregates. This LAA reports on the Greater Essex[11] position on 31 December 2021. It is to be noted that the Plan Area pursuant to the Essex Minerals Local Plan (2014) covers the administrative area of Essex only. Southend-on-Sea and Thurrock have their own Local Plans relevant to their own administrative areas.

Map 1: Spatial Context of Greater Essex



1.1.2. Greater Essex is in the East of England, bordering on Kent and four London Boroughs[12]. Essex is a two-tier administrative system[13], whilst Southend-on-Sea and Thurrock are unitary authorities who operate separately.

1.2. Summary of Key Planned Infrastructure Projects

1.2.1. The demand for mineral resources[14] is predicated on the amount and type of development in and close to Greater Essex. Whilst the rolling 10-year average sales data (discussed in detail in the next sections) provides a basis for providing a steady and adequate supply of mineral, the National Planning Policy Guidance (NPPG) indicates that a LAA could use other relevant local information. Due to the proximity to London and other local factors, there is expected to be significant housing growth and major construction projects, as described below.

Housing Delivery

1.2.2. The National Government has recently issued statements[15] reaffirming its pledge to tackle the stated under-supply of housing in England, by requiring an increase in

[10] Required by the National Planning Policy Framework (NPPF, 2021, para 213, a)
[11] Greater Essex is formed of the Authorities of Essex, Southend-on-Sea, and Thurrock. These are amalgamated in statistical/data collection activities to protect commercial confidentiality.
[12] Enfield, Waltham Forest, Redbridge, and Havering.
[13] The Essex administrative area is formed of the County Council and 12 Local Councils.
[14] Including the generation and use of recycled/secondary aggregates
[15] Levelling-up and Regeneration Bill: reforms to national planning policy (Dec 2022)

house building to 300,000 houses per annum nationally. Delivery of this requirement will be set out in emerging Local Plans, and taken into account through the Minerals Local Plan review and any impacts on the delivery rates within the Local Plans.

1.2.3. Local Authorities in Essex (excluding the unitary authorities) are preparing Local Plans to deliver approximately 145,000 additional homes up to 2036 and beyond, of which 37,000 have been completed, 43,000 have the benefit of planning permission and 65,000 remain to secure planning permission as of April 2021. This equates to approximately 7,120 additional homes per annum based on either `objectively assessed housing need' or the `Standard Method' for the relevant local authority. Significant additional growth is also being planned in the emerging Local Plans for Southend and Thurrock Unitary Authorities.

1.2.4. Local Plans at Basildon (March 2022) and Castle Point (July 2022) have recently been withdrawn with new Local Plan preparation commencing immediately. Other Local Plans in Chelmsford, Maldon, Rochford, Uttlesford, Southend and Thurrock are at early stages of plan preparation to go beyond 2040. Brentwood has recently adopted a new Local Plan but in doing so is committed to submission of a review for examination within 28 months of adoption. It is envisaged that these plans will present a higher rate of housing site delivery than previous plans. However, given the stage of their preparation the scale and potential location of growth has not yet been identified. ECC authorities have made progress in increasing delivery over the last five years with net annual housing additions more than doubling from 3,100 in 2013/14 to a high of 7,300 in 2018/19. Delivery fell to 5,565 in 2021 largely due to the impact of the pandemic.

1.2.5. Based on the current positions articulated through extant and emerging Local Plans, a significant proportion of growth will continue to be provided at the key centres of Basildon, Chelmsford, Colchester and Harlow through extant planning permissions and new site allocations, including many new sustainable urban extensions. The four new Garden Communities in adopted Local Plans are also located adjacent to or in close proximity to these key centres. Specific details on housing numbers are presented in Appendix I.

Major Construction Projects

1.2.6. In addition to this growth, there are also major developments/construction projects[16] that are either planned, programmed or underway in Greater Essex and/or in adjoining authorities during 2021. These are set out in Figure 38 presented in Appendix I, which also identifies the lead, decision pathway and potential delivery date.

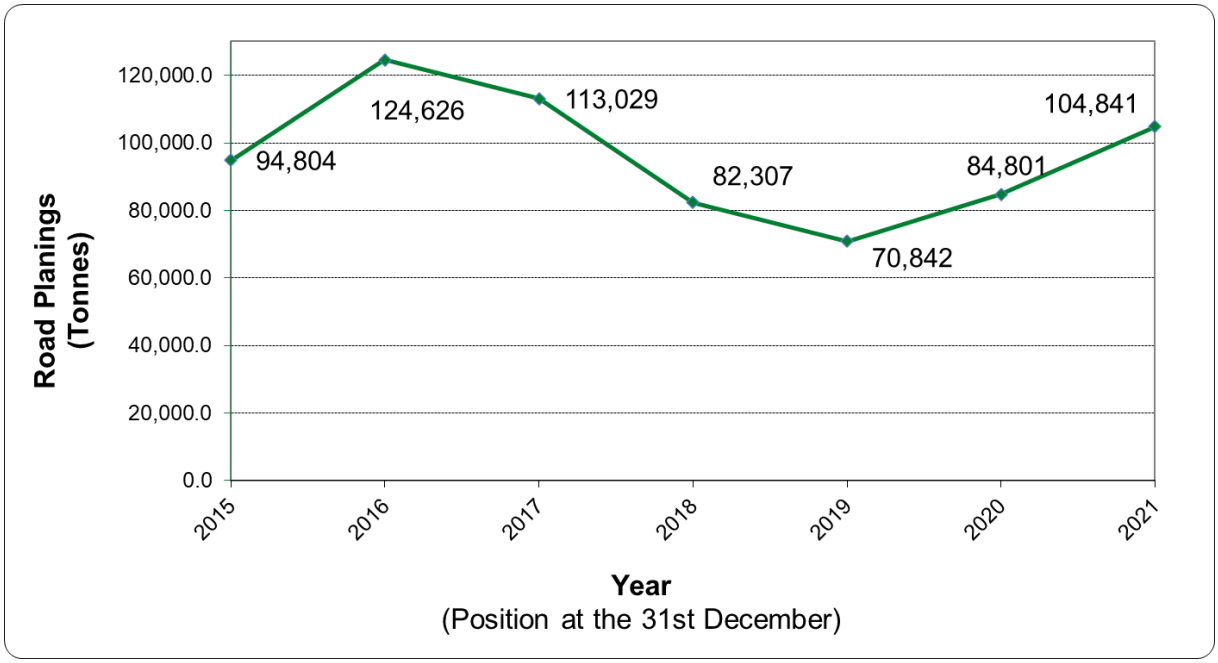
[16] For the purposes of the AWP Survey and this report, these are 'unusually large individual development projects', which are anticipated to have greater than local influence on aggregate demand. This could include Nationally Significant Infrastructure Projects (NSIPs), residential/mixed residential schemes more than 200 dwellings along with supporting infrastructure, and significant new transport infrastructure.

1.2.7. As an example, the Lower Thames Crossing is expected to have an aggregate demand in the range of 8.41Mt and 10.58Mt, which would have a significant impact on mineral demand.

Highway Maintenance

1.2.8. Highway maintenance is a major and on-going activity which gives rise to 'road planings'[17]. Road planings are produced when the surface layer of a tarmac road or footpath is removed and can be used as further road materials as an alternative to primary aggregates. Their use is considered environmentally sound as bitumen is a natural substance, is not burned, is 100% re-usable and re-using them reduces pressure on quarried aggregate stocks. The tonnage of road planings arising in Greater Essex in 2021 was 85,616 tonnes. As can be seen in the graph below, this is a slight increase on all values since 2018 but is less than the amounts between 2015 to 2017.

Figure 1: Road Planings Arising in Greater Essex 2015 to 2022



Notes: This graph contains the values that were provided to Essex County Council via the Annual Aggregate Survey.
Source: Essex County Council (2022)

[17] Mineral Products Association (Aug 2020) published an overview of construction a

2. At A Glance: Minerals in Greater Essex

2.1. Geology

2.1.1. Geology dictates where viable mineral resources occur and consequently where extraction can take place. The predominant economic mineral is sand and gravel, but Greater Essex also contains silica sand, brick clay, brickearth and chalk. Silica sand, brick clay, brickearth and chalk are not classed as aggregates and are therefore not required to be reported on though the Local Aggregate Assessment (LAA). However, the inclusion of silica sand is made to provide a fuller picture of the provision of the main minerals in Greater Essex.

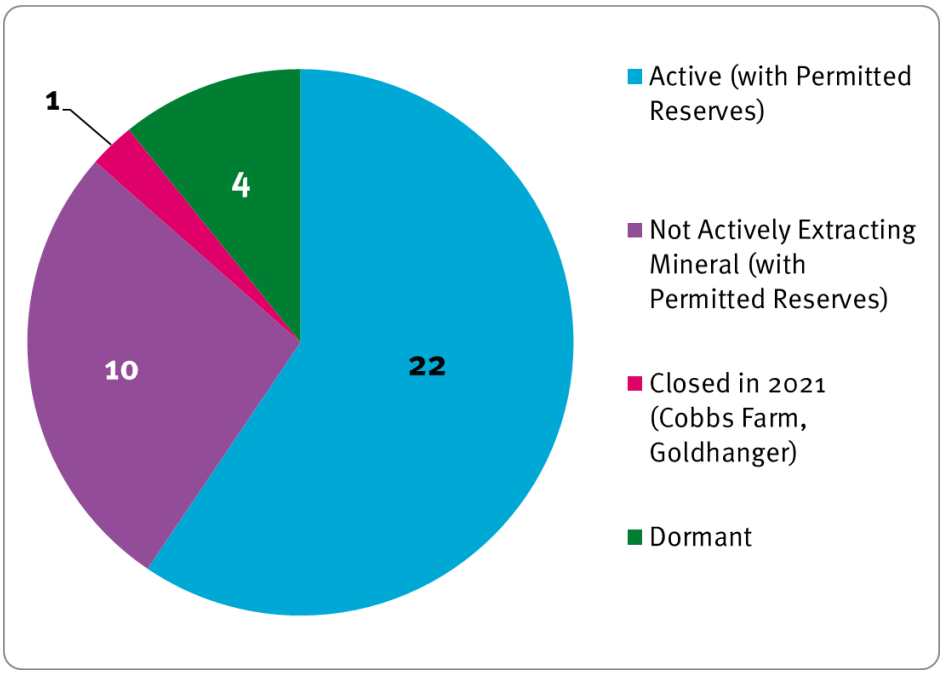
2.1.2. There are no hard rock deposits within Greater Essex and therefore demand for this aggregate is supplied via the importation of material, which is reported in a later chapter.

2.2. Primary Land-won Aggregate Facilities

2.2.1. Figure 2, below identifies the status of the sand and gravel extraction sites in Greater Essex as of 31 December 2021[18]. Map 2 below identifies the spatial location of these facilities.

[18] As listed within Appendix A.

Figure 2: Sand and Gravel Quarries in Greater Essex (As Of 31 December 2021)



Source: Essex County Council (2022). The data that informs this table is in Appendix A

2.2.2. As of 31 December 2021 there was at least 3.23Mtpa potential sand and gravel production capacity[19]. Although this is stated as the maximum amount of sand and gravel that could be produced annually, the response rate for this aspect of the aggregate survey was 58.3%[20] so actual production capacity will be higher. However, an estimate of maximum capacity cannot be inferred as production rates vary significantly across sites and therefore it is not the case that an additional 41.7% can be added to the cumulative productive capacity figure received through survey information. Additionally, it would not be appropriate to speculate on facilities that did not provide response to the Survey.

2.2.3. In addition to facilities that extract sand and gravel, a further four facilities extract other non-aggregate minerals: silica sand, brick clay and chalk.

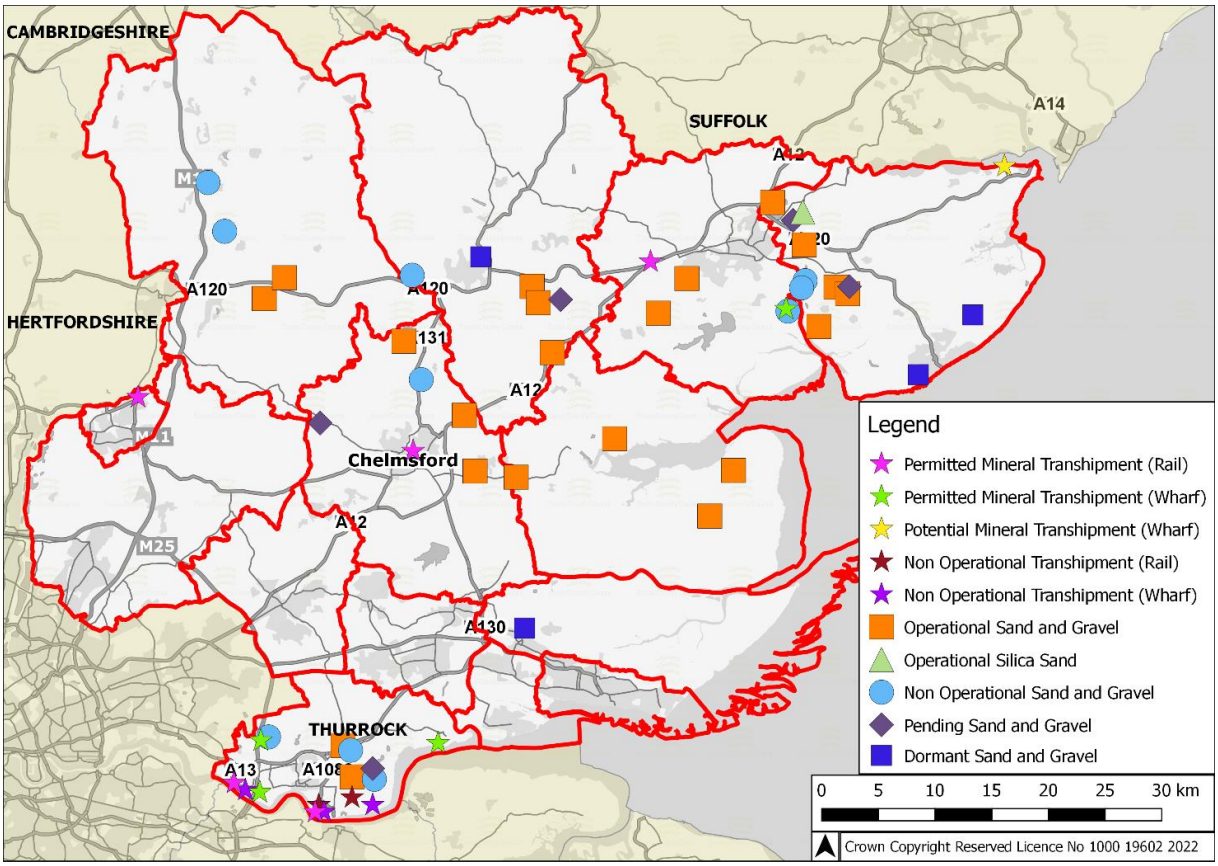
2.3. Transhipment Facilities

2.3.1. Transhipment facilities allow mineral movement over long distances, typically rail or water based. Mineral can be sold and distributed from these sites. The spatial distribution of these is shown in Map 2 below.

[19] Taking account of plant capabilities and planning restrictions

[20] The overall response rate for the survey was 96%. Of these responses only 65.2% of sites provided potential sand and gravel production capacity

Map 2: Mineral Extraction & Transhipment Sites in Greater Essex (31 December 2021)



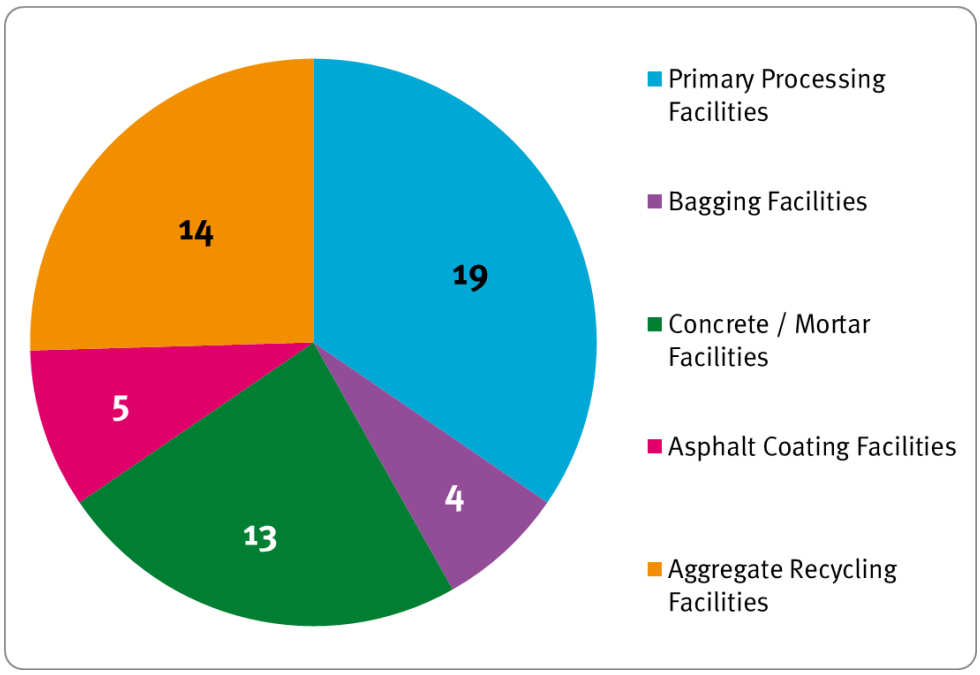
Source: Essex County Council (2022). The data that informs this table is in Appendix A and Appendix B.

2.4. Processing Plants

2.4.1. Processing allows for a greater range of products to be produced on-site: contributing to the economic viability of mineral developments and reducing "mineral miles". Primary processing produces a higher quality final product and allows more sustainable use of aggregate. Secondary processing differs from primary, as it makes a higher value final product through manufacturing of the original material.

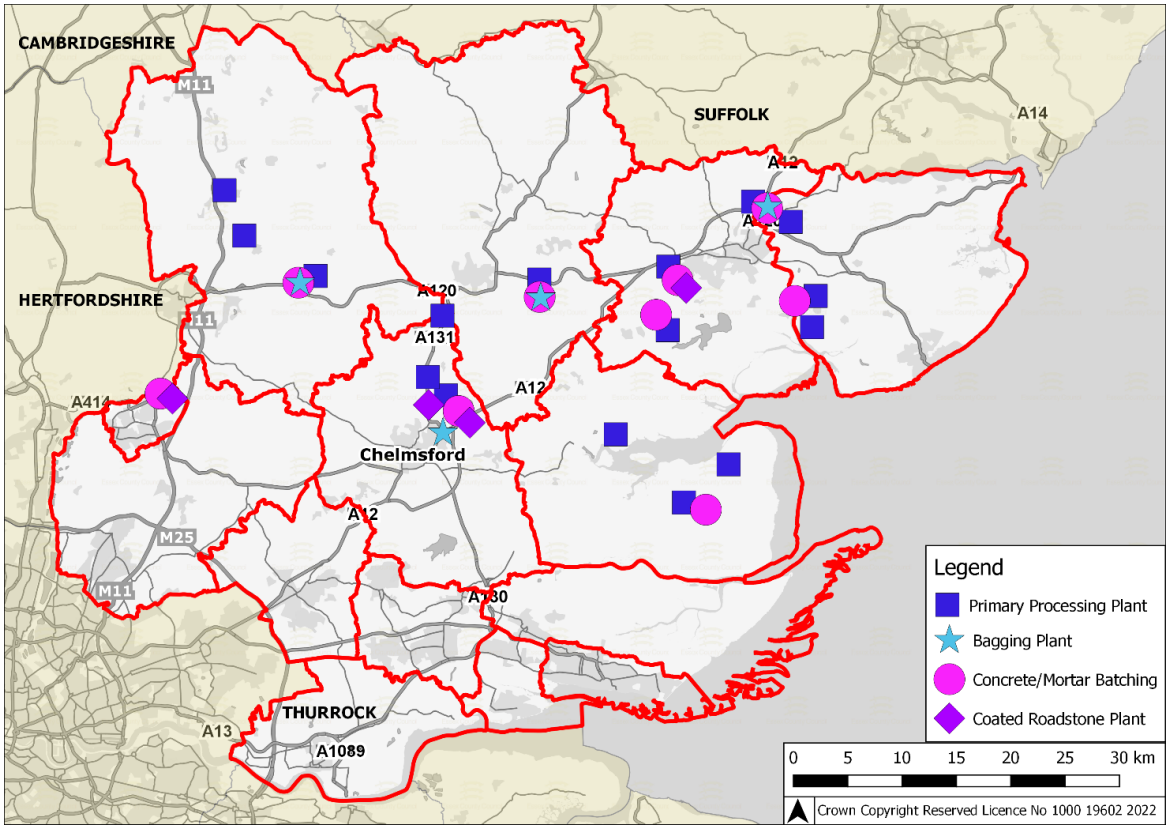
2.4.2. The figure below identifies types of processing facilities in Greater Essex and the subsequent map identifies the spatial distribution of processing facilities where co-located with primary extraction and transhipment sites.

Figure 3: Processing Plant at Mineral Extraction/Transhipment Sites in Greater Essex (31 December 2021)



Source: Essex County Council (2022). The data that informs this table is in Appendix D.

Map 3: Primary and Secondary Aggregate Processing Facilities in Greater Essex (31 December 2021)



Source: Essex County Council (2022). The data that informs this table is in Appendix A.

3. Land-Won Sand & Gravel

3.1. Introduction

3.1.1. The NPPF requires that Mineral Planning Authorities (MPAs) plan for a steady and adequate supply of sand and gravel by maintaining a landbank of at least seven years[21]. Within Greater Essex the primary method of calculating the sand and gravel landbank is via the annualised apportionment[22] of 4.45Mtpa.

3.1.2. The NPPF[23] states that mineral provision should be based (*inter-alia*) on a rolling average of ten years' sales data and other relevant local information, including any extant guidelines. This is 'sense checked' through an average of the last three-years of sales, as advocated by the PPG. This LAAs ten-year rolling average sales is calculated from 2012 to 2021. Henceforth, any reference to ten-year rolling average sales is describing this time-period.

3.1.3. Both calculation methods described in paragraphs 3.1.1 and 3.1.2, above are presented in this chapter, to ensure complete and appropriate assessment.

Impact of the Essex MLP Review

3.1.4. As part of the Essex MLP Review process, consideration has been given to revising the annualised plan provision and consequently the baseline figure from which a landbank is calculated due to the expiration of the National and sub-national guidelines upon which the current provision rate was based. At the last public engagement in March 2022, it was proposed to adopt an annual plan provision based on the ten-year rolling sales, with an additional 20% buffer to offer a measure of flexibility which took in to account relevant local factors, such as sales reducing over the pandemic period which acted to artificially depress the ten-year average, and the increased rate of future development as set out in district local plans. With the decision subsequently taken to re-base the MLP to 2040, a revised mineral provision figure will be calculated and published for public consultation in late 2023.

3.1.5. As a Unitary Authority, Thurrock Council are responsible for their own Local Plan and therefore any changes to the approach in Essex does not impact the approach taken in Thurrock to mineral provision. Their plan provision figure will remain at 0.14mtpa until such a time as they consider any potential alternatives.

3.1.6. The source of primary data in this chapter is the annual Regional Aggregate Survey 2021 for Greater Essex, undertaken during March to May 2022. In total, 92.9% of sites provided a response. Data is collected at this sub-regional level, rather than on an authority basis, as this provides the most accurate information available, at the

[21] Landbanks for seven years are required for sand and gravel (NPPF Paragraph 213, f). The landbank is determined by comparing the permitted reserve and the estimate of the demand of mineral per annum.
[22] as adopted through policy, which was based on the "National and Sub-national Guidelines for Aggregates Provision in England", (2005 – 2020)
[23] NPPF Paragraph 213, a.

lowest reporting level at which commercial confidentiality can be maintained. As with all surveys, there are limitations which could lead to inaccuracies, such as:

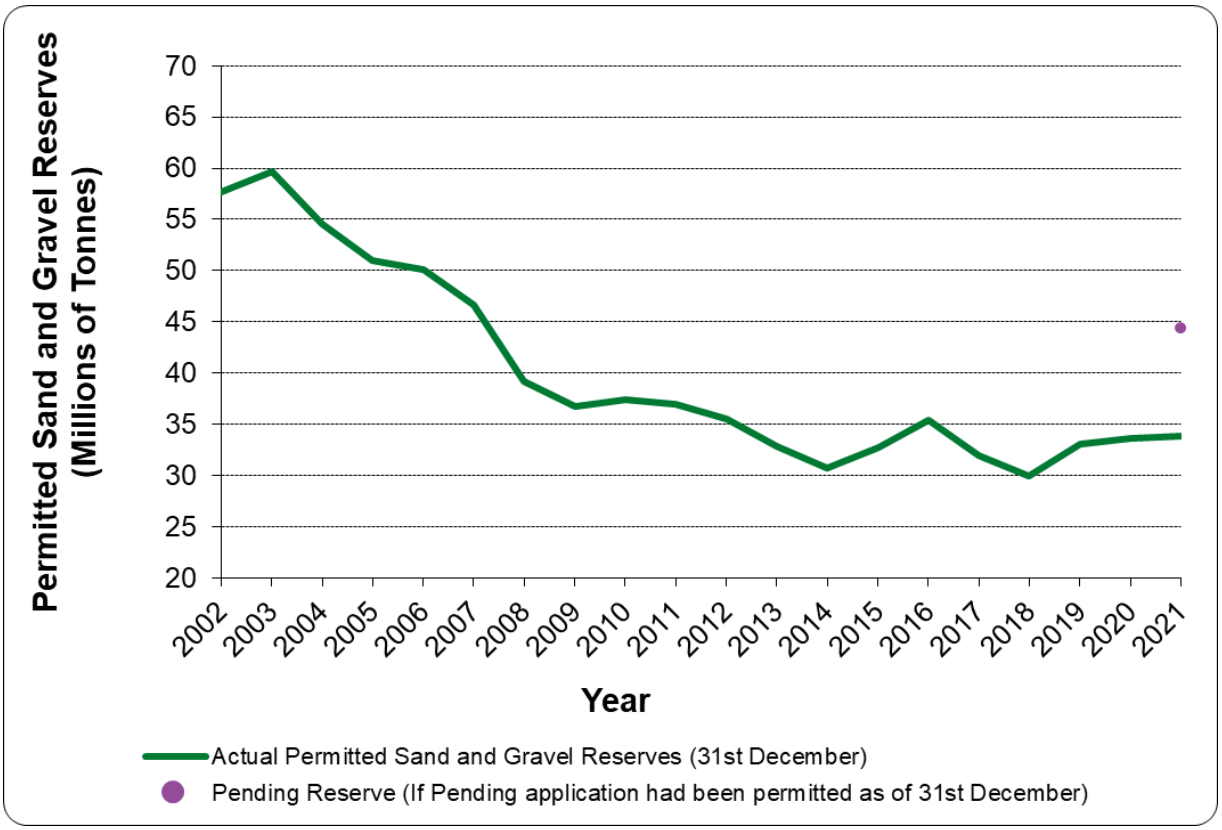
- Operator(s) may not provide information on site(s) within their control for various reasons;
- Accidental errors on the form, not able to be detected by the MPA.

3.1.7. It should be noted that where there are fewer than three separate operators who returned survey data, this collated data cannot be published, even if those operators provide returns for multiple sites. Further, the MWPA is required to destroy all individual site survey responses annually once individual returns have been collated for monitoring purposes. As such, where information cannot be reported due to insufficient data returns to protect commercial confidentiality in any given year, there will be no figure retained that can be used for planning purposes in the future, even for internal purposes.

3.2. Sand & Gravel Permitted Reserves in Greater Essex

3.2.1. From discussions with some operators within Greater Essex, as part of the annual aggregate survey, it is understood that the COVID recovery period in 2021 provided an opportunity for some operators to review their assets. In so doing, a number of 2021 data returns suggested a higher permitted reserves figure than had previously been expressed, within the limit of planning permissions already acquired. This has resulted in an uplift in the overall Greater Essex permitted reserves figure compared with 31 December 2020, even though no planning permissions were granted for additional sand gravel reserves within Greater Essex in 2021.

Figure 4: Permitted Sand & Gravel Reserves in Greater Essex (2002 to 2021, 20 years)



Source: Essex County Council (2022). The data that informs this table is in Appendix E.
Note 1 2019 data collection impacted by furlough due to COVID-19 and therefore sales are potentially under-reported.
Note 2: Y axis not at zero. The data that informs this table is located in Appendix E.

3.2.2. There has been a clear reduction in the amount of mineral permitted for extraction in Greater Essex over the last 20 years. Actual permitted reserves were 57.69 million tonnes (Mt) in 2002, but at the end of 2021 stood at 33.86Mt, which is a slight increase from the 2019 value[24] (33.59Mt). Without prejudice to any planning decision, the graph above also identifies the amount of reserve that would be added to the permitted reserve should permission be granted for all those applications which were pending determination and/or legal agreements as of 31st December 2021. This "pending reserve" is 10.57Mt across both Essex and Thurrock Mineral Planning Areas. If this 10.57Mt was added to the permitted reserve by way of planning approval, the permitted reserve would increase to 44.42Mt, which would represent the highest permitted reserve since 2007.

3.2.3. Notwithstanding the potential reserve increase set out above, the overall 20-year reduction in current permitted reserves is the result of the rate of sales being higher than the rate of material being added to the reserve through planning permissions. This local reduction follows a national trend and is not considered to be a significant

[24] It is assumed that operator(s) have reviewed their estimated reserves, which has resulted in this uplift as no planning permission have given rise to an increase in permitted reserve.

local planning issue at this time as the sand and gravel landbank remains above the minimum seven years, particularly when considering the potential pending reserve highlighted above.

3.2.4. The Draft East of England Aggregate Working Party (EoE AWP) Monitoring Report[25] notes that in 2021, Greater Essex held 28% of the permitted reserves held in the area covered by the EoE AWP. This report also states inter-alia that "it is important to consider the context of continued sales against the backdrop of a general downward trend in reserves" and that this is "a position which is unsustainable in the long run, and which must be considered to be of concern"[26].

3.2.5. During 2021, 37 applications relating to sand and gravel extraction were either determined or were in the determination process, of which:

- No planning applications were granted for sand and gravel that boosts permitted reserve;
- Four applications[27] (including additional reserve) remain pending determination and/or pending subject to the signing of legal agreements and would increase the permitted reserve by 8.78Mt of sand and gravel as of 31 December 2021.[28]
- A further two applications[29] (including additional reserve) were submitted for determination and remain pending as of 31 December 2021. If permitted these would increase the permitted reserve by a further 1.33Mt as of 31 December 2021.
  When all pending applications are considered together, they account for a potential 10.83Mt sand and gravel and 0.72Mt Silica Sand as of 31 December 2021[30];
- One application (ESS/11/22/BTE, Colemans Farm Quarry) was permitted, which included additional sand and gravel processing, in the form of the installation of a ready-mix concrete plant;
- 10 applications were granted for operational changes and/or extensions of time and had no impact on the permitted reserve; and
- 20 applications remain pending for operational changes and/or extensions of time and had no impact on the permitted reserve.

3.2.6. It should be noted that at the point of writing, two applications which were pending as of the 31 December 2021, have subsequently been permitted in 2022, with the respective reserves added to the permitted reserve figure. These were:

- ESS/77/20/CHL: Salts Green, granted on 01/03/22 for 0.19Mt; and

[25] EoEAWP (2022) Draft Annual Monitoring Report 2021 Data, page 29, paragraph 4.3
[26] EoEAWP (2022) Draft Annual Monitoring Report 2021 Data, page 29, paragraph 4.8
[27] 19/01709/FUL (Orsett Quarry &Walton Hall Farm, Thurrock), E
[28] One of these applications, (ESS/29/20/TEN, Martells Quarry) includes a further 0.72Mt of Silica Sand
[29] ESS/36/21/BTE (Colemans Farm Quarry, Essex) and ESS/101/21/TEN (Lufkins Farm, Essex SS/12/20/BTE (Bradwell Quarry, Essex), ESS/77/20/CHL (Salts Green, Essex), & ESS/29/20/TEN (Martells Quarry, Essex) remain pending determination. Updates on all applications will be provided in the next edition of the Greater Essex LAA.

- ESS/12/20/BTE: Bradwell Quarry, granted on 01/09/22 for 6.5Mt.

3.3. Sales of Sand & Gravel

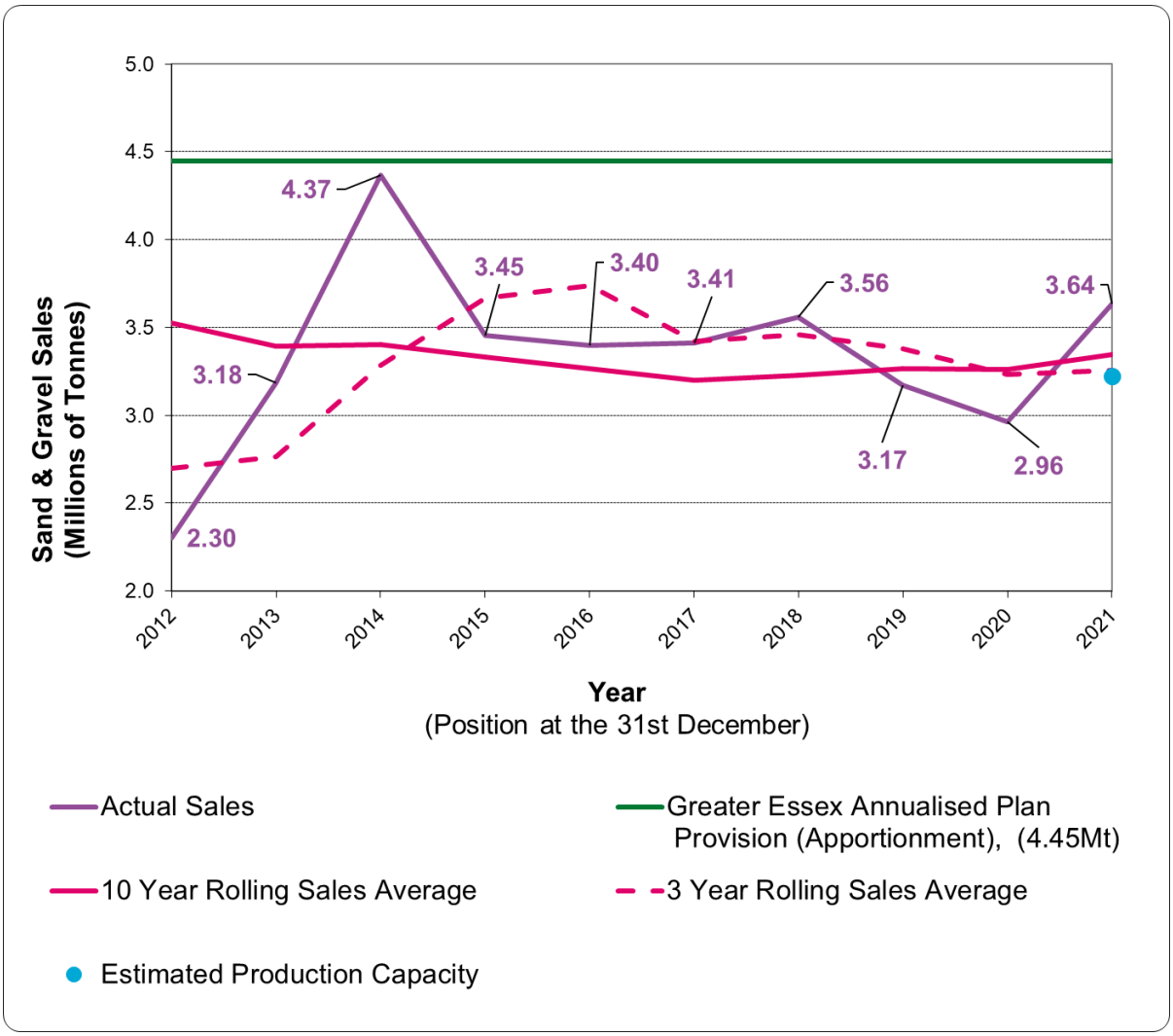
Comparison of National and Regional 2019 Data

3.3.1. As discussed in the previous LAA[31], a national aggregate survey for the year 2019 was undertaken during 2020, with the results being published in mid-2021. As this information was collated after the annual regional aggregate survey covering the same period, a data comparison of both surveys at Greater Essex level was undertaken. This comparison identified a discrepancy and concluded the larger sales value of 3.17Mt (obtained via the Regional Survey) should be used for continued internal assessment now and in the future. This was because it was informed by a greater number of survey returns, although this should still be acknowledged as an under-representation of the annual sales in that year as the regional survey was also not informed by a 100% survey return.

3.3.2. It should be noted that the Draft East of England Aggregate Working Party (EoE AWP) Monitoring Report[32] is obliged to use the national aggregate survey value of 2.94Mt sales in 2021 for reporting at regional level[33]. At this value, as is noted within the draft EoEAWP AMR, Greater Essex contributed 29% of the East of England sales[34].

[31] The Greater Essex LAA (Covering the year 2020), published in 2021.
[32] To be confirmed at publication of the EoEAWP AMR for 2021.
[33] The East of England Authority Monitoring Report, produced at the regional output level will continue to use the Greater Essex 2019 reserves figure, but will use the BGS (National) sales figure to ensure consistency within the table contained therein, and to allow a consistent representation across the region.
[34] EoEAWP (2022) Draft Annual Monitoring Report 2021 Data, page 32, paragraph 4.21

Figure 5: Greater Essex Sales of Land Won Sand & Gravel (2012 to 2021, 10 years)



Source: Annual collated Aggregate Survey data, correct as of 31st December annually.
Note 1 2019/2020 data collection impacted by furlough due to COVID-19 and therefore sales are potentially under-reported.
Note 2: Y axis not at zero. The data that informs this table is in Appendix F.

3.3.3. Sales have fluctuated during the preceding ten years, with sales in 2012 recorded as 2.30Mt, and after peaking in 2014 (4.37Mt, just 2% below the annual apportionment), fluctuated before reducing to 3.64Mt in 2021. This is an increase broadly comparable although above similar levels experienced between 2015-2018, prior to the sales and data collection issues caused by the COVID-19 pandemic. It is important to note that paragraph 2.2.2 stated that the 2021 Aggregate Survey revealed at least 3.23Mtpa potential sand and gravel production capacity, which is below this sales value, although this is based on a 58.3%[35] response rate and is therefore considered to be an under-estimation of Greater Essex's production capacity.

[35] 58.3% response rate for this aspect of the Aggregate Survey 2021

3.3.4. As previously set out in paragraph 3.3.1, it is considered that the value presented for 2019 (3.17Mt) should be considered as an under-representation of sales in that year, as due to the impacts of the pandemic some operators responded to the local survey and not the national, and vice versa.

3.3.5. Nevertheless, it is a requirement for the LAA to report on the ten-year rolling average sales. The PPG also requires an assessment of the last three years of rolling average sales to help establish any trend in sales. It should be noted that all the average sales information will be impacted by the reduction in survey returns covering sales in 2019 (data collection issues) and 2020 (actual lower sales due to the impacts of the pandemic), which would depress the overall averages.

3.3.6. When comparing these 2021 sales (3.64Mt, as noted above), the current level of sales is below both the ten and three year sales average. For reference, the twenty-year sales average (2002 to 2021) is 3.55Mt. The ten-year rolling average sales figure is 3.35Mt, which is an increase of 2.6% recorded over the previously reported ten-year period (2011 to 2020). The three-year average sales figure (2019 to 2021) stands at 3.26Mt, which also is an increase (0.80%) on the figure presented last year.

3.3.7. The annualised plan provision apportionment value is 24.8% higher than the 2012 to 2021 ten-year rolling sales average value, with sales not exceeding the apportionment value across the period assessed. It is noted that the current ten-year rolling average sales figure includes the previous period of economic recession around 2008 as well as the impacts of the COVID-19 pandemic. The sales in 2021 were 8.7% above the ten-year rolling average sales figure (2012 – 2021) of 3.35Mt.

3.3.8. The Draft East of England AWP Monitoring Report[36] states inter-alia that "caution should continue to be exercised when assessing the position against 10-year sales figures and individual mineral planning authorities are encouraged to give careful consideration to their annual aggregate provision rates when preparing their Local Aggregate Assessments and particularly when reviewing their development plans." As stated above, this is in the "context of continued sales against the backdrop of a general downward trend in reserves … a position which is unsustainable in the long run, and which must be considered to be of concern"[37]. Whilst the current MLP sand and gravel provision rate has consistently been above recorded sales, the Essex Minerals and Waste Planning Authority recognises that basing mineral provision strictly on a ten-year rolling sales average when that average is notably depressed due to impacts on the economy and where current sales clearly outstrip that average, would contribute to the overall issue of a downward trend in reserves. An appropriate plan provision figure is being considered through the current MLP Review.

3.3.9. When considering the three-year rolling average sales, it can be seen in Figure 5, that in 2021, this increased to 3.26Mt from 3.23 in 2020; although this still remain

[36] EoEAWP (2022) Draft Annual Monitoring Report 2021 Data, page 29, paragraph 4.8
[37] EoEAWP (2022) Draft Annual Monitoring Report 2021 Data, page 29, paragraph 4.8

one of the lowest three-year rolling average sales figure since 2014 (3.28Mt). This is again likely due to the impacts experienced due to the COVID-19 pandemic.

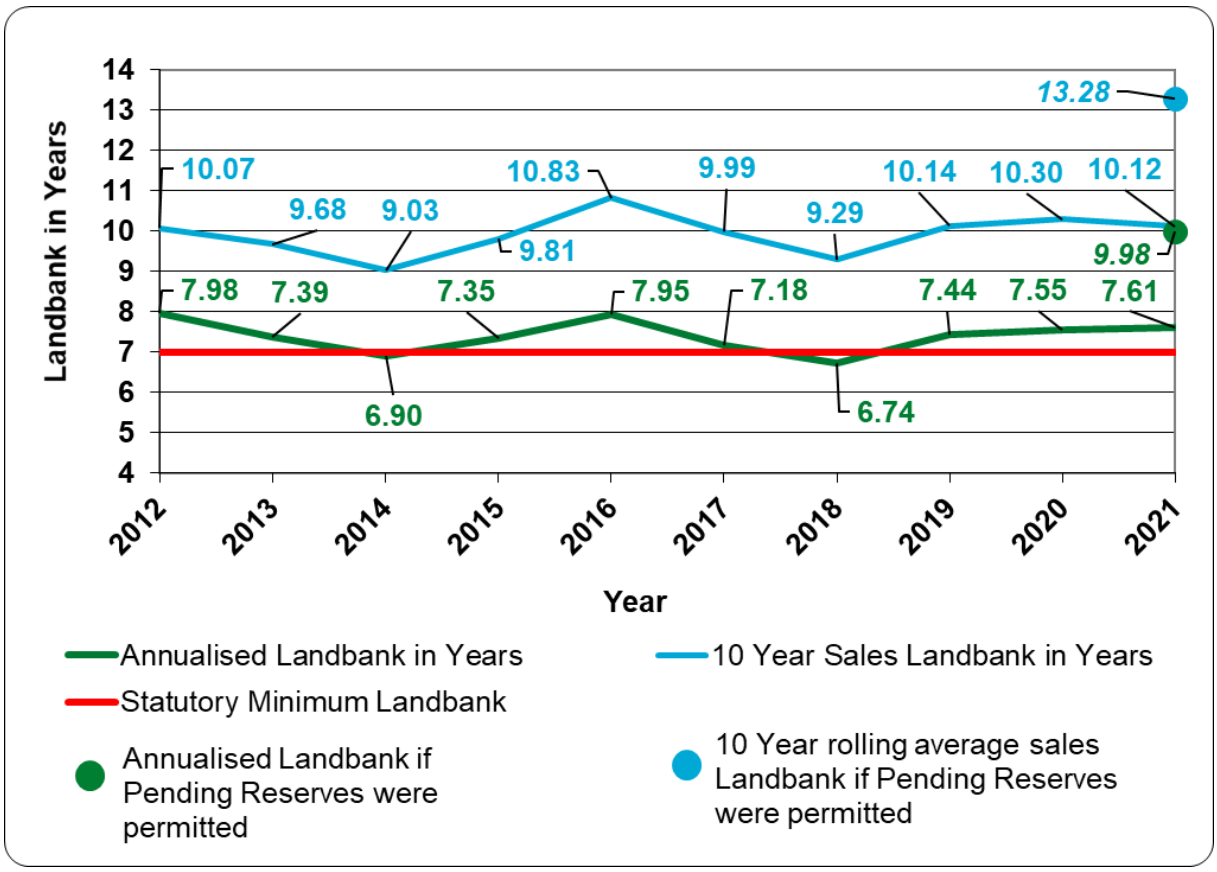
3.4. Sand & Gravel Landbank

3.4.1. Landbanks are calculated by dividing permitted reserve by the annual amount of mineral to be extracted; and are reported in years. The reported value is the time the landbank will last before it is exhausted if no further mineral is permitted for extraction. Permitted reserves will be increased by the grant of planning permissions, whilst sales will erode the permitted reserve.

3.4.2. During 2021, no planning applications were granted within Greater Essex which generated additional sand and gravel reserve. Despite this, it appears that one or more operators have reviewed the expected reserves within their permitted sites, with a slight uplift in the permitted reserves as a result, which has the following impacts on the landbank.

3.4.3. As of December 2021, when using the apportionment method of calculation, the landbank stood at 7.61 years, a 0.008% increase compared to December 2020, when it stood at 7.55 years. When using the ten-year rolling average sales method, the landbank is calculated as being 10.12 years, compared to 10.30 years recorded in the previous year. Both values are presented in the figure below, which identifies the landbank value at the end of each year, as informed by the annual Aggregate Survey. The reason the apportionment approach resulted in a landbank increase whilst the ten-year sales average approach resulted in a drop is that the plan apportionment is a fixed figure whereas the ten-year rolling sales value varies annually. As the ten-year rolling sales average was an increase on the previous year, there was an increase in the denominator used.

Figure 6: Greater Essex Landbank (2012 to 2021)[38]



Source: Essex County Council (2022)
Note 1 2019/2020 data collection impacted by furlough due to COVID-19 and therefore sales are potentially under-reported.
Note 2: Y axis not at zero. The data that informs this table is in Appendix F

3.4.4. Irrespective of calculation method, there is at least a seven year landbank as of 31 December 2021, with a landbank of 7.61 years based on the apportionment rate and a ten-year rolling sales landbank of 10.12 years. When including the 'pending reserve' of an additional 10.57Mt in the landbank calculation (Figure 6), it would provide for a 9.98-year annualised landbank under the adopted appointment, and a 13.28-year landbank under the ten-year rolling average sales method of calculation.

3.4.5. During the production of this LAA in 2022, one of the sites that was pending (A7 Bradwell) was permitted. This has been provided for information only and will be included in the next edition of the Greater Essex LAA. Therefore, using an estimate of six months of sales, with the addition of 6.5Mt it has been estimated that as of 30th June 2022, the apportionment rate landbank stood at 8.69 years and the ten years rolling sales landbank stood at 11.56 years. This is given as context only and will be fully reviewed in due course.

[38] Prior to 2009 the apportionment was 4.55mpta, and 4.45Mtpa from 2009 onwards.

3.4.6. The Essex Minerals Local Plan is currently being assessed/reviewed due to the statutory need to review Development Plans within five years of adoption. The impacts of the pandemic delayed the timetable for production but following the initial Issues and Options (Reg 18) consultation (2021), an informal engagement on mineral provision took place between February and March 2022 which was supported by a call for sites. Following a consideration of responses received through the public engagements and a review of best practice, the decision has been taken to re-base the MLP to 2040 and another Call for Sites was initiated on that basis, which closed in November 2022. Sites submitted through both Call for Sites, and those allocations which remain undelivered in the MLP will be put through a site assessment methodology. It is currently envisaged that the interim results will be consulted upon in late 2023 under Regulation 18 alongside proposed amendments to the MLP.

Forecast of Demand for Sand and Gravel

3.4.7. There are two primary drivers for mineral demand, each with their own difficulties in quantifying a specific figure. These are considered in turn:

Housing Growth

3.4.8. As part of the Regulation 18 Review of the Essex Minerals Local Plan, ECC produced a report,[39] comparing current rates of housing delivery with future delivery rates required to meet the need calculated under the Standard Method for forecasting future housing need. It concluded that, since the adoption of the MLP (2014) through to 2019 (latest data at the time of the report), dwelling completions increased by 42%, but current rates of delivery are still below the rate required to satisfy demand derived from the Standard Methodology. The report also identified a required increased rate of dwelling provision of 90% to meet housing provision targets.

3.4.9. Growth is expected to be driven by private housing, (the largest subsector in the region)[40] , hence housing projections are the primary influencer of mineral need. However, whilst it is simple to conclude that an increase in the rate of housing provision will result in an increased need for mineral provision, a quantifiable link is not possible to calculate. The MWPA uses housing figures only as a proxy for mineral demand as it is not possible to state that X number of houses equates to Y amount of mineral.

Major Infrastructure Provision

3.4.10. The difficulty of quantifying an increase in mineral need through increased rates of development is exacerbated when considering major infrastructure projects. This is due to economies of scale meaning that a number of mineral sourcing strategies can be considered, thereby increasing the number of potential markets to source the

[39] Essex County Council (2021) The Aggregate Provision Paper - Other Relevant Local Information to Justify Aggregate Provision in Essex 2012-2029.
[40] ibid

required mineral. This includes from marine sources, where a project may be of such a size as to justify or require bespoke landing facilities to be established.

3.4.11. This was highlighted during the planning and programming of the Lower Thames Crossing[41] where it was stated that the project would require approximately 6% of the Greater Essex and Kent average 10-year annual sales combined, so already a specific Essex figure cannot be derived. Importantly, this 6% does not include aggregate used in pre-cast units transported to the site, which would likely be obtained from sources local to the point of manufacture, wherever that might be. Furthermore, aggregate demand is likely to be greater to the north of the River Thames, enabling use of transhipment facilities such as. Port of Tilbury and Tilbury2 Construction Materials Terminal (CMAT). These could enable the import of aggregate from beyond Greater Essex and Kent. It is important to clarify that Greater Essex is not looking to use this information to offset mineral demand, rather it is not possible to specifically quantify the impact that major infrastructure projects would have on local mineral supply. These are matters for the mineral supply market and are beyond the control of MWPAs.

3.4.12. In conclusion, it stands to reason that an increase in local development will likely result in an increase in mineral need and subsequently sales, even if that increase cannot be directly quantified. As such, it is noted that the 3.64Mt of sand and gravel which was recorded as sold in Greater Essex in 2021 equates to 81.7% of the current Greater Essex apportionment, so there is currently significant capacity to accommodate an annual increase in sales. Future plan reviews will be required to consider the appropriateness of the current apportionment and the subsequent impact on the need for new site allocations.

3.5. Silica Sand Provision

3.5.1. Silica sand is not classed as an aggregate but is included to provide a fuller picture of the provision of the main economic minerals in Greater Essex.

3.5.2. In Greater Essex, silica sand is produced only at Martells Quarry in Ardleigh, therefore it is not possible to provide sales data due to commercial confidentiality. The currently extant permission for the site is permission reference ESS/53/17/TEN, which was implemented on 20 September 2018.

3.5.3. At the time of developing the adopted Essex Minerals Local Plan (2014), there existed 0.42Mt of material permitted through an extant permission (application reference ESS/18/07/TEN). This described the proportional split of the resource as 54% silica sand to 46% sand and gravel and provided the processing plant capacity to produce silica sand which is 0.045Mtpa. To maintain the statutory ten-year minimum silica sand landbank, the EMLP was required to allocate an additional 0.39Mt across the plan period: therefore, an extension of Slough Farm was allocated. This provided a total estimated mineral yield at the site of 0.86Mt, of

[41] Highways England (2020) Aggregate Demand for the Lower Thames Crossing briefing paper

which 0.46Mt comprises of silica sand. The assumed annual output of the site remains at 0.045Mtpa.

3.5.4. As of 31 December 2021, an application (reference: ESS/29/20/TEN) on this allocated site has been presented to the Essex County Council Development and Regulation Committee (24 September 2021). The application was resolved to be granted, subject to conditions & legal agreements, the latter of which remain pending as of October 2022. Should permission be granted, the site would yield 1.31Mt mineral from the western lateral extension[42] of which 0.46Mt would be silica sand.

[42] The 1.31 million tonnes is made up of some 460,000t of silica sand and 390,000t of sand and gravel, which works out to be a split at a 54:46 ratio according to the Development & Regulation Committee report for application ref: ESS/29/20/TEN (24th SEPTEMBER 2021)

4. Marine-Won Sand & Gravel

4.1.1. Marine-won aggregates are an alternative to those extracted from the land although they cannot always function as a direct substitution. They can be used for some of the same purposes including a variety of construction purposes e.g., road sub-base, land reclamation and beach nourishment.

4.1.2. It is understood that the figures presented in this section exclude material dredged from areas not in the ownership of the Crown Estate and material that was removed for navigational purposes, as stated in the draft East of England Aggregates Working Party Annual Monitoring Repot 2022.

4.2. Marine Planning

4.2.1. The working of marine resources has substantial economic, environmental, and social value. However, increasing additional pressures such as large-scale renewable energy developments, fishing, as well as demand for aggregate, led to concerns over marine degradation. The Marine and Coastal Access Act (2009) sets out the mechanism for marine planning, which aims to tackle these concerns[43].

Figure 7: Marine Planning Areas Close to Greater Essex

Key: 3= East Inshore, 4 = East Offshore, 5 = Southeast Inshore & 6 = South Inshore
Source: Essex County Council (2022) as derived from MMO Marine Planning Areas in England

4.2.2. A key tool are marine plans, which contribute to more effective management of marine activities and reduce the degradation of these habitats. Prior to Marine

[43] Houses of Parliament PostNote Number 388 (Sept 2011) 'Marine Planning'

Plans being adopted, there was a limited evidence-base, meaning decisions were undertaken on a risk-based approach to accommodate uncertainty. Marine plans are monitored with a view to ongoing revision in similarity to terrestrial based Local Plans.

4.2.3. In England, the Marine Management Organisation (MMO) brings together planning, licensing, and enforcement. The marine planning area closest to Greater Essex is covered by the South East Marine Plan. This covers an area of approximately 1,400 kilometres of coastline stretching from Felixstowe to near Dover, a total of over 3,900km^2 of sea. It is, however, highly likely that the areas 'East Inshore' and East 'Offshore', could also supply marine aggregate to the Greater Essex area, as identified in Figure 7.

4.2.4. It is noted that there are three aggregate specific policies (SE-AGG1, SE-AGG2 and SE-AGG3)[44] in the Southeast Marine Plan which effectively serve as safeguarding policies against the potential of other proposals e.g., offshore wind farm developments compromising the ability to extract known aggregate resources.

4.2.5. Both the East Inshore and Offshore plans were adopted in June 2014, with the South East Marine Plan being more recently adopted on 23rd June 2021. Each marine plan has a 20-year horizon, with the MMO reviewing each plan to produce a report every three years after adoption[45]. Furthermore, every six years a report is produced by Defra collating the effectiveness of all marine plans together.

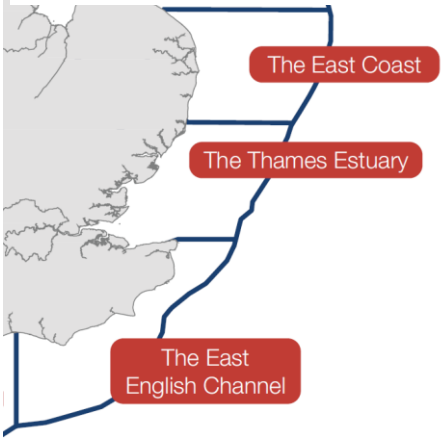
[44] Further information regarding the South East Aggregate policies are contained in the technical annex.

[45] The MMO monitor the effectiveness of marine plan policies by using data from indicators and applying a logic model framework. Further information can be found on the MMO's Website.

4.3. Dredging Areas & Wharf Facilities Serving Greater Essex

4.3.1. Ports can be considered as 'virtual quarries' due to their ability to sell and distribute mineral, whilst many also have processing facilities. The marine-won material landed in the vicinity of Greater Essex is mainly sourced from the Thames Estuary Licensed Area, as identified in Figure8. This area extends eastwards from Aldebrough in Suffolk to a line extending east from Margate in Kent. To the north of Aldeburgh is the East Coast Licensing area and to the south of Margate is the English Channel region.

Figure8: Local Dredging Regions



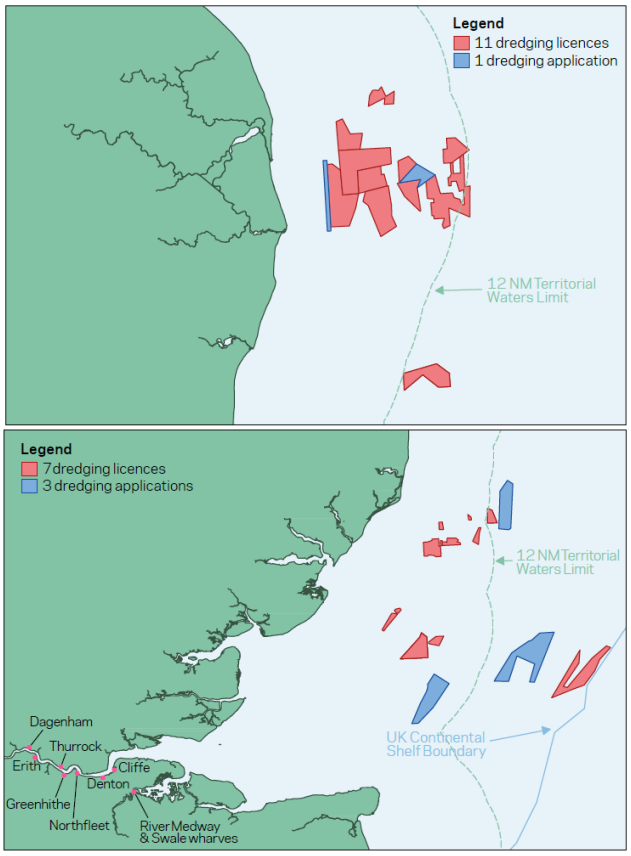
Source: As derived from The Crown Estate: Capability and Portfolio 2021

4.3.2. The now expired National and Regional Guidelines for Aggregate Provision in England 2005 – 2020[46], assumed 14 million tonnes (Mt) of marine sand and gravel would be landed in the East of England during that time. This equates to 0.93Mt per year, although it is not apportioned to individual authorities. These Guidelines have not, to date, been replaced.

4.3.3. Although marine-won minerals contribute to the Greater Essex mineral supply, across Greater Essex there are only ports in Thurrock that accept marine won aggregate, with other landing points in proximity being in adjoining authorities, namely Ipswich and within the Thames Estuary. The ports considered to have the potential to serve Greater Essex are shown in Map 4 below and listed in Appendix H. It is noted that the wharves in London are likely to supply the City's needs, with wharves in Kent less viable to supply mineral to Greater Essex. The map also identifies the licensed dredging areas closest to Essex, alongside new dredging application areas and exploration areas.

[46] The National and Regional Guidelines for Aggregate Provision in England 2005 – 2020 remains the most recent guidance available. It is pending an update by the National Government, which would be based on the 2019 National Aggregate Survey results.

Map 4: Marine Dredging Areas in Proximity to Greater Essex (2021)



Source: The Crown Estate: Marine Aggregates - Capability & Portfolio (2021) pages 9 and 10.

Note: Each landing port will have several associated wharves. For example, the landing port of West Thurrock includes the wharves of Purfleet and Thurrock as noted in Appendix H

4.3.4. Paragraph 210(e) of the Revised NPPF (2021)[47] states (inter-alia) that MPAs should safeguard existing, planned, and potential facilities for bulk mineral transport including those for marine-dredged materials.

4.4. Marine Aggregate Landings

4.4.1. The Crown Estate collects statistics regarding marine-won mineral landed at its ports, although these do not define the mineral's destination[48]. Resultantly, the figures do not relate to the amount of marine-won aggregate used within any one location, rather it is the amount landed. In this case marine won aggregate landed in the Thames Estuary and/or at Ipswich would usually be used within proximity to these ports, namely within Essex, Thurrock, Southend-on-Sea, Kent, Suffolk, and London, but potentially also further afield. However, due to their mass, landed

[47] Ministry of Housing, Communities and Local Government (2021) National Planning Policy Framework

[48] Unless it is sourced for a specific 'significant' project. Such projects are detailed in Crown Estate: Marine Aggregates – Capability and Portfolio (2021) pages 14 and 15 and include locally Container Terminal (Felixstowe), London Array Wind Farm, Clacton Pier (Essex), Thames Tideway tunnel (London), Queen Elizabeth II Bridge (Dartford), Crossrail (London) and numerous other major London projects.

minerals do not have a large road based economically viable transport distance, so it is likely these marine-won minerals will be used in the surrounding vicinity unless they are transported by rail.

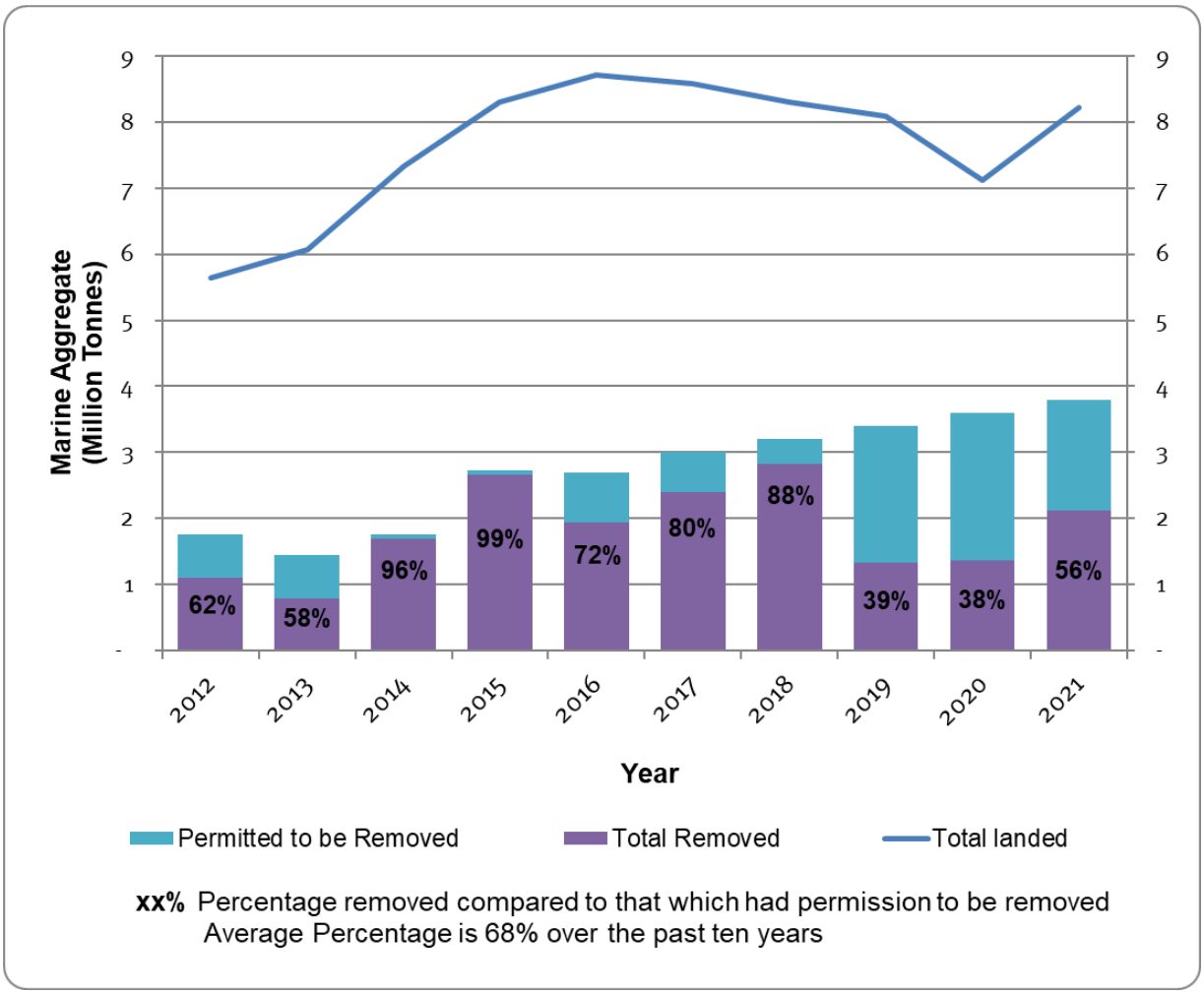
4.4.2. It is suggested that the average road delivery distance (of any aggregate) is 38km (24 miles)[49], with the cost often doubling for each 30 miles travelled. As such aggregates are likely to only be transported long distances when it is absolutely necessary[50]. BGS[51] studies support this and suggests that 60km (37 miles) is the maximum *typical* distance *bulk* aggregates travel by road. It has been concluded that although this isn't stated as an absolute maximum (viability would be considered on a case-by-case basis) it has been inferred that travel distances of large volumes of aggregate would not likely be greater than 37 miles.

4.4.3. A Crown Estate Report[52] identifies dredging and landing statistics in 2021, as shown in the figure below. This highlights the total marine aggregate extracted from the Thames Estuary Area, the additional amount that has permission to be extracted and total marine aggregates landed at the Estuary's ports. Importantly, between 2016 and 2022 there has been a steady increase in the amount of marine aggregate that is licensed to be removed, with a corresponding increase in uptake of extraction up to 2019. Extraction is once again increasing in 2021 after a dip in 2019 and 2020.

4.4.4. A total of 2.12Mt of marine aggregate were removed from the seabed in 2021, meaning that in this year, 56% of the annually permitted/licensed extraction occurred. This is an increase from the 39% recorded in 2019 and 38% in 2020, respectively, but remains lower than the preceding five years (between 72% and 99% as a proportion, but also with regards to the total amount removed in tonnes). Between 2012 and 2021, the annual average extraction of that permitted was therefore increased by 1% to 69%.

[49] SustainableConcrete.org referenced the source as the Concrete Centre 2010
[50] Mineral Products Association - Aggregates
[51] British Geological Survey Planning Matters Factsheet "Construction Aggregates", BGS, 2007
[52] Crown Estate (2022) Marine Aggregates - The Crown Estate Licences, Summary Of Statistics 2019, Licences to dredge Marine Minerals on page 2 and Landing Statistics for dredged primary aggregates on page 4 (East Coast) and page 5 (Thames Estuary)

Figure9: Marine Aggregate Extraction in the Thames Estuary Region (2012 to 2021)



Source: Essex County Council (2022), as derived from data contained within the Marine Aggregates, The Crown Estate Licences, Summary Of Statistics (Crown Estate) reports between 2012 and 2021.

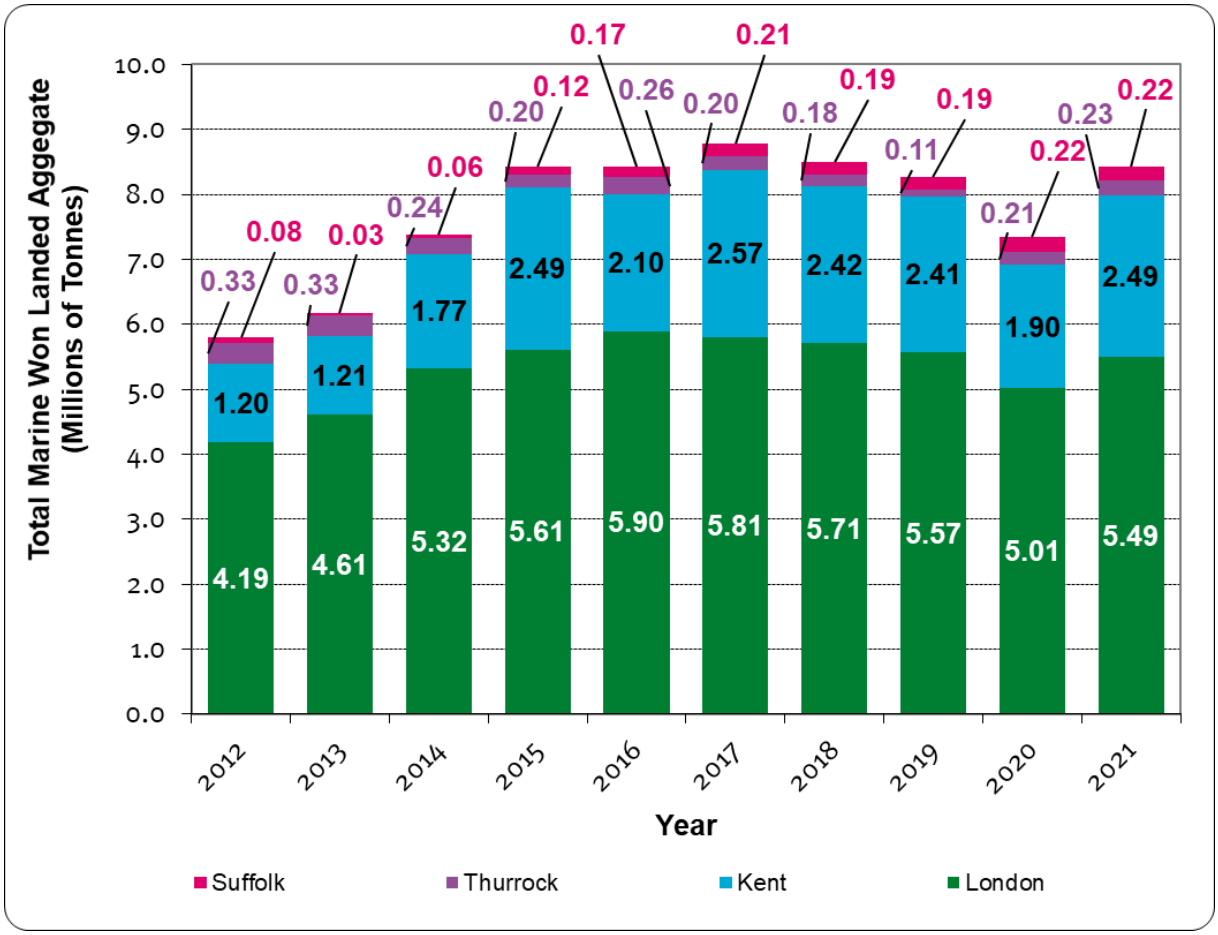
4.4.5. The above figure shows that there was a total of nearly 8.21Mt landed within the Thames Estuary area during 2021, which is significantly more than the total removed (2.12Mt). This means that a significant quantity (6.10Mt) was extracted from other licenced areas (such as the East Coast and East English Channel) and subsequently landed within the Thames Estuary Area, presumably to assist with development within Greater London and surrounding areas.

4.4.6. It continues that, only 0.22Mt were landed within the East Coast region in 2021[53], whilst just over 3.30Mt were removed through extraction. This means that a significant amount was extracted but landed in other regions.

[53] Crown Estate (2022) Marine Aggregates - The Crown Estate Licences, Summary Of Statistics 2021, Licences to dredge Marine Minerals on page 2 and Landing Statistics for dredged primary aggregates on page 4 (East Coast) and page 5 (Thames Estuary)

4.4.7. The following figure details the amount of marine-won mineral landed in ports within London, Thurrock, Kent, and Suffolk. It is considered that marine dredged minerals landed at these ports have the capacity to be used in Greater Essex.

Figure10: Marine-Won Mineral Landed in Ports that Serve Greater Essex (2012 to 2021)



Source: Essex County Council (2022) as derived from The Crown Estate, Summary of Statistics, 2012 – 2021
The data that informs this table is located in Figure 35, Appendix H.

4.4.8. There has been a fluctuating amount of marine-won aggregate landed between 2012 and 2021, from 5.80Mt to 8.44Mt, representing an increase of 45.4% in ten years. Furthermore, 2021 had an 14.9% increase in tonnes landed when compared to 2020 figures.

4.4.9. When ports are analysed by administrative region, since 2012 there has been an overall increase in the marine-won aggregate coming into London ports, (31.1%). Kent landed more than double than in 2012 (107.4%) as did Suffolk (164.1%). Thurrock continues to land decreasing amount of marine aggregate than ten years ago (-29.2%)[54].

[54] Source of all this data is derived from The Crown Estate, Summary of Statistics, 2012 – 2021, as presented in Figure10 and paragraphs 4.467 and 4.4.8. Further statistics can be found in Appendix H.

4.5. Planned Marine Contribution to Mineral Supply

4.5.1. As noted in paragraph 4.4.1, Greater Essex has the potential to be served from further afield[55], but is most likely to receive aggregate from the Thames and East Coast dredging regions, due to the prohibitive costs of long-haul road transport of mineral. Licenses have been granted such that 3.8 Million Tonnes (Mt) and 7.08Mt (Thames and East Coast respectively) can be extracted from these two regions annually. This would total 10.88Mt per annum from the two regions combined. It is stated by the Crown Estate[56] that at this rate, current estimates suggest there are 24 years of primary marine aggregate production permitted in the Thames Estuary and there remains 12 years within the East Coast region. This could be increased through current Licence applications, of which there are a total of four between the two regions. These could contribute a further 2.5Mt, according to the Crown Estate[57].

4.5.2. It is noted that this resource has the potential to serve markets other than Greater Essex, with the market destination being a commercial decision, and therefore this figure cannot be taken to equate to a marine supply for Greater Essex, with Greater London likely to be a significant consumer.

4.6. Offsetting Land-won Production through Marine-won Aggregate

4.6.1. During the examination held into the Essex Minerals Local Plan (Nov 2013) several concerns were raised claiming that marine aggregate imports to Essex have the potential to be increased and make a greater contribution to overall aggregate provision. As such, the Mineral and Waste Planning Authority (MWPA) should not allocate as much land-won aggregate as set out in the emerging MLP. The Planning Inspector ruled that the MWPA were required to include a commitment to continue monitoring the potential for increasing the proportion of marine-won sand and gravel contributing to the future overall County requirement. This resulted in the inclusion of Minerals Monitoring Indicator 3, as reported on through the Essex Authority Monitoring Reports.

4.6.2. However, ensuring an increase in the proportion of marine-won sand and gravel to offset the provision required from land-won sources, is outside of the remit of Mineral and Waste Planning Authorities, as marine extraction areas are leased by the Crown Estate, with licenses to dredge issued by the Marine Management Organisation (MMO). Further, the sale destination is a commercial decision over which the MWPA has no control. Land-won and marine-won aggregate are not always directly substitutable in any event[58]. Similarly, it has been noted[59] that

[55] e.g., the Humber and East English Channel Regions

[56] Crown Estate (2021) Marine Aggregates – Capability and Portfolio. Statistics relate to the calendar year 2020.

[57] Ibid

[58] At the EoEAWP meeting (9 Feb 2019), it was noted that marine aggregates in the East tend to be more sand-rich and therefore can't simply use dredging to achieve a 50:50 sand: gravel mix so therefore not directly substitutable. A more directly substitutable source would be off the north-eastern coast (c. Hull)

[59] Source: EoEAWP meeting (9 Feb 2019),

substituting land-won for marine aggregates is linked to economic circumstances and is ultimately market driven.

4.6.3. Subsequent conversations with the industry have established that marine sources are not constrained by resource availability or by a limit on permitted reserves. Instead, it is believed that constraints are caused by production capability being limited by existing dredger numbers (and their production rate), and their ability to access the market, which is determined by the capacity and location of wharfs and associated infrastructure. As such it is not considered appropriate to reduce land-won reserves based on the assumption that they will be replaced by marine-won reserves.

4.6.4. MWPAs can ensure that marine-won sand is able to make an important contribution to land-won mineral by ensuring that wharves and ports are safeguarded from the encroachment of incompatible development that may compromise the ability of these marine facilities to carry out their function. In this regard, MWPAs are supported by the NPPF[60] which incorporates the 'Agent of Change' Principle. This principle states that where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed.

4.6.5. The Essex MWPA produced a Wharf Baseline Capacity Study to assist in the development of the Minerals Local Plan Review (MLPR) (Regulation 18) consultation (March to April 2021). This evidence base document addressed the required commitment to continue to monitor the potential for increasing the proportion of marine-won sand and gravel contributing to the future overall County requirement, and specifically to report on Mineral Monitoring Indicator 3. The requirement of the indicator was to assess whether the amount of marine aggregate landed in Greater Essex is within 90% of existing capacity to see if existing capacity was constraining marine aggregate importation into Greater Essex. The rationale report, informing the MLPR concluded inter-alia "it is currently considered that there are no means to justify a land-won aggregate allocation reduction through a reliance on an increase in marine-won aggregate landings. Furthermore, additional work surrounding the port capacity indicator would not yield additional results, as there is no statutory requirement for operator's participation. It is therefore proposed that the relevant Mineral Monitoring Indicator be removed from the Monitoring Framework, and Policy S6 continues to omit any marine aggregate contribution from its quantification of need."[61] The responses to the MLPR Regulation 18 consultation are still being analysed, and any updates to the position because of the consultation will be made available in due course.

[60] NPPF Paragraph 187.

[61] See paragraph 4.169 of the rationale report for full wording

5. Imports & Exports of Land-Won Aggregate

5.1. Introduction

5.1.1. Historically, approximately 75% of the mineral extracted within Greater Essex has been used within the area, with the majority of that exported going to London. Greater Essex is heavily reliant on hard rock importation, used as construction material and rail ballast, as well as limestone specifically used in cement making. A pattern of long-distance supply has emerged, with Greater Essex exporting its sand and gravel, whilst importing hard rock[62].

5.2. Methods of Mineral Transportation within Greater Essex

5.2.1. Bulk transport modes for mineral movement consist of road, rail, and water. For relatively short movements, the road network is the most efficient and heavily used mode of transport, as this offers flexibility to deliver to any destination. There is also some cross-boundary movement of aggregate by road into and from neighbouring areas, although exportation from Essex to London is predominantly by rail.

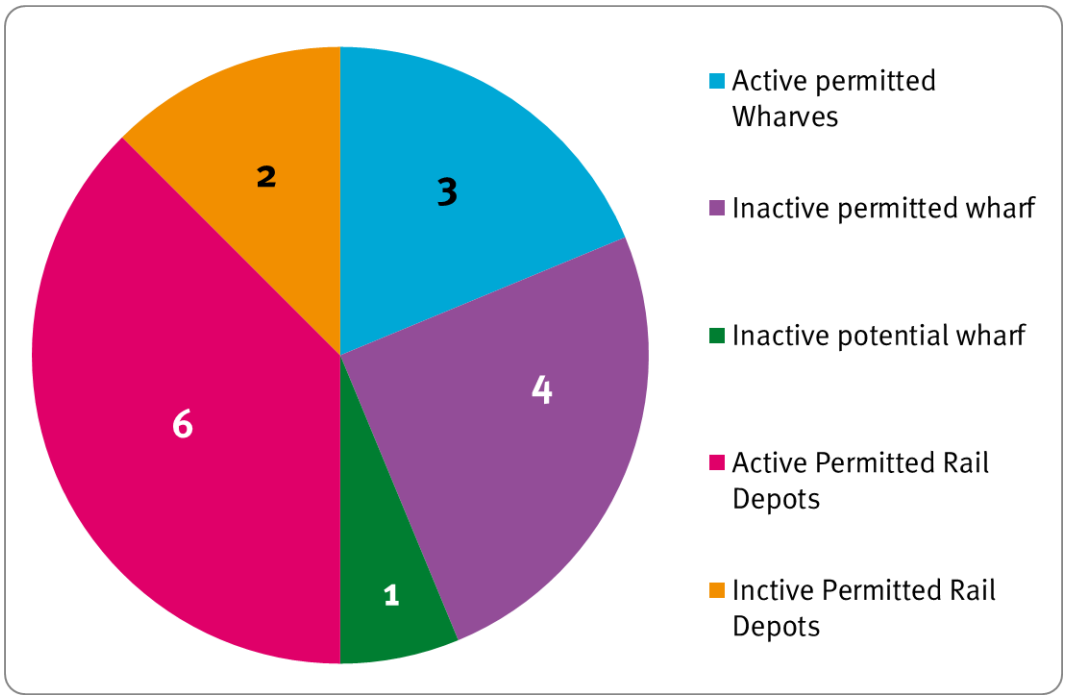
5.2.2. Rail and water provide the most effective long-distance transhipment opportunities, despite involving 'double handling' i.e., loading and unloading of aggregate on to lorries at each end.

5.2.3. Understanding road haulage of minerals is not possible as there is no data collection mechanism establishing supply chains. However, an insight into the bulk movement of mineral at transhipment sites is usually possible through data collected within annual mineral surveys, although only when there are sufficient responses provided which allow publication and yet maintain commercial confidentiality. As stated in paragraph 3.1.7, where there are less than three separate operators responding to survey requests, this collated data cannot be published, even if those operators provide returns for multiple sites. Any individual data points are destroyed annually once collated for monitoring purposes. As such, where commercial confidentiality cannot be protected, figures cannot be provided, and this information is destroyed with no record of retained.

5.2.4. The 2020 National Aggregate survey provided an in-depth and robust review of the national movements of aggregates for the calendar year 2019. Due to the strategic nature of this analysis, it is considered that this provides greater insight to the movement of minerals compared to the regional annual aggregate survey.

[62] From areas such as the East Midlands and limestone from the Southwest.

Figure 11: Status of Transhipment Sites in Greater Essex (As of 31 December 2021)



Source: Essex County Council (2022). The data that informs this table is in Appendix B.

Exportation of Sand & Gravel in 2019

5.2.5. As specified in paragraph 5.2.4 above, the most robust and up to date information regarding imports and exports of aggregate is contained within table 9d (page 62) of the National Survey Results[63], as presented below. It should be noted that the rail terminals were not included in the national survey 2019, with only the aggregate exported via wharf facilities considered, to avoid the potential of double-counting of aggregate across the country. The regional survey, on the contrary would consider all rail and wharf facility exportation. This regional survey information has been provided towards the end of this section, where commercial confidentiality allows, to ensure that the importation and exportation of aggregate directly into and out of Essex is captured, as it had no active wharves at present.

Figure 12: Source/Destination of Land-won Sand & Gravel in 2019 (Million Tonnes)

Source Region/ Source MPA	Destination	Land-won Sand & Gravel (Mt)	MPA %	Marine-won Sand & Gravel (Mt)	MPA %
	Greater Essex	2.39	81%	0.20	93%

[63] BGS/MHCLG (2021) Collation of the results of the 2019 Aggregate Minerals survey

Source Region/ Source MPA	Destination	Land-won Sand & Gravel (Mt)	MPA %	Marine-won Sand & Gravel (Mt)	MPA %
East of England/ Greater Essex	East of England	0.34	12%	-	-
	Elsewhere	0.21	7%	0.01	7%
MPA Total		2.94	-	0.21	-

Source: Essex County Council (2021) as derived from table 9d (page 62), Essex County Council & Thurrock Borough Council, BGS/MHCLG (2021) Collation of the results of the 2019 Aggregate Minerals survey.

5.2.6. As can be seen from the table above, of the total sand and gravel extracted within Greater Essex, 81% is used within the same area. The remaining 19% is exported beyond the sub-regions' boundaries, of which the vast majority (12%) is exported to the East of England. Only 7% of the total sand and gravel extracted within the Greater Essex sub-region is exported to other regions, such as Greater London or the Southeast, for example.

Importation of Sand and Gravel in 2019

5.2.7. In similarity to exportation of aggregate, the most robust and up to date information regarding imports and exports of aggregate is contained within table 10 (page 79) of the National Survey Results, as presented below. In similarity to the above only the aggregate exported via wharf facilities is considered, to avoid the potential of double-counting of aggregate across the country. The regional survey, on the contrary would consider all rail and wharf facility exportation. As noted in paragraph 5.2.5, the regional survey data is provided later in this section, to ensure that the importation and exportation directly into/out of Essex is accounted for.

Figure 13: Importation of Sand & Gravel in 2019 to Greater Essex (Million Tonnes)

Source Region/ Source MPA	Land-won Sand & Gravel (Mt)	Marine Sand & Gravel (Mt)	Total Sand & Gravel (Mt)	Crushed Rock (Mt)	Total Primary Aggregate (Mt)
East of England/Greater Essex	0.10	1.19	**1.29**	**1.58**	**2.87**

Source: Essex County Council (2021) as derived from table 10 (page 79), Essex County Council & Thurrock Borough Council, BGS/MHCLG (2021) Collation of the results of the 2019 Aggregate Minerals survey.
Note: The columns may not sum due to rounding.

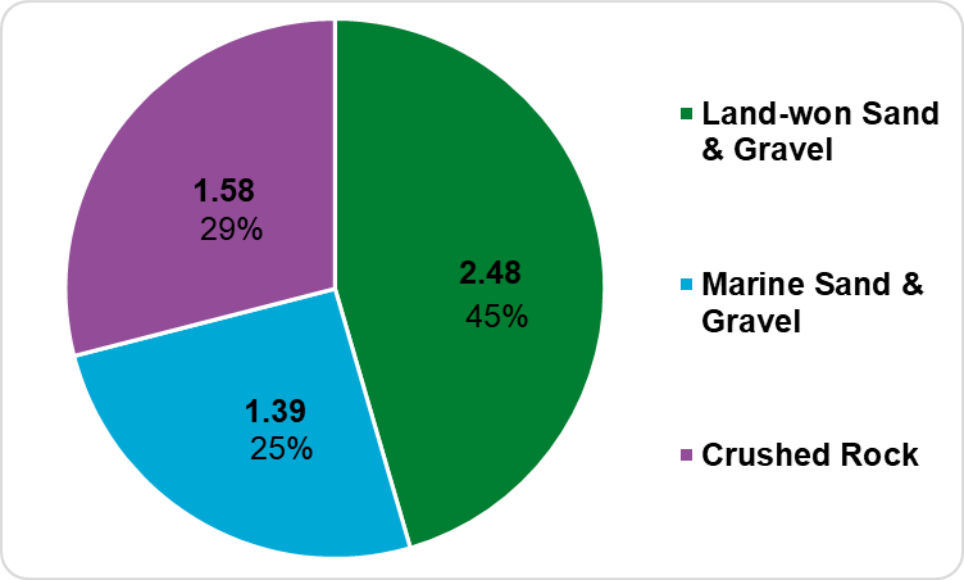
5.2.8. The table above identifies that there was little land-won sand and gravel imported into Greater Essex, which should be expected given the extent of the indigenous material. This was supplemented by 1.19Mt of marine-won sand and gravel which was imported into Greater Essex, although as set out above, this does not suggest that 1.19Mt of marine-won sand and gravel was used in Greater Essex as it has the potential to be sold elsewhere.

5.2.9. As noted previously in 2.1.1, there are no hard rock deposits withing the Greater Essex sub-region. All hard rock demand within Greater Essex is therefore supplied via importation. It can be seen in the table above that 1.58Mt of hard rock was imported in 2019.

5.3. Greater Essex Consumption of Primary Aggregate in 2019

5.3.1. The 2019 National aggregate survey was the first to identify the 'consumption' of aggregate within sub-regions. This is calculated via the amount extracted and consumed within a sub-region, minus the amount extracted and exported from the sub-region, plus material imported and consumed within the sub-region.

Figure14: Greater Essex Consumption of Primary Aggregate in 2019 (Million Tonnes)



Source: Essex County Council (2021) as derived from table 11 (page 82), Essex County Council & Thurrock Borough Council, BGS/MHCLG (2021) Collation of the results of the 2019 Aggregate Minerals survey.
Note: this does not include the consumption of any recycled or secondary aggregate within Greater Essex, which was not presented in the results of the national data survey
Note: The columns may not sum due to rounding.

5.3.2. From the figure above, Greater Essex consumed a total of 3.87Mt of sand and gravel (land and marine won combined), with the greater proportion being supplied from land-won sources. 29% of the total consumed was crushed rock, which was imported due to the lack of hard rock geology within the sub-region.

Imports and Exports in 2020 and 2021

5.3.3. During the most recent two annual mineral surveys (covering the calendar years 2020 and 2021) there have not been enough responses to maintain commercial confidentiality, for all aspects of the imports and exports of Greater Essex. However, the information that is available is presented in the tables below.

Figure 15: Imports to Greater Essex in 2020 and 2021 (Million Tonnes)

Year	Imports to Rail Depots	Imports to Wharves	Total Imports to Rail Depots and Wharves	Source(s) of Material
2020	Not enough operators responded to maintain commercial confidentiality		1.62	East Midlands Greece, Ireland & Norway Marine Won Aggregate Scotland

Year	Imports to Rail Depots	Imports to Wharves	Total Imports to Rail Depots and Wharves	Source(s) of Material
				Southeast England Southwest England
2021	0.65	1.64	2.29	Belgium & Norway East Midlands Scotland Southeast England Southwest England

Source: Essex County Council (2022)

Figure 16: Exports from Greater Essex in 2020 and 2021 (Million Tonnes)

Year	Exports to Rail Depots	Exports to Wharves	Total Imports to Rail Depots and Wharves	Receiver(s) of Material
2020	Not enough operators responded to maintain commercial confidentiality			
2021	Not enough operators responded to maintain commercial confidentiality		0.25	Not enough operators responded to maintain commercial confidentiality

Source: Essex County Council (2022)

Potential Maximum Throughput of transhipment sites in 2020 and 2021

5.3.4. Within the 2020 and 2021 annual survey operators of transhipment sites were asked to provide data on the potential maximum throughput of aggregate at their sites[64]. This was a new metric, which was designed by the AWP to assist in understanding potential mineral movement to meet future demands. This area is also subject to commercial confidentiality, therefore, where data can be provided, it is shown in the table below.

[64] This is understood to be the maximum feasible capacity of a site taking into account any restrictions such as planning or permit limits (i.e., tonnage restrictions), as well as any other constraints around site size or things imposed by operating conditions (so this would include imposed limits to HGV movements).

Figure 17: Potential Maximum Annual Throughput of Aggregate within Greater Essex in 2020 and 2021 (Million Tonnes)

Year	Potential Maximum Annual Throughput of Aggregate:		
	At Rail Depots	At Wharves	Total at Rail Depots and Wharves
2020	Not enough operators responded to maintain commercial confidentiality		
2021	Not enough operators responded to maintain commercial confidentiality		0.25Mtpa

Source: Essex County Council (2022)

5.3.5. As of 31 December 2021 there was at least 2.93Mtpa potential maximum annual throughput of aggregate at Transhipment sites in Greater Essex. Although this is stated as the maximum throughput annually, the response rate for this aspect of the aggregate survey was 60.0% suggesting there is more capacity. However, an estimate of maximum capacity cannot be inferred as throughputs vary significantly across sites. Additionally, it would not be appropriate to speculate on facilities that did not provide response to the Survey.

6. Secondary & Recycled Aggregate

6.1. Introduction

6.1.1. Secondary and recycled aggregates are alternative sources of aggregate. The revised NPPF (paragraph 210) specifically requires MPAs to take account of the contribution made by substitute or secondary and recycled materials and mineral waste before considering the extraction of primary materials whilst aiming to source minerals supplies indigenously.

6.1.2. 'Recycled' aggregates are derived from the reprocessing of inorganic materials previously used in construction such as rail ballast or material recovered from demolition or construction waste. Such materials need to comply with national specifications and aggregate standards and therefore continue to provide an increasingly important contribution as substitutes for primary aggregates. This can also be known as aggregate recovery.

6.1.3. 'Secondary' aggregates are created as a by-product of a construction or industrial process[65]. Substantial amounts are processed on construction and redevelopment sites, either at stand-alone permanent facilities or temporary facilities co-located with existing quarries, landfill, and recycling sites for the life of the primary operation.

6.1.4. The benefits for maximising the use of these are two-fold. Re-use and recycling reduce the need to extract primary material and reduces the amount of waste needing disposal. This has clear economic, environmental, and social benefits.

6.1.5. The Greater Essex Authorities positively encourage re-use and recycling of Construction, Demolition and Excavation (CD&E) waste through policies within their Development Plans. However, this does not mean increasing the importation of CD&E waste to be recycled would always be acceptable. The NPPF[66] also provides support for the safeguarding of existing facilities from the future development of 'sensitive' uses through the 'Agent of Change' Principle. The Essex and Southend-on-Sea WLP (2017) provides additional capacity through recycling and recovery allocations and safeguards existing and allocated sites to prevent the operation of existing or future facilities becoming compromised due to their proximity to incompatible development which would act to reduce available capacity across the Plan area.

6.2. National Data

6.2.1. It is important to understand there remain data limitations associated with secondary and recycled aggregates. Specifically, regarding recycled aggregate,

[65] Examples include power station ash from combustion (fly ash) that can be turned into bricks and cement, and slag from iron smelting that can be manufactured into mineral wool and used as heating pipe insulation.
[66] NPPF Paragraph 187.

there is no direct way of collating data for recycled aggregate production. Instead, assumptions and proxy's must be used, which is less robust than primary data, as explained below. Other than individual Authorities carrying out additional surveys, for which there is no requirement for industry to complete so response rates can be low, the Environment Agency's annually published Waste Data Interrogator (WDI), must be used.

6.2.2. The data within the WDI does not account for mobile crushers or recycling and re-use that occurs on individual construction sites. The tonnage of recycled aggregates reported in the WDI is therefore likely to only represent a proportion of the recycled aggregates in circulation. These figures are therefore only estimates and should be treated with caution. To account for this, the combined figure from the WDI is assumed to represent 80% of total available capacity, with an additional 20% added to the figure to account for mobile aggregate recycling facilities. Further, secondary aggregates, where certain quality protocol specifications are met, is considered to be non-waste and is therefore not included within the waste tonnage returns.

6.3. Secondary Aggregate in Greater Essex

6.3.1. Supporting evidence for the Essex and Southend-on-Sea Waste Local Plan 2017 (WLP)[67] stated that it is not known whether secondary aggregates are produced in any significant quantity in the joint Essex and Southend-on-Sea Plan area. It is however considered that the lack of heavy industry in Greater Essex, suggests that there will be little produced. At present, it is not likely that a study to investigate this aspect will be pursued due to the lack of generating facilities.

6.4. Recycled Aggregate in Greater Essex

6.4.1. Since the production of the previous LAA, a guidance note has been prepared[68] to assist with planning for recycled aggregate production. It considers that for a product to be made from waste, recycled aggregate must meet the 'end of waste' criteria set out the WRAP/ Environment Agency Quality Protocol[69]. The guidance contains standardised methodologies for planners to measure production of recycled aggregate more accurately.

6.4.2. This LAA replaces the interim measures employed in the previous LAA, by using the Waste Data Interrogator methodology for reporting on 2019, 2020 and 2021 data[70]. This provides data received from Environment Agency regulated waste management facilities, with the submission of this data being a legal requirement of a waste management permit.

[67] ECC/BPP (December 2015) SD 20 - Topic Paper 1 - Waste Capacity Gap Update

[68] Guidance on Assessing Levels of Recycled Aggregates (2022) was devised on behalf of the regional Aggregate Working Parties and Waste Technical Advisory Board/Planning Advisory Groups. This guidance note links to a regional/national project to standardise aggregate recycling collation data.

[69] WRAP & The Environment Agency (October 2013) Quality Protocol: Aggregates from inert waste

[70] AWP/WTAB (2022) Guidance on Assessing Levels of Recycled Aggregates, page 3

6.4.3. The guidance note states that when using the EA Waste Data Interrogator (WDI) to determine the amount of waste material sold as recycled aggregate, it is important to note that the data from the WDI excludes the proportion of waste material which is processed by mobile plant at construction sites. Therefore, this LAA replicates an approach undertaken within a study published by Capita Symonds in 2005 which suggested that the amount of recycled aggregate produced from fixed processing plant represents 80% of the total recycled aggregate produced in a planning area, with the remaining 20% produced from mobile plant at construction sites.

6.4.4. This methodology was clarified in an WTAB meeting (24/01/2023) to state that a quarter of the WDI value, when added to the WDI value would equate to 80/20% split as specified in the methodology. Therefore, to ascertain the overall recycled aggregate figure, an additional 20% has been applied to the WDI figure to give an overall tonnage of recycled aggregate production.

Table 18: Aggregate Recycling Production at Extraction and/or Transhipment Sites in Greater Essex (2019 to 2021)

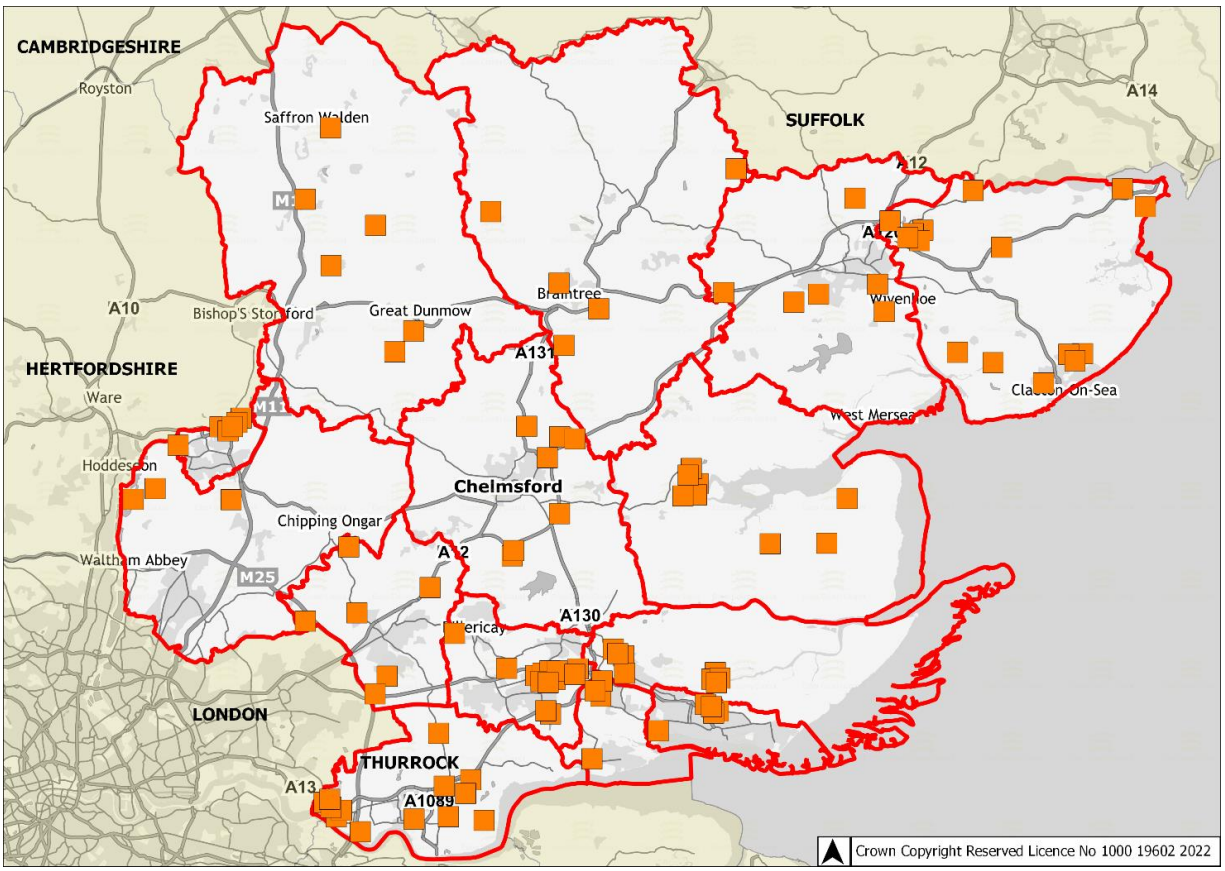
	Year		
	2019	**2020**	**2021**
Million Tonnes Recycled Aggregate (as specified in the WDI)	0.77	0.67	0.70
Plus 20% (estimated tonnage from mobile plant at construction sites) (As clarified at WTAB)	0.19	0.17	0.18
Total Recycled Aggregate Produced (Tonnes)	**0.97**	**0.83**	**0.88**

Source: Essex County Council (2022) as derived from the EA Waste Data Interrogator (WDI) 2019 to 2021 inclusive. Further evidence is available in Appendix C, Figure 27.

6.4.5. It can be seen from the graph above that during 2021, 0.88Mt of recycled aggregate was produced at mineral extraction and/or transhipment sites, which is an increase of 5.68% on the 2020 level. Between 2019 and 2021 the amount of recycled aggregate produced decreased by 9.21%. Production of recycled aggregate fell by 14.09% in 2020 on the 2019 levels but started to seemingly recover in 2021. It is likely that this can be attributed to the impact of COVID-19 on sales and data collation rather than the reduction in recycled aggregate being truly reflective of the market.

6.4.6. The map below identifies sites that have produced recycled aggregate during at least one year between 2019 and 2021.

Map 5: Extraction/Transhipment Sites That Produced Recycled Aggregate between 2019 and 2021



Note: Not all locations produced recycled aggregate each year between 2019 and 2021
Source: Essex County Council (2022) as derived from the EA Waste Data Interrogator (WDI) 2019 to 2021 inclusive.

6.4.7. It is noted that most of the facilities considered on this basis are in the southern part of Essex. This is unlikely to be representative of the overall spatial distribution of the recycled aggregate production network as recycled plant is omitted from WDI information. Some facilities will also have temporary permissions[71] meaning that long-term reliance cannot be placed on existing facilities to maintain production capacity. Therefore, additional capacity will continue to be encouraged where located in accordance with relevant mineral and waste Plan policies.

Potential Maximum Throughput of CD&E Recycling Facilities in 2020 and 2021

6.4.8. Within the 2020 and 2021 annual survey operators of CD&E Recycling Facilities were asked to provide data on the potential maximum throughput of aggregate recycling at their sites. This was a new metric, which was designed by the AWP to assist in understanding potential mineral movement to meet future demands. As this is

[71] Therefore, these will cease production prior to restoration completion at the currently operation active extraction sites.

based on annual survey returns, the values in the table below only include CD&E recovery potential, where co-located with extraction and transhipment sites in Greater Essex. It does not include any potential recovery throughput at stand-alone sites in Greater Essex.

Figure 19: Potential Maximum Annual Throughput of Co-located CD&E Recycling Facilities within Greater Essex in 2020 and 2021 (Million tonnes per annum)

Year	Potential Maximum Annual Throughput (Mtpa)	% Response Rate
2020	0.74	37.5%
2021	0.83	50.0%

Source: Essex County Council (2022)

6.4.9. As of 31 December 2021 there was at least 0.83Mtpa potential maximum annual throughput of aggregate at extraction and/or transhipment sites in Greater Essex. Although this is stated as the maximum throughput annually, the response rate for this aspect of the aggregate survey was only 50.0% suggesting potentially more capacity. However, an estimate of maximum capacity cannot be inferred as production rates vary significantly across sites. Additionally, it would not be appropriate to speculate on facilities that did not provide response to the Survey. Both the response rate to this metric and values provided are increasing, so it is hoped that these figures will be more robust in the future.

7. Conclusion

7.1.1. The Aggregate Survey is undertaken annually in Greater Essex to provide primary sales data for collation and reporting through the Local Aggregate Assessment. The Aggregate Survey that informs this LAA was undertaken during March to May 2022, with a response rate of 92.9% of sites.

7.1.2. However, it cannot be subsequently inferred that any combined figures presented represent 92.9% of their true value as production rates vary significantly across sites. It would not be appropriate to speculate on those values which may have been derived from those sites where surveys were not returned. As such, any trend analysis factoring in the latest data must be treated with caution.

7.1.3. At present the Essex Mineral Local Plan is being reviewed. At the most recent public engagement (March 2022), it was proposed to adopt an annual plan provision based on the average ten-year rolling sales, with an additional 20% buffer to offer a measure of flexibility. Greater Essex, and adjoining Authority Areas, are expected to experience significant growth, in terms of both housing and major infrastructure projects. This combined with the fact that sales have been greater than the average 10-year rolling sales figure for six out of the previous ten years, justify this the 20% uplift in provision. The forecast of demand and any uplift from the average ten-year rolling sales will continue to be monitored and reviewed, with adjustments made (if necessary) during the MLP review process.

7.1.4. As of 31 December 2021, Greater Essex, there are 37 sand and gravel quarries of which 22 of which were active. A single active quarry closed during 2021. The Aggregate Survey 2021 revealed that there was at least 3.23Mtpa potential sand and gravel production capacity at these extraction sites. In addition, at the end of 2021, five extraction sites are pending determination and/or Legal Agreements. At the same time, there were 50 processing facilities that add value to mineral products, which have been permitted by the Mineral Planning Authorities. These are located on either mineral extraction or transhipment sites.

7.1.5. At the end of 2021, Greater Essex had sufficient permitted reserve and allocations to satisfy the sand and gravel landbank minimum requirement of seven years when considering both the apportionment (7.61 years) and the ten-year rolling sales method of calculation (10.12 years). There were also 10.57 Million tonnes (Mt) of pending reserves, as of 31 December 2021, awaiting determination through the Development Management system, which would further increase the landbank.

7.1.6. Using the operator returns, sales of sand and gravel in 2021 in Greater Essex were recorded as 3.64Mt. This is greater than the ten-year rolling sales average of 3.35 million tonnes per annum (Mtpa), and the apportionment value of 4.45Mtpa that the Essex Minerals Local Plan (2014) and Thurrock Core Strategy (2015) are based on. Sales have not increased beyond the Development Plan provision figure of 4.45Mtpa across the previous ten years. The PPG also requires an assessment of

the last three years of sales to help establish any trend in sales. The three-year average sales figure (2019 to 2021) stands at 3.26Mt, which is lower than the actual sales recorded in 2021. It is noted that trend analysis, particularly that which is short-term, is likely to be a misrepresentation of actual need due to the impacts of the pandemic.

7.1.7. Greater Essex is served by the Thames Estuary and East Coast dredging regions. In combination, 5.42Mt of material was removed from the seabed in 2021 in these areas. This was an increase of 0.12Mt when compared to the 4.35Mt removed in 2020. Licenses have been granted that permit the extraction of a total of 10.88Mt per annum from the Thames and East Coast regions combined. At this rate, current estimates suggest there are 24 years of primary marine aggregate production permitted in the Thames Estuary and there remains 12 years within the East Coast region. The Marine Plan covering this area of sea is the Southeast Marine Plan, which was adopted in June 2021.

7.1.8. Across Greater Essex, as at 31 December 2021, there were seven wharves (of which four were inactive in 2021, and a further 'potential' wharf[72]) and eight rail (two of which were inactive in 2021) mineral transhipment facilities[73]. The National Aggregate survey 2019, provides the most robust data regarding importation and exportation, as in many cases in 2020 and 2021 there were not enough operators who responded to allow for figures to be published whilst maintaining commercial confidentiality. In total, 0.55Mt of sand and gravel was exported from Greater Essex, whilst a total of sand and gravel 1.29Mt was imported. In addition, 1.58Mt of crushed rock was imported to Greater Essex.

7.1.9. Supporting evidence to the Essex and Southend-on-Sea Waste Local Plan 2017 (WLP)[74] stated that it is not known whether secondary aggregates are produced in any significant quantity in the joint Essex and Southend-on-Sea Plan area. It also considered that the lack of heavy industry suggests there will be little.

7.1.10. Since the production of the previous LAA, a guidance note has been prepared to assist with planning for recycled aggregate production. Using this new standardised methodology, it has been established that in 2021 there were 86 Greater Essex aggregate recovery facilities (both co-located with other mineral related activities and stand-alone facilities) which produced an estimated 0.88Mt of recycled aggregate product. It is noted that a concentration of this type of facility is in the southern part of Greater Essex. Also in 2021, by way of a different methodology, (based solely on the aggregate survey returns) reported a potential maximum recycled aggregate production of 0.83Mtpa at facilities that are co-located with other mineral activities (e.g. extraction and transhipment facilities) and does not include estimated maximum production rates at standalone CD&E inert recovery facilities. On the face of it, maximum potential recycled aggregate throughput has

[72] Parkeston Quay (East) in Harwich has been identified as potentially providing a large new aggregate import in the form of a marine wharf, although this proposal has, to date, not materialised. As specified in the Essex MLP (2014, pg. 72)

[73] This consists of both rail and wharf transhipment facilities.

[74] ECC/BPP (December 2015) SD 20 - Topic Paper 1 - Waste Capacity Gap Update

been exceeded. However, the above stated maximum potential recycled aggregate throughput of 0.83Mtpa is considered to be low; firstly because the aggregate survey does not include the stand alone facilities that can recycle aggregate and secondly of those that responded to the overall aggregate survey, only had a response rate of only 50.0%. This would suggest that there is more potential capacity, although this cannot be reliably estimated. This is because capacity varies widely on a case-by-case basis, and therefore robust assumptions cannot be made.

7.1.11. The Mineral Planning Authorities will continue to safeguard aggregate recovery and secondary processing facilities from incompatible development to ensure their continued operation, thus maintaining this source of aggregate for the market.

7.1.12. It is not considered appropriate to reduce land-won reserves based on the assumption that they will be replaced by an expansion in the landing of marine-won reserves and/or increases in recycled/ secondary aggregate production, which the Mineral Products Association state that greater efficiencies are unlikely to be realised. Mineral Planning Authorities have no jurisdiction in the marine environment and so have little ability to influence the amount of marine-won mineral that could be dredged. The small number and constrained location of landing facilities in Greater Essex exacerbates this.

7.1.13. The Mineral Planning Authorities will also continue to ensure that existing wharf and rail transhipment facilities are safeguarded from incompatible development to ensure their continued operation.

This information is issued by:

Essex County Council, Minerals and Waste Planning

Contact us:

mineralsandwastepolicy@essex.gov.uk
www.essex.gov.uk/planning
03330 139 808

The information contained in this document can be translated, and/or made available in alternative formats, on request.

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Essex County Council

Greater Essex LAA 2022

Appendices

Appendix A Primary Extraction Facilities within Greater Essex

Figure 20: Permitted Primary Aggregate Sites in Essex (31 December 2021)

Operator		Site Name		Cessation Date for Planning Permission	District /Borough	Easting, Northing (Approx.)
Part A:		**Active Sand & Gravel Quarries with Permitted Reserves**				
1.	Blackwater Aggregates	1.	Bradwell Quarry, Silver End[75]	2022	Braintree	581900, 221700
2.	Brett Aggregates	2.	Alresford Creek, Alresford	2042	Tendring	660630,222000
		3.	Brightlingsea Quarry	2026	Tendring	607000, 218800
		4.	Lufkins Farm, Thorrington Road	January 2022	Tendring	609700, 222100
3.	Brice Aggregates	5.	Colemans Farm Quarry, Witham[76]	2036	Braintree	583327, 215613

[75] ESS/12/20/BTE was in the determination process as of 31/12/2021 (see part D of this table (below) for further details).
[76] ESS/51/21/BTE was in the determination process as of 31/12/2021 (see part D of this table (below) for further details).

Appendix A: Primary Extraction Facilities within Greater Essex

Operator		Site Name		Cessation Date for Planning Permission	District /Borough	Easting, Northing (Approx.)
4.	Danbury Aggregates	6.	Royal Oak, Danbury	2029	Chelmsford	580300, 205200
		7.	St Cleres Pit, Danbury	Cessation of mineral extraction to 16 February 2029; Cessation of use of the processing plant by 31 December 2031 Restoration of processing plant and stockpile area by 31 March 2032	Chelmsford	576355, 205866
5.	Dewicks	8.	Curry Farm, Bradwell-on-Sea	End on site 2023, restoration by 2024	Maldon	599365, 205812
6.	Edviron Ltd	9.	Crumps Farm, Gt Canfield	2031	Uttlesford	558400, 221100
7.	Frank Lyons Plant Services Ltd	10.	Blackley Quarry, Great Leighs	2045	Chelmsford	572800, 219100
8.	G&B Finch Ltd	11.	Asheldham Quarry, Southminster	2029	Maldon	597439, 201505

Operator		Site Name		Cessation Date for Planning Permission	District /Borough	Easting, Northing (Approx.)
9.	Gent Fairhead & Co Ltd	12.	Rivenhall Airfield (Waste Facility)	Planning Permission for waste management ESS/34/15/BTE was implemented in March 2016. Includes 100 thousand tonnes material to be extracted prior to development.	Braintree	582200, 220700
10.	Hanson Aggregates	13.	Birch Quarry, Birch	Five years from date of permission which has not yet been issued	Colchester	592700, 219300
		14.	Bulls Lodge Quarry, Boreham	Permission CHL/1019/87 (Airfield) =2020[77] Permission CHL/1890/87 (Park & Brick Farms) = 2030[78]	Chelmsford	574600, 210800
11.	R W Mitchell & Sons	15.	Elmstead Hall (AKA Elmstead Reservoir)	November 2024	Tendring	605763, 225810

[77] Application submitted prior to 31st December 2020, currently in determination to extend to 2034 (ref: ESS/148/20/CHL). This will be taken to Committee and, if granted, would require legal agreements to be negotiated/signed.

[78] Rephasing application also submitted prior to 31st December 2020 currently in determination (ref: ESS/147/20/CHL). This similarly will be taken to Committee and, if granted, would require legal agreements to be negotiated/signed.

Operator		Site Name		Cessation Date for Planning Permission	District /Borough	Easting, Northing (Approx.)
12.	SRC Ltd	16.	Cobbs Farm, Goldhanger	30 September 2021 (Closed during 2021, containing no workable permitted reserves and no saleable stockpiles)	Maldon	589300, 208500
		17.	Crown Quarry, Ardleigh	2028	Tendring	602761, 229470
		18.	Highwood Quarry, Little Easton	2026	Uttlesford	559800, 222400
13.	Tarmac Ltd	19.	Colchester Quarry, (aka Stanway Quarry)	2042	Colchester	595400, 222700
Part B:		**Operational Sand & Gravel and Silica Sand Sites with Permitted Reserves**				
N/A	SRC Ltd	20.	Martells Quarry, Ardleigh	2026[79]	Tendring	605027, 228324
Total Active Extraction Facilities in Essex (Sand & Gravel): **Of which, is also extracting Silica Sand:** **Total Operators with Active Extraction Facilities in Essex**						**20** **1** **13**

[79] Application submitted prior to 31st December 2021, currently in determination (ref: ESS/29/20/TEN). See part D of this table (below) for further details.

Operator		Site Name		Cessation Date for Planning Permission	District /Borough	Easting, Northing (Approx.)
Part C:		**Sand & Gravel Quarries with Permitted Reserves (Not Actively Extracting Mineral)**				
1.	SRC Ltd	1.	Sheepcotes Farm	Not yet commenced as of 31 December 2021. Commencement required by 01 August 2022, cessation of extraction 5 years after commencement.	Chelmsford	571700, 213700
2.	Brett Aggregates	2.	Elsenham Quarry, Elsenham	Majority of the quarry has been worked with de minimus reserves remaining. Operator notes this is closed as an extraction site. There is no end date for just mineral extraction. Conditions attached control the landfilling end date (10 May 2029) with restoration to agriculture within a further 12 months.	Uttlesford	554500, 226700
3.	Ingrebourne Valley Ltd	3.	Rayne Quarry	Not yet commenced as of 31 December 2021[8o]	Braintree	571100, 222900

[8o] Commenced 18 February 2022, with a resulting end date of 18 February 2035.

Operator		Site Name		Cessation Date for Planning Permission	District /Borough	Easting, Northing (Approx.)
				Commencement required within 3 years from the approval date of ESS/19/17/BTE (by Aug 2022), cessation of extraction 13 years after commencement.		
4.	Tarmac Ltd	4.	Wivenhoe Quarry, Sunnymead Extension Wivenhoe	Not yet commenced as of 31 December 2021. Commencement required within 3 years from the approval date of ESS/17/18/TEN (by 18 Dec 2020), cessation of extraction 19 years after commencement, with an addition 2 years for the restoration of the site.	Colchester	605794, 222627
	Tarmac Ltd	5.	Wivenhoe Quarry, Wivenhoe	No extraction occurring on site. Current restoration end date is 30th June 2021[81].	Colchester	604754, 222688
4.	JJ Prior Ltd	6.	Fingringhoe Quarry, Fingringhoe	2042	Colchester	604321, 221003

[81] The original site at Wivenhoe is not actively extraction and currently being restored. However, there is an application (ESS/80/20/TEN) currently being determined, to allow the extension of the restoration phase of the quarry to 30th June 2021, although this may not be met.

Operator		Site Name		Cessation Date for Planning Permission	District /Borough	Easting, Northing (Approx.)
				Extraction has ceased on site, exporting from stockpiled material.		
5.	Widdington Recycling	7.	Widdington Pit, Widdington	2022 (with restoration by 2023) Not actively extracting mineral	Uttlesford	552954, 231093
Part E:			**Dormant Sand & Gravel Quarries**[82]			
1.	S.R. Finch	1.	Straits Mill, Bocking	N/A	Braintree	576800, 224600
2.	-	2.	Alton Park, Clacton	N/A	Tendring	615900, 214100
3.	-	3.	Hodgnells Farm, Gt. Holland	N/A	Tendring	620700, 219300
4.	Devernish Ltd	4.	Hambro Hill, Rayleigh	N/A	Rochford	581400, 191900
Total sites with permitted reserves, but not actively extracting mineral:						**11**

[82] Sites can be classified as 'Dormant' under the terms of the Planning & Compensation Act 1991 and the Environment Act 1995. Dormant sites cannot be worked until new schemes of conditions have been determined and, therefore, do not contain 'permitted reserves.

Appendix A: Primary Extraction Facilities within Greater Essex

Operator		Site Name		Cessation Date for Planning Permission	District /Borough	Easting, Northing (Approx.)
Part D:		**New/Extension Site with Applications Pending Determination/Legal Agreements, Which If Permitted, Would Provide Additional Sand and Gravel Reserves.**				
1.	Blackwater Aggregates	1.	Bradwell Quarry (MLP Reserve Site A7)	Remains Pending Determination at 31/12/21,[83] (Ref: ESS/12/20/BTE)	Braintree	583327, 215613
2.	H R Philpot & Son	2.	Salts Green (Part of MLP preferred site Shellows Cross A40)	Remains Pending Determination at 31/12/21[84], (Ref: ESS/77/20/CHL)	Chelmsford	563032, 209943
3.	SRC Ltd	3.	Martells Quarry (MLP Preferred Site B1)	Remains Pending (Resolved to be Granted subject to conditions & legal agreement) at 31/12/21, (Ref: ESS/29/20/TEN)[85]	Tendring	604898, 227986
4.	Brett Aggregates	4.	Lufkins Farm Frating (Agricultural Reservoir)	Pending Determination at 31/12/21, (Ref: ESS/101/21/TEN)	Tendring	609724, 221921

[83] This application was granted, with all legal agreements made on 22 June 2022. Full details of this will be updated in the next edition of the LAA.
[84] This application was granted, with all legal agreements made on 01 March 2022. Full details of this will be updated in the next edition of the LAA.
[85] Resolved to be Granted subject to conditions & legal agreements at the September 2021 Essex County Council Development and Regulation Committee

Operator		Site Name		Cessation Date for Planning Permission	District /Borough	Easting, Northing (Approx.)
5.	Brice Aggregates	5.	Coleman's Farm Quarry (Site Extension)	Pending Determination at 31/12/21 (Ref: ESS/51/21/BTE)	Braintree	583327, 215613
Sites with 'Pending' Permitted Reserves:						**5**

Source: Essex County Council (2022), as derived from the Aggregate Survey (2022)
Note: Brick clay sites and Chalk sites are no longer listed within this Local Aggregate Assessment, and therefore details are not listed here. For information on these sites, please view the most recently published Authority Monitoring Report.

Figure 21: Permitted Primary Aggregate Sites in Thurrock (31 December 2021)

Operator			Site Name	Cessation Date for Planning Permission	District /Borough	Easting, Northing (Approx.)
Part A:		**Operational Sand & Gravel Quarries with Permitted Reserves**				
1.	Rio Aggregates	1.	Dansand Quarry, Stanford Road, Orsett	2025	Thurrock	565158, 181035

Operator			Site Name	Cessation Date for Planning Permission	District /Borough	Easting, Northing (Approx.)
2.	Ingrebourne Valley Ltd	2.	Mill House Farm, Chadwell St Mary. (Agricultural Reservoir)	2021	Thurrock	565879, 179152
Total Active Extraction Facilities in Thurrock:						**2**
Part B:		**Non-Operational Sand & Gravel Quarries with Permitted Reserves**				
1.	Ingrebourne Valley Ltd	1.	Medina Farm, South Ockendon	Not yet commenced Commencement required within 5 years from the approval date of 19/01799/FUL (by Nov 2025), cessation of extraction 4 years after commencement.	Thurrock	557842, 183968
		2.	Orsett Quarry, Stanford le Hope	2042 Not active (mothballed). Some restoration work taking place on southwest of site. Also subject to pending application for extension -yet to be determined.	Thurrock	567223, 180614

Operator			Site Name	Cessation Date for Planning Permission	District /Borough	Easting, Northing (Approx.)
2.	S. Walsh & Sons Ltd	3.	East Tilbury Quarry	Under-going restoration	Thurrock	568700, 177800
Total sites with permitted reserves, but not actively extracting mineral:						**3**
Part C:		**New/Extension Site with Applications Pending Determination/Legal Agreements, Which If Permitted, Would Provide Additional Sand and Gravel Reserves**				
1.	Ingrebourne Valley Ltd	1.	Orsett Quarry & Walton Hall Farm, Linford	Pending Determination	Thurrock	567700, 180700
Sites with 'Pending' Permitted Reserves:						1

Source: As derived from Thurrock Council & the Aggregate Survey (2022)

Appendix B Transhipment Facilities within Greater Essex

Figure 22: Permitted Mineral Transhipment Sites in Essex (31 December 2021)

Operator		Site Name / Address		Site Type	End Date	District/Borough	Easting, Northing (Approx.)
Inactive[86] Permitted Wharfs							
1.	JJ Prior Ltd	1.	Ballast Quay, Ballast Quay Road Fingringhoe Colchester, CO5 7DB	Exporting until stockpiles exhausted	Until stockpiles are exhausted	Colchester	604300, 221000
Inactive 'Potential' Wharfs as specified in the MLP[87]							
1.	Hutchinson Ports	1.	Port of Harwich (F4) Parkeston Harwich, CO12 4SR		Permanent	Tendring	623348, 232590
Active Permitted Rail Depots							

[86] Inactive due to COVID-19 in 2020

[87] Parkeston Quay (East) in Harwich has been identified as potentially providing a large new aggregate import in the form of a marine wharf, although this proposal has, to date, not materialised. As specified in the Essex MLP (2014, pg. 72)

Operator		Site Name / Address		Site Type	End Date	District/Borough	Easting, Northing (Approx.)
1.	Aggregate Industries UK Ltd	1.	Chelmsford Rail Depot Brook Street Chelmsford, CM1 1UQ	Receiving Depot	Permanent	Chelmsford	571273, 207450
		2.	Harlow Rail Depot Station Approach, Harlow, CM20 2EL	Receiving Depot	Permanent	Harlow	547000, 212200
2.	Tarmac Ltd	3.	Harlow Rail Depot Station Approach, Harlow, CM20 2EL	Receiving Depot	Permanent	Harlow	547000, 212200
		4.	Marks Tey Rail Depot North Lane Marks Tey Colchester, CO6 1ED	Receiving and loading point	Permanent	Colchester	591800, 224000
Total Transhipment Facilities in Essex (Permitted): **Total Transhipment Facilities in Essex (Potential)**							**5** **1**

Appendix B: Transhipment Facilities within Greater Essex

Source: Essex County Council (2022), as derived from the Aggregate Survey (2022)

Figure 23: Permitted Mineral Transhipment Sites in Thurrock (31 December 2021[88])

	Operator		Site Name / Address	End Date	Aggregate Type	District/ Borough	Eastings, Northings (Approx.)
Part A:			**Active Permitted Wharfs**				
1.	Aggregate Industries UK Ltd	1.	DP World Berth 7, London Gateway Drive, Stanford Le Hope, SS17 9PD	Permanent	Aggregate	Thurrock	572093,181395
2.	Tarmac Ltd	2.	Thurrock Marine Terminal, Oliver Close, West Thurrock Grays, RM20 3EE	Permanent	Aggregate	Thurrock	557417, 176960
3.	Stema Shipping Ltd	3.	1 Berth, Tilbury Docks, Tilbury, RM18 7HL	Permanent	Crushed Rock, Aggregate	Thurrock	63257,175650
Part B:			**Inactive Permitted Wharfs**				

[88] Within the Active Permitted rail Depots section, a note has been added as to what kind of Handling facility has been added (Receiving and/or loading) This information was found via Network Rail

Operator			Site Name / Address	End Date	Aggregate Type	District/ Borough	Eastings, Northings (Approx.)
1.	Hanson	1.	Purfleet Wharf Aveley, RM19 1RP	Permanent	Jetty wharfs remain but site occupied by Hanson cement and does not appear to import aggregate	Thurrock	557092, 176953
2.	Port of Tilbury, S. Walsh & Sons	2.	Port of Tilbury, Berth 34 Expected to commence 2022	Permanent	Import Secondary Aggregate	Thurrock	563178, 175178
3.	Tilbury 2, (specific operator unknown)	3.	Tilbury 2 Power Station, Fort Road Tilbury, RM18 7NR Expected to commence 2022	Permanent	Various aggregates Import and export by rail	Thurrock	566166, 175634
Part C:			**Active Permitted Rail Depots**				
1.	Aggregate Industries UK Ltd	1.	Purfleet Rail Depot Jurgens Road Off London Road Purfleet, RM19 1UA	Permanent	Crushed Rock and Other (Receiving Depot)	Thurrock	556551, 177167

Operator		Site Name / Address		End Date	Aggregate Type	District/ Borough	Eastings, Northings (Approx.)
2.	Port of Tilbury, FM Conway	2.	Port of Tilbury, Bulk Rail Terminal Tilbury, RM18 7EH	Permanent	Marine imported sea dredged crushed rock. exported by rail. Secondary aggregate.	Thurrock	562593, 176996
Part D:				**Inactive Permitted Rail Depots**			
1.	Rail depot, Port of Tilbury, S. Walsh & Sons	1.	Port of Tilbury, Berth 34 (Expected to commence 2022)	Permanent	Crushed Rock	Thurrock	563178,175178
2.	Tilbury 2	2.	CMAT Rail Facility Tilbury 2 Power Station, Fort Road Tilbury, RM18 7NR	Permanent	Various aggregates Import and export by rail Not commenced by 31 December 2021[89]	Thurrock	566186, 175858
Total Transhipment Facilities in Thurrock							**11**

Source: As derived from Thurrock Council & the Aggregate Survey (2022)

[89] Although this was not commenced during 2021, it was started in early 2022 and therefore will be reported on further in the next edition of the Greater Essex LAA.

Appendix C Aggregate Recycling Facilities within Greater Essex

Figure 24: Aggregate Recycling Facilities in Essex (2021)

Operator	Site Name / Address	Aggregate Type	District/Borough	Easting, Northing (Approx)	Planning Permission End Date
Part A:	**Active Permitted Aggregate Recycling Facilities**				
Clearaway Recycling Ltd	Archers Fields, SS13 1DH	Inert/C+D	Basildon	573638, 190273	Permanent
Benfleet Scrap Co Ltd	Benfleet Scrap, SS13 1QJ	Inert/C+D	Basildon	573852, 190525	Permanent
Littmoden Plant Hire Ltd	Blunts Wall Farm, CM12 9SA	Inert/C+D	Basildon	565725, 194087	Permanent
Robert Michael Walker & Victoria Kathleen Walker	Bob's Skips, SS13 1DG	Inert/C+D	Basildon	618706, 218031	Permanent

Appendix C: Aggregate Recycling Facilities within Greater Essex

Operator	Site Name / Address	Aggregate Type	District/Borough	Easting, Northing (Approx)	Planning Permission End Date
Cohart Asbestos Disposal Ltd	Cohart Asbestos Disposal Limited, SS13 1DH	Inert/C+D	Basildon	573647, 190522	Permanent
T L M Management Ltd	Hovefields Court, SS13 1EB	Inert/C+D	Basildon	572881, 190533	Permanent
J K Farms Ltd	J. K. Farms, SS15 4AZ	Inert/C+D	Basildon	570231, 190963	
Stone - Alan M	Leigh Skips Transfer Station, SS13 1DG	Inert/C+D	Basildon	573731, 190304	Unknown – not ECC Permission
J.A.C Groundwork & Civil Engineering Ltd	JAC YARD-BONVILLE FARM, SS12 9JQ	Inert/C+D	Basildon	577030, 190350	Unknown – not ECC Permission
Neil Sullivan & Sons Ltd	Neil Sullivan & Sons Recycling Centre Tennis Courts, SS12 9JQ	Inert/C+D	Basildon	577135, 190495	Unknown – not ECC Permission

Operator	Site Name / Address	Aggregate Type	District/Borough	Easting, Northing (Approx)	Planning Permission End Date
Essex County Council	Pitsea RCHW, SS14 4UH	Inert/C+D	Basildon	573676, 187079	Permanent
Mr James Heard & Mrs Marie Heard	Terminus Drive. SS16 4UH	Inert/C+D	Basildon	573637, 187574	Permanent
W J Hedger, M W R Hedger & P W J Hedger	All Clear Skip Hire, CM7 8DL	Inert/C+D	Braintree	578036, 221776	Permanent
G & B Finch Limited	Batemans Farm, CM3 1PU	Inert/C+D	Braintree	574510, 218424	Permanent
Essex County Council	Braintree Recycling Centre for Household Waste, CM7 2YN	Inert/C+D	Braintree	574665, 224359	Permanent
T & K Weavers Demolition Ltd	T & K Weavers Demolition, CO8 5DL	Inert/C+D	Braintree	589462, 234062	Permanent
Bushcade Ltd	Bushcade Ltd, CM4 9AY	Inert/C+D	Brentwood	563628, 197934	Unknown – not ECC Permission

Appendix C: Aggregate Recycling Facilities within Greater Essex

Operator	Site Name / Address	Aggregate Type	District/Borough	Easting, Northing (Approx)	Planning Permission End Date
G J Bowmer	G J Bowmer (Waste Disposal) Ltd, CM13 3DT	Inert/C+D	Brentwood	559999, 190415	Permanent
Heatherland Ltd, Stondon Massey	Heatherland Ltd, CM5 9RB	Inert/C+D	Brentwood	556243, 201888	
Skippy Grabs & Groundworks Ltd	Wotton Green Works, CM14 5SU	Inert/C+D	Brentwood	552936, 195053	Unknown – not ECC Permission
Essex County Council	Brentwood RCHW, CM14 5PN	Inert/C+D	Brentwood	557379, 195593	Permanent
Wallace Brian	A A Quickskips, SS7 4PS	Inert/C+D	Castle Point	577756, 189193	Unknown – not ECC Permission
D C Donovan Group Ltd	D C Donovan Group Limited, SS7 3NH	Inert/C+D	Castle Point	578251, 190340	Unknown – not ECC Permission

Operator	Site Name / Address	Aggregate Type	District/Borough	Easting, Northing (Approx)	Planning Permission End Date
Essex County Skips Ltd	Essex County Skips Ltd, SS7 4PY	Inert/C+D	Castle Point	577748, 189475	Permanent
A Team Services Ltd	Waste Transfer Station, SS8 0PQ	Inert/C+D	Castle Point	577550, 183400	
Eurovia Infrastructure Ltd / Hanson	Bulls Lodge Quarry, CM3 3HR	Inert/C+D	Chelmsford	574499, 210668	30/06/2030
Biffa Waste Services Ltd	Chelmsford Transfer & Recycling Facility, CM3 3AW	Inert/C+D	Chelmsford	575951, 210632	Permanent
Dunmow Skips Ltd	Dunmow Skips Ltd, CM3 3PZ	Inert/C+D	Chelmsford	571805, 211243	Unknown – not ECC Permission
T D Buttling & P J Cars & Plant Ltd	S B Skip Hire, CM2 8LP	Inert/C+D	Chelmsford	570735, 200688	Permanent
Essex County Council	Chelmsford RCHW, CM2 5PP	Inert/C+D	Chelmsford	573646, 209121	Permanent

Appendix C: Aggregate Recycling Facilities within Greater Essex

Operator	Site Name / Address	Aggregate Type	District/Borough	Easting, Northing (Approx)	Planning Permission End Date
Foster Peter	Cooks Skip Hire, CO5 7HY	Inert/C+D	Colchester	602390, 221501	Unknown – not ECC Permission
Core Fusion Ltd	Core Fusion Limited, CO2 8HT	Inert/C+D	Colchester	602250, 223457	Unknown – not ECC Permission
Mason Trucking Co Ltd	Mason Trucking Company, CO6 1HU	Inert/C+D	Colchester	588699, 223065	Unknown – not ECC Permission
Trevor John Watling, Josephine Carol Watling & Matthew John Watling	Tin Bins, CO4 5QY	Inert/C+D	Colchester	600021, 231312	Permanent
Essex County Council	Colchester RCHW, CO3 4RN	Inert/C+D	Colchester	596757, 223105	Permanent

Operator	Site Name / Address	Aggregate Type	District/Borough	Easting, Northing (Approx)	Planning Permission End Date
John Evans, Timothy Evans, Terry Evans	Evans Thornwood, CM16 6LU	Inert/C+D	Epping Forest	546824, 204903	Permanent
Harvey Martin	Harvey Automobile Engineering, EN9 2EX	Inert/C+D	Epping Forest	538092, 205473	Permanent
J & R Haulage Ltd	J & R Haulage, EN9 2RJ	Inert/C+D	Epping Forest	539969, 206865	Unknown – not ECC Permission
Brown David Romanus	David Brown Skip Hire and Recycling, CM20 2DY	Inert/C+D	Harlow	546938, 212401	Permanent
G B N Services Ltd	G B N Services Ltd, CM20 2DP	Inert/C+D	Harlow	546653, 212634	Permanent
H T S (Property and Environment) Ltd	Mead Park Depot, Harlow, CM20 2SE	Inert/C+D	Harlow	545579, 211896	Permanent

Appendix C: Aggregate Recycling Facilities within Greater Essex

Operator	Site Name / Address	Aggregate Type	District/Borough	Easting, Northing (Approx)	Planning Permission End Date
R B Whitbread (Plant Hire) Ltd	Roydon Lea Farm, CM19 5DU	Inert/C+D	Harlow	542308, 210614	Unknown – not ECC Permission
Essex County Council	Harlow RCHW, CM20 2DY	Inert/C+D	Harlow	546952, 212467	Permanent
G & B Finch Ltd	Asheldham Quarry, CM0 7DZ	Inert/C+D	Maldon	597451, 201569	31/12/2029
Simon John Rogers & Jeanne Melvina Rogers	Buck Rogers Car Breakers, CM3 6EG	Inert/C+D	Maldon	592553, 201714	Permanent
Maldon District Council	Promenade Park Depot, CM9 5UR	Inert/C+D	Maldon	586050, 206200	Permanent
Green Recycling Ltd	Green Recycling Limited, CM9 5FA	Inert/C+D	Maldon	585758, 207538	Permanent
Essex County Council	Maldon RCHW, CM9 5U	Inert/C+D	Maldon	586280, 206186	Permanent

Operator	Site Name / Address	Aggregate Type	District/Borough	Easting, Northing (Approx)	Planning Permission End Date
James Waste Management Llp	Brickfields Way Transfer Station, SS4 1NB	Inert/C+D	Rochford	588227, 190181	Permanent
D D Recycling Ltd	Cottis Yard Recycling Facility, SS4 1LB	Inert/C+D	Rochford	588478, 190172	Permanent
G. B. N. Services Ltd	Ecologic Yard, SS4 1LA	Inert/C+D	Rochford	588341, 190248	Permanent
Franklin Hire Ltd	Franklin Hire, SS6 9RL	Inert/C+D	Rochford	579600, 192401	Assumed Permanent
J K S Group Ltd	J K S Construction, SS4 1LZ	Inert/C+D	Rochford	588095, 189893	Permanent
R. R. R. Recycling Solutions Ltd	R. R. R Recycling Solutions, SS6 9RL	Inert/C+D	Rochford	579604, 192131	Unknown – not ECC Permission
Essex County Council	Rayleigh RCHW, SS6 7QF	Inert/C+D	Rochford	580666, 190186	Permanent

Appendix C: Aggregate Recycling Facilities within Greater Essex

Operator	Site Name / Address	Aggregate Type	District/Borough	Easting, Northing (Approx)	Planning Permission End Date
T J Cottis Transport Ltd	T J Cottis Transport, SS6 9RL	Inert/C+D	Rochford	579617, 192171	Permanent
Veolia Environmental Services (UK) Plc	Clacton Civic Amenity Site, CO16 7AD	Inert/C+D	Tendring	615596, 214892	Permanent
Barnett Ian Justin	Collect - A – Way, CO15 4LR	Inert/C+D	Tendring	618582, 217925	Permanent
Shotley Holdings Ltd	Collins Skip Hire, CO7 7RU	Inert/C+D	Tendring	604781, 228216	Permanent
Sewells Reservoir Construction Ltd	Crown Quarry, CO7 7QR	Inert/C+D	Tendring	602688, 229533	2028
Eastern Waste Disposal Ltd	Eastern Waste Disposal Ltd, CO7 0SD	Inert/C+D	Tendring	608650, 218080	Permanent
Sewells Reservoir Construction Ltd	Martells Quarry, CO7 7RU	Inert/C+D	Tendring	605060, 228150	2026 – subject to application determination

Operator	Site Name / Address	Aggregate Type	District/Borough	Easting, Northing (Approx)	Planning Permission End Date
Sewells Reservoir Construction Ltd	Martells Yard, CO7 7RU	Inert/C+D	Tendring	605094, 228278	Permanent
Andrew William Mapes	The Works - South Strand, CO11 1UP	Inert/C+D	Tendring	610038, 232233	Permanent
Network Rail Infrastructure Ltd	Parkeston Quay, CO12 4SS	Inert/C+D	Tendring	622642, 232265	Permanent
Prince Recycling Ltd	Gowers Farm. CM6 1NL	Inert/C+D	Uttlesford	560516, 218077	Permanent
Haigh Russell	Haigh Recycling, CM6 2NN	Inert/C+D	Uttlesford	559526, 229161	Permanent
Essex Waste Ltd	Home Farm, CM22 6DR	Inert/C+D	Uttlesford	555140, 225614	
Eco Plan Environmental Ltd	Mawkinherds Farm, CM6 1ND	Inert/C+D	Uttlesford	563997, 218783	Unknown – not ECC Permission

Operator	Site Name / Address	Aggregate Type	District/Borough	Easting, Northing (Approx)	Planning Permission End Date
Essex County Council	Saffron Walden Recycling Centre for Household Waste, CB10 2UR	Inert/C+D	Uttlesford	555219, 237298	Permanent
Widdington Recycling Ltd	Widdington Pit, CB11 3SL	Inert/C+D	Uttlesford	552918, 231094	01/01/2023

Source: Essex County Council (2022), as derived from the EA Waste Data Interrogator (WDI) 2019 to 2021 inclusive.
Note: This list has been generated from the best practice methodology, AWPs/WRAP, Guidance on Assessing Levels of Recycled Aggregates (2022)

Figure 25: Aggregate Recycling Facilities in Thurrock (2021)

Operator	Site Name / Address	Aggregate Type	District/Borough	Easting, Northing (Approx.)	Planning Permission End Date
Part A:	**Active Permitted Aggregate Recycling Facilities**				
Benfleet Scrap Co Ltd	Benfleet Scrap, RM17 6ST	Inert/C+D	Thurrock	562387, 177921	01/01/2023
Killoughery Waste	Botany Quarry, Purfleet, RM16 0AA	Inert/C+D	Thurrock	555795, 178278	Permanent

Operator	Site Name / Address	Aggregate Type	District/Borough	Easting, Northing (Approx.)	Planning Permission End Date
Part A:	**Active Permitted Aggregate Recycling Facilities**				
Management Ltd					
Brocks Haulage Ltd	Brocks Haulage, RM20 3EF	Inert/C+D	Thurrock	558223, 176835	n/a
Thurrock Council	Buckingham Hill Civic Amenity Site, SS17 0PP	Inert/C+D	Thurrock	567061, 181274	n/a
Sims Environmental & Recycling Services Ltd	Burrows Farm Transfer Station - EPR/WP3831JT, RM14 3TL	Inert/C+D	Thurrock	564510, 185080	Permanent
S Walsh & Son Ltd	East Tilbury Quarry, RM18 8PH	Inert/C+D	Thurrock	568688, 177751	n/a
Clearserve Ltd	Rainbow Shaw Treatment, SS17 0PJ	Inert/C+D	Thurrock	566748, 180366	Site currently in restoration

Appendix C: Aggregate Recycling Facilities within Greater Essex

Operator	Site Name / Address	Aggregate Type	District/Borough	Easting, Northing (Approx.)	Planning Permission End Date
Part A:	**Active Permitted Aggregate Recycling Facilities**				
Recycled In Orsett Ltd	Recycled In Orsett, RM16 3BB	Inert/C+D	Thurrock	565171, 181136	2020/21
Seales Road Haulage Ltd	Seales Road Haulage Ltd, RM15 4YD	Inert/C+D	Thurrock	554775, 179720	2024/25
Henderson & Taylor Public Works Ltd	Unit 5 Bennett's Industrial Estate, RM16 4LR	Inert/C+D	Thurrock	565340, 178135	n/a
Modern Skips 2014 Ltd	Units 15/16 Juliet Way, RM15 4YA	Inert/C+D	Thurrock	554622, 179857	
P F Ahern (London) Ltd	West Thurrock Recycling and Transfer Station, RM20 3EE	Inert/C+D	Thurrock	557637, 177043	

Source: Thurrock Borough Council (2022), as derived from the EA Waste Data Interrogator (WDI) 2019 to 2021 inclusive.
Note: This list has been generated from the best practice methodology, AWPs/WRAP, Guidance on Assessing Levels of Recycled Aggregates (2022)

Figure 26: Aggregate Recycling Facilities in Southend-On-Sea (2021)

Operator	Site Name / Address	Aggregate Type	District/Borough	Easting, Northing (Approx)	Planning Permission End Date
Part A:	**Active Permitted Aggregate Recycling Facilities**				
Veolia Environmental Services UK Ltd	Leigh Marsh Civic Amenity Site, SS9 2ET	Inert/C+D	Southend-on-Sea	583069, 185668	Permanent
Hadleigh Salvage (Recycling) Ltd	Plot 9, SS2 5QF	Inert/C+D	Southend-on-Sea	587886, 187715	Permanent
Veolia E S (UK) Ltd	Stock Road Recycling Centre, SS2 5QF	Inert/C+D	Southend-on-Sea	588040, 187650	Permanent
W & H (Roads) Ltd	Stock Road Recycling Facility, SS2 5QG	Inert/C+D	Southend-on-Sea	587780, 188107	

Operator	Site Name / Address	Aggregate Type	District/Borough	Easting, Northing (Approx)	Planning Permission End Date
W & H (Roads) Ltd	W & H (Roads) Ltd, SS2 QG	Inert/C+D	Southend-on-Sea	587831, 188179	Permanent

Source: Thurrock Borough Council (2022), as derived from the EA Waste Data Interrogator (WDI) 2019 to 2021 inclusive.
Note: This list has been generated from the best practice methodology, AWPs/WRAP, Guidance on Assessing Levels of Recycled Aggregates (2022)

Figure 27: Recycled Aggregate Production at Facilities in Greater Essex (2019 to 2021)

Year	Total number of Fixed Facilities Producing Recycled Aggregate	Total Number of Operators Operating these Fixed Facilities	Total Recycled Aggregate Produced at Fixed Facilities (Mt)	20% Mobile Plant Allowance (Mt)	Estimated Total Recycled Aggregate Produced at Fixed Facilities and + 20% Mobile Plant Allowance (Mt)	Percentage Change on Previous Year	Percentage Change since 2019
2019	83	64	0.77	0.19	0.97	N/A	N/A
2020	87	71	0.67	0.17	0.83	-14.09% ↓	-14.09% ↓
2021	86	73	0.70	0.18	0.88	5.68% ↑	-9.21% ↓

Source: Essex County Council (2022), as derived from the EA Waste Data Interrogator (WDI) 2019 to 2021 inclusive.
Note: New methodology and guidance was published in May 2022 to ensure standardisation of aggregate recycling rates. ECC adopted the method using the WDI to gauge this metric. As such, to ascertain the overall recycled aggregate figure a quarter of the value provided by the WDI was applied to the figure to give an overall tonnage of recycled aggregate production. This was updated following advice from the WTAB meeting on 24/01/2023 regarding the use of the methodology.

Appendix D Permitted Primary and Secondary Processing Plant in Greater Essex (31 December 2021)

Figure 28: Permitted Processing Plant in Essex (31 December 2021)

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority				Plant Permitted on Site[90]					
Operator	**Quarry / Transhipment Facility**	**Site Status (2021)**	**End Date**	**Primary Processing**	**Bagging**	**Concrete / Mortar Batching**	**Coated Roadstone**	**Aggregate Recycling Facility[91]**	**Transhipment Facility[92]**
Aggregate Industries	Chelmsford Rail Depot (Receiving Depot)	Active	Permanent						✓ (MLP – F1)
	Harlow Mill Rail Station (Receiving Depot)	Active	Permanent			✓			✓ (MLP – F2)

[90] This only includes processing plants on extraction and transhipment sites that have been permitted by the Mineral Planning Authorities. It does not include any aggregate processing facilities that have been permitted by individual Local Planning Authorities in other locations (such as on industrial sites, according to local planning policies).
[91] There are additional Aggregate Recycling Facilities, which are not co-located with Mineral Extraction/Transhipment Sites. These can be viewed in **Error! Reference source not found.**.
[92] As specified by Network Rail in Rail served aggregates and minerals handling locations (2016)

Appendix D: Permitted Primary and Secondary Processing Plant in Greater Essex (31 December 2021)

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority				Plant Permitted on Site[90]					
Operator	**Quarry / Transhipment Facility**	**Site Status (2021)**	**End Date**	**Primary Processing**	**Bagging**	**Concrete / Mortar Batching**	**Coated Roadstone**	**Aggregate Recycling Facility[91]**	**Transhipment Facility[92]**
	Essex Regiment Way, Chelmsford	Active	Permanent				✓		
Blackwater Aggregates	Bradwell Quarry, Bradwell	Active	2022	✓	✓	✓			
Brett Aggregates	Alresford Creek, Alresford[93]	Active	2042	✓		✓ (LPA Permission)			
	Brightlingsea Quarry, Brightlingsea	Active	2026	✓					
	Elsenham Quarry, Elsenham	Inactive [94]	2029	✓				✓	

[93] Not extracting material from site at present. Only importing from Lufkins Farm (Brett site) for processing and onward transportation

[94] Elsenham Quarry is inactive in terms of mineral extraction but is active only in terms of infilling/landfill, as such the plant listed above are permitted but not on site.

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority				Plant Permitted on Site[90]					
Operator	**Quarry / Transhipment Facility**	**Site Status (2021)**	**End Date**	**Primary Processing**	**Bagging**	**Concrete / Mortar Batching**	**Coated Roadstone**	**Aggregate Recycling Facility[91]**	**Transhipment Facility[92]**
Brice Aggregates	Colemans Farm Quarry	Active	2036			✓ [95]			
Widdington Recycling Ltd	Widdington Pit, Widdington	Active	2022[96]	✓				✓	
Danbury Aggregates	St. Claires, Danbury	Active	2031	✓					
Dewicks	Curry Farm, Bradwell-on-Sea	Active	2023	✓					
Frank Lyons Plant Services	Blackley Quarry, Great Leighs	Active	2045	✓		✓ (Inactive)			

[95] The Concrete / Mortar Batching plant was permitted by ESS/11/20/BTE on 4 June 2021
[96] There is a resolution to extend life of Widdington to 2031

Appendix D: Permitted Primary and Secondary Processing Plant in Greater Essex (31 December 2021)

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority				Plant Permitted on Site[90]					
Operator	**Quarry / Transhipment Facility**	**Site Status (2021)**	**End Date**	**Primary Processing**	**Bagging**	**Concrete / Mortar Batching**	**Coated Roadstone**	**Aggregate Recycling Facility[91]**	**Transhipment Facility[92]**
G&B Finch	Asheldham Quarry, Asheldham	Active	2029	✓		✓		✓	
Hanson Aggregates	Birch Quarry, Birch	Active	2018[97]	✓		✓			
	Bulls Lodge Quarry, Boreham	Active	2020/2030	✓	✓	✓	✓	✓	
Ingrebourne Valley	Rayne Quarry Commenced 18 February 2022	Active	18/02/2035	✓					
	Newport Chalk Quarry, Newport. (TL 525 332)	Active	2031					✓ Inactive	

[97] Application reference: ESS/45/19/COL is currently awaiting determination, which would impact the end date presented here. Should this permission be granted the end date would be five years from date of permission.

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority				Plant Permitted on Site[90]					
Operator	**Quarry / Transhipment Facility**	**Site Status (2021)**	**End Date**	**Primary Processing**	**Bagging**	**Concrete / Mortar Batching**	**Coated Roadstone**	**Aggregate Recycling Facility[91]**	**Transhipment Facility[92]**
	Commenced 03 September 2021								
JJ Prior Ltd	Fingringhoe Quarry, Fingringhoe	Inactive	2042 (or when stockpiles exhausted)						✓ (MLP - D2)
Tarmac Ltd	Colchester Quarry, Stanway	Active	2042	✓		✓	✓	✓	
	Harlow Mill Rail Station (Receiving Depot)	Active	Permanent				✓		✓ (MLP – F2)
	Marks Tey Rail Depot (Receiving and loading point)	Active	Permanent						✓ (MLP – F3)

Appendix D: Permitted Primary and Secondary Processing Plant in Greater Essex (31 December 2021)

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority				Plant Permitted on Site[90]					
Operator	**Quarry / Transhipment Facility**	**Site Status (2021)**	**End Date**	**Primary Processing**	**Bagging**	**Concrete / Mortar Batching**	**Coated Roadstone**	**Aggregate Recycling Facility[91]**	**Transhipment Facility[92]**
Sewells Reservoir Construction (SRC)	Martells Quarry, Ardleigh	Active	2026	✓				✓	
	Cobbs Farm, Goldhanger (Closed In 2021)	Active (Closed in 2021)	2021	✓					
	Crown Quarry, Ardleigh	Active	2028	✓	✓ [98]	✓		✓	
	Dollymans Farm, Wickford (Commenced 03 September 2021)	Active	2031					✓	
	Elmstead Hall[99]	Active	November 2024	✓					

[98] The bagging plant at Crown Quarry is pending retrospective determination (ESS/07/20/TEN)

[99]

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority				Plant Permitted on Site[90]					
Operator	**Quarry / Transhipment Facility**	**Site Status (2021)**	**End Date**	**Primary Processing**	**Bagging**	**Concrete / Mortar Batching**	**Coated Roadstone**	**Aggregate Recycling Facility[91]**	**Transhipment Facility[92]**
	Highwood Quarry, Little Easton	Active	2026	✓	✓	✓		✓	
	Sheepcotes Farm[100] (Not commenced Planning Permission ESS/01/18/CHL by 31 December 2021)	Inactive	2027	✓ Inactive					
Hutchinson's Ports	Port or Harwich[101]	Inactive	Permanent						✓ (MLP – F4)

[100] Sheepcotes commenced 06 May 2022, the end date therefore is 2027 for extraction and processing.

[101] Parkeston Quay (East) in Harwich has been identified as potentially providing a large new aggregate import in the form of a marine wharf, although this proposal has, to date, not materialised. As specified in the Essex MLP (2014, pg. 72)

Appendix D: Permitted Primary and Secondary Processing Plant in Greater Essex (31 December 2021)

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority				Plant Permitted on Site[90]					
Operator	**Quarry / Transhipment Facility**	**Site Status (2021)**	**End Date**	**Primary Processing**	**Bagging**	**Concrete / Mortar Batching**	**Coated Roadstone**	**Aggregate Recycling Facility[91]**	**Transhipment Facility[92]**
TOTAL Permitted=				**19** (↑)	4 (-)	**12** (↑)	5 (-)	10 (↑)	6 (-)

Source: Essex County Council (2022)

Key:

(↑) = An increase in facilities since the last edition of the LAA

(🡻) = An increase in facilities since the last edition of the LAA
(-) = No change in the number of facilities since the last edition of the LAA

Figure 29: Permitted Processing Plant in Thurrock (31 December 2021)

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority				Plant Permitted on Site					
Operator	**Quarry / Transportation Facility**	**Site Status (2021)**	**End Date**	**Primary Processing**	**Bagging**	**Concrete / Mortar Batching**	**Coated Roadstone**	**Aggregate Recycling Facility[102]**	**Transhipment Facility[103]**
Aggregate Industries	DP World London Gateway	Active	Permanent						Wharf
	Purfleet Rail Depot, (Jurgens Road)	Active	Permanent					✓	Rail
Port of Tilbury, FM Conway	Tilbury Bulk Rail Terminal	Active	Permanent						Rail
Hanson Aggregates	Purfleet Wharf, West Thurrock (a.k.a Dagenham	Inactive	Permanent						Wharf

[102] There are additional Aggregate Recycling Facilities, which are not co-located with Mineral Extraction/Transhipment Sites. .
[103] As specified by Network Rail in Rail served aggregates and minerals handling locations (2016)

Appendix D: Permitted Primary and Secondary Processing Plant in Greater Essex (31 December 2021)

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority				Plant Permitted on Site					
Operator	**Quarry / Transportation Facility**	**Site Status (2021)**	**End Date**	**Primary Processing**	**Bagging**	**Concrete / Mortar Batching**	**Coated Roadstone**	**Aggregate Recycling Facility[102]**	**Transhipment Facility[103]**
	Wharf) Aveley, RM19 1RP								
Recycled in Orsett	Dansand Quarry	Active	2025					✓	
S. Walsh & Sons	Port of Tilbury, Berth 34	Inactive [104]	Permanent						Wharf
	East Tilbury Quarry	Closed – currently being restored						✓	
Stema Shipping	Tilbury Docks Berth 1	Active	Permanent						Wharf
Tarmac Ltd	Thurrock Marine Jetty/Terminal	Active	Permanent						Wharf

[104]S. Walsh & Sons Port of Tilbury, Berth 34 was expected to commence in 2021

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority				Plant Permitted on Site					
Operator	**Quarry / Transportation Facility**	**Site Status (2021)**	**End Date**	**Primary Processing**	**Bagging**	**Concrete / Mortar Batching**	**Coated Roadstone**	**Aggregate Recycling Facility[102]**	**Transhipment Facility[103]**
Tilbury 2	Tilbury 2 Power Station	Inactive [105]	Permanent			TBC		✓	Rail & Wharf
TOTAL Permitted =				**0**	**0**	**1 (TBC)**	**0**	**4**	**9**

[105] Tilbury 2 was expected to commence in late 2021

Appendix E Permitted Reserves in Greater Essex (2002 to 2021)

Figure 30: Permitted Reserves in Greater Essex (2002 to 2021)

Year	Permitted Sand and Gravel Reserves in Greater Essex, (Millions of Tonnes)	…Continued Year	Permitted Sand and Gravel Reserves in Greater Essex, (Millions of Tonnes)
2002	57.69	2012	35.50
2003	59.64	2013	32.88
2004	54.60	2014	30.72
2005	51.00	2015	32.69
2006	50.12	2016	35.37
2007	46.68	2017	31.95
2008	39.19	2018	29.98
2009	36.71	2019	33.10
2010	37.36	2020	33.59
2011	37.01	2021	33.86

Source: Essex County Council Annual Monitoring Reports and East of England Annual Monitoring Reports

Note 1: Dormant mineral developments are not included in the calculations in this section

Note 2: 2019 data collection impacted by furlough due to COVID-19 and therefore sales are potentially under-reported;

Note 3: From discussions with some operators within Greater Essex, as part of the annual aggregate survey, it is understood that the COVID recovery period in 2021 provided an opportunity for some operators to review their assets. In so doing, a number of 2021 data returns suggested a higher permitted reserves figure than had previously been expressed, within the limit of planning permissions already acquired. This has resulted in an uplift in the overall Greater Essex permitted reserves figure compared with 31 December 2020, even

though no planning permissions were granted for additional sand gravel reserves within Greater Essex in 2021.
Supporting: Figure 4- Permitted Sand & Gravel Reserves in Greater Essex (2002 to 2021, page 10.

Appendix F Apportionment & Landbank Data

Figure 31: Greater Essex Annual Sand & Gravel Apportionment Figures

Year Set	Period Covered by Guidelines	Apportionment (Millions of Tonnes Per Annum)
1989	1989 to 1994	6.9Mt for Greater Essex
1994	1994 to 2003	6.2Mt for Greater Essex
2003	2001 to 2016	4.55Mtpa (Essex = 4.41Mtpa, Thurrock = 0.14Mtpa)
2009	2005 to 2020	4.45Mtpa (Essex = 4.31Mtpa, Thurrock = 0.14Mtpa)
2021	2020 onwards	Until new National and Sub-national values are adopted: 4.45Mtpa (Essex = 4.31Mtpa, Thurrock = 0.14Mtpa)

Source: East of England Aggregates Working Party, 2010 AMR
Note: The period covered by Guidelines for the current apportionment ends on 31 December 2020. It is expected that Government will be updating these guidelines once it has been evidenced through the currently live National Aggregate Survey 2020

Figure 32: Annualised Landbank held in Greater Essex (2012 – 2021)

Year	Permitted Reserve in Mt (a)	Annualised Plan Provision in Mt (b)	Landbank in Years (a/b)
2012	35.5Mt	4.45Mt	7.98
2013	32.88Mt	4.45Mt	7.39
2014	30.72Mt	4.45Mt	6.90
2015	32.69Mt	4.45Mt	7.35
2016	35.37Mt	4.45Mt	7.95
2017	31.95Mt	4.45Mt	7.18

Year	Permitted Reserve in Mt (a)	Annualised Plan Provision in Mt (b)	Landbank in Years (a/b)
2018	29.98Mt	4.45Mt	6.74
2019	33.10Mt	4.45Mt	7.44
2020	33.59	4.45Mt	7.55
2021	33.86Mt	4.45Mt	7.61
2021 Permitted & Pending Reserve*	33.86Mt (permitted reserve) + 10.57Mt (pending reserve) = **44.42***	4.45Mt	9.98*
Supplementary Information			
30 June 2022 After permission fully granted for Bradwell (A7) Essex	33.86Mt (permitted reserve on 31st December 2021) Minus estimated 6 months of sales based on ten years average sales data (1.67Mt) + 6.5Mt at A7 =**38.68 Mt**	4.45Mt	8.69

Appendix F: Apportionment & Landbank Data

Source: East of England Annual Monitoring Reports & Essex County Council (2022);
Note: 2019 data collection impacted by furlough due to COVID-19 and therefore sales are potentially under-reported;
Note * This is not actual reserve as of 31st December 2021, but what would have been available if all applications in determination and/or signing of legal agreements were complete at this date;
Supporting: Figure 6: , Greater Essex Landbank (2012 to 2021), page 16.

Figure 33: 10-Year Average Rolling Sales Landbank held in Greater Essex (2011 to 2021)

Year	Permitted Reserve in Mt (a)	10-year Average Rolling Sales of Sand and Gravel in Mt (b) (2011 to 2020)	Landbank in Years (a/b)
2012	35.5Mt	3.52	10.07
2013	32.88Mt	3.39	9.69
2014	30.72Mt	3.40	9.03
2015	32.69Mt	3.33	9.81
2016	35.35Mt	3.27	10.83
2017	31.95Mt	3.20	9.99
2018	29.98Mt	3.23	9.30
2019	33.10Mt	3.26	10.14
2020	33.59	3.26	10.30
2021	33.86Mt	3.35	10.12
2021 Permitted & Pending Reserve*	33.86Mt (permitted reserve) + 10.57Mt (pending reserve) = **44.42***	3.35	13.28
Supplementary Information			
30 June 2022 After permission fully granted for Bradwell (A7) Essex	33.86Mt (permitted reserve on 31st December 2021) Minus estimated 6 months of sales	3.35	11.56

Year	Permitted Reserve in Mt (a)	10-year Average Rolling Sales of Sand and Gravel in Mt (b) (2011 to 2020)	Landbank in Years (a/b)
	based on ten years average sales data (1.67Mt) + 6.5Mt at A7 =**38.68 Mt**		

Source: Essex County Council (2022);
Note: 2019 data collection impacted by furlough due to COVID-19 and therefore sales are potentially under-reported
Note * This is not actual reserve as of 31st December 2021, but what would have been available if all applications in determination and/or signing of legal agreements were complete at this date;
Supporting: Figure 6: , Greater Essex Landbank (2012 to 2021), page 16.

Appendix G Sales Data

Figure 34: Sales of Land Won Sand & Gravel within Greater Essex (2002 – 2021) (in millions of Tonnes)

Year	Sand and Gravel Sales in Greater Essex (Mt)		…. Continued Year	Sand and Gravel Sales in Greater Essex (Mt)
2002	4.66		2012	2.30
2003	4.47		2013	3.18
2004	4.30		2014	4.37
2005	4.14		2015	3.45
2006	4.07		2016	3.40
2007	4.09		2017	3.41
2008	3.29		2018	3.56
2009	2.79		2019	3.17
2010	2.99		2020	2.96
2011	2.80		2021	3.64

Average Annual Sales 2002 to 2021 (20 years)	3.55 Mt
10 Year Rolling Average Annual Sales (2012 to 2021)	3.35Mt
3 Year Rolling Average Sales (2019 to 2021)	3.26Mt

Source: Essex County Council Annual Monitoring Reports and East of England Aggregates Working Party Annual Monitoring Reports & Essex County Council (2022)
Note: 2019 data collection impacted by furlough due to COVID-19 and therefore sales are potentially under-reported.;
Supporting: Figure 5: Greater Essex Sales of Land Won Sand & Gravel (2012 to 2021, 10 years), page 13

Appendix H Marine-Won Minerals

Figure 35: Wharves with the Potential to Serve Greater Essex (2021)

The Crown Estate Thames Region		
Landing Port (Standard Name) / Locality	**Wharves (Alternative Name(s))**	**AWP Area**
Barking (London)	Barking, Docklands Wharf	London
Cliffe (Kent)	Alpha Wharf, Cliffe (Brett), North Sea Terminal	SEEAWP
Dagenham (London)	Dagenham, Chequers Lane (Hanson). Dagenham Depot, Choats Road, Dagenham (Cemex).	London
Denton (Kent)	Denton Wharf, Denton BAD, Mark Lane, Gravesend, J Clubbs	SEEAWP
Erith (London)	Erith, Pioneer Wharf (Tarmac)	London
Greenhithe (London)	Johnson's Wharf, Greenhithe (Hanson)	London
Greenwich Wharves (London)	Angerstein Wharf (Cemex). Blackwall Wharf, Charlton, Delta Wharf, Greenwich, Murphy's Wharf, (Tarmac), Phoenix Wharf, Victoria Deep Wharf	London
London Docklands Wharves (Mostly Disused)	Canning Town, Cargo Fleet Wharf, Clarence Wharf, East India Dock, Heron Quay, Millwall, Orchard Wharf, Peruvian Wharf, Rotherhithe, Silver Town, Thames Wharf, Thamesmead, Union Wharf, Victoria Wharf	London
Northfleet (Kent)	Robin's Wharf, Grove Road (Brett)	SEEAWP
River Medway Wharves (Kent)	Euro Wharf, Frindsbury (Hanson) Rochester, Rochester Hanson, Sheerness	SEEAWP

Swale Wharves (Kent)	Ridham Dock (Tarmac) Queenborough	SEEAWP
Tilbury	Tilbury Stema	East of England AWP
Thurrock (Thurrock)	Lafarge Jetty, West Thurrock (Tarmac) Purfleet, Purfleet PAL, Thurrock, West Thurrock	East of England AWP
Isle of Grain	Aggregate Industries Terminal, Isle of Grain (Aggregate Industries)	SEEAWP
The Crown Estate East Coast Region		
Landing Port (Standard Name) / Locality	**Wharves (Alternative Name(s))**	**AWP Area**
Bacton	Bacton	East of England AWP
Ipswich (Suffolk)	West Bank Terminal, Ipswich (Brett)	East of England AWP
Lowestoft	Lowestoft	East of England AWP

Source: The Crown Estate: Marine Aggregates Summary of Statistics (2021) & Crown Estate Marine Aggregate Landings Port Listing 2019 (excluding beach replenishment / fill projects), provided to the EoEAWP by request from The Crown Estate.

Figure 36: Marine Won Mineral Landed in Ports with The Capacity to Serve Greater Essex in Tonnes (2012 to 2021)

	London	Thurrock	Kent	Suffolk	Total
2012	4,188,757	329,376	1,200,040	83,865	**5,802,038**
2013	4,606,442	329,376	1,211,574	27,931	**6,175,323**
2014	5,316,369	238,331	1,771,156	57,085	**7,382,941**
2015	5,613,006	204,276	2,489,490	119,421	**8,426,193**
2016	5,898,302	263,756	2,553,793	171,083	**8,886,934**

2017	5,808,273	198,753	2,574,808	208,015	**8,789,849**
2018	5,705,675	177,047	2,421,847	194,098	**8,498,667**
2019	5,567,593	106,683	2,407,683	188,009	**8,269,968**
2020	5,012,754	205,814	1,901,014	222,088	**7,341,670**
2021	5,492,812	233,123	2,488,856	221,500	**8,436,291**
10-year % change 2012 to 2021	31.1%	-29.2%	107.4%	164.1%	**19.7%**
Annual % change 2012 to 2021	9.6%	13.3%	30.9%	-0.3%	**14.9%**

Source: The Crown Estate, Summary of Statistics, 2012 – 2021
Supporting: Figure10: Marine-Won Mineral Landed in Ports that Serve Greater Essex (2012 to 2021), page 26

Appendix I Indicative Future Housing Requirements, Major Construction Projects & Local Plan Production Update

Figure 37: Indicative Housing Growth as Committed to in Local Plans (April 2021)

Local Authority Area	Local Plan Requirement	Emerging Local Plan Period	Complete Builds in Plan Period to date	Outstanding at April 2021	Of which have planning permission at April 2021
Basildon	20,160	2014 - 2034	3,368	16,792	2,105
Braintree	14,320	2013 - 2033	4,161	10,159	10,546
Brentwood	7,752	2016 - 2033	977	6,775	1,036
Castle Point	5,325	2018 - 2033	437	4,888	502
Chelmsford	21,843	2013 - 2036	7,015	14,828	5,490
Colchester	18,400	2013 - 2033	7,807	10,593	5,372
Epping Forest	11,400	2011 - 2033	2,695	8,705	1,242
Harlow	9,200	2011 - 2033	3,653	5,547	3,551

Local Authority Area	Local Plan Requirement	Emerging Local Plan Period	Complete Builds in Plan Period to date	Outstanding at April 2021	Of which have planning permission at April 2021
Maldon	4,650	2014 - 2029	1,902	2,748	1,669
Rochford	7,200	2020 - 2040	349	6,851	2,128
Tendring	11,000	2013 - 2033	4,284	6,716	6,573
Uttlesford	14,020	2020 - 2040	362	13,658	2,977
Administrative Essex	**145,270**	**-**	**37,010**	**108,260**	**43,191**
Southend-on-Sea	23,600	2020 -2040	1,149	22,451	N/A
Thurrock	25,234	2018 - 2040	1,460	23,774	N/A
Greater Essex	**194,104**	**-**	**39,619**	**154,485**	**N/A**

Notes: All asterisk explanations are provided in Appendix I, Indicative Future Housing Requirements, Major Construction Projects & Local Plan Production Update
(page 58)Source: Essex County Council (2022)

Figure 38: Summary of Major Developments/Construction Projects within and adjacent to Greater Essex

Infrastructure Scheme	Lead	Decision Pathway	Potential/Actual Delivery Date
M11 Junction 7a	ECC	Planning Application	Opened to traffic June 2022
M25, Junction 28	National Highways	Nationally Significant Infrastructure Project (Development Consent Order)	Construction to commence October 2022 Open to traffic - Summer 2025 (Preparation works for construction have commenced)
Chelmsford Northeast Bypass	ECC	Planning Application	Permission granted – April 2022 Open to traffic – 2025
A120/A133 Link Road and Rapid Transit System	ECC	Planning Application	Permission granted – 2021 Open to traffic - 2025
Beaulieu Park Station	ECC/ Network Rail	Planning Application	Outline Permission granted – 2013 Open – late 2025
A12 Widening (19 – 25)	National Highways	Nationally Significant Infrastructure Project (Development Consent Order)	Construction to commence – 2023 – 2024 (DCO Application to the Planning Inspectorate Aug 2022) Open to traffic - 2027/28

Infrastructure Scheme	Lead	Decision Pathway	Potential/Actual Delivery Date
Lower Thames Crossing	National Highways	Nationally Significant Infrastructure Project (Development Consent Order)	Application expected to be submitted Autumn 2022. It has been estimated that the total aggregate demand would range between 8.41Mt and 10.58Mt. Open to traffic -2029/30
New A120 Braintree to the A12 route	ECC/ National Highways	Nationally Significant Infrastructure Project	Await RIS3 (2025 – 2030) to be published in 2024
A127/A130 Fairglen Interchange – (short term)	ECC	Planning Application	Permission granted – December 2021 Open to traffic – 2023/24
A127 Improvement Package	ECC	Planning Application and subject to DfT funding approval	Strategic business case in preparation for submission to Department for Transport
Army and Navy Sustainable Transport Package	ECC	Planning Application	The Army and Navy Sustainable Transport Package is approved by ECC in March 2022. Construction scheduled to start in early 2025.

Infrastructure Scheme	Lead	Decision Pathway	Potential/Actual Delivery Date
Stansted Airport	MAG & STAL	Planning Application	Permission granted by appeal - May 2021 Implementation date – Vary and set out in the Unilateral Undertaking. Dependent on passenger throughput and future need. Sustainable Development Plan published in 2015- currently under review
A13 Widening (A128 – Orsett Cock to A1014, The Manorway, Stanford- le-Hope)	Thurrock Council - Highways	Planning Application	Opened May 2022
Freeport East (Harwich Bathside Bay component)	Hutchison Ports UK	Planning Application	Land and reclamation estimated to run from January 2023 to December 2025
London Gateway Port - Development of Employment areas	DP World via a Local Development Order		Expected beyond 2023
Tilbury 2 (Tilbury Port Expansion)	Port of Tilbury	Nationally Significant Infrastructure Project (Development Consent Order)	Open January 2021

Infrastructure Scheme	Lead	Decision Pathway	Potential/Actual Delivery Date
Purfleet Regeneration Scheme	Purfleet Centre Regeneration Ltd	N/A	Construction started in 2021 - no definitive completion date
South of West Thurrock Way/West of Euclid Way	Bellway Homes	N/A	Expect completion 2022
Car Park at 27 Victoria Avenue, SS2 6AL	Southend on Sea	Planning Application	Currently under-construction
Bradwell B Nuclear Power Station	China Generation Nuclear Power Corporation (CGN) and EDF Energy	Nationally Significant Infrastructure Project	Paused January 2021 Scheme recommencement - not defined
Sizewell C Nuclear Power Station	EDF Energy	Nationally Significant Infrastructure Project (Development Consent Order)	The Secretary of State granted development consent for the Sizewell C Project on 20 July 2022. Construction could commence before 2024, taking between nine and twelve years.
Bramford to Twinstead Connection Project	National Grid	Nationally Significant Infrastructure Project (Development Consent Order)	DCO submission in early 2023 Construction to commence Autumn 2024 Fully operational in 2028

Infrastructure Scheme	Lead	Decision Pathway	Potential/Actual Delivery Date
North Falls Wind Farm	SSE Renewables/RWE	Nationally Significant Infrastructure Project (Development Consent Order)	DCO submission - late 2023/4 Fully operational by 2030
Five Estuaries Wind Farm	Consortium led by RWE	Nationally Significant Infrastructure Project (Development Consent Order)	Statutory consultation in early 2023. DCO submission - 2023 Fully operational by 2030
East Anglia Green Energy Enablement	National Grid	Nationally Significant Infrastructure Project (Development Consent Order)	April – June 2023 – Statutory consultation December 2024 – Development Consent Order Submission 2025 – 2026 – DCO Examination From 2031 - Operational

Source: Essex County Council (2022).

Figure 39: Emerging Local Plan Progress (June 2022)

Area	Local Authority	Progress
Mid	Braintree	Shared Section 1 Local Plan adopted by BDC 22/02/2021 Section 2 Local Plan adopted 25/07/2022
	Chelmsford	Local Plan found sound and was adopted on 27/05/2020
	Maldon	Adopted Local Plan (July 2017) Timetable for the Local Plan Review is under review by MDC - no consultation dates at this stage
Northeast	Colchester	Shared Section 1 Local Plan adopted by CBC 01/02/2021 Section 2 Local Plan adopted TDC 04/07/2022
	Tendring	Shared Section 1 Local Plan adopted by TDC 26/01/2021 Section 2 Local Plan adopted TDC 25/01/2022
South	Basildon	Basildon Council withdraws Local Plan from examination on 3 March 2022. New Local Plan to be prepared
	Brentwood	Local Plan found sound and was adopted by Brentwood Borough Council on 23/03/2022
	Castle Point	CPBC voted NOT to adopt the Local Plan after it was found 'sound' and withdrew the plan. New LP to be prepared
	Rochford	Timetable for a Draft Plan consultation (Reg 18) is under review by RDC - no consultation dates at this stage
West	Epping Forest	EFDC will undertake a Main Modifications consultation following a letter from their new Inspector outlining requirements - dates TBC

	Harlow	Local Plan found sound and was adopted by Harlow Council on 10/12/2020
	Uttlesford	Timetable for a Draft Plan consultation (Reg 18) is under review by UDC - no consultation dates at this stage
Unitary Authorities	Southend-on-Sea	Issues and Options February - April 2019 Preferred Approach consultation – Q3 2022 Submission Q4 2023
	Thurrock	Local Plan timetable under review

Source: Essex County Council (2022)

Note: S1 = North Essex Shared Section 1 Local Plan Adopted by Braintree 22/01/21, Colchester 01/02/2021, Tendring 26/01/2021

This information is issued by:

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Contact us:

mineralsandwastepolicy@essex.gov.uk
www.essex.gov.uk/planning
03330 139 808

The information contained in this document can be translated, and/or made available in alternative formats, on request.

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