Greater Essex Local Aggregate Assessment 2021

(Covering the calendar year of 2020)

EXECUTIVE SUMMARY

This is the eighth Local Aggregate Assessment (LAA) produced on behalf of the Greater Essex authorities[1], reflecting the position at the end of 2020. It should be noted that the Aggregate Survey is undertaken annually to provide primary data for all sales and reserves information.

The Aggregate Survey that informs this LAA was undertaken during March to May 2021, during which time the effects of the Coronavirus pandemic were still having impacts on data collation. Despite this, 96% of sites provided a response.

A national aggregate survey for the year 2019 was undertaken during 2020, with the results being published in mid-2021. Therefore, the results presented at the Greater Essex level will be considered and compared to the regional survey results for the same calendar year, which were reported on in the previous LAA.

Extraction and Processing Facilities within Greater Essex

There are 37 sand and gravel quarries in Greater Essex, 24 of which were active[2]. Of the 13 inactive sand and gravel quarries, four are considered as long term 'dormant'[3] and nine are permitted, but not actively extracting, as of 31 December 2020. At this time, there was at least 3.60Mtpa potential sand and gravel production capacity at these sites. In addition, at the end of December 2020, the potential of extraction at a further four sites are pending determination and/or Legal Agreements. A single site ceased mineral extraction/closed in 2020.

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 46 processing facilities that add value to mineral products co-located with mineral and transhipment facilities.

Sand & Gravel Sales

Sales increased between 2011 and 2020, from 2.80 million tonnes (Mt) to 2.96Mt. Within this time, the highest sales were in 2014 (4.37Mt) and lowest in 2012 (2.3Mt), despite the constraints on sales during 2020 due to COVID-19. The ten-year average sales (2011 to 2020) figure (3.26Mt) and the three-year sales (2018 to 2020) average (3.23Mt) 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 a decrease from 3.56Mt in 2018 to 2.96Mt in 2020. However, some of this decrease

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

[2] Due to the Aggregate Survey that informs this LAA being undertaken during 'lockdown', this total number of active sites is yet to be confirmed.

[3] 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.

could be attributed to the lower-than-expected survey response rate due to the impacts of COVID-19.

Sand and Gravel Permitted Reserves & Landbank

Permitted reserves were 33.59Mt in December 2020. The apportionment[4] landbank increased to 7.55 years at the end of 2020, , whilst the ten-year sales average landbank stands at 10.30 years. Therefore, the landbank is above the seven-year requirement set out in the NPPF[5]. As of 31st December 2021, there were four pending permissions across Greater Essex, which would permit the working of 9.5Mt of sand and gravel which, if granted and/or all legal agreements are signed, would further increase the landbank.

Marine-Won Sand and Gravel

Greater Essex is served by the Thames and East Coast dredging regions, with a total of 4.23Mt of material removed from the seabed from these areas in 2020. This is a decrease of 0.12Mt compared to the 4.35Mt removed in 2019. Licenses have been granted that permit the extraction of a total of 10.93Mt per annum from the Thames and East Coast regions combined. At this rate, current estimates suggest there are 26 years of primary marine aggregate production permitted for extraction in the Thames Estuary and 12 years within the East Coast region.

Imports and Exports

Across Greater Essex, there were seven wharves (of which four were inactive in 2020, and a further 'potential' wharf[6]) and eight rail (two of which were inactive in 2020) mineral transhipment facilities[7]. The National Aggregate survey 2019, provides the most robust data regarding importation and exportation. 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.

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.

Regarding aggregate recycling, within the Essex Mineral Local Plan Review Regulation 18 consultation document, it was highlighted that the methodology to identify the 'production' of recycled aggregate is different to the methodology previously used in both the Essex Authority Monitoring Reports and these Greater Essex LAAs. As an interim measure, the

[4] 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.

[5] NPPF Paragraph 213, f.

[6] 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)

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

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

few CD&E waste recovery facilities that are co-located at mineral extraction and transhipment sites have been reviewed. The six facilities (operated by four different operators) sold 0.59Mt recycled product in 2020.

2020 Headline Figures

	Performance in 2020	Comparison with 2019
Land-won sand & gravel sales (Million tonnes (Mt))	2.96Mt (↓ 6.6%)	3.17Mt
Permitted reserves of sand and gravel at end of year (Mt)	33.59Mt (↑ 1.5%)	33.10Mt
Landbank based on apportionment (years)	7.55 years (↑ 1.5%)	7.44 years
Ten-year rolling annual average sales (Mt) (Ten-year period 2011 – 2020)	3.26Mt (↓ 0.07%)	3.26Mt
Landbank based on ten-year rolling average sales (years)	10.30 years (↑ 1.9%)	10.14 years
Three-year rolling average sales (Mt) (Three-year period 2018 – 2020)	3.23Mt (↓ 4.4%)	3.38Mt
Wharf depot imports (Hard rock)	-	1.58Mt
Wharf depot Exports (Sand & Gravel)	-	0.55Mt
Recycled Aggregate Sales (Mt)[9]	0.59Mt (↑ 7.9%)	0.55Mt

Source: Essex County Council (2021).

[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

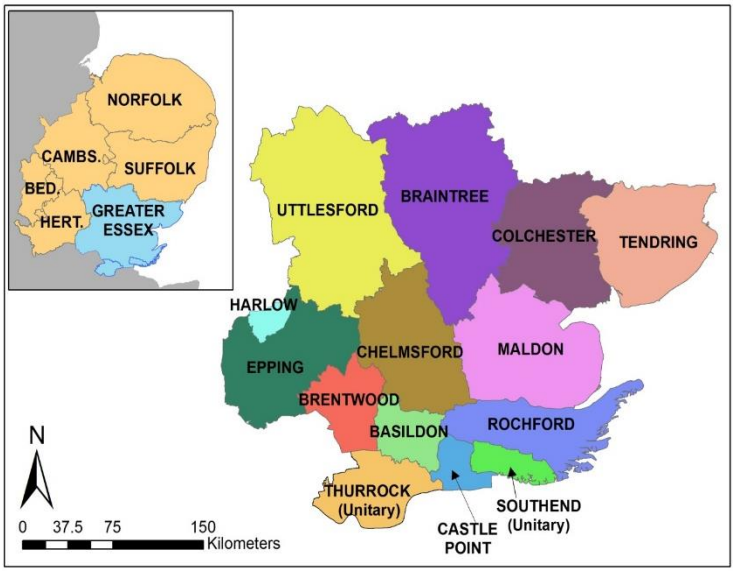
1.1. Background

1.1.1. Mineral Planning Authorities (MPAs) are required[10] to produce a Local Aggregate Assessment (LAA) annually to ensure that there is a steady and adequate supply of aggregates. This LAA reports on the Greater Essex[11] position on 31 December 2020. 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.

1.2. Spatial Context

1.2.1. Greater Essex is within the East of England, as identified in the map. It borders Kent and the London Boroughs of Enfield, Waltham Forest, Redbridge, and Havering. Greater Essex is comprised of the administrative areas of Essex, Southend-on-Sea, and Thurrock. Essex sits within a two-tier administrative system formed of the County Council and 12 Local Councils. Southend-on-Sea and Thurrock are unitary authorities who operate separately to Essex County Council and its constituent local authorities.

Map 1: Spatial Context of Greater Essex



1.3. Summary of Key Planned Infrastructure Projects

1.3.1. The level of demand for mineral resources[12] will be predicated on the amount and type of development in and close to Essex.

[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] Including the generation and use of recycled/secondary aggregates

1.3.2. The Mineral Products Association (MPA) published an overview of construction and mineral products markets in the East of England[13]. This included reference to the construction outlook between 2019 and 2023[14].

1.3.3. Total construction is forecast to increase by an average of 1.2% per annum (pa) over 2019 to 2023 compared to overall expected growth of 1.3% pa on average for the UK. Growth is expected to be driven by private housing, (the largest subsector in the region) with some additional support from public sector construction in the housing and non-housing subsectors. The extension in Beaulieu Park in Essex and redevelopment of Purfleet, (both valued at £1 billion respectively) are noted as significant projects within the East of England region.

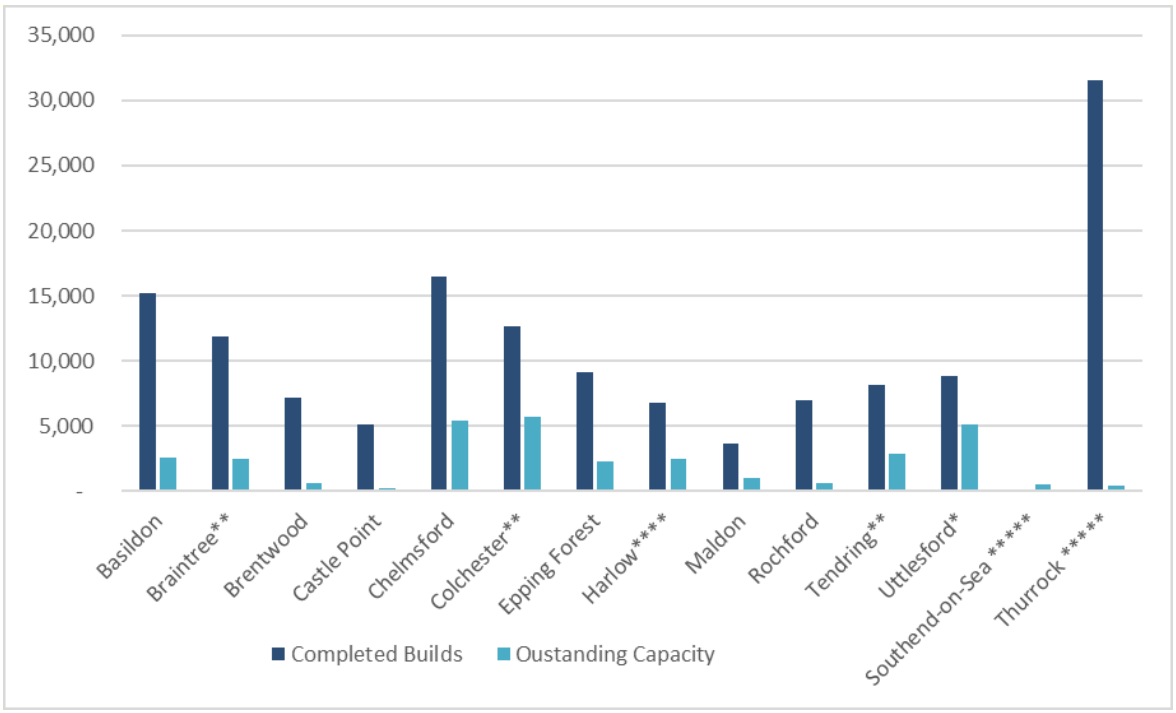
Housing Delivery

1.3.4. The housing stock in Essex increased by approximately 7,300 new homes in 2018/19 to 642,320. Updated figures for 2019/20 have yet to be produced and will be provided in future LAAs. Several Essex authorities are preparing Local Plans, which will continue to deliver significant new homes beyond 2033. Much of this growth is being directed to the existing major growth centres in the County, along with strategic urban extensions. Further options being explored potentially include several new garden communities across Greater Essex. Whilst the scale of development is still to be defined, such levels of development forecast housing growth will need to be supported by significant new physical and social infrastructure. Figure 1 provides an indication of the possible scale and distribution of housing growth as committed to in Local Plans.

[13] Mineral Products Association (Aug 2020) published an overview of construction and mineral products markets in the East of England

[14] This forecast was produced in 2019, therefore does not account for the disruption caused by the coronavirus pandemic

Figure 1: Indicative Housing Growth as Committed to in Local Plans (April 2019)



Notes: All asterisk explanations are provided in Annex H, Local Plan Production & Indicative Future Housing Requirements (page 80)
Source: Essex County Council (2020)

Major Construction Projects

1.3.5. In addition to this growth, there are also major developments/construction projects[15] that are either planned, programmed or underway in Greater Essex and/or in adjoining authorities during 2020. These are set out in the list below, which also identifies the lead, decision pathway and potential delivery date[16]:

- M11 Junction 7a* (Essex) led by ECC via planning application, expected 2022;
- M25, Junction 28* (Essex) led by National Highways as a Nationally Significant Infrastructure Project (NISP), expected 2022/23;
- Chelmsford North East Bypass* (Essex) led by ECC via planning application, expected 2024;
- A120/A133 Link Road and Rapid Transit System* (Essex) led by ECC via planning application, expected 2024;
- Beaulieu Park Station* (Essex) jointly led by ECC and Network Rail via planning application, expected 2025;

[15] This constitutes large one-off developments, urban extensions, or new roads/transport projects, that would generate any significant additional demand for aggregates and/or produce significant quantities of waste.
[16] All projects marked with * remain accurate as of 2019 and their status has not been updated for the year 2020. Additional information for some of the projects can be viewed on the ECC website. Additional information is outlined in Annex H.

- A12 Widening (19 to 25)* (Essex) led by National Highways, as a NISP, expected via planning application, expected 2027/28;
- New A120 route* (Essex) led jointly by ECC and National Highways, expected 2028 or beyond;
- Bradwell B Nuclear Power Station* (Essex) led jointly China Generation Nuclear Power Corporation (CGN) and EDF Energy as a with expected delivery not yet defined;
- Lower Thames Crossing*(Thurrock) led by National Highways as a NISP, expected in 2027/28*;
- A13 Widening (A128 to A1014) (Thurrock) led by Thurrock Highways, via planning application, expected in 2021;
- London Gateway Port (Thurrock) led by DP World, via a Local Development Order, expected in 2023 or beyond;
- Tilbury 2 (Tilbury Port Expansion) (Thurrock) led by the Port of Tilbury as a NISP, expected in 2021/22;
- Car Park at 27 Victoria Avenue, Southend on Sea SS2 6AL (Southend-On-Sea) as a planning application, which is currently under-construction.

1.3.6. It is important to note that the A12 widening route announcement (28 August 2020[17]), for the section between junctions 23 (Kelvedon South) to 25 (Marks Tey), announcement builds on the October 2019 Preferred Route Announcement for junctions 19 to 23. The result is a full preferred route for the A12 Chelmsford to A120 widening scheme from Junction 19 to Junction 25. This would directly impact on the reserves and availability of aggregate and non-aggregate reserves/sites, as specified in the Essex Mineral Local Plan.

1.3.7. Highway maintenance is a major and on-going activity which gives rise to ‘road planings’. Road planings are produced when the surface layer of a tarmac road or footpath is removed. They are also known as road scalpings or road scrapings 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 and re-using them also reduces pressure on quarried aggregate stocks. The tonnage of Road Planings arising in Greater Essex in 2020 was 84,801 tonnes.

[17] Highways England (Aug 2020) A12 Chelmsford to A120 widening scheme

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. This report only relates to sand and gravel and imported crushed rock. 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.

2.2. Primary Land-won Aggregate Facilities

2.2.1. There are 37 sand and gravel quarries in Greater Essex, 24 of which were active. Of the 13 inactive sand and gravel quarries, four are considered as long term 'dormant'[18] and nine are permitted, but not actively extracting in Greater Essex as of 31 December 2020[19] as presented in Figure 2. In addition, during 2020, four sites are pending determination and/or Legal Agreements.

[18] 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.

[19] As listed within Annex A.

Figure 2: Sand and Gravel Quarries in Greater Essex

Source: Essex County Council (2021)

2.2.2. The Aggregate Survey 2020 revealed that there was at least 3.60Mtpa potential sand and gravel production capacity[20]. In theory this value is assumed to be the maximum amount of sand and gravel that could be produced annually. However, there is assumed to be significantly more capacity within Greater Essex, as this figure is based on a 65.2%[21] response rate for this aspect of the Aggregate Survey. However, it cannot be subsequently inferred that any combined figures presented represent 65.2% of their true value. Production rates vary significantly across sites and, due to reasons of commercial confidentiality, it would not be appropriate to speculate on those values which may have been derived from those sites where surveys were not returned.

2.2.3. There are a further four facilities extracting other minerals within the Greater Essex area:

- One site extracting silica sand;
- Two extracting brick clay;
- One extracting chalk.

2.3. Transhipment Facilities

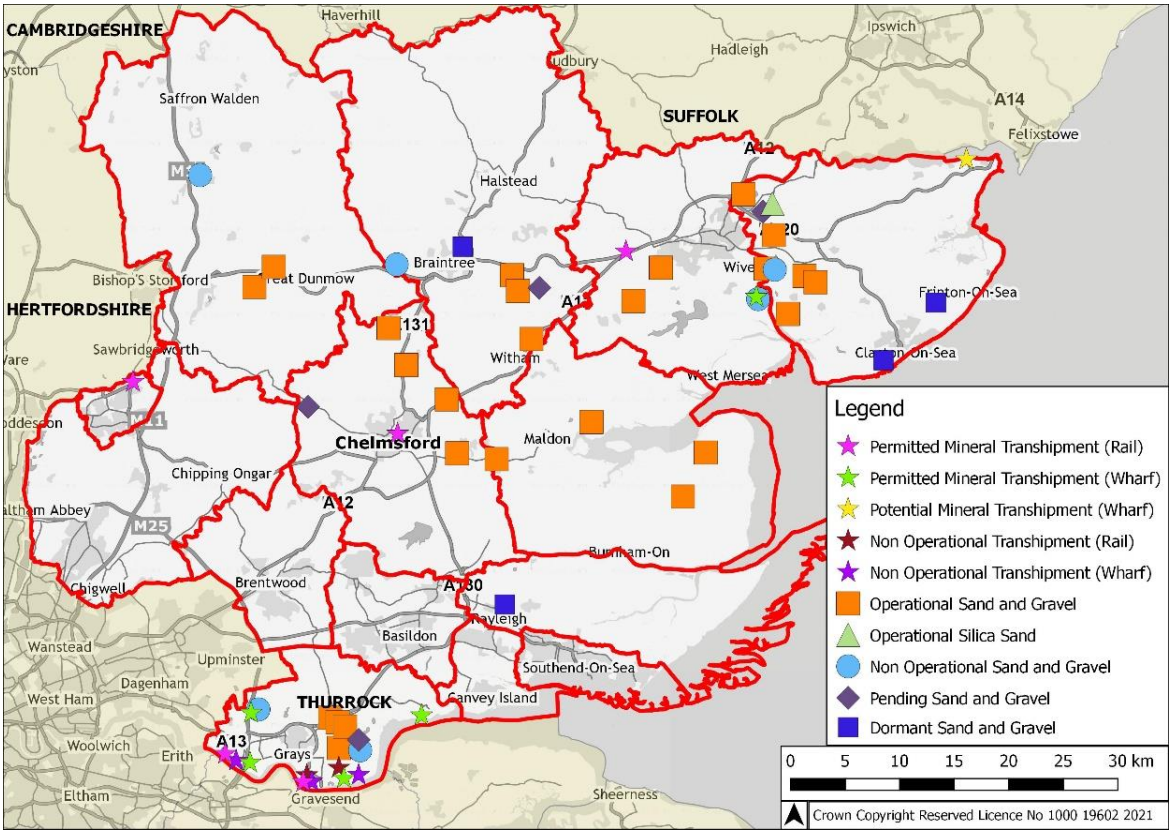
2.3.1. Transhipment facilities provide for the movement of minerals over long distances and are typically rail or water based. These facilities can be thought of as 'virtual quarries' as mineral can be sold and distributed from these sites.

[20] Taking account of plant capabilities and planning restrictions

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

2.3.2. The location of the transhipment facilities in Greater Essex is shown in Map 2 below. Further information about the transhipment sites is located in section 5, Imports & Exports of Land-Won Aggregate, page 33 and Annex A.)

Map 2: Mineral Extraction & Transhipment Sites in Greater Essex (31 December 2020)



Source: Essex County Council (2021). The data that informs this table is in Annex A.

2.4. Processing Plants

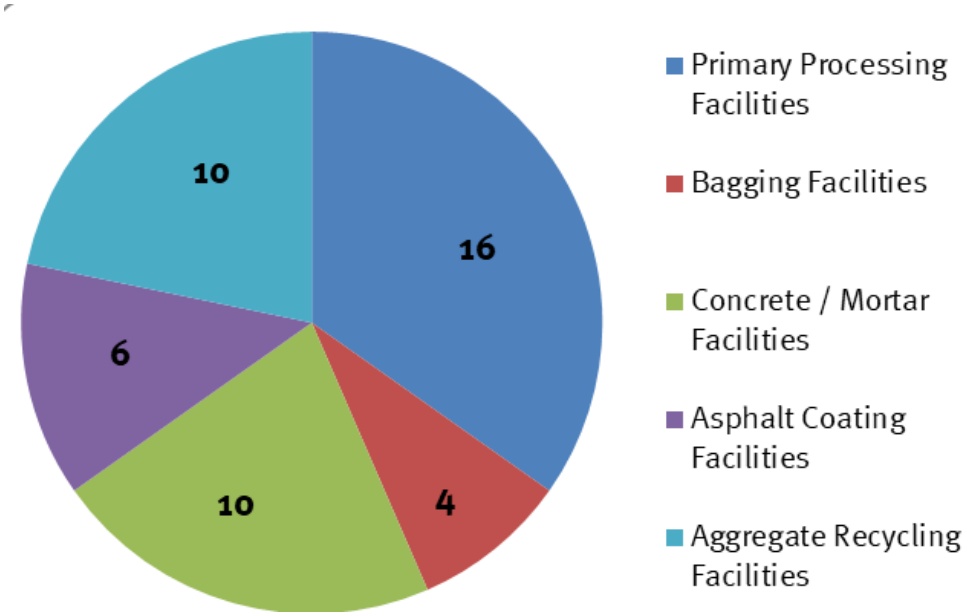
2.4.1. On several extraction sites, primary processing occurs, producing a higher quality final product as well as allowing more sustainable use of aggregate. This can take different forms such as crushing, sieving, de-watering and through exploitation of physical and/or chemical properties.

2.4.2. Secondary processing can also occur on extraction sites. This differs from primary processing in that it makes a higher value final product through manufacturing of the original material. Examples of secondary processing are concrete batching, roadstone coating and brick/tile/block making.

2.4.3. Any form of processing allows for a greater range of products to be produced on site and contributes to the economic viability of mineral developments. Processing also reduces mineral miles, which is the term given to the distance aggregate travels from its extraction point to its end use. The map below

shows where the co-located (with primary extraction and transhipment sites) primary and secondary aggregate processing facilities are located.

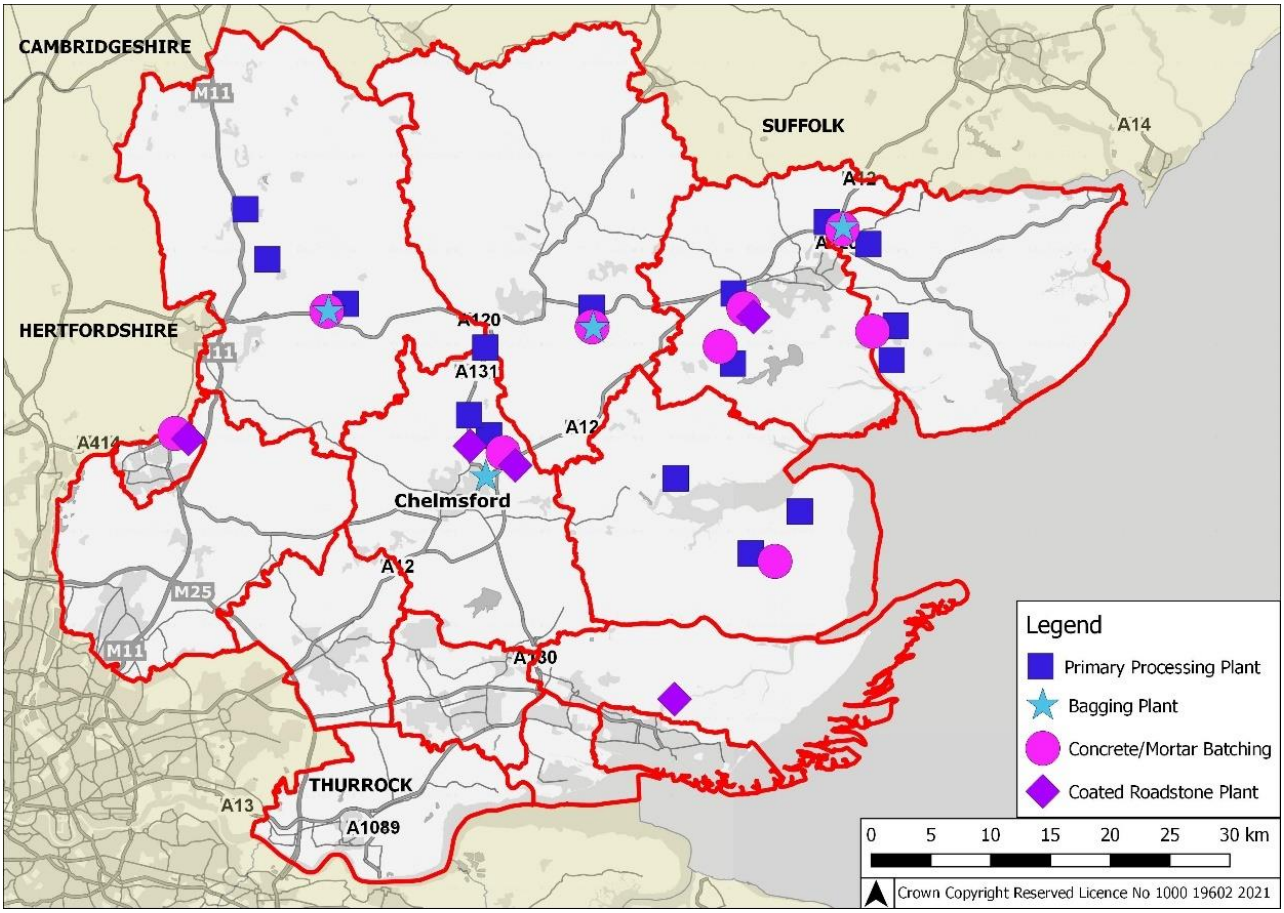
Figure 3: Processing Plant at Mineral Extraction/Transhipment Sites



Source: Essex County Council (2021).

2.4.4. Within Greater Essex there were 46 processing facilities that add value to mineral products, which have been permitted by the Mineral Planning Authorities. These 46 (as listed in the Appendix) are located on either mineral extraction or transhipment sites.

Map 3: Primary and Secondary Aggregate Processing Facilities in Greater Essex (31 December 2020)



Source: Essex County Council (2021)

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[22].

3.1.2. Within Greater Essex the primary method of calculating the sand and gravel landbank is via the annualised apportionment as adopted through policy, which was based on the "National and Sub-national Guidelines for Aggregates Provision in England", (2005 – 2020), and which resulted in a figure of 4.45Mtpa for Greater Essex. It is understood that the results from the National monitoring survey of the year 2019, will be used for an update to these guidelines, which is being actively progressed by the Government, but there has been no indication of when these would be adopted.

3.1.3. 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. For the purposes of this years' edition of the LAA the ten-year rolling average sales is calculated from 2011 to 2020. Henceforth, any reference to ten-year rolling average sales is describing this time-period.

3.1.4. Both landbank calculation methods are presented later in this section, to ensure the adopted policy in the MLP is accurately reflected, whilst also acknowledging the ten-year rolling sales figure.

3.1.5. Data contained within this chapter is based on information provided to the Mineral Planning Authority (MPA) by operators in Greater Essex via the annual Regional Aggregate Survey for 2020. This provides the most accurate information available, at the lowest reporting level, at which commercial confidentiality can be maintained. However, the information in this LAA is only as accurate as the information provided within the survey returns and, therefore, may be subject to inaccuracies such as:

[22] 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.

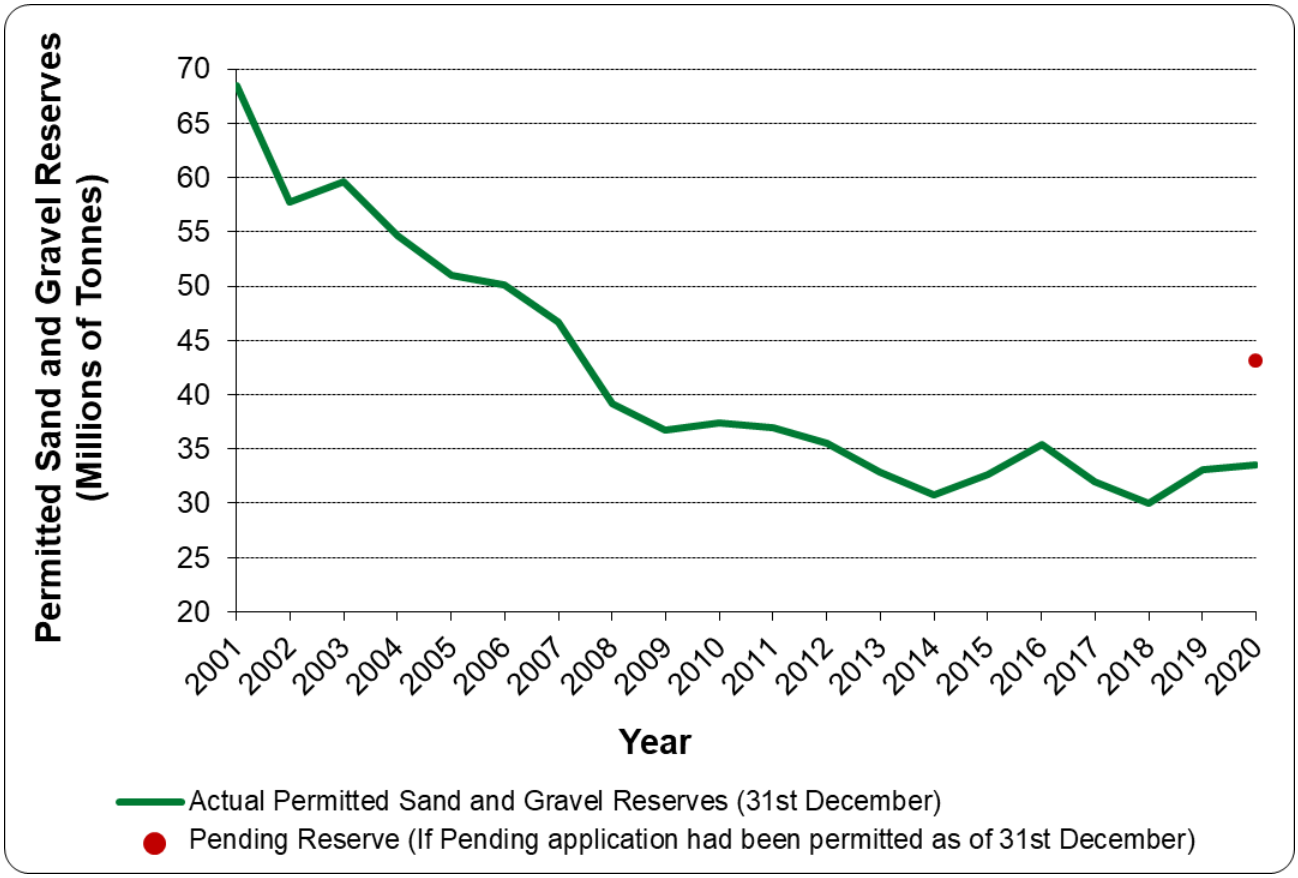
[23] NPPF Paragraph 213, a.

- 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.

3.1.6. It should be noted that the Aggregate Survey that informs this LAA was undertaken during March to May 2021, during which time the effects of the Coronavirus pandemic were still having impacts on data collation. Despite this, 96% of sites provided a response.

3.2. Sand & Gravel Permitted Reserves in Greater Essex

Figure 4: Permitted Sand & Gravel Reserves in Greater Essex (2001 to 2020, 20 years)



Source: Essex County Council (2021).
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 Annex C.

3.2.1. 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 68.48 million tonnes (Mt) in 2001, but at the end of 2020 stood at 33.59Mt. This does however equate to an increase of 1.5% from the 2019

value (33.10Mt). 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 2020. This "pending reserve" is 9.5Mt across both Essex and Thurrock Mineral Planning Areas. If this 9.5Mt was added to the permitted reserve by way of planning approval, the permitted reserve would increase to 43.09Mt, which would represent the highest permitted reserve since 2007.

3.2.2. 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 local planning issue as the sand and gravel landbank remains above the minimum seven years.

3.2.3. The Draft East of England Aggregate Working Party (EoE AWP) Monitoring Report[24] notes that in 2020, Greater Essex held 25% of the permitted reserves held in the area covered by the EoE AWP.

3.2.4. During 2020, 26 applications relating to sand and gravel extraction were either determined or awaiting determination, of which:

- Two[25] planning applications (including additional reserve) had their relevant legal agreements signed, which boosted the permitted reserve by 4.0Mt;
- One application[26] (including additional reserve) remains pending determination and/or pending subject to the signing of legal agreements and would increase the permitted reserve by 1.5Mt as of 31 December 2020.
  A further three applications[27] (including additional reserve) were submitted for determination and remain pending as of 31 December 2020. If permitted these would increase the permitted reserve by 8.0Mt as of 31 December 2020.
  When all pending applications are considered together, they account for a potential 9.5Mt as of 31 December 2020[28];
- Two applications were granted for operational changes and/or extensions of time and had no impact on the permitted reserve;

[24] To be confirmed at publication of the EoEAWP AMR for 2020.

[25] ESS/17/18/TEN (Wivenhoe Quarry – Sunnymead Extension (Essex), 3.8Mt) and 19/01799/FUL (Medina Farm (Thurrock), 0.2Mt)

[26] 19/01709/FUL (Orsett Quarry &Walton Hall Farm (Thurrock), 1.5Mt)

[27] ESS/12/20/BTE (Bradwell Quarry A7 (Essex), 6.5Mt), ESS/77/20/CHL (Salt's Green (Essex), 0.19Mt) and ESS/29/20/TEN (Martells Quarry (Essex), 1.31Mt)

[28] It should be noted that ESS/29/20/TEN was resolved to be granted subject to conditions & legal agreements in September 2021, whilst ESS/12/20/BTE ESS/77/20/CHL remain pending determination. Updates on all applications will be provided in the next edition of the Greater Essex LAA.

- 16 applications remain pending for operational changes and/or extensions of time and had no impact on the permitted reserve; and
- The remaining two, also related to operational/site alterations, are pending determination.

3.3. Sales of Sand & Gravel

Comparison of National and Regional 2019 Data

3.3.1. As discussed in the previous LAA, a national aggregate survey for the year 2019 was undertaken during 2020, with the results being published in mid-2021. This is in addition to a regional survey for the same calendar year as timescales for publication of the national statistics would not have allowed for the timely publication of the previous LAA. It therefore was concluded that this LAA would include a data comparison of both surveys at Greater Essex level, where possible, to identify any inconsistencies.

3.3.2. Within table 9d of the National Survey Results[29] the sales of primary aggregate were produced to allow comparison of this data with the earlier regional survey at the Greater Essex level. The comparison is shown in the table below.

Table 1: Sales Comparison of National and Regional 2019 Data (Million Tonnes)

Metric	Regional Survey 2019 (Mt)	National Survey 2019 (Mt)	Difference
Cumulative Sales (Mt)	3.17	2.94	0.42Mt (12%)

Source: Essex County Council (2021) and BGS/MHCLG (2021) Collation of the results of the 2019 Aggregate Minerals survey, table 9d.

3.3.3. It can be seen that there is a discrepancy between the results presented in the national and regional surveys for 2019. Due to the commercial confidentiality of both separate datasets, and the need for the MWPA to delete survey returns once they have been amalgamated for the regional survey, there is limited comparison opportunities available.

3.3.4. It should be noted that the Draft East of England Aggregate Working Party (EoE AWP) Monitoring Report[30] is obliged to use the national aggregate

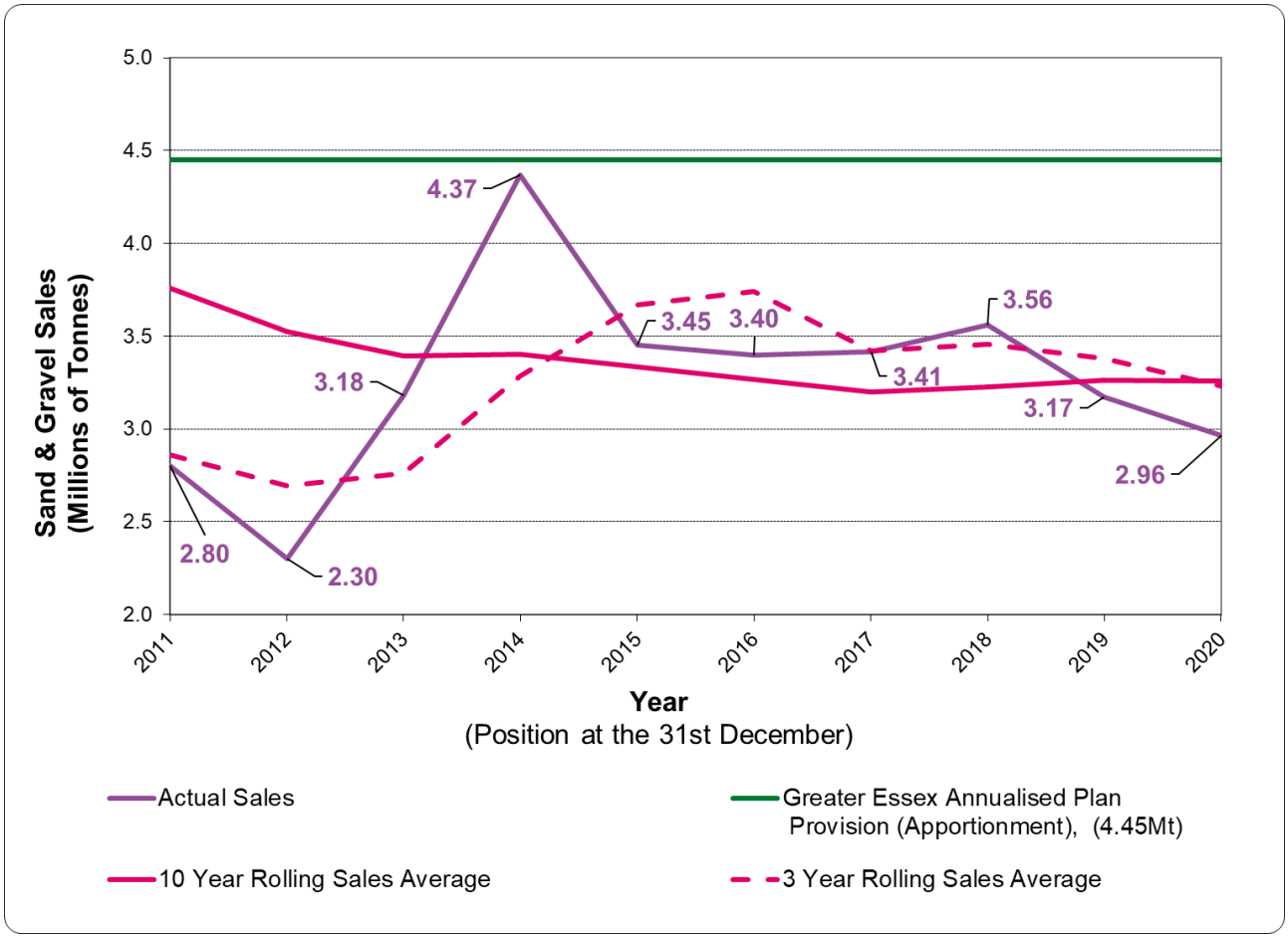
[29] BGS/MHCLG (2021) Collation of the results of the 2019 Aggregate Minerals survey. Table 9d is located on Page 62

[30] To be confirmed at publication of the EoEAWP AMR for 2020.

survey value of 2.94Mt sales in 2020 for reporting at regional level[31]. At this value, is noted that Greater Essex contributed 29% of the EoE AWP sales.

3.3.5. However, for the continued analysis of data at the Greater Essex level, internal review has concluded that the larger reserve figure (3.17Mt presented by the regional survey) should be used as it was informed by a greater number of survey returns than the national survey, but this should still be acknowledged as an under-representation of the full sales data. It is considered to be an under-representation, as, despite a greater number of sites responding to the regional survey, resulting in a greater sales figure, some sites responded to the national survey and not the regional one. The option to estimate a higher value to try to include any responses received by the national survey has been ruled out as there is not enough primary data available (due to commercial confidentiality) to make a robust estimation.

Figure 5: Greater Essex Sales of Land Won Sand & Gravel (2011 to 2020, 10 years)



Source: Annual collated Aggregate Survey data, correct as of 31st December annually.

[31] 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.

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 in Annex D.

3.3.6. Sales have fluctuated during the preceding ten years, with sales in 2011 recorded as 2.80Mt, but after peaking in 2014 (4.37Mt, just 2% below the annual apportionment), fluctuated before reducing to 2.96Mt in 2020. The most recent and consistent reduction of sales is attributed to impacts on 2019 data collection in 2020, and then also impacts on sales of aggregate during 2020 as a result of the pandemic. It is important to note that paragraph 2.2.2 stated that the 2020 Aggregate Survey revealed at least 3.60Mtpa potential sand and gravel production capacity, although this is based on a 65.2%[32] response rate and is therefore considered to be an under-estimation of Greater Essex's production capacity.

3.3.7. As previously set out in paragraph 3.3.5, it is considered that the value presented for 2019 (3.17Mt) should be considered as 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.

3.3.8. 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 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.

3.3.9. When comparing these 2020 sales (2.96Mt, as noted above), the current level of sales is below all the ten and three year average. For reference, the twenty year sales average (2001 to 2020) is 3.58Mt. The ten-year rolling average sales figure remains 3.26Mt, which is a negligible reduction (0.07%) recorded over the previously reported ten-year period (2010 to 2019). The three-year average sales figure (2018 to 2020) stands at 3.23Mt.

3.3.10. The annualised plan provision apportionment value is 26.7% higher than the 2011 to 2020 ten-year rolling sales average value, with sales not exceeding the apportionment value since 2014. 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 current pandemic. The sales in 2020 were 9.2% below the ten-year rolling average sales figure (2011 – 2020) of 3.26Mt.

3.3.11. When considering the three-year rolling average sales, it can be seen in Figure 5, that in 2020, this reduced to 3.23Mt; the lowest three-year rolling

[32] 65.2% response rate for this aspect of the Aggregate Survey 2020

average sales figure since 2014 (3.28Mt). This is again likely due to the impacts experienced due to the COVID-19 pandemic.

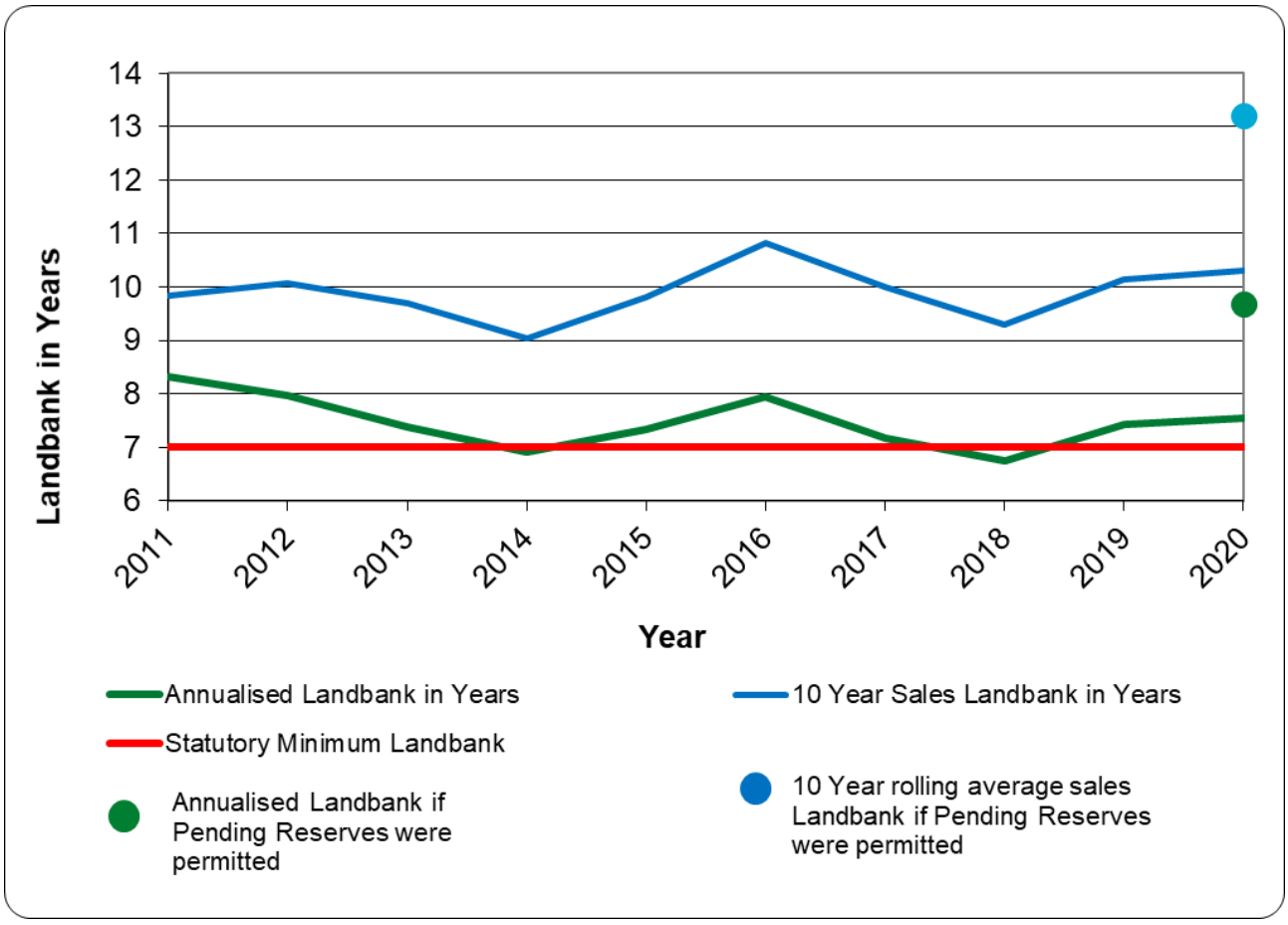
3.4. Sand & Gravel Landbank

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 2020, two planning applications were granted within Greater Essex which totalled an addition of 4.0Mt of sand and gravel.

3.4.3. As of December 2020, when using the apportionment method of calculation, the landbank stood at 7.55 years, a 1.5% increase compared to December 2019, when it stood at 7.44 years. When using the ten-year rolling average sales method, the landbank is calculated as being 10.30 years, compared to 10.14 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.

Figure 6: Greater Essex Landbank (2011 to 2020)[33]



Source: Essex County Council (2021)
Note1 2019 data collection impacted by furlough due to COVID-19 and therefore sales are potentially under-reported.
Note2: Y axis not at zero. The data that informs this table is in Annex D

3.4.4. Irrespective of calculation method, there is at least a seven year landbank as of 31 December 2020, with a landbank of 7.55 years based on the apportionment rate and a ten-year rolling sales landbank of 10.30 years. When including the 'pending reserve' of an additional 9.5Mt in the landbank calculation (Figure 6), it would provide for a 9.68-year annualised landbank under the adopted appointment, and a 13.21-year landbank under the ten-year rolling average sales method of calculation.

3.4.5. 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 the Issues and Options (Reg 18) consultation occurred between 18th March and 29th April 2021. Review of the issues to be further addressed will inform future timetabling, with the Essex Minerals and Waste Development Scheme being

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

updated in due course with a revised timetable for all required consultation events.

Forecasting the Future Demand for Sand and Gravel

3.4.6. Planning applications continue to be lodged and approved by LPAs despite the current COVID-19 pandemic which suggest housing completions will continue to increase for the remainder of the MLP plan period. As part of the Regulation 18 Review of the Essex Minerals Local Plan, ECC produced a report,[34] which compares current rates of housing delivery with future delivery rates which would be required to meet the need calculated under the Standard Method for forecasting future housing need. It found that for Greater Essex, the standard method indicates an annual provision of 10,683 dwellings between 2020 and 2029, compared with recorded dwelling completions of an average of 5,605 between 2010 and 2019. This represents a required increased rate of dwelling provision of 90%. The paper further found that housing completions in Greater Essex between 2010 – 2019 increased year on year from 2013 to 2018, and whilst completions dropped in 2019, they were still above completions in 2017. Since 2014 when the MLP was adopted through to 2019 (latest data at the time of the report), completions have increased by 42%, but current rates of delivery can be seen to still be below the rate required to satisfy demand derived from the Standard Methodology.

3.4.7. 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. It is however important to note that the MWPA uses housing figures only as a proxy for mineral demand: it is not possible to state that X number of houses equates to Y amount of mineral. The Aggregate Provision Paper[35] notes that 'Growth is expected to be driven by private housing, (the largest subsector in the region) with some additional support from public sector construction in the housing and non-housing subsectors.' (Paragraph 3.4), hence the use of housing projections as the primary influencer of mineral need.

3.4.8. The difficulty of quantifying an increase in mineral need through increased rates of development is exacerbated when considering major infrastructure projects. The reason for this is that there are a number of potential markets from where mineral for major infrastructure developments could be sourced from due to economies of scale, including marine sources, where bespoke landing facilities may be able to be established. The total mineral take of these projects would also be spread over a number of years, determined by the construction plans of the respective developer. By way of highlighting this

[34] Essex County Council (2021) Other Relevant Local Information to Justify Aggregate Provision in Essex 2012-2029.

[35] Essex County Council (2021) Other Relevant Local Information to Justify Aggregate Provision in Essex 2012-2029.

issue, a briefing paper on Aggregate Demand for the Lower Thames Crossing produced by Highways England states that the annual take of sharp sand and gravel expected to be required for this project equates to approximately 6% of an average of the last 10 years of annual sales in Greater Essex and Kent combined. As this is their likely terrestrial mineral market area, the combined area of Greater Essex and Kent is the basis of their calculation so already a specific Essex figure cannot be derived. An important caveat to this calculation is that it 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. Another complication with regards to understanding a Greater Essex requirement is that the aggregate demand is likely to be greater to the north of the River Thames which enables developers to access several aggregate transhipment facilities (e.g. Port of Tilbury and the proposed Tilbury2 Construction Materials Terminal (CMAT) which could enable the import of aggregate from other sources outside of Greater Essex and Kent. This is not to suggest that Greater Essex as a group of MWPAs is looking to offset mineral demand to other Mineral Planning Authorities, rather that it is not possible to specifically quantify the impact that major infrastructure projects will have on local mineral supply as these are matters for the mineral supply market and not matters that a MWPA can control. However, 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 quantified. On this point it is noted that the 2.96mt of sand and gravel which was recorded as sold in Greater Essex in 2020 equates to 67% of the current Greater Essex apportionment, so there is currently significant capacity to accommodate an annual increase. 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. Although silica sand is not classed as an aggregate, its inclusion is made to provide a fuller picture of the provision of the main minerals in Greater Essex.

3.5.2. Silica sand is produced at a single site within Greater Essex which is located at Martells Quarry in Ardleigh. Therefore, it is not possible to provide sales data for reasons of commercial confidentiality. The currently extant permission for the site is planning permission reference ESS/53/17/TEN, which was implemented 20 September 2018.

3.5.3. At the time of developing the now adopted Minerals Local Plan, the relevant extant permission was application reference ESS/18/07/TEN, which provided 0.42Mt of material. This permission 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.

3.5.4. To maintain the statutory ten-year minimum landbank for silica sand, there was a requirement to allocate an additional 0.39Mt across the plan period, therefore an extension of the site was allocated at Slough Farm within the Essex Minerals Local Plan (2014). This provided a total estimated mineral yield at the site of 0.86Mt, of which 0.46Mt comprises of silica sand. The assumed annual output of the site remains at 0.045Mtpa.

3.5.5. As of 31 December 2020, an application on this allocated site has been submitted for the site (ref: ESS/29/20/TEN) which would yield 1.31Mt mineral from the western lateral extension. The application provides additional reserves of silica sand (0.72Mt) as well as sand and gravel (0.59Mt) which equates to a 55:45 ratio. If this is permitted and commenced, this application would provide in excess of material to that which was allocated in the MLP (2014). This was presented to the Essex County Council Development and Regulation Committee in September 2021, where the application was resolved to be granted subject to conditions & legal agreements, the latter of which remain pending at publication of this document.

4. MARINE-WON SAND & GRAVEL

4.1.1. Marine-won aggregates are an alternative to those extracted from the land although cannot always act 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. In contrast to the data sets used in previous sections of the LAA, the data collection for marine-won sand and gravel has not been impacted by furlough due to COVID-19 because a different collection technique was undertaken by the Crown Estate.

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) set out the mechanism for marine planning, which aims to tackle these concerns[36].

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

Figure 7: Marine Planning Areas Close to Greater Essex

Key: 3= East Inshore, 4 = East Offshore, 5 = South East Inshore & 6 = South Inshore
Source: Essex County Council (2021) 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. Initially 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)[37] in the South East Marine Plan which effectively serve as safeguarding policies against the potential of other proposals e.g.,

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

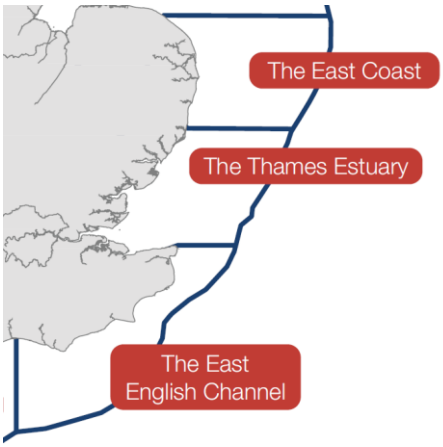
offshore wind farm developments compromising the ability to extract known aggregate resources.

4.2.5. Both the East Inshore and Offshore plans were adopted in June 2014, with the South East 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[38]. Furthermore, every six years a report is produced by Defra collating the effectiveness of all marine plans together.

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 Figure 8. 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.

Figure 8: Local Dredging Regions



Source: As derived from The Crown Estate: Capability and Portfolio 2020

4.3.2. The National and Regional Guidelines for Aggregate Provision in England 2005 – 2020, 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.

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 with the potential to serve Greater Essex are shown in Table 2 and Map 4 below. The map also identifies the licensed dredging areas closest to Essex, alongside new dredging application areas and exploration areas.

[38] 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.

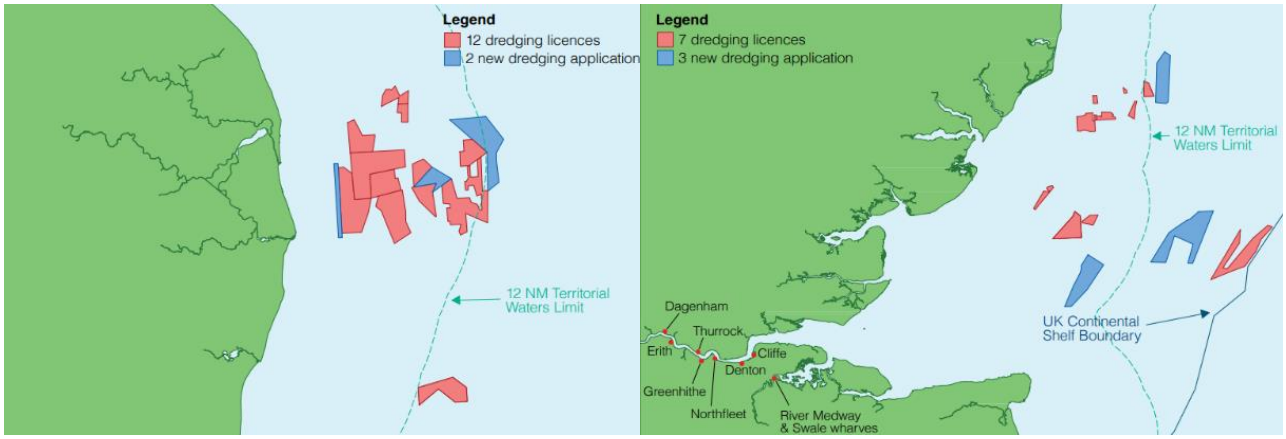
Table 2: Wharves with the Potential to Serve Greater Essex (2020)

The Crown Estate Thames Region		
Landing Port (Standard Name) / Locality	**Wharves (Alternative Name(s))**	**AWP Area**
Cliffe (Kent)	Alpha Wharf, Cliffe (Brett)	SEEAWP
Dagenham (London)	Dagenham, Chequers Lane (Hanson). Choats Road, Dagenham (Cemex).	London
Denton (Kent)	Denton Wharf, Mark Lane, Gravesend, J Clubb	SEEAWP
Erith (London)	Erith, Pioneer Wharf (Tarmac)	London
Greenhithe (London)	Johnson's Wharf, Greenhithe (Hanson)	London
Greenwich Wharves (London)	Angerstein Wharf (Cemex). Murphy's Wharf, (Tarmac),	London
Northfleet (Kent)	Botany Marshes, Lower Road, Northfleet (Cemex). Robin's Wharf, Grove Road (Brett)	SEEAWP
River Medway Wharves (Kent)	Euro Wharf, Frindsbury (Hanson)	SEEAWP
Swale Wharves (Kent)	Ridham Dock (Tarmac)	SEEAWP
Thurrock (Thurrock)	Lafarge Jetty, West Thurrock (Tarmac)	East of England
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**

Ipswich (Suffolk)	West Bank Terminal, Ipswich (Brett)	East of England AWP

Source: The Crown Estate: Marine Aggregates Summary of Statistics (2020) & Crown Estate Marine Aggregate Landings Port Listing 2019 (excluding beach replenishment / fill projects), provided to the EoEAWP by request from The Crown Estate.

Map 4: Marine Dredging Areas in Proximity to Greater Essex (2020)



Source: The Crown Estate: Marine Aggregates - Capability & Portfolio 2019 (2020) pages 8 and 9.
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 Table 2 above.

4.3.4. Paragraph 210(e) of the Revised NPPF 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 final destination[39]. 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 close 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 minerals do not have a

[39] Unless it is sourced for a specific 'significant' project. Such projects are detailed in Crown Estate: Marine Aggregates – Capability and Portfolio (2019) pages 14 and 15 and include locally Container Terminal, Felixstowe, London Array Wind Farm, Thames Barrier, London, Crossrail, London and numerous other major London projects. No such significant projects were listed within Greater Essex.

large road based economically viable transport distance, so it is likely these marine-won minerals will be used in the surrounding vicinity. It is suggested that the average road delivery distance (of any aggregate) is 38km (24 miles)[40], 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[41]. BGS[42] 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.

4.4.2. A Crown Estate Report[43] identifies dredging and landing statistics in 2020, 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 2020 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.

4.4.3. It can be seen that a total of 1.35Mt of marine aggregate were removed from the seabed in 2020, meaning that in this year, 38% of the annually permitted/licensed extraction occurred. This closely matches the 39% recorded in 2019, but is significantly 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 2011 and 2020, the annual average extraction of that permitted was therefore reduced to 68%.

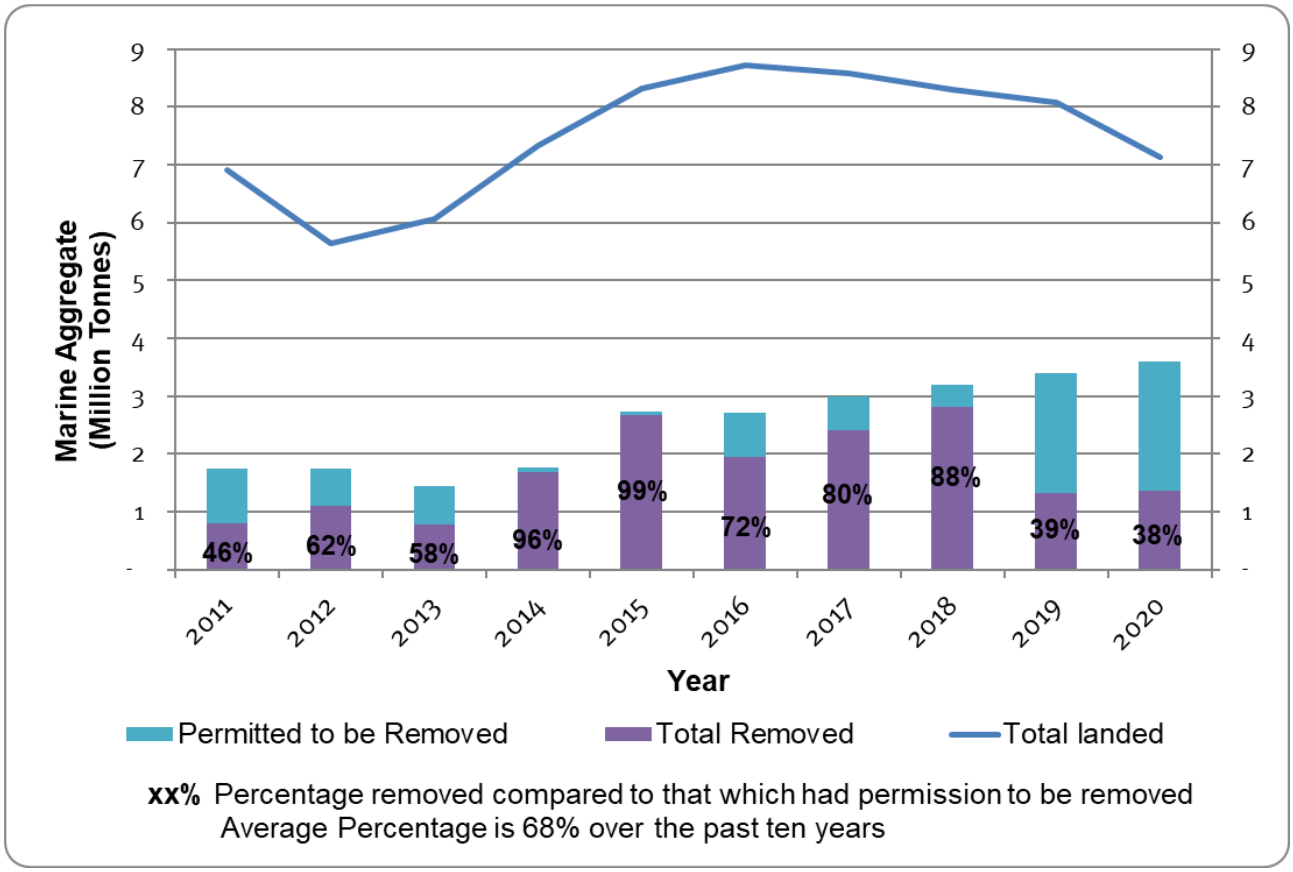
[40] SustainableConcrete.org referenced the source as the Concrete Centre 2010

[41] Mineral Products Association - Aggregates

[42] British Geological Survey Planning Matters Factsheet "Construction Aggregates", BGS, 2007

[43] Crown Estate (2019) 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)

Figure 9: Marine Aggregate Extraction in the Thames Estuary Region (2011 to 2020)



Source: Essex County Council (2021), as derived from data contained within the Marine Aggregates, The Crown Estate Licences, Summary Of Statistics (Crown Estate) reports between 2011 and 2020.

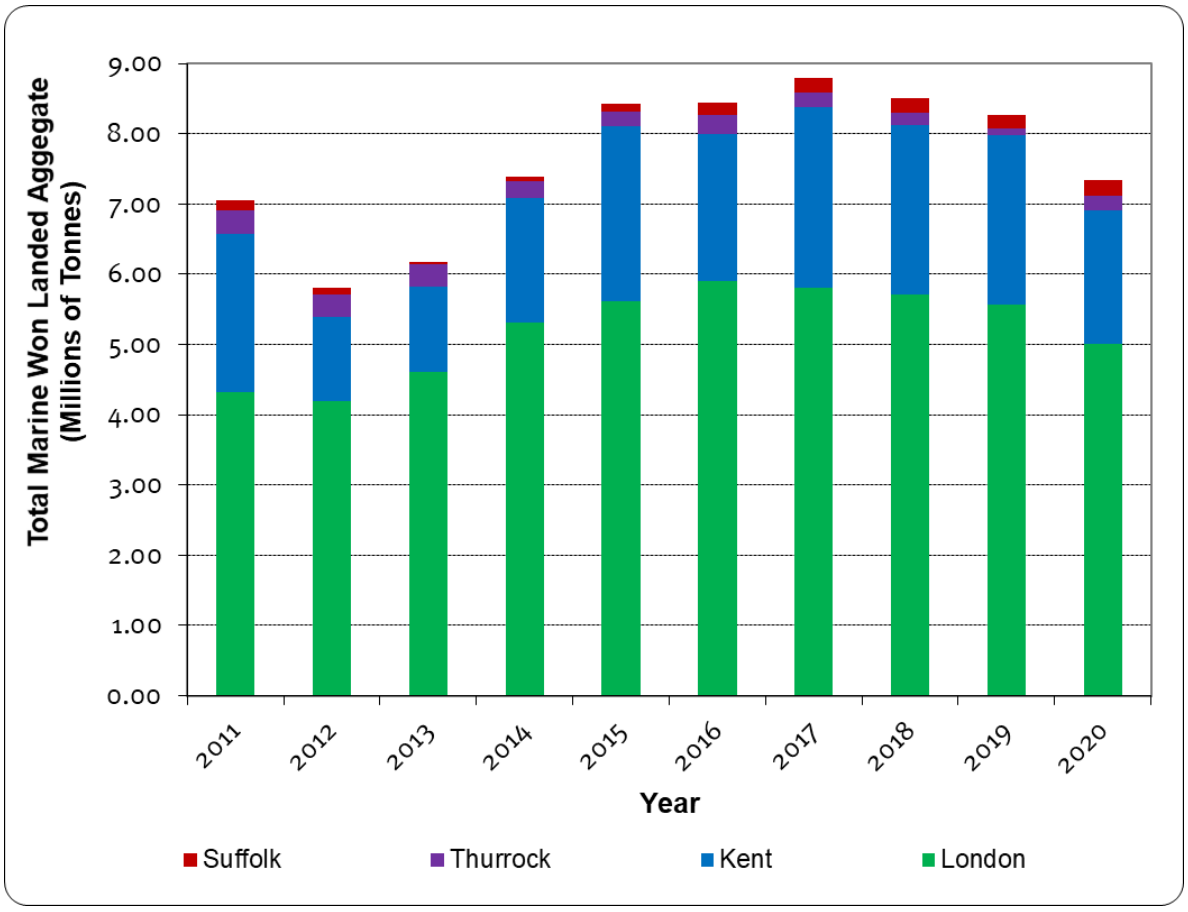
4.4.4. The above figure shows that there was a total of nearly 7.12Mt landed within the Thames Estuary area during 2020, which is significantly more than the total removed (1.35Mt). This means that a significant quantity (5.77Mt) was extracted from other licenced areas (such as the East Coast and East English Channel) and subsequently landed within the Thames Estuary Area, presumably to assist with development within Greater London and surrounding areas.

4.4.5. According to the Crown Estates Summary of Statistics (2020), only 0.22Mt were landed within the East Coast region in 2020[44], whilst just over 2.87Mt were removed through extraction. This means that a significant amount was extracted but landed in other regions.

[44] Crown Estate (2019) Marine Aggregates - The Crown Estate Licences, Summary Of Statistics 2020, 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)

4.4.6. 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.

Figure 10: Marine-Won Mineral Landed in Ports that Serve Greater Essex (2011 to 2020)



Source: Essex County Council (2021) as derived from The Crown Estate, Summary of Statistics, 2010 – 2020
The data that informs this table is located in Table 14.

4.4.7. There has been a fluctuating amount of marine-won aggregate landed between 2011 and 2020, from 7.05Mt to 7.34Mt, representing an increase of 4%. Despite this general increase however, 2020 had an 11.2% decrease in tonnes landed when compared to 2019 figures.

4.4.8. When ports are analysed by administrative region, since 2011 there has been an overall increase in the marine-won aggregate coming into London ports, (16%). Kent has seen a decrease of 15.6% since 2011, as did Thurrock

(37.5%, whilst during the same period, Suffolk has had a 49.6% increase in the amount of aggregate landed[45].

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[46], 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 3.6 Million Tonnes (Mt) and 7.33Mt (respectively) can be extracted from these two regions annually. This would total 10.93Mt per annum from the two regions combined. It is stated by the Crown Estate[47] that at this rate, current estimates suggest there are 26 years of primary marine aggregate production permitted in the Thames Estuary and 12 years within the East Coast region. This could be increased through the current Licence applications, of which there are a total of 5 between the 2 regions. These could contribute a further 3.1Mt, according to the Crown Estate[48].

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

4.6.1. During the examination held into the Essex Minerals Local Plan (Nov 2013) a number of 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 Planning Authority (MPA) should not allocate as much land-won aggregate as set out in the MLP. The Planning Inspector ruled that the MPA 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, increasing the proportion of marine-won sand and gravel to offset the provision required from land-won sources, is outside of the remit of Mineral Planning Authorities, as marine extraction areas are leased by the Crown Estate, with licenses to dredge issued by the Marine Management

[45] Source of all this data is derived from The Crown Estate, Summary of Statistics, 2011 – 2020, as presented in Figure 10 and paragraphs 4.467 and 4.4.8. Further statistics can be found in Annex F.

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

[47] Crown Estate (2020) Marine Aggregates – Capability and Portfolio. Statistics relate to the calendar year 2019.

[48] Ibid

Organisation (MMO). Land-won and marine-won aggregate are not always directly substitutable in any event[49]. Similarly, it has been noted[50] that 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. MPAs 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, MPAs are supported by the NPPF[51] 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 MPA 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 'the Rationale Report'[52] 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. 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

[49] 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)

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

[51] NPPF Paragraph 187.

[52] ECC (2021) Essex Minerals Local Plan Review 2021 – Report setting out the Rationale behind the Proposed Amendments

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."[53] 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.

[53] 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[54].

5.1.2. During 2020, the National Aggregate survey was undertaken which 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, although this does contain some valuable information for the calendar year 2020.

5.2. Methods of Mineral Transportation within Greater Essex

5.2.1. There are three bulk transport modes for mineral movement: road, rail, and water. For internal, relatively short movements, the road network is the most efficient and heavily used mode of transportation, as this route offers flexibility and the ability to deliver to any destination. Rail and water however 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.

5.2.2. There were seven wharves (of which four were inactive in 2020, and a further 'potential' wharf[55]) and eight rail (two of which were inactive in 2020) transhipment sites within Greater Essex[56] that facilitate long distance movement of aggregate. There is also some cross-boundary movement of

[54] From areas such as the East Midlands and limestone from the South West.

[55] 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)

[56] As listed within Annex A. This value is a result of the Aggregate Survey being undertaken during the Furlough period; this could be subject to change.

aggregate by road into and from neighbouring areas, although exportation from Essex to London is predominantly by rail.

Exportation of Sand & Gravel in 2019

5.2.3. As specified in paragraph 5.1.2 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[57], 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.

Table 3: 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 %
East of England/ Greater Essex	Greater Essex	2.39	81%	0.20	93%
	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.

5.2.4. 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 South East, for example.

Importation of Sand and Gravel in 2019

5.2.5. 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. It

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

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.

Table 4: 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.

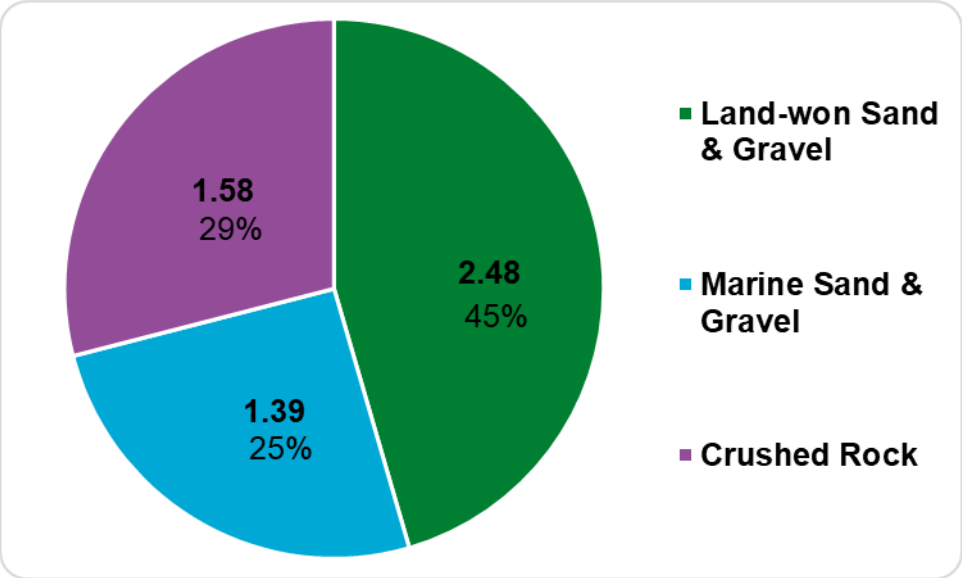
5.2.6. The table above identifies there was little land-won sand and gravel imported into Greater Essex, which should be expected given the extent of the indigenous material. This was supplemented by 1.19Mt of marine-won sand and gravel which was imported into Greater Essex.

5.2.7. 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.

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.

Figure 11: 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, it can be seen that 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.

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[58]. Large 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[59] 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 recovery allocations and safeguards existing and allocated sites continue to prevent the operation of existing or future facilities becoming

[58] 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.
[59] NPPF Paragraph 187.

compromised due to their proximity to incompatible development which would act to reduce available capacity across the Plan area.

6.1.6. The Mineral Product Association have provided information (in October 2019), which included a commentary about the mineral industry at present and included reference to recycled and secondary aggregates. However, for secondary and recycled aggregates only 2013 and 2014 data were presented unlike other sectors within the industry. This helps to identify a difficulty in obtaining raw data regarding these resource types at a national level, which is amplified at the local reporting level of Greater Essex.

6.2. Secondary Aggregate

6.2.1. Supporting evidence to the Essex and Southend-on-Sea Waste Local Plan 2017 (WLP)[60] 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. At present, it is not likely that a study to investigate this aspect will be pursued.

6.3. Recycled Aggregate

6.3.1. Within the Essex Mineral Local Plan Review Regulation 18 consultation document[61], it was highlighted that the methodology to identify the 'production' of recycled aggregate is different to the methodology previously used in both the Essex Authority Monitoring Reports and these Greater Essex LAAs. This is because the methodology used previously investigates the capacity available at waste sites to manage waste aggregate, whilst recycled aggregate production would look at the output of saleable product, which would need to meet certain specification. Not all material that arrives at a CD&E waste recycling facility, will be suitable to be sold, with some waste remaining as waste at the end of the process.

6.3.2. Therefore, a revised methodology to enable a more accurate recording of CD&E data is being devised as part of the MLP review, which links to a regional/national project to standardise aggregate recycling collation data. As an interim measure for this report, the CD&E waste recovery facilities[62] co-located at mineral extraction and transhipment sites have been reviewed from the data received through the 2020 regional aggregate survey. To assist with trend analysis, the total production data from 2016 to 2019 has also been collated. The results are identified in Figure 12, below.

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

[61] As specified on the ECC Consultation Website, within the Rationale Report, Section MMI 4: Production of Secondary & Recycled Aggregates, starting on page 154

[62] These are listed in Annex G, page 76

6.3.3. It should be noted that in addition to the CD&E recovery facilities co-located at mineral extraction and transhipment sites there is a significant number that are either:

- Standalone facilities;
- Co-located with other waste facilities.

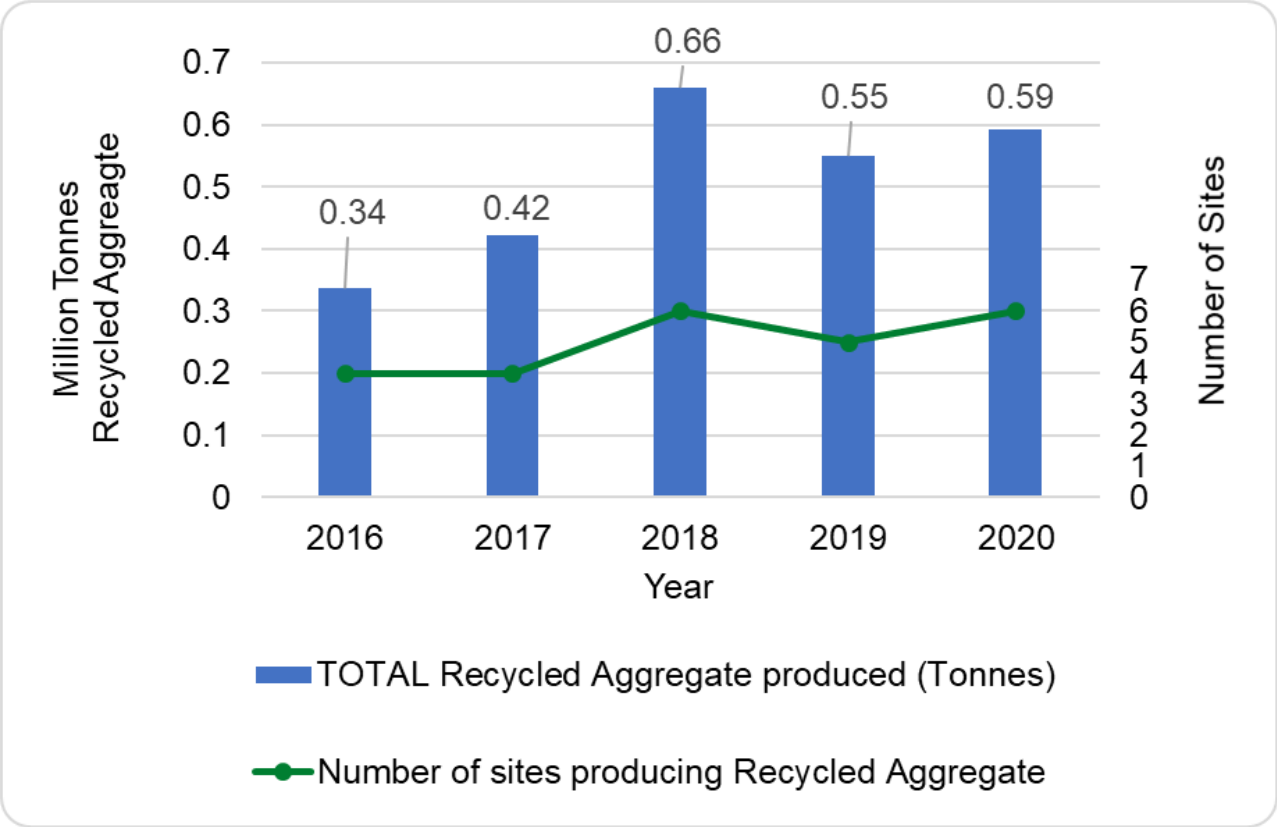
and are therefore not captured within this methodology. As such, the results presented in Figure 12 are known to be an under-representation of actual recycled aggregate product produced since 2016.

6.3.4. Data contained within this chapter is based on information provided to the Mineral Planning Authority (MPA) by operators in Greater Essex via the annual Regional Aggregate Survey for 2020. This provides the most accurate information available, at the lowest reporting level, at which commercial confidentiality can be maintained. However, the information in this LAA is only as accurate as the information provided within the survey returns and, therefore, may be subject 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.

6.3.5. It should be noted that the Aggregate Survey that informs this LAA was undertaken during March to May 2021, during which time the effects of the Coronavirus pandemic were still having impacts on data collation.

Figure 12: Aggregate Recycling Production at Extraction and/or Transhipment Sites in Greater Essex (2016 to 2020)



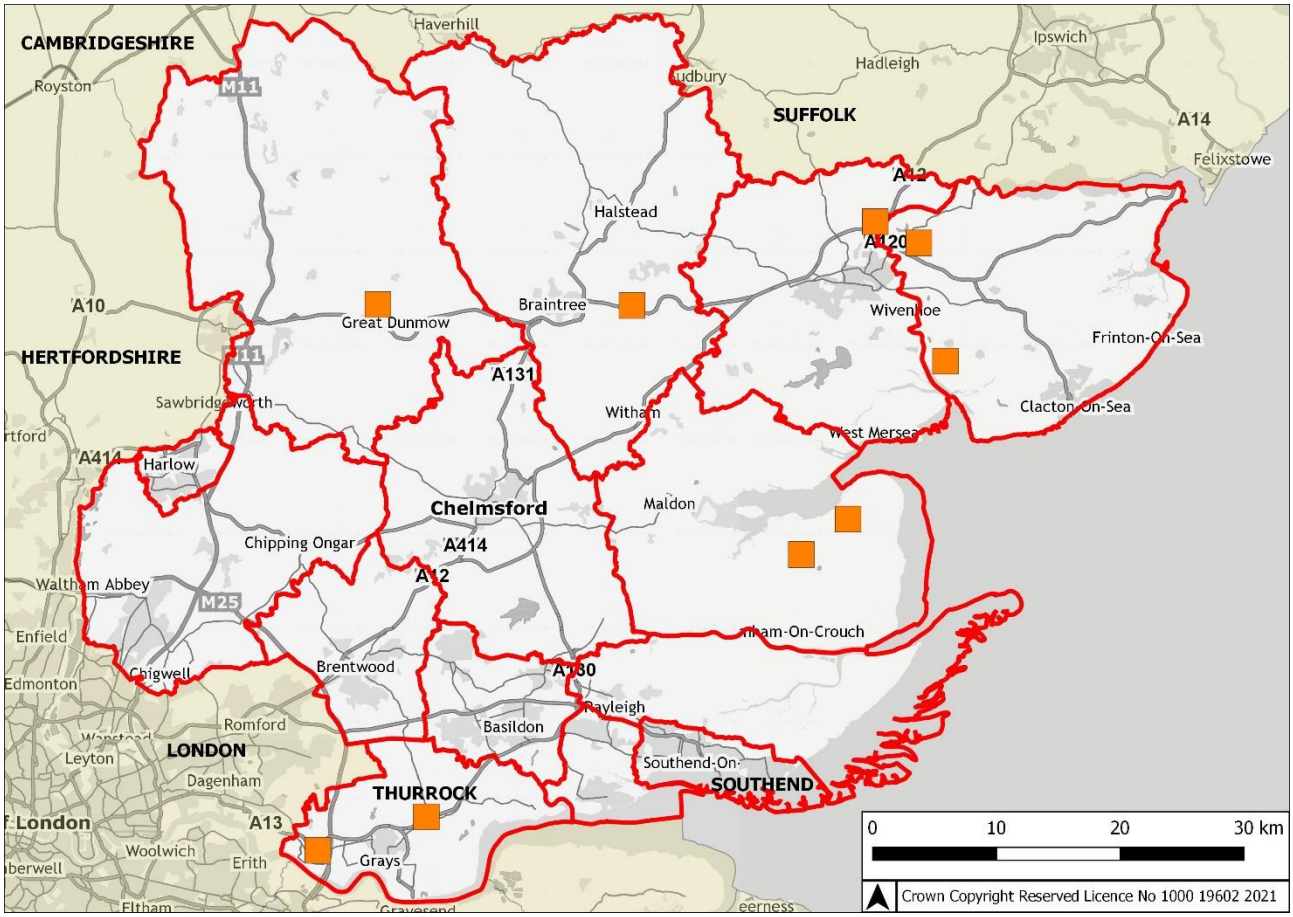
Source: Essex County Council (2021) as derived from the Regional Aggregate Surveys 2016 to 2020
Note: Data is not available for the years 2014 and 2015

6.3.6. It can be seen from the graph above that during 2020, 0.59Mt of recycled aggregate was produced at mineral extraction and/or transhipment sites, which is an increase of 7.9% on the 2019 level and an overall increased on 76.2% on that produced in 2016. Between 2016 and 2018 the amount of recycled aggregate produced at mineral extraction and/or transhipment sites increase by 95.7%, where production peaked. Production of recycled aggregate fell by 16.5% in 2019 on the 2018 levels but started to seemingly recover in 2020. This can partly be attributed to the impact of COVID-19 on sales and data collation.

6.3.7. The graph also shows that the number of sites producing recycled aggregate product broadly correlates with the output of product.

6.3.8. The map below identifies sites that have produced recycled aggregate at least during 1 year between 2016 and 2020.

Map 5: Extraction/Transhipment Sites That Produced Recycled Aggregate between 2016 and 2020



Note: Not all locations produced recycled aggregate each year between 2016 and 2020
Source: Essex County Council (2021) as derived from the 2016 to 2020 Regional Aggregate Surveys

6.3.9. It is noted that most of the facilities considered on this basis are in the northern part of Essex, although there are some sites in Thurrock and Maldon district. This is unlikely to be representative of the overall spatial distribution of the Recycled aggregate production network. They also have temporary permissions[63] 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.

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

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 February to May 2021, when COVID-19 was still having an impact on business operation. Despite this, 96% of sites provided a response.

7.1.2. However, it cannot be subsequently inferred that any combined figures presented represent 96% 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. A National Aggregate survey was undertaken (summer/autumn 2020), which aimed to capture all sales undertaken in 2019, including any sites that did not have the opportunity to respond due to lockdown restrictions. There is a discrepancy between the results presented in the national and regional surveys for 2019. It has been concluded that the greater reserve figure (presented by the regional survey) should still be used, as it was informed by a higher survey return, but this should be treated as an under-representation of the full sales data, as some sites responded to the national survey and not the regional. It was concluded that an attempt to mitigate and/or present a higher estimated sales figure for 2019, would not be robust due to the lack of primary data available (due to commercial confidentiality).

7.1.4. As of 31st December 2020, Greater Essex, there are 37 sand and gravel quarries of which 24 of which were active. The Aggregate Survey 2020 revealed that there was at least 3.60Mtpa potential sand and gravel production capacity at these extraction sites. In addition, at the end of 2020, four extraction sites are pending determination and/or Legal Agreements. At the same time, there were 46 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 2020, 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 (7.55 years) and the ten-year rolling sales method of calculation (10.30 years). There were also 9.5 Million tonnes (Mt) of pending reserves, as of 31st December 2020, 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 2020 in Greater Essex were recorded as 2.96 Mt. This is the lowest figure since 2012 and is considered to be a direct result of the general economic contraction due to the COVID-19 epidemic. This is less than the ten-year rolling sales average of 3.26 million tonnes per annum (Mtpa), and the apportionment value of 4.45Mtpa that the Essex Minerals Local Plan (2014) and Thurrock Core Strategy (2015) were based on. Sales have not increased beyond the 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 (2018 to 2020) stands at 3.23Mt, which is again higher than the sales recorded in 2020. 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, 4.23Mt of material was removed from the seabed in 2020 in these areas. This was a decrease of 0.12Mt when compared to the 4.35Mt removed in 2019. Licenses have been granted that permit the extraction of a total of 10.93Mt per annum from the Thames and East Coast regions combined. At this rate, current estimates suggest there are 26 years of primary marine aggregate production permitted in the Thames Estuary and 12 years within the East Coast region. The Marine Plan covering this area of sea is the South East Marine Plan was adopted in June 2021.

7.1.8. There were seven wharves (of which four were inactive in 2020, and a further 'potential' wharf[64]) and eight rail (two of which were inactive in 2020) in Greater Essex. The National Aggregate survey 2019, provides the most robust data regarding importation and exportation. 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)[65] 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. Regarding aggregate recycling, within the Essex Mineral Local Plan Review Regulation 18 consultation document, it was highlighted that the methodology to identify the 'production' of recycled aggregate is different to the methodology previously used in both the Essex Authority Monitoring Reports and these Greater Essex LAAs. As an interim measure, the few CD&E waste

[64] 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)

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

recovery facilities that are co-located at mineral extraction and transhipment sites have been reviewed. The six facilities (operated by four different operators) sold 0.59Mt recycled product in 2020. This is a 7.9% increase on what was produced/sold in 2019, despite the COVID-19 pandemic.

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 maintain 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 marine-won reserves and/or recycled/ secondary aggregate. 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.

Annexes

ANNEX A PRIMARY EXTRACTION FACILITIES WITHIN GREATER ESSEX

Table 5: Permitted Primary Aggregate Sites in Essex (31 December 2020)

Operator		Site Name		Cessation Date for Planning Permission	District /Borough	Grid Ref / GIS Co-Ordinates (Approx.)
Part A:		**Active Sand & Gravel Quarries with Permitted Reserves**				
1.	Blackwater Aggregates	1.	Bradwell Quarry, Silver End[66]	2022	Braintree	TL 819 217
2.	Brett Aggregates	2.	Alresford Creek, Alresford	2042	Tendring	TM 063 200
		3.	Brightlingsea Quarry	2026	Tendring	TM 070 188
		4.	Lufkins Farm, Thorrington Road	Commenced January 2019 cessation of extraction January 2022.	Tendring	X - 609625.1 Y – 222106.3
3.	Brice Aggregates	5.	Colemans Quarry, Witham[67]	2036	Braintree	TL 838 156

[66] ESS/12/20/BTE is currently in determination (see part D of this table (below) for further details).

[67] Application ESS/51/21/BTE was validated in May 2021 for a proposed western extension at Coleman's Farm Quarry, to allow extraction in advance of the proposed A12 widening project. The proposal would provide 265,000 tonnes aggregate and require importation of 236,000m3 (425,000 tonnes) inert material for restoration. Further information will be included in the next LAA, which will cover the 2021 timeframe.

Operator		Site Name		Cessation Date for Planning Permission	District /Borough	Grid Ref / GIS Co-Ordinates (Approx.)
4.	Danbury Aggregates	6.	Royal Oak, Danbury	2029	Chelmsford	TL 805 050
		7.	St Cleres Pit, Danbury	2019[68]	Chelmsford	TL 763 058
5.	Dewicks	8.	Curry Farm, Bradwell-on-Sea	End on site 2023, restoration by 2024	Maldon	TL 993 059
6.	Edviron Ltd	9.	Crumps Farm, Gt Canfield	2031	Uttlesford	TL 584 211
7.	Frank Lyons Plant Services Ltd	10.	Blackley Quarry, Great Leighs	2045	Chelmsford	TL 728 191
8.	G&B Finch Ltd	11.	Asheldham Quarry, Southminster	2029	Maldon	TL 973 014

[68] ESS/31/16/CHL requires extraction to cease 31/7/2019 and restoration to be completed by 2022. There is currently an application awaiting the signing of legal agreements which would allow the continued use of the site to process as lifted unprocessed aggregate from Royal Oak Quarry into St Cleres Hall Pit until 16 February 2029 (ref: ESS/50/19/CHL). A further planning application (ref ESS/49/19/CHL) would also allow the continuation of extraction from St. Cleres Hall pit until the same date, with cessation of the processing plant by 31st December 2031 and restoration to be complete by 31st March 2032.

Operator		Site Name		Cessation Date for Planning Permission	District /Borough	Grid Ref / GIS Co-Ordinates (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	X – 581819 Y - 221749
10.	Hanson Aggregates	13.	Birch Quarry, Birch	2018	Colchester	TL 927 193
		14.	Bulls Lodge Quarry, Boreham	Permission CHL/1019/87 (Airfield) =2020[69] Permission CHL/1890/87 (Park & Brick Farms) = 2030[70]	Chelmsford	TL 746 108
11.	R W Mitchell & Sons	15.	Elmstead Hall (AKA Elmstead Reservoir)	November 2021	Tendring	X – 605769 Y - 225753

[69] 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.

[70] 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	Grid Ref / GIS Co-Ordinates (Approx.)
12.	SRC Ltd	16.	Cobbs Farm, Goldhanger	30 September 2021	Maldon	TL 893 085
		17.	Crown Quarry, Ardleigh	2028	Tendring	TM 025 295
		18.	Highwood Quarry, Little Easton	2026	Uttlesford	TL 598 224
13.	Tarmac Ltd	19.	Colchester Quarry, (aka Stanway Quarry)	2042	Colchester	TL 954 227
Part B:		**Operational Sand & Gravel and Silica Sand Sites with Permitted Reserves**				
N/A	SRC Ltd	20.	Martells Quarry, Ardleigh	2026[71]	Tendring	TM 049 283
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**

[71] Application submitted prior to 31st December 2020, 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	Grid Ref / GIS Co-Ordinates (Approx.)
Part C:		**Sand & Gravel Quarries with Permitted Reserves (Not Actively Extracting Mineral)**				
1.	SRC Ltd	1.	Sheepcotes Farm	Not yet commenced. Commencement required by 01 August 2022, cessation of extraction 5 years after commencement.	Chelmsford	X – 571862 Y - 213954
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	TL 545 267
3.	Tarmac Ltd	3.	Rayne Quarry	Not yet commenced Commencement required within 3 years from the approval date of ESS/19/17/BTE (by Aug 2022), cessation of extraction 13 years after commencement.	Braintree	X – 570950 Y - 223099

Operator		Site Name		Cessation Date for Planning Permission	District /Borough	Grid Ref / GIS Co-Ordinates (Approx.)
		4.	Wivenhoe Quarry, Sunnymead Extension Wivenhoe	Not yet commenced 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	X – 605695 Y –222598
		5.	Wivenhoe Quarry, Wivenhoe	No extraction occurring on site. Current restoration end date is 30th June 2021[72].	Colchester	TM 046 224
4.	JJ Prior Ltd	6.	Fingringhoe Quarry, Fingringhoe	2042 Extraction has ceased on site, exporting from stockpiled material.	Colchester	TM 042 210
5.	Widdington Recycling	7.	Widdington Pit, Widdington	2022 (with restoration by 2023) Not actively extracting mineral	Uttlesford	TL 528 310

[72] 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	Grid Ref / GIS Co-Ordinates (Approx.)
Part E:			**Dormant Sand & Gravel Quarries[73]**			
1.	S.R. Finch	1.	Straits Mill	N/A	Braintree	TL 768 246
2.	-	2.	Alton Park	N/A	Tendring	X – 615905 Y - 214146
3.	-	3.	Hodgnells Farm	N/A	Tendring	X – 620742 Y - 219329
4.	Devernish Ltd	4.	Hambro Hill	N/A	Rochford	TQ 814 919
Total sites with permitted reserves, but not actively extracting mineral:						**11**
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)	Pending Determination at /12/20, (Ref: ESS/12/20/BTE)	Braintree	582814 220828

[73] 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.

Operator		Site Name		Cessation Date for Planning Permission	District /Borough	Grid Ref / GIS Co-Ordinates (Approx.)
2.	H R Philpot & Son	2.	Shellows Cross Quarry	Pending Determination at /12/20, (Ref: ESS/77/20/CHL)	Chelmsford	563032 209943
3.	SRC Ltd	3.	Martells Quarry	Pending Determination at 31/12/20, (Ref: ESS/29/20/TEN)[74]	Tendring	604898 227986
Sites with 'Pending' Permitted Reserves:						**3**

Source: Essex County Council (2021), as derived from the Aggregate Survey (2021)
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.

Table 6: Permitted Primary Aggregate Sites in Thurrock (31 December 2020)

Operator		Site Name		Cessation Date for Planning Permission	District /Borough	Grid Ref / GIS Co-Ordinates (Approx.)
Part A:		**Operational Sand & Gravel Quarries with Permitted Reserves**				
1.	Rio Aggregates	1.	Dansand Quarry, Stanford Road, Orsett	2025	Thurrock	TQ 650 810

[74] 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	Grid Ref / GIS Co-Ordinates (Approx.)
2.	Ingrebourne Valley Ltd	2.	Mill House Farm, Chadwell St Mary.	2020	Thurrock	TQ 658 791
		3.	Orsett Quarry, Stanford le Hope	2042	Thurrock	TQ 677 807
		4.	Orsett Quarry	2042	Thurrock	TQ 677 807
Total Active Extraction Facilities in Thurrock:						**4**
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	TQ 574 838
2.	S. Walsh & Sons Ltd	2.	East Tilbury Quarry	Under-going restoration	Thurrock	TQ 687 778
Total sites with permitted reserves, but not actively extracting mineral:						**2**

Operator		Site Name		Cessation Date for Planning Permission	District /Borough	Grid Ref / GIS Co-Ordinates (Approx.)
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	TQ 677 807
Sites with 'Pending' Permitted Reserves:						1

Source: As derived from Thurrock Council & the Aggregate Survey (2021)

Table 7: Permitted Mineral Transhipment Sites in Essex (31 December 2020)

Operator		Site Name / Address			District/Borough	Grid Ref / GIS Co-Ordinates (Approx.)
Inactive[75] Permitted Wharfs						
1.	JJ Prior Ltd	1.	Ballast Quay, Ballast Quay Road Fingringhoe Colchester, CO5 7DB	Exporting until stockpiles exhausted	Colchester	TM 043 210

[75] Inactive due to COVID-19 in 2020

Operator		Site Name / Address		District/Borough	Grid Ref / GIS Co-Ordinates (Approx.)
Inactive 'Potential' Wharfs as specified in the MLP[76]					
1.	Hutchinson Ports	1.	Port of Harwich (F4) Parkeston Harwich, CO12 4SR	Tendring	TM 238 326
Active Permitted Rail Depots					
1.	Aggregate Industries UK Ltd	1.	Chelmsford Rail Depot Brook Street Chelmsford, CM1 1UQ	Receiving Depot	Chelmsford	TL 712 074
		2.	Harlow Rail Depot Station Approach, Harlow, CM20 2EL	Receiving Depot	Harlow	TL 470 122
2.	Tarmac Ltd	3.	Harlow Rail Depot Station Approach, Harlow, CM20 2EL	Receiving Depot	Harlow	TL 470 122
		4.	Marks Tey Rail Depot North Lane	Receiving and loading point	Colchester	TL 918 240

[76] 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		District/Borough	Grid Ref / GIS Co-Ordinates (Approx.)
			Marks Tey Colchester, CO6 1ED			
Total Transhipment Facilities in Essex (Permitted): **Total Transhipment Facilities in Essex (Potential)**						**5** **1**

Source: Essex County Council (2021), as derived from the Aggregate Survey (2021)

Table 8: Permitted Mineral Transhipment Sites in Thurrock (31 December 2020[77])

Operator		Site Name / Address		Aggregate Type	District/Borough	Grid Ref / GIS Co-Ordinates (Approx.)
Part A:			**Active Permitted Wharfs**			
1.	Aggregate Industries UK Ltd	1.	DP World Berth 7, London Gateway Drive, Stanford Le Hope, SS17 9PD	Aggregate	Thurrock	TQ 719 823
2.	Tarmac Ltd	2.	Thurrock Marine Terminal, Oliver Close, West Thurrock Grays, RM20 3EE	Aggregate	Thurrock	TQ 576 771

[77] 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		Aggregate Type	District/Borough	Grid Ref / GIS Co-Ordinates (Approx.)
3.	Stema Shipping Ltd	3.	1 Berth, Tilbury Docks, Tilbury, RM18 7HL	Crushed Rock, Aggregate	Thurrock	TQ 638 759
Part B:			**Inactive Permitted Wharfs**			
1.	Cemex/ Hanson	1.	Purfleet Wharf Aveley, RM19 1RP		Thurrock	TQ 564 775
2.	Port of Tilbury, S. Walsh	2.	Port of Tilbury, Berth 34 Expected to commence 2021	Crushed Rock	Thurrock	
3.	Tilbury 2	3.	Tilbury 2 Power Station, Fort Road Tilbury, RM18 7NR	Various aggregates Import and export by rail	Thurrock	TQ 647 752
Part C:			**Active Permitted Rail Depots**			
1.	Aggregate Industries UK Ltd	1.	Purfleet Rail Depot Jurgens Road Off London Road Purfleet, RM19 1UA	Crushed Rock and Other (Receiving Depot)	Thurrock	TQ 566 771

Operator		Site Name / Address		Aggregate Type	District/Borough	Grid Ref / GIS Co-Ordinates (Approx.)
2.	Port of Tilbury, FM Conway	2.	Port of Tilbury, Bulk Rail Terminal Tilbury, RM18 7EH	Marine imported sea dredged crushed rock. exported by rail.	Thurrock	TQ 630 765
Part D:			**Inactive Permitted Rail Depots**			
1.	Port of Tilbury, S. Walsh	1.	Port of Tilbury, Berth 34 (Expected to commence 2021)	Crushed Rock	Thurrock	
2.	Tilbury 2	2.	Tilbury 2 Power Station, Fort Road Tilbury, RM18 7NR	Various aggregates Import and export by rail Expected to commence late 2021	Thurrock	TQ 647 752
Total Transhipment Facilities in Thurrock						**11**

Source: As derived from Thurrock Council & the Aggregate Survey (2021)

ANNEX B PERMITTED PROCESSING PLANTS IN GREATER ESSEX (DEC 2020)

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority		Plants Permitted on Site[78]					
Operator	**Quarry / Transportation Facility**	**Primary Processing**	**Bagging**	**Concrete / Mortar Batching**	**Coated Roadstone**	**Aggregate Recycling Facility[79]**	**Transhipment Facility[8o]**
Aggregate Industries	Martells Quarry, Ardleigh	✓				✓	
	Chelmsford Rail Depot (MLP – F1) (Receiving Depot)						✓ (MLP – F1)
	Harlow Mill Rail Station (MLP – F2) (Receiving Depot)			✓	✓		✓ (MLP – F2)

[78] 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).

[79] There are additional Aggregate Recycling Facilities, which are not co-located with Mineral Extraction/Transhipment Sites. These can be viewed in Annex G.

[8o] As specified by Network Rail in Rail served aggregates and minerals handling locations (2016)

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority		Plants Permitted on Site[78]					
Operator	**Quarry / Transportation Facility**	**Primary Processing**	**Bagging**	**Concrete / Mortar Batching**	**Coated Roadstone**	**Aggregate Recycling Facility[79]**	**Transhipment Facility[80]**
	Essex Regiment Way, Chelmsford				✓		
Blackwater Aggregates	Bradwell Quarry, Bradwell/Kelvedon	✓	✓	✓			
Brett Aggregates	Alresford Creek, Alresford	✓		✓ (Permitted by LPA not MPA)			
	Brightlingsea Quarry, Brightlingsea	✓					
	Elsenham Quarry, Elsenham	✓ (Permitted, but not on Site)				✓ (Permitted, but not on Site)	

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority		Plants Permitted on Site[78]					
Operator	**Quarry / Transportation Facility**	**Primary Processing**	**Bagging**	**Concrete / Mortar Batching**	**Coated Roadstone**	**Aggregate Recycling Facility[79]**	**Transhipment Facility[80]**
Widdington Recycling Ltd	Widdington Pit, Widdington	✓				✓	
Danbury Aggregates	Royal Oak, Danbury						
Dewicks	Curry Farm, Bradwell-on-Sea	✓					
Frank Lyons Plant Services	Blackley Quarry, Great Leighs	✓					
G&B Finch	Asheldham Quarry, Asheldham	✓		✓		✓	
	Birch Quarry, Birch	✓		✓			

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority		Plants Permitted on Site[78]					
Operator	**Quarry / Transportation Facility**	**Primary Processing**	**Bagging**	**Concrete / Mortar Batching**	**Coated Roadstone**	**Aggregate Recycling Facility[79]**	**Transhipment Facility[80]**
Hanson Aggregates	Bulls Lodge Quarry, Boreham	✓	✓	✓	✓	✓ (Now Operated by Hanson)	
JJ Prior Ltd	Fingringhoe Quarry, Fingringhoe						✓ (MLP - D2)
Newport Chalks	Newport Quarry, Newport					✓ (Non-Operational, with Planning Permission ESS/42/18/UTT)	
Tarmac Ltd	Colchester Quarry, Stanway	✓		✓	✓	✓	

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority		Plants Permitted on Site[78]					
Operator	**Quarry / Transportation Facility**	**Primary Processing**	**Bagging**	**Concrete / Mortar Batching**	**Coated Roadstone**	**Aggregate Recycling Facility[79]**	**Transhipment Facility[80]**
	Harlow Mill Rail Station (Receiving Depot)			✓	✓		✓ (MLP – F2)
	Marks Tey Rail Depot (Receiving and loading point)						✓ (MLP – F3)
S Walsh and Sons Ltd	East Tilbury Quarry					✓	
Sewells Reservoir Construction (SRC)	Cobbs Farm, Goldhanger	✓					
	Crown Quarry, Ardleigh	✓	✓ Pending retrospective determination	✓		✓	

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority		Plants Permitted on Site[78]					
Operator	**Quarry / Transportation Facility**	**Primary Processing**	**Bagging**	**Concrete / Mortar Batching**	**Coated Roadstone**	**Aggregate Recycling Facility[79]**	**Transhipment Facility[80]**
			(ESS/07/20/TEN)				
	Highwood Quarry, Little Easton	✓	✓	✓		✓	
	Sheepcotes Farm	✓ (Non-Operational, with Planning Permission ESS/01/18/CHL)					
Hutchinson's Ports	Port or Harwich[81]						✓ (MLP – F4)

[81] 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)

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority		Plants Permitted on Site[78]					
Operator	**Quarry / Transportation Facility**	**Primary Processing**	**Bagging**	**Concrete / Mortar Batching**	**Coated Roadstone**	**Aggregate Recycling Facility[79]**	**Transhipment Facility[80]**
TOTAL =		**16 (↑)**	**4 (-)**	**10 (-)**	**5 (↓)**	**10 (↑)**	**6 (-)**

Source: Essex County Council (2021)

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

ANNEX C PERMITTED RESERVES IN GREATER ESSEX (2001 TO- 2020)

Table 9: Permitted Reserves in Greater Essex (2001 to 2020)

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)
2001	68.48	2011	37.01
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

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 *: This is not actual reserve as of 31st December 2019, but what would have been available if all applications in determination and/or signing of legal agreements were complete at this date;
Supporting: Figure 4- Permitted Sand & Gravel Reserves in Greater Essex (2001 to 2020, page 12.

ANNEX D APPORTIONMENT & LANDBANK DATA

Table 10: 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)

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

Table 11: Annualised Landbank held in Greater Essex (2011 – 2020)

Year	Permitted Reserve in Mt (a)	Annualised Plan Provision in Mt (b)	Landbank in Years (a/b)
2011	37.01Mt	4.45Mt	8.32
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
2018	29.98Mt	4.45Mt	6.74

2019	33.10Mt	4.45Mt	7.44
2020	33.59Mt	4.45Mt	7.55
2020 Permitted & Pending Reserve*	33.59Mt (permitted reserve) + 9.5Mt (pending reserve) = 49.03*	4.45Mt	9.68*

Source: East of England Annual Monitoring Reports & Essex County Council (2021);
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 2019, 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 (2011 to 2020), page 18.

Table 12: 10-Year Average Rolling Sales Landbank held in Greater Essex (2011 to 2020)

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)
2011	37.01Mt	3.76	9.84
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	33.59Mt	3.26	10.30
2020 Permitted & Pending Reserve*	33.59Mt (permitted reserve) + 9.5Mt (pending reserve) = **43.09***	3.26	13.21

Source: Essex County Council (2021);
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 2019, 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 (2011 to 2020), page 18.

ANNEX E SALES DATA

Table 13: Sales of Land Won Sand & Gravel within Greater Essex (2001 – 2020) (in millions of Tonnes)

Year	Sand and Gravel Sales in Greater Essex (Mt)		…. Continued Year	Sand and Gravel Sales in Greater Essex (Mt)
2001	4.23		2011	2.80
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

Average Annual Sales 2001 to 2020 (20 years)	3.58 Mt
10 Year Rolling Average Annual Sales (2011 to 2020)	3.26Mt
3 Year Rolling Average Sales (2018 to 2020)	3.23Mt

Source: Essex County Council Annual Monitoring Reports and East of England Aggregates Working Party Annual Monitoring Reports & Essex County Council (2021)

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 (2011 to 2020, 10 years), page 15

ANNEX F MARINE-WON MINERALS

Table 14: Marine Won Mineral Landed in Ports with The Capacity to Serve Greater Essex In Tonnes (2011 to 2020)

	London	Thurrock	Kent	Suffolk	Total
2011	4,319,908	329,376	2,252,864	148,483	**7,050,631**
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**
10 year % change 2011 to 2020	16.0%	-37.5%	-15.6%	49.6%	**4.1%**
Annual % change 2019 to 2020	-10.0%	92.9%	-21.0%	18.1%	**-11.2%**

Source: The Crown Estate, Summary of Statistics, 2011 – 2020
Supporting: Figure 10: Marine-Won Mineral Landed in Ports that Serve Greater Essex (2011 to 2020), page 29

ANNEX G AGGREGATE RECYCLING FACILITIES WITHIN GREATER ESSEX 2020

Table 15: Aggregate Recycling Facilities as reported in the Aggregate Survey 2020

Operator	Site	District/Borough
Dewicks	Curry Farm Quarry Site	Maldon
SRC Ltd	Martell Quarry	Tendring
	Highwood Quarry	Uttlesford
	Crown Quarry	Tendring
Brett Aggregates	Brightlingsea Quarry	Tendring
Recycled in Orsett Ltd	Dansand Quarry and Aggregate Recycling Centre	Thurrock
Total Recycled Aggregate Produced from these sites (Mt)		**0.59**

Source: Essex County Council (2021) as derived from the Regional Aggregate Survey 2020

Table 16: Recycled Aggregate Production at Mineral Extraction and/or Transhipments Sites (2016 to 2020)

Year	Total number of Facilities Producing Recycled Aggregate	Total Number of Operators Operating these Facilities	Total Recycled Aggregate Produced (Mt)	Percentage Change on Previous Year	Percentage Change since 2016
2016	4	3	0.34	N/A	N/A
2017	4	3	0.42	↑ 25.6%	↑ 25.6%
2018	6	5	0.66	↑ 55.8%	↑ 95.7%
2019	5	3	0.55	↓ 16.5%	↑ 63.4%
2020	6	4	0.59	↑ 7.9%	↑ 7.9%

Source: Essex County Council (2021) as derived from the Regional Aggregate Surveys

ANNEX H LOCAL PLAN PRODUCTION & INDICATIVE FUTURE HOUSING REQUIREMENTS

Table 17: Future Housing Requirements in Emerging Local Plans (April 2019)

LPA	Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7
	Emerging Local Plan Requirement	Emerging Local Plan Period	Builds to Date (April 2019)	Builds Remaining at April 2019	With Outstanding planning Permission at April 2019	With Outstanding planning Permission 2019/20 – 2023/24	Allocated with no Permission
Basildon	17,791	2014 - 2034	2,587	15,204	2,918	n/a	12,286
Braintree	14,320	2013 - 2033	2,451	11,869	5,693	n/a	6,176
Brentwood	7,752	2016 - 2033	609	7,143	1,285	n/a	5,858
Castle Point	5,284	2018 - 2033	200	5,084	605	n/a	4,479
Chelmsford	21,843	2013 - 2036	5,348	16,495	5,716	n/a	10,779
Colchester	18,400	2013 - 2033	5,713	12,687	n/a*	4,693	7,994

LPA	Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7
	Emerging Local Plan Requirement	Emerging Local Plan Period	Builds to Date (April 2019)	Builds Remaining at April 2019	With Outstanding planning Permission at April 2019	With Outstanding planning Permission 2019/20 – 2023/24	Allocated with no Permission
Epping Forest	11,400	2011 - 2033	2,297	9,103	1,497	n/a	7,606
Harlow	9,200	2011 - 2031	2,463	6,737	4,723	n/a	2,014
Maldon	4,650	2014 - 2029	1,013	3,637	1,856	n/a	1,781
Rochford	7,491	2017 - 2037	561	6,930	2,274	n/a	4,656
Tendring	11,000	2013 - 2033	2,854	8,146	4,146	n/a	4,000
Uttlesford	14,000	2011 - 2033	5,139	8,861	3,048	n/a	5,813
Essex Sub-Total	**143,131**	**~**	**31,235**	**111,896**	**33,761**	**4,693**	**73,442**

LPA	Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7
	Emerging Local Plan Requirement	Emerging Local Plan Period	Builds to Date (April 2019)	Builds Remaining at April 2019	With Outstanding planning Permission at April 2019	With Outstanding planning Permission 2019/20 – 2023/24	Allocated with no Permission
Southend-on Sea	23,520	2018 - 2038	492	To Confirm	To Confirm	To Confirm	To Confirm
Thurrock	Up to 32,000 (Provisional)	2018-2038	409	31,591	To confirm	N/A	N/A
Greater Essex TOTAL	**198,566 (Provisional)**	**~**	**32,136**	**143,487 (To Confirm)**	**33,761 (To Confirm)**	**4,693 (To Confirm)**	**73,442 (To Confirm)**

Source: Essex County Council (2019);
Note *: Colchester BC cannot separate out sites with planning permission up to 2033. Capacity of sites with permission in five-year supply 2019/20 to 2023/24 – 4,693
Note: In Thurrock and Southend-on-Sea, provisional values have been presented by these Authorities and are therefore subject to future change.
Column 3; Net completions since the base date of the Local Plan in Col 2;
Column 4 New homes required in the plan period less completions to date, including sites with outstanding permission/allocations/windfall;

Column 5 Capacity of sites with outstanding planning permission, not started or under construction with capacity outstanding;
Column 6; CBC sites with outstanding planning permission, not started/under construction in 5-year supply only
Column 7 New homes required in the plan period without the benefit of planning permission, mainly the new allocation/windfall sites (except COL see *** in the notes below).
Supporting: Figure 1, Indicative Housing Growth as Committed to in Local Plans (April 2019).

Table 18: Emerging Local Plan Progress (April 2019)

Area	Local Authority	Progress
Mid	Braintree **	Publication Draft Local Plan (June 2017) Section 1 examination `paused' pending further evidence base work Further Hearings January 2020 Inspectors Letter May 2020 - await Inspectors Main Modifications
	Chelmsford	Pre-Submission (Reg 19) - January 2018 Hearings Nov/Dec 2018 Main Modifications (September 2019) Inspectors Report, February 2020 Adoption May 2020
	Maldon	Adopted Local Plan (July 2017)
North East	Colchester **	Publication Draft Local Plan (June 2017) Section 1 examination `paused' pending further evidence base work Further Hearings January 2020 Inspectors Letter May 2020 - await Inspectors Main Modifications
	Tendring **	Publication Draft Local Plan (June 2017) Section 1 examination `paused' pending further evidence base work Further Hearings January 2020 Inspectors Letter May 2020 - await Inspectors Main Modifications
South	Basildon	Revised Publication Local Plan (2014 - 2034) - December 2018 Submission to SoS in March 2019

		No timescale set for Hearings - late 2020
	Brentwood	Pre-Submission (Regulation 19) - February - March 2019 Focussed Consultation (October 2019) Submitted February 2020
	Castle Point	New Local Plan (2016) - withdrawn March 2017 Regulation 18 (July 2018) Pre-submission Local Plan (December 2019)
	Rochford	Adopted Core Strategy (2011) Issues and Options (January 2018)
West	Epping Forest	Submission Local Plan (December 2017) Hearings February - March 2019 Inspectors Initial Findings (September 2019). Inspectors Actions being progressed
	Harlow ****	Pre-Submission (Regulation 19) - May 2018 Hearings March - April 2019 Main Modifications, March - May 2020
	Uttlesford*	Local Plan (Regulation 19) (May 2018) Submission January 2019 Hearings June - July 2019 Inspectors Letter January 2020 (Unsound) Plan Withdrawn - April 2020
Unitary Authorities	Southend-on-Sea	Adopted Core Strategy (December 2007). Initial Issues and Options (February - March 2019)
	Thurrock	Adopted Core Strategy 2015

		Local Plan Issues and Options Stage 2 (December 2018 - March 2019)

Source: Essex County Council (2020)
Note *: Uttlesford Local Plan withdrawn in April 2020 - a new Plan would be required to plan for between 18,000 and 19,700 over the period of 2017 – 2040;
Note **: North Essex Section 1 - Inspector Letter (May 2020) recommended the plan is `sound' subject to Main Modifications including the removal of Colchester/Braintree Borders (1,350) and West of Braintree (2,060) by 2033;
Note***: Colchester BC cannot separate out sites with planning permission up to 2033. Capacity of sites with permission in five-year supply 2019/20 - 2023/24 - 4693;
Note ****: Harlow - site allocations amended to reflect the Main Modifications as of 1 April 2019.

This information is issued by:

Essex County Council, Minerals and Waste Planning

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