



Greater Essex Local Aggregate Assessment 2020

(Covering the Calendar Year 2019)



Essex County Council

EXECUTIVE SUMMARY

This is the seventh Local Aggregate Assessment (LAA) produced on behalf of the Greater Essex authorities¹, reflecting the position at the end of 2019. 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 2020, through much of which the nation was in lockdown for the prevention of Coronavirus spread. Despite this, 92% of sites provided a response. However, it cannot be subsequently inferred that any combined figures presented represent 92% 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. As such, any trend analysis factoring in the latest data must be treated with caution.

A national aggregate survey is currently being undertaken (summer 2020), which hopes to capture all sales reported in 2019, including any sites that did not have the opportunity to previously respond due to lockdown restrictions. Any results provided via the National Survey will be considered and reviewed in the next edition of the LAA which will be published in 2021, which will also assess sales in 2020.

Extraction and Processing Facilities within Greater Essex

There are 33 sand and gravel quarries in Greater Essex, 23 of which were active². Of the 10 inactive sand and gravel quarries, four are considered as long term 'dormant'³ and six are permitted, but not actively extracting, as of 31 December 2019. In addition, during 2019, three sites are pending determination and/or Legal Agreements and a single site ceased mineral extraction/closed.

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 43 processing facilities that add value to mineral products co-located with mineral and transshipment facilities.

Sand & Gravel Sales

Sales increased between 2010 and 2019, from 2.99 million tonnes (Mt) to 3.17Mt. Within this time, the highest sales were in 2014 (4.37Mt) and lowest in 2012 (2.3Mt). The ten-year average sales (2010 to 2019) figure (3.26Mt) and the three-year sales (2017 to 2019) average (3.38Mt) are below the apportioned tonnage of 4.45 Million tonnes per annum (Mtpa) provision made in the adopted Development Plan. The last three years of sales show a decrease from 3.41Mt in 2017 to 3.17Mt in 2019, which amounts to a

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 Therefore, are omitted from the landbank and permitted preserve calculations.

decrease of 7%. However, some of this decrease could be attributed to the lower than expected survey response rate due to staff being on furlough as a result of the lockdown.

Sand and Gravel Permitted Reserves & Landbank

Permitted reserves were 33.10Mt in December 2019. The apportionment⁴ landbank stood at 7.44 years at the end of 2019, whilst the ten-year sales average landbank stands at 10.14 years. Therefore, the landbank is sufficient. In addition, at the time of writing (September 2020) there exist three pending permissions across Greater Essex, which would permit the working of 5.5Mt 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 8.57Mt of material removed from the seabed in 2019. This was an increase of 1.51Mt compared to that removed in 2018. Licenses have been granted that permit the extraction of a total of 11.73Mt per annum from the Thames and East Coast regions combined. At this rate, current estimates suggest there are 29 years of primary marine aggregate production permitted in the Thames Estuary and 15 years within the East Coast region. This data is collected in a different manner to terrestrial sand and gravel extraction and not impacted by data collection issues related to COVID-19.

Imports and Exports

Across Greater Essex, there are 11 mineral transshipment facilities⁵. Whilst it can be stated that nearly 1.6Mt of material was imported into Greater Essex during 2019, there were not enough operators reporting on exportation to present data, due to commercial confidentiality.

Secondary and Recycled Aggregate

It has been assessed that within Essex and Southend-on Sea, there is inert recovery capacity of 2.118Mtpa, and that 1.05Mt of recycled aggregate was produced in 2014⁶. There is additional CD&E waste capacity within Thurrock, which also make a contribution to the total amount of recycled aggregate available within Greater Essex. During 2019, two permissions were granted that would increase the inert recovery capacity in Greater Essex, by at least 0.2Mtpa, which would therefore provide a potential total capacity of approximately 2.3Mtpa, if these facilities were developed.

Across the whole of the Greater Essex Area a number of aggregate recycling sites are co-located with other minerals and/or waste sites and are

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 This consists of both rail and wharf transshipment facilities.

⁶ This is the latest data available

temporary in nature. Consequently, available capacity fluctuates. Additional capacity will continue to be encouraged where located in accordance with relevant mineral and waste plan policies.

It is not known whether secondary aggregates are produced in any significant quantity, but the lack of heavy industry, in Essex at least, suggests that there will be little.

2019 Headline Figures

	Performance in 2019	Comparison with 2018
Land-won sand & gravel sales (Million tonnes (Mt))	3.17Mt (↓ 11.0%)	3.56Mt
Permitted reserves of sand and gravel at end of year (Million tonnes (Mt))	33.10Mt (↑ 10.4%)	29.98Mt
Landbank based on apportionment (years)	7.44 years (↑ 10.4%)	6.74 years
Ten-year rolling annual average sales (Mt) (Ten-year period 2010 – 2019)	3.26Mt (↓ 8.4%)	3.56Mt
Landbank based on ten-year rolling average sales (years)	10.14 years (↑ 8.7%)	9.30 years
Three-year rolling average sales (Mt) (Three-year period 2017 – 2019)	3.38Mt (↓ 2.3%)	3.46Mt
Wharf & Rail depot imports (Hard rock)	1.60Mt (↑ 42.9%)	1.12Mt
Wharf & Rail depot Exports (Sand & Gravel)	Value cannot be provided ⁷ , due to commercial confidentiality	Value cannot be provided ⁸ , due to commercial confidentiality.

Source: Essex County Council (2020).

⁷ Even when amalgamating data for both types of transshipment facility, there remains too few sites reporting the exportation of material from Greater Essex to provide data for reasons of commercial confidentiality.

⁸ Ibid

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1. INTRODUCTION

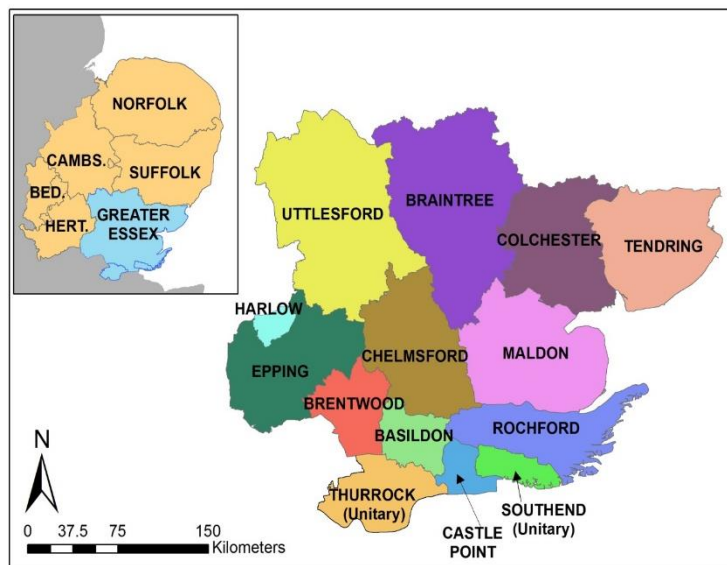
1.1. Background

- 1.1.1. Mineral Planning Authorities (MPAs) are required⁹ 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 Essex¹⁰ position at 31 December 2019. 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 resources¹¹ will be predicated on the amount and type of development in and close to Essex.
- 1.3.2. The Mineral Products Association (MPA) published an overview of construction and mineral products markets in the East of England¹². This included reference to the construction outlook between 2019 and 2023¹³.
- 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

⁹ Required by the National Planning Policy Framework (NPPF, 2019)

¹⁰ 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.

¹¹ Including the generation and use of recycled/secondary aggregates

¹² Mineral Products Association (Aug 2020) published an overview of construction and mineral products markets in the East of England

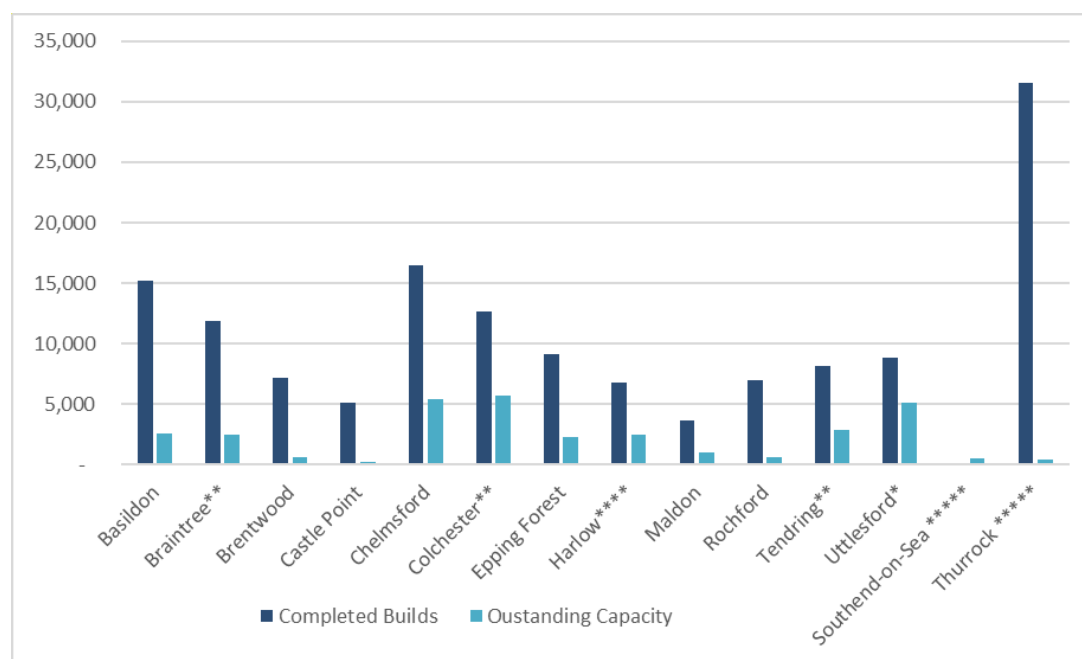
¹³ This forecast was produced in 2019, therefore does not account for the disruption caused by the coronavirus pandemic

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. A number of Essex authorities are preparing Local Plans, which will continue to deliver significant new homes beyond 2033. The majority 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 a number of 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.

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 62)

Source: Essex County Council (2020)

Major Construction Projects

- 1.3.5. In addition to this growth, there are also major developments/construction projects¹⁴ that are either planned, programmed or underway in Essex and/or in adjoining authorities. These are set out in the table below.

Table 1: Summary of Key Infrastructure Projects

Infrastructure Scheme	Lead	Decision Pathway	Potential Delivery Date
M11 Junction 7a	ECC	Planning Application	2022
M25, Junction 28	Highways England	Nationally Significant Infrastructure Project	2022/23
Chelmsford North East Bypass	ECC	Planning Application	2024
A120/A133 Link Road and Rapid Transit System	ECC	Planning Application	2024
Beaulieu Park Station	ECC/ Network Rail	Planning Application	2025
A12 Widening (19 – 25)	Highways England	Nationally Significant Infrastructure Project	2027/28
Lower Thames Crossing	Highways England	Nationally Significant Infrastructure Project	2027/28
New A120 route	ECC/ Highways England		2028 or beyond
Bradwell B Nuclear Power Station	China Generation Nuclear Power Corporation (CGN) and EDF Energy	Nationally Significant Infrastructure Project	Not defined
A13 Widening (A128 to A1014)	Thurrock Highways	Planning Application	2021
London Gateway Port	DP World	Local Development Order	2023 or beyond
Tilbury 2 (Tilbury Port Expansion)	Port of Tilbury	Nationally Significant Infrastructure Project	2021/22

¹⁴ 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.

Source: Essex County Council (2020). Additional information is outlined in Annex H.

- 1.3.6. It is important to note that the A12 widening route announcement (28 August 2020¹⁵), 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. With regard to Southend-on-Sea specifically, there are currently no major developments/construction projects that have completed the planning process, although there are noted to be three such developments currently being developed. These are Seaways (in the appeals process); Fossets Farm (including Football Stadium is in the planning stage); and Queensway regeneration application is expected to be received by the Authority imminently.
- 1.3.8. 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 Essex and Thurrock Authority Areas in 2019 was 70,842 tonnes.

¹⁵ Highways England (Aug 2020) [A12 Chelmsford to A120 widening scheme](#)

2. AT A GLANCE: MINERALS IN GREATER ESSEX

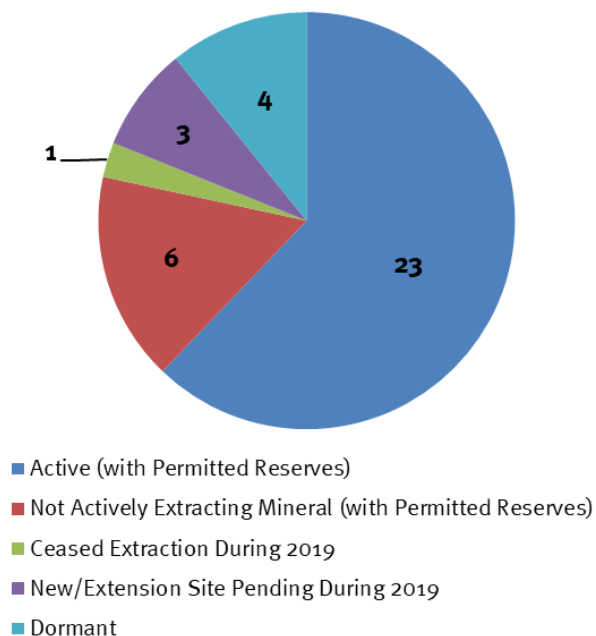
2.1. Geology

- 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. Sales figures within this report only relate 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. However, the inclusion of silica sand is made to provide a fuller picture of the provision of the main minerals in Greater Essex.

2.2. Primary Land-won Aggregate Facilities

- 2.2.1. There are 33 sand and gravel quarries in Greater Essex, 23 of which were active¹⁶. Of the 10 inactive sand and gravel quarries, four are considered as long term 'dormant'¹⁷ and six are permitted, but not actively extracting in Greater Essex as of 31 December 2019¹⁸ as presented in Figure 2. In addition, during 2019, three sites are pending determination and/or Legal Agreements and a single site ceased mineral extraction/closed.

Figure 2: Sand & Gravel Quarries



Source: Essex County Council (2020)

- 2.2.2. The Aggregate Survey 2019 revealed that there was at least 3.23Mtpa potential sand and gravel production capacity¹⁹. There is assumed to be significantly more capacity within Greater Essex, as this figure is based on a 59%²⁰ response rate for this particular aspect of the Aggregate Survey.
- 2.2.3. There are a further four facilities extracting other minerals within the Greater Essex area:

¹⁶ Due to the Aggregate Survey that informs this LAA being undertaken during 'lockdown', this total number of active sites is yet to be confirmed.

¹⁷ Therefore, are omitted from the landbank and permitted preserve calculations.

¹⁸ As listed within Annex A. This figure is a result of the aggregate Survey being undertaken during the furlough period; this could be subject to change.

¹⁹ Taking account of plant capabilities and planning restrictions

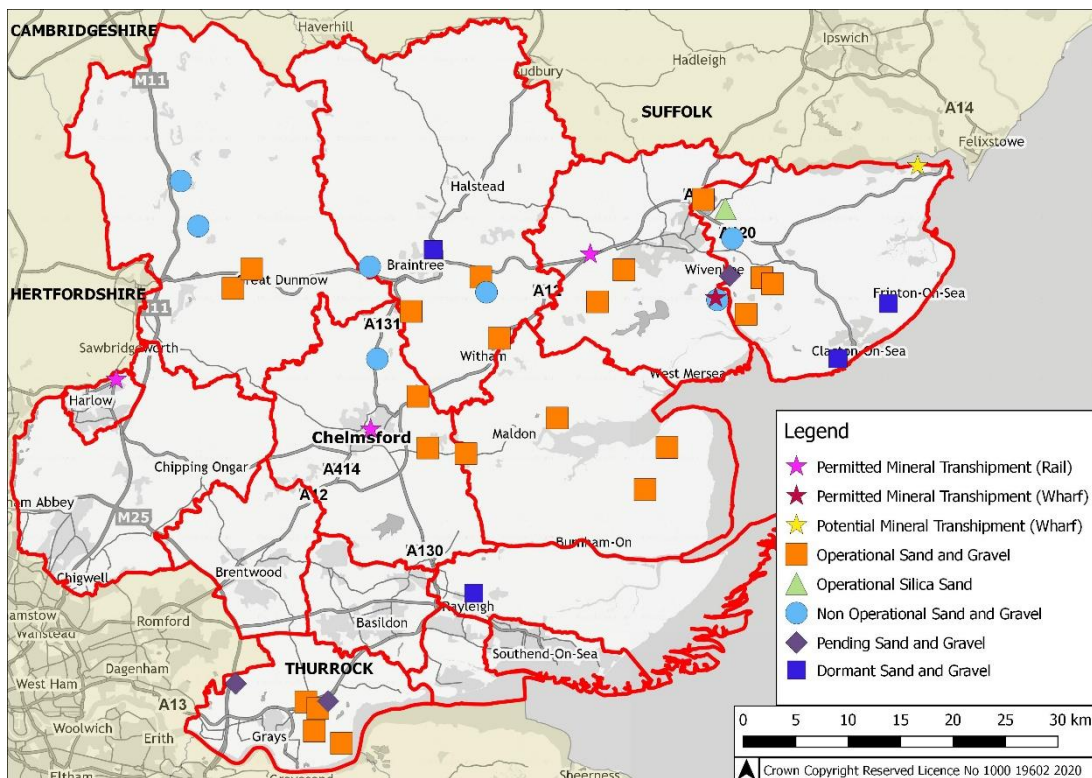
²⁰ The overall response rate for the survey was 93%. Of these responses only 59% of sites provided potential sand and gravel production capacity

- One site specifically 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. Within Greater Essex there are five rail facilities and six wharves (of which one is inactive).
- 2.3.2. The location of the transhipment facilities in Greater Essex is shown in Map 2 below.

Map 2: Mineral Extraction & Transhipment Sites In Greater Essex (31 December 2019)

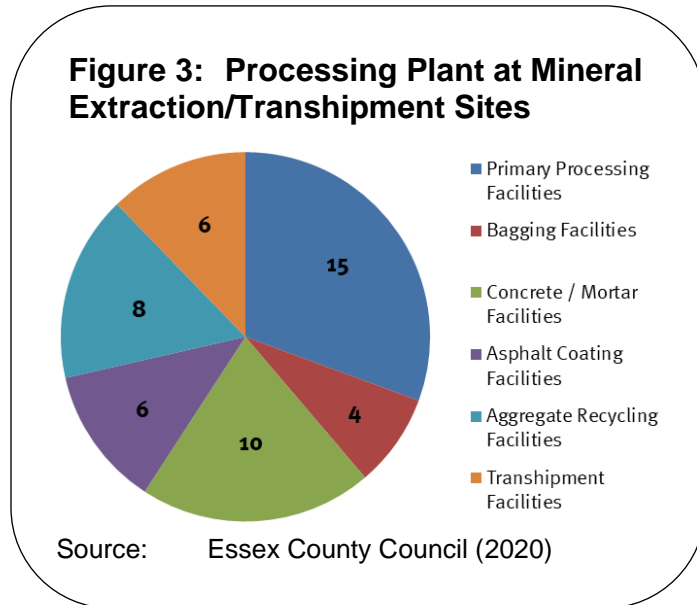


Source: Essex County Council (2020). The data that informs this table is in Annex A.

2.4. Processing Plants

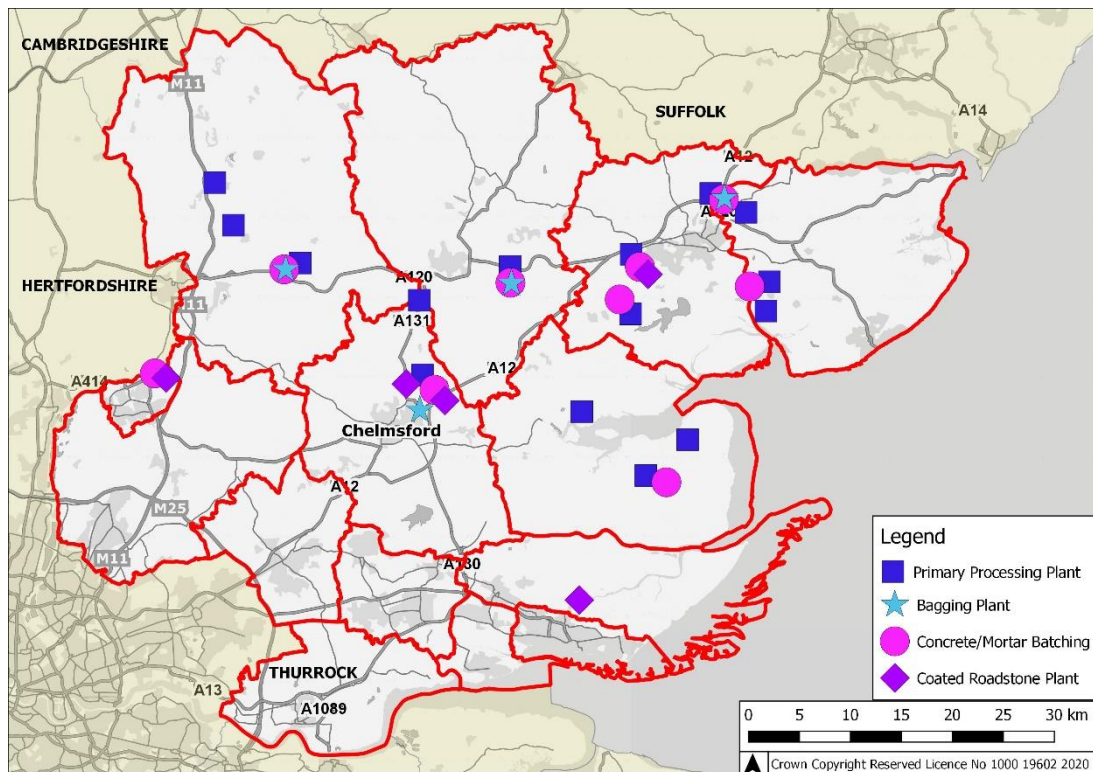
- 2.4.1. On a number of extraction sites, primary processing occurs, producing a higher quality final product as well as allowing more sustainable use of aggregate. This can take a number of different forms such as crushing, sieving, de-watering and through exploitation of physical and/or chemical properties.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



- 2.4.4. Within Greater Essex there were 43²¹ processing facilities that add value to mineral products, which have been permitted by the Mineral Planning Authority.

Map 3: Primary and Secondary Aggregate Processing Facilities In Greater Essex (31 December 2019)



Source: Essex County Council (2020)

²¹ One of which is located at a transhipment facility. (Harlow Mill)

3. LAND-WON SAND & GRAVEL

3.1. Introduction

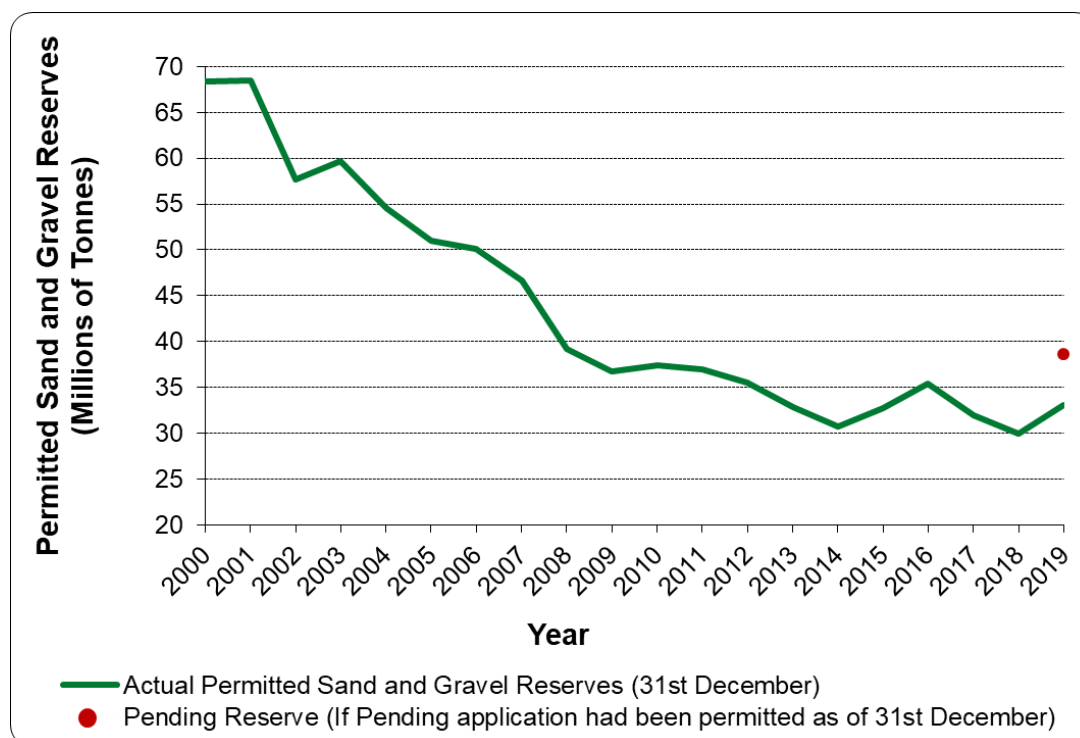
- 3.1.1. The NPPF requires that Mineral Planning Authorities (MPAs) plan for a steady and adequate supply of sand and gravel by maintaining a landbank of at least seven years²².
- 3.1.2. Within Greater Essex the primary method of calculating the sand and gravel landbank is via the annualised apportionment as adopted through policy, which was based on the “National and Sub-national Guidelines for Aggregates Provision in England”, (2005 – 2020), and which provided a figure of 4.45Mtpa for Greater Essex.
- 3.1.3. The NPPF however states that mineral provision should be based (*inter-alia*) on a rolling average of ten years’ sales data and other relevant local information. 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 2010 to 2019. 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 by operators in Greater Essex via the annual Aggregate Survey. 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.
- 3.1.6. It should be noted that the Aggregate Survey that informs this LAA was undertaken during March to May 2020, much of which the nation was in lockdown for the prevention of Coronavirus spread. Despite this, 92% of sites provided a response. However, it cannot be subsequently inferred that any combined figures presented represent 92% 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. As such, any trend analysis factoring in the latest data must be treated with caution.

²² Landbanks for seven years are required for sand and gravel (NPPF Paragraph 207, f). The landbank is determined by comparing the permitted reserve and the estimate of the demand of mineral per annum.

- 3.1.7. The effect of this under-reporting will impact on sales and reserves figures as well as on the landbank.
- 3.1.8. A national aggregate survey is currently being undertaken (summer 2020), which hopes to capture all sales undertaken in 2019, including any site(s) that did not have the opportunity to respond due to lockdown restrictions. Any results provided via the National Survey will be considered and reviewed in the next edition of the LAA which will be published in 2021, which will include sales reported in 2020.

3.2. Sand & Gravel Permitted Reserves

Figure 4: Permitted Sand & Gravel Reserves in Greater Essex (2000 to 2019, 20 years)



Source: Essex County Council (2020).

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 0

- 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 68.42 million tonnes (Mt) in 2000, but at the end of 2019 stood at just 33.10Mt. This does however equate to an increase of 10% from the 2018 value (29.98Mt). The graph above also identifies the amount of reserve that was pending determination and/or legal agreements as of 31st December 2019, which is important in terms of understanding delivery of local plans and aggregate. The “pending reserve” is 5.5Mt across both Essex and Thurrock Mineral Planning Areas and may or may not be added to the permitted reserve in the future. If this 5.5Mt was added to the permitted reserve, it would total 38.60Mt.
- 3.2.2. This overall 20-year reduction in permitted reserves is the result of the rate of sales being higher than the rate of material being added to the reserve

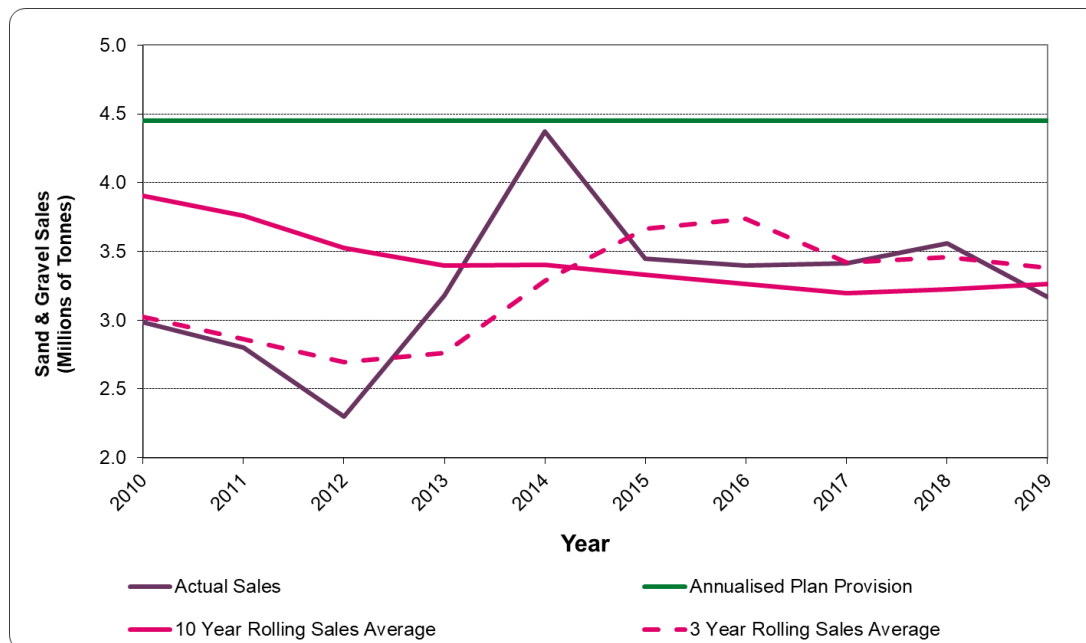
through planning permissions. This local reduction follows a national trend and is not considered to be a significant local planning issue as the sand and gravel landbank remains above the minimum seven years.

3.2.3. During 2019, 14 applications relating to sand and gravel extraction were determined, of which:

- Three²³ planning applications had their relevant legal agreements signed, which boosted the permitted reserve by 6.3Mt;
- Three were pending determination and/or pending subject to the signing of legal agreements and would increase the permitted reserve by 5.5Mt²⁴;
- Six applications were 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

Figure 5: Greater Essex Sales of Land Won Sand & Gravel (2000 to 2019, 20 years)



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

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 D.

3.3.1. In similarity to the reduction seen in the amount of permitted reserves, there has been a downward trend in sand and gravel sales across the previous 20 years, although this has not been uniform. Sales in 2000 were recorded as 4.04Mt but after fluctuating, in 2019 reduce to 3.17Mt. More recently, following a reduction in sales from a peak in 2014 (4.37Mt, just 2% below the annual apportionment, as set out in current Guidelines), sales had been

²³ ESS/19/17/BTE (Rayne Quarry), ESS/01/18/CHL (Sheepcotes farm) & ESS/03/18/BTE (Bradwell Quarry)

²⁴ ESS/17/18/TEN (Wivenhoe Quarry, 3.8Mt), 19/01799/FUL (Medina Farm, 0.2Mt) and 19/01709/FUL (Orsett Quarry & Walton Hall Farm, 1.5Mt)

generally increasing up until 2019, where they then reduce to a similar level experienced in 2013 (3.18Mt). However, as previously set out, survey returns were not received for all active sites due to staff being furloughed and as such the dataset is incomplete, and should therefore be considered an interim value, until such time all returns can be provided. Therefore, this apparent reduction in 2019 must be treated with caution and the reported level of sales is likely be lower than the level of sales that actually occurred.

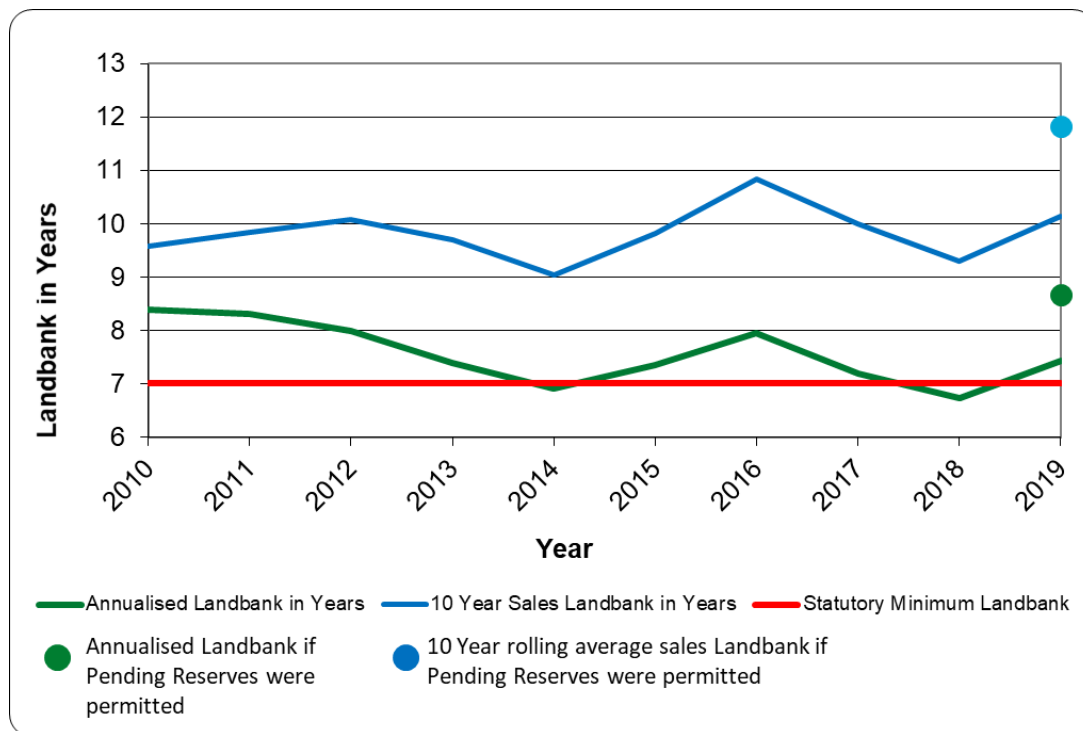
- 3.3.2. Nevertheless, it is a requirement for the LAA to report on the ten-year rolling average sales. The PPG also requires an assessment of the last three years of rolling average sales to help establish any particular trend in sales.
- 3.3.3. It should be noted that all of the average sales information will be impacted by the reduction in survey returns covering sales in 2019, which potentially serves to depress the overall averages. The following sales averages are considered to be interim as the intention is to update these in the next LAA when a more complete dataset will be obtainable. When comparing these interim 2019 sales (3.17Mt, as noted above), it can be seen that the current level of sales has fallen below all averages specified. The interim historic sales average (20 year, 2000-2019) is 3.64Mt. The interim ten-year rolling average sales figure decreased slightly to 3.26Mt, which would be an 8.4% reduction from the average of 3.56Mt recorded over the previously reported ten-year period (2009 to 2018). The interim three-year average sales figure (2017 to 2019) stands at 3.38Mt.
- 3.3.4. The annualised plan provision apportionment value is 28.7% higher than the 2010-19 ten-year rolling sales average value, with sales not exceeding the apportionment value since 2002 (when the apportionment stood at 4.55Mtpa). It is noted that the current ten-year rolling average sales figure currently includes the period of recession and austerity, which is acting to depress the average ten-year rolling average, relative to the current level of reported sales. Importantly, the interim sales in 2019 were 3.1% below the ten-year rolling average sales figure (2010 – 2019) of 3.26Mt. This has not occurred since 2014, and may be a result of the incomplete dataset, which would question the appropriateness of adopting that figure as a basis for mineral provision in Greater Essex.
- 3.3.5. When considering the three-year rolling average sales, it can be seen in Figure 5, that the sales of sand and gravel are decreasing to its lowest figure since 2014. This is again likely due to the under-reporting the actual sales within Greater Essex that occurred in 2019, due to the data collection impact by furlough (COVID-19).

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 is reported in years. This value is the time the landbank will last before it is exhausted, if no further mineral is permitted for extraction.
- 3.4.2. As previously noted, a caveat to this data is that 2019 data collection was impacted by furlough due to COVID-19 and therefore the calculated landbank for 2019 must be treated with caution.

- 3.4.3. As of December 2019, when using the annualised plan provision method of calculation, the landbank stood at 7.44 years, an increase compared to December 2018, when it stood at 6.74 years. When using the ten-year rolling average sales method, the landbank is calculated as being 10.14 years, compared to 9.30 years recorded in the previous year. Both values are presented in the figure below, which identifies the landbank value at the end of each year, as informed by the annual Aggregate Survey.

Figure 6: Greater Essex Landbank (2010 to 2019)²⁵



Source: Essex County Council (2020)

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 located in Annex D

- 3.4.4. It can be seen that both landbank calculation methods have similar peaks and troughs, although the ten-year sales method consistently results in a higher landbank than the apportionment method. Importantly, both show at least a seven year landbank as of 31 December 2019, with the prospect further improved when including the 'pending reserve' in the landbank calculation (Figure 6). When this 'pending' reserve of 5.5Mt is also considered, it would provide an 8.67-year annualised landbank and an 11.83-year landbank under the 10-year rolling average sales method of calculation. However, with survey returns being incomplete due to staff at certain sites being on furlough, there is the potential that sales have been underreported. If this is the case, the implication is that the landbank figure in the figure above will also be overreported.
- 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 have delayed the timetable for the Issues and Options (Reg 18) consultation, with no current update to the

²⁵ Prior to 2009 the apportionment was 4.55mtpa, and 4.45Mtpa from 2009 onwards.

timetable. The Essex Minerals and Waste Development Scheme will be updated in due course with a revised timetable for all required consultation events.

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. In order 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. As of 31 December 2019, an application on this allocated site has not been submitted. However, it should be noted that during 2019, a Screening Opinion request was submitted and considered with relevant pre-application advice provided (ref: ESS/92/19/TEN/SO), with an application pending validation in August 2020.

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 earlier aspects of this document, 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 concerns²⁶.

Figure 7: Marine Planning Areas Close to Greater Essex



Key: 3= East Inshore, 4 = East Offshore, 5 = South East Inshore & 6 = South Inshore (not applicable for the purposes of this report)
Source: Essex County Council (2020) 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 revision in similarity to terrestrial based Local Plans.

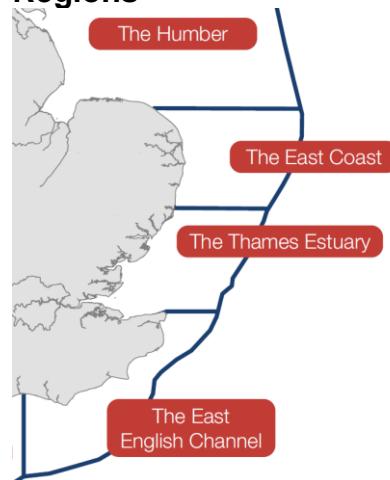
²⁶ Houses of Parliament PostNote Number 388 (Sept 2011) [‘Marine Planning’](#)

- 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 3,900km² 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 (AGG1, AGG2 and AGG3) in the emerging South East Marine Plan which effectively serve as safeguarding policies against the potential of other proposals e.g. offshore wind farm developments compromising the ability to extract known aggregate resources.
- 4.2.5. Both the East Inshore and Offshore plans were adopted in June 2014, but the South East plan is currently in an iterative process of option development. The [South East Inshore Marine Plan Draft for consultation](#) (and accompanying documents) were published In January 2020, with consultation closing in April 2020. This was the final stage of statutory public consultation before the Plan is submitted to the Secretary of State for Environment, Food and Rural Affairs for adoption.

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 2019

- 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 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.

Table 2: Wharves with the Potential to Serve Greater Essex (2019)

Thames Region	
Landing Port (Standard Name) / Locality	Wharves (Alternative Name(s))
Barking (London)	Barking, Docklands Wharf
Cliffe (Kent)	Alpha Wharf, Cliffe, North Sea Terminal
Dagenham (London)	Hanson/ARC Dagenham, Dagenham
Denton (London)	Denton, Denton B.A.D, Denton Sand, J Clubbs
Erith (London)	Erith, Pioneer Wharf
Felixstowe (Suffolk)	Felixstowe ²⁷
Greenhithe (London)	Greenhithe
Greenwich Wharves (London)	Angerstein, Blackwall Wharf, Charlton, Delta Wharf, Greenwich, Murphy's Wharf, Phoenix Wharf, Victoria Deep Wharf
London Docklands Wharves (mostly disused, (London)	Canning Town, Cargo Fleet Wharf, Clarence Wharf, East India Dock, Heron Quay, Millwall, Orchard Wharf, Peruvian Wharf, Rotherhithe, Silvertown, Thames Wharf, Thamesmead, Union Wharf, Victoria Wharf
Northfleet (Kent)	Northfleet, Northfleet Brett, Robin's Wharf
River Medway Wharves (Kent)	Ridham, Queenborough
Swale Wharves (Kent)	Rochester, Rochester Hanson, Sheerness
Tilbury (Thurrock)	Tilbury Stema
Thurrock (Thurrock)	Purfleet, Purfleet PAL, Thurrock, West Thurrock
East Coast Region	
Landing Port (Standard Name) / Locality	Wharves (Alternative Name(s))
Ipswich (Suffolk)	Hanson/ARC Ipswich, Brett Aggregates Ipswich
Lowestoft (Suffolk)	Lowestoft

Source: The Crown Estate: Marine Aggregates Summary of Statistics (2019)

²⁷ Felixstowe is counted as Thames Estuary (with the boundary with East Coast being roughly 27km north at Aldeburgh)

Map 4: Marine Dredging Areas in Proximity to Greater Essex (2019)



Source: As adapted from Crown Estate: [Marine Aggregates - Capability & Portfolio 2019](#) (2020) pages 8 and 9

Note: Each landing port will have a number of 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 204(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

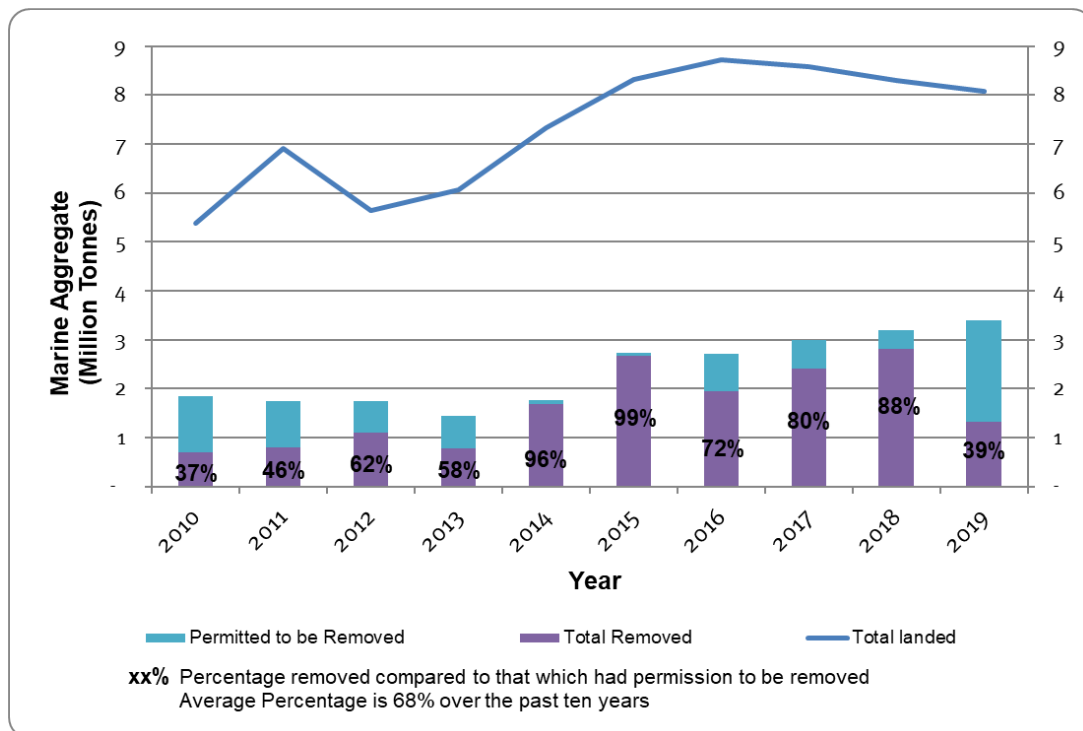
- 4.4.1. The Crown Estate collects statistics regarding marine-won mineral landed at its ports, although these do not define the mineral's final destination²⁸. Resultantly, the figures do not relate to the amount of marine-won aggregate *used* within any one location, rather it is the amount landed. 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 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

²⁸ 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.

38km (24 miles)²⁹, 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 necessary³⁰. BGS³¹ 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. Loads may travel further, but viability reduces rapidly the further afield it travels.

- 4.4.2. A Crown Estate Report³² identifies dredging and landing statistics in 2019, 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. It can be seen that a total of 1.3Mt of marine aggregate were removed from the sea bed in 2019, meaning 39% of the annually permitted extraction occurred. Comparatively, in 2018, 88% of the permitted removal occurred, with the last ten-year average being 68%.

Figure 9: Marine Aggregate Extraction in the Thames Estuary Region (2010 to 2019)



Source: Essex County Council (2020), as derived from data contained within the Marine Aggregates - The Crown Estate Licences, Summary Of Statistics (Crown Estate) reports between 2010 and [2019](#).

²⁹ [SustainableConcrete.org](https://www.sustainableconcrete.org) referenced the source as the Concrete Centre 2010

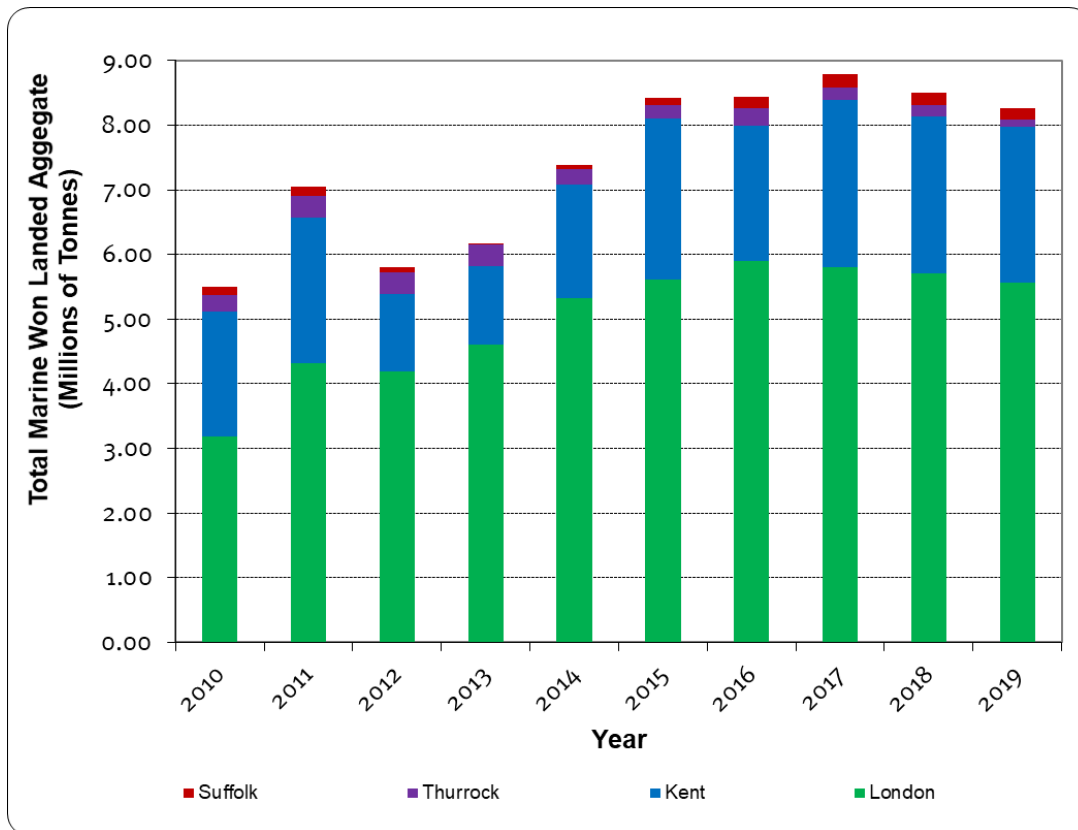
³⁰ [Mineral Products Association](https://www.mineralproductsassociation.org) - Aggregates

³¹ British Geological Survey Planning Matters Factsheet "Construction Aggregates", BGS, 2007

³² 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)

- 4.4.3. The above figure shows that there was a total of nearly 8.1Mt landed within the Thames Estuary area during 2019, which is significantly more than the total removed (1.3Mt). This means that a significant quantity (6.75Mt) 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.
- 4.4.4. According to the Crown Estates Summary of Statistics (2019), only 188 thousand tonnes were landed within the East Coast region in 2019³³, whilst just over 7.2Mt were removed through extraction. This means that a significant amount was extracted but landed in other regions.
- 4.4.5. 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 (2010 to 2019)



Source: Essex County Council (2020) as derived from The Crown Estate, Summary of Statistics, 2010 – [2019](#)
The data that informs this table is located in Table 12.

- 4.4.6. There has been a general increase in the amount of marine-won aggregate landed between 2010 and 2019, from 5.49Mt to 8.27Mt, representing an

³³ 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)

increase of 40%. Despite this general increase however, 2019 had a 3% decrease in tonnes landed when compared to 2018 figures.

- 4.4.7. When ports are analysed by administrative region, since 2010 there has been an overall increase in the marine-won aggregate coming into London ports, (75%). Kent, comprising of three wharves, has seen an increase of 24% since 2010, whilst during the same period, Suffolk comprising of a single wharf, has had a 65% increase in the amount of aggregate landed whereas Thurrock, comprising a single wharf, saw a decrease of 58%³⁴.

4.5. Planned Marine Contribution to Mineral Supply

- 4.5.1. Greater Essex has the potential to be served by the Thames and East Coast dredging regions. Licenses have been granted that 8.3 Million Tonnes (Mt) and 7.93Mt (respectively) can be extracted from these two regions annually. This would total 11.73Mt per annum from the two regions combined. It is stated by the Crown Estate³⁵ that at this rate, current estimates suggest there are 29 years of primary marine aggregate production permitted in the Thames Estuary and 15 years within the East Coast region. 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.

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 to monitor 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 Organisation (MMO). Land-won and marine-won aggregate are not always directly substitutable in any event³⁶. Similarly, it has been noted³⁷ that substituting land-won for marine aggregates is linked to economic circumstances and is ultimately market driven.

³⁴ Source of this data is derived from The Crown Estate, Summary of Statistics, 2010 – [2019](#)

³⁵ Crown Estate (2019) [Marine Aggregates – Capability and Portfolio](#)

³⁶ 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)

³⁷ Source: EoEAWP meeting (9 Feb 2019),

- 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 focussed around production capability 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 which incorporates the 'Agent of Change' Principle (para 182). 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 is currently developing a Wharf Baseline Capacity Study to further address 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. Should this be the case, this would necessitate the need to engage with the minerals industry, port authorities and district authorities where landings occur to establish whether marine aggregate supply is being constrained. This report will form part of the evidence base for the MLP Review.

5. IMPORTS & EXPORTS OF LAND-WON AGGREGATE

- 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 rock³⁸.
- 5.1.2. More recent analysis of the amount of sand and gravel used within Greater Essex compared to that exported is prevented, due to the need to protect commercial confidentiality and the small number of transshipment facilities/operators providing information via the annual aggregate survey.

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 final destination. Rail and water however provide the most effective long-distance transshipment opportunities, despite involving 'double handling' i.e. loading and unloading of aggregate on to lorries at each end.
- 5.2.2. There are six wharf (two of which are inactive) and five rail transshipment sites within Greater Essex³⁹ that facilitate long distance movement of aggregate. There is also some cross-boundary movement of aggregate by road into and from neighbouring areas, although exportation to London is predominantly by rail.

5.3. Approved & Pending Transshipment Applications in 2019

- 5.3.1. During February 2019, the Secretary of State approved an aggregate berth and rail terminal to manage up to 1.6Mt tonnes of mixed aggregate per annum at Tilbury in Thurrock⁴⁰. This facility would receive marine dredged aggregates and crushed rock aggregates. The permission also includes aggregate recycling and secondary aggregate facilities.

5.4. Imports & Exports of Aggregate

- 5.4.1. The Mineral Products Association (MPA) published an overview of construction and mineral products markets in the East of England⁴¹ in 2020. This included reference to inter-regional flow of mineral products at a regional level but was based on the 2014 National Aggregate Survey data. This helps to identify a difficulty in obtaining raw data regarding these

³⁸ From areas such as the East Midlands and limestone from the South West.

³⁹ 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.

⁴⁰ Ref: TR030003, Aggregate Berth, Port of Tilbury (Expansion) Order 2019, at Site of Former Tilbury Power Station.

⁴¹ Mineral Products Association (Aug 2020) published an overview of construction and mineral products markets in the East of England

resource types at a national level, which is amplified at the local reporting level of Greater Essex.

- 5.4.2. The import and export data reported below, is gathered through the Aggregate Survey undertaken by each Authority within the East of England Aggregate Working Party (EoEAWP). As such, 2019 data collection was impacted by furlough due to COVID-19 and therefore importation and exportation of sand and gravel is potentially under-reported. Therefore, any trend analysis factoring in the latest data must be treated with caution
- 5.4.3. Due to the number of operators of wharves and rail transshipment facilities within Greater Essex, it is not possible to provide data for each separate mode of transport, due to commercial confidentiality. Therefore, data in the following sections are an amalgamation of rail and wharf values.

Importation

- 5.4.4. The table below shows the amount, type and source of material that was imported in to Greater Essex during 2019.

Table 3: Imports of Aggregate (2019)

Total tonnage of aggregate imported into Greater Essex	Source of Material	Types of Material
1,598,869	Marine, South West England, Scotland, East Midlands, Belgium	For roadstone, railway ballast, concrete aggregate, armourstone, & other screened & graded aggregate or for constructional fill

Source: Annual collated Aggregate Survey data for calendar year 2019.

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

- 5.4.5. Nearly 1.6Mt of material was imported during 2019. When compared to the importation that occurred in 2018, approximately 482,000 tonnes (43%) more was accepted into Greater Essex, which shows a substantial increase. From review, it appears that the same number of facilities responded to the aggregate survey in 2019 when compared to those in 2018, despite the effects of Furlough, resulting from COVID-19 pandemic.

Exportation

- 5.4.6. Even when amalgamating exportation data for both types of transshipment facility, there remains too few operators reporting the exportation of material from Greater Essex to provide data for reasons of commercial confidentiality. Exportation still remains a relatively small value compared to that which was imported.
- 5.4.7. Of the information that was received, all of the material that was exported was destined for London. In similarity to 2018 and 2017, there was much less material exported than imported through Greater Essex transshipment sites in 2019.

5.5. Potential Maximum Annual Throughput

- 5.5.1. The annual Aggregate Survey endeavours to identify the potential maximum annual throughput of aggregates or estimate of such capacity at transshipment facilities. However, there were not enough responses provided to the survey to maintain commercial confidentiality and as such these figures cannot be reported.

6. SECONDARY & RECYCLED AGGREGATE

6.1. Introduction

- 6.1.1. Secondary and recycled aggregates are alternative sources of aggregate. '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. This can also be known as aggregate recovery. 'Secondary' aggregates are created as a by-product of a construction or industrial process⁴². 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.
- 6.1.2. The benefits for maximising the use of these are two-fold. Re-use and recycling reduces the need to extract primary material and also reduces the amount of waste needing disposal. This has clear economic, environmental and social benefits.
- 6.1.3. The Greater Essex Authorities positively encourage re-use and recycling of Construction, Demolition and Excavation (CD&E) waste through policies within their Development Plan. However, this does not mean increasing the importation of CD&E waste to be recycled would always be acceptable.
- 6.1.4. 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 was 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. Recycled Aggregate Throughput & Capacity

Essex & Southend-on-Sea

- 6.2.1. Supporting evidence to the Essex and Southend-on-Sea Waste Local Plan 2017 (WLP)⁴³ assessed construction, demolition and excavation (CD&E) waste recovery consented capacity in the Essex and Southend-on-Sea joint plan area to be 2.118Mtpa. The sites that process this waste are listed in Annex G. It is not known whether secondary aggregates are produced in any significant quantity in the joint Essex and Southend-on-Sea Plan area, but the lack of heavy industry suggests there will be little.
- 6.2.2. The most recently published Essex Authority Monitoring Report (17/18)⁴⁴ identifies a Plan area wide network of CD&E recovery facilities. However, a number of facilities have temporary permissions indicating that reliance cannot be placed solely on existing facilities to maintain production capacity.

⁴² 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.

⁴³ ECC/BPP (December 2015) SD 20 - Topic Paper 1 - Waste Capacity Gap Update

⁴⁴ Insert hyperlink when published

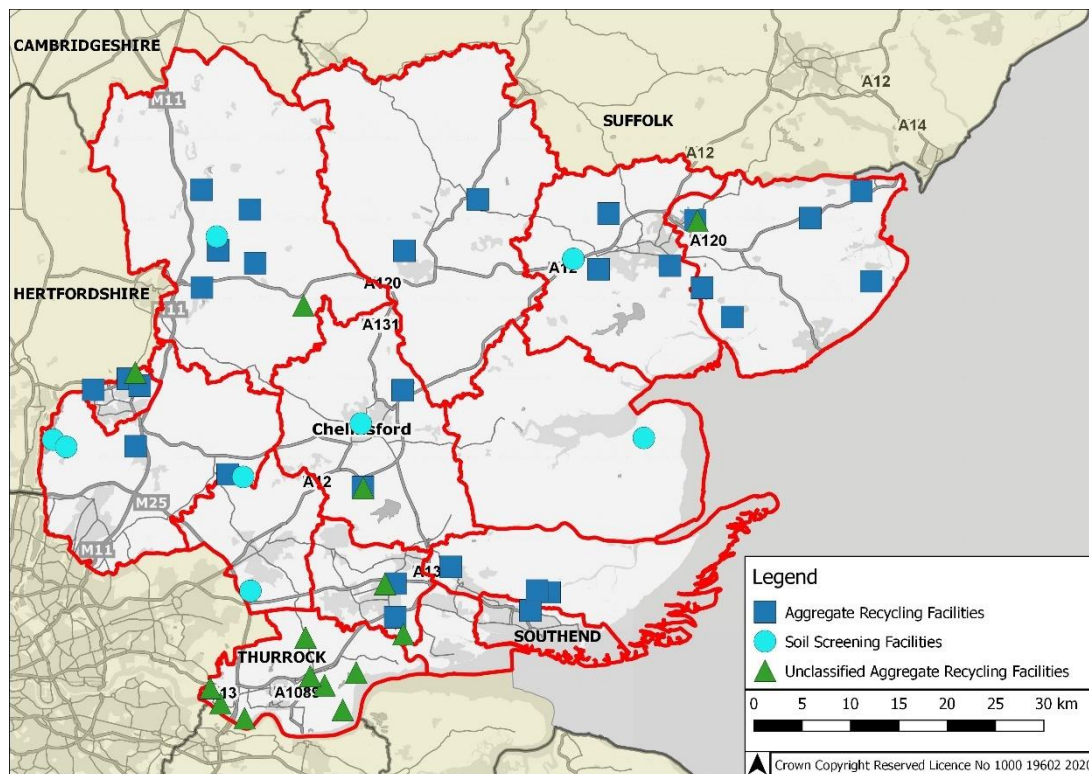
Therefore, additional capacity will continue to be encouraged where located in accordance with relevant mineral and waste Plan policies.

- 6.2.3. In addition, CD&E recovery allocations to provide additional capacity were included within the WLP. It is also important that existing and allocated sites continue to be safeguarded to prevent the operation of existing or future facilities becoming compromised due to their proximity to incompatible development which would act to reduce available capacity across the Plan area. The NPPF also provides support for the safeguarding of existing facilities from the future development of 'sensitive' uses through the 'Agent of Change' Principle (para 182).

Thurrock

- 6.2.4. With regard to Thurrock, there are eight authorised sites that process recycled aggregate as well as screen soils associated with this type of aggregate. Of these eight sites, three are associated with mineral and landfill sites and are thus of a temporary nature, and five are 'permanent' sites. However, one of the latter (Kiloughery at Botany Way, Purfleet) is within an area proposed for comprehensive redevelopment and thus is likely to be lost at some time in the future. There are no non-operational sites. These facilities are also detailed in Annex G.
- 6.2.5. The Thurrock Waste Management Capacity Needs Assessment Update 2010 indicated that Thurrock had an oversupply of CD&E recycling capacity to meet its own waste arisings. It was forecast that Thurrock would fall short of capacity before 2015/16 but that this could be addressed through the permitting of one or two new or retained sites. Since then the life of two of the temporary facilities has been extended such that this capacity shortfall will probably not occur as envisaged. Furthermore, any undersupply would be reduced by the extent of recycling carried out on development sites by mobile crushers and screens. This latter type of capacity will fluctuate markedly depending on the number and type of development sites within Thurrock at any one time with marked results on total capacity. It is recognised that a number of current recycling sites are likely to cease operation in the near future and there is a new facility proposed with consent but not yet operational at Tilbury2. Thurrock Council is to undertake a review of CD&E waste arisings and capacity to inform the next LAA.
- 6.2.6. In theory the provision made for primary aggregate provision could be reduced to a degree to reflect the availability of recycled materials. It is noteworthy that provision of the latter is likely to be greater than the regional apportionment for sand & gravel of 0.14Mtpa. However the CD&E recycling capacity from which this recycled material is derived is 'fueled' to a large degree by imports of waste, with London being in close proximity. Furthermore there is no agreed apportionment for this type of waste import. Thus for Thurrock it would be inappropriate to reduce primary aggregate provision on the basis of this supply option, as suggested by the NPPF, when the supply of recycled material is underpinned by imports of waste.

Map 5: Aggregate Recycling Facilities In Greater Essex (31 December 2019)



Source: Essex County Council (2020)

6.3. Approved & Pending Inert Recovery Facilities in 2019

- 6.3.1. As noted in Section 5.3 of this report, during February 2019, the Secretary of State approved an aggregate berth and rail terminal to manage up to 1.6Mt tonnes of mixed aggregate per annum at Tilbury in Thurrock⁴⁵, which would include aggregate recycling and secondary aggregate facilities. However, the total capacity/throughput of the proposed recycling and secondary facilities is currently unknown.
- 6.3.2. In addition, there were three applications approved by Essex MPA during the same period. Two of these did not increase CD&E recovery capacity, but the new temporary site at Newport Chalk Quarry⁴⁶ would provide an additional 28,500tpa of CD&E recovery capacity during a seven-year period (totalling 200,000 tonnes). As of 31st December 2019, there was one pending application in Essex which includes inert waste recovery at Widdington Pit.

6.4. Potential Maximum Annual Throughput

- 6.4.1. The annual Aggregate Survey endeavours to identify the potential maximum annual throughput of aggregates or estimates of such capacity at CD&E Recovery facilities. However, there were not enough responses provided to maintain commercial confidentiality and as such data cannot be reported.

⁴⁵ Ref: TR030003, Construction Materials and Aggregate Terminal, (CMAT) Port of Tilbury (Expansion) Order 2019, at Site of Former Tilbury Power Station.

⁴⁶ Ref: ESS/42/18/UTT

6.5. Conclusion

- 6.5.1. Within Greater Essex, there is a well-established network of CD&E waste recycling/recovery facilities. Additional capacity will continue to be encouraged when located in accordance with relevant mineral and waste plan policies. Such capacity is coming forward, as evidence by the new permissions this year, to ensure the continued production of recycled aggregates and to maintain the diversity of aggregate variety/sources,
- 6.5.2. It is not known whether secondary aggregates are produced in any significant quantity within Greater Essex, but the lack of heavy industry, in Essex at least, suggests that there will be little.

7. CONCLUSION

- 7.1.1. The Aggregate Survey is undertaken annually in Greater Essex to provide primary sales data for collation and reporting through the Local Aggregate Assessment. The Aggregate Survey that informs this LAA was undertaken during March to May 2020, when there was the potential for mineral operator staff to be furloughed. Despite this, 92% of sites provided a response.
- 7.1.2. However, it cannot be subsequently inferred that any combined figures presented represent 92% 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 is currently being undertaken (summer 2020), which hopes to capture all sales undertaken in 2019, including any sites that did not have the opportunity to respond due to lockdown restrictions. Any results provided via the National Survey will be considered and reviewed in the next edition of the LAA which will be published in 2021, looking at the sales undertaken in 2020.
- 7.1.4. With this in mind, as of 31 December 2019, Greater Essex has sufficient permitted reserve and allocations to satisfy the assessed sand and gravel mineral requirement when considering both the apportionment (7.44 years) and the 10-year rolling sales method of calculation (10.14 years). Importantly, there was also 5.5 Million tonnes (Mt) of pending reserves, as of 31st December 2019, awaiting determination through the Development Management system, which further improves the situation.
- 7.1.5. Current total estimations of sales of sand and gravel in 2019 in Greater Essex were recorded as 3.17 Mt. 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 particular trend in sales. Such an assessment shows that the sales of sand and gravel has increased since 2015 (with the exception of the interim 2019 data).
- 7.1.6. Greater Essex is served by the Thames Estuary and East Coast dredging regions. In combination, 8.57Mt of material was removed from the seabed in 2019 in these areas. This was an increase of 1.51Mt compared to that removed in 2018. Licenses have been granted that permit the extraction of a total of 11.73Mt per annum from the Thames and East Coast regions combined. At this rate, current estimates suggest there are 29 years of primary marine aggregate production permitted in the Thames Estuary and 15 years within the East Coast region. The Marine Plan covering this area of sea is the South East Marine Plan which is currently in production. The final statutory consultation stage was completed in April 2020, prior to it being submitted to the Secretary of State for Environment, Food and Rural Affairs for adoption.

- 7.1.7. There was one permission for additional processing capacity of up to 1.6Mtpa for both rail and wharf facilities, on the site of the former Tilbury Power Station. It is anticipated this would process marine dredged aggregate and crushed rock aggregates together with recycled and secondary aggregate. The proportional split between these four uses, remains unknown at present.
- 7.1.8. With regard to recycled aggregate production, it has been assessed that construction, demolition and excavation (CD&E) waste recovery consented capacity in the Essex and Southend-on-Sea joint plan area to be 2.118Mtpa in 2014. There is additional CD&E waste capacity within Thurrock, which also make a contribution to the total amount of recycled aggregate available within Greater Essex. During 2019, two permissions were granted that would increase the inert recovery capacity in Greater Essex by at least an additional 0.2Mtpa, which would therefore provide a potential total capacity of approximately 2.3Mtpa if these facilities were developed.. Across the whole of the Greater Essex Area a number of aggregate recycling sites are co-located with other minerals and/or waste sites and are therefore temporary in nature. Therefore, additional capacity will continue to be encouraged where located in accordance with relevant mineral and waste Plan policies.
- 7.1.9. 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.
- 7.1.10. It is not known whether secondary aggregates are produced in any significant quantity, but the lack of heavy industry, in Essex at least, suggests there will be little.
- 7.1.11. 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.
- 7.1.12. The Mineral Planning Authorities will also continue to ensure that existing wharf and rail transshipment facilities are safeguarded from incompatible development to ensure their continued operation.



Appendices



Essex County Council

ANNEX A PRIMARY EXTRACTION FACILITIES WITHIN GREATER ESSEX

Table 4: Permitted Primary Aggregate Sites in Essex (31 December 2019)

Operator	Site Name	Cessation Date for Planning Permission	District /Borough	Grid Ref / GIS Co-Ordinates (Approx.)
Active Sand & Gravel Quarries with Permitted Reserves				
Brett Aggregates	Alresford Creek, Alresford	2042	Tendring	TM 063 200
G&B Finch Ltd	Asheldham Quarry, Southminster	2029	Maldon	TL 973 014
Hanson Aggregates	Birch Quarry, Birch	2018	Colchester	TL 927 193
Frank Lyons Plant Services Ltd	Blackley Quarry, Great Leighs	2045	Chelmsford	TL 728 191
Blackwater Aggregates	Bradwell Quarry, Silver End	2022	Braintree	TL 819 217
Brett Aggregates	Brightlingsea Quarry	2026	Tendring	TM 070 188
Hanson Aggregates	Bulls Lodge Quarry, Boreham	Permission CHL/1019/87 (Airfield) =2020 Permission CHL/1890/87 (Park & Brick Farms) = 2030	Chelmsford	TL 746 108
SRC Ltd	Cobbs Farm, Goldhanger	2020 ⁴⁷	Maldon	TL 893 085
Tarmac Ltd	Colchester Quarry, (aka Stanway Quarry)	2042	Colchester	TL 954 227
Brice Aggregates	Colemans Quarry, Witham	2036	Braintree	TL 838 156
SRC Ltd	Crown Quarry, Ardleigh	2028	Tendring	TM 025 295

⁴⁷ At the time of writing (August 2020) there are three undetermined applications for the Cobbs Farm, which if granted would allow an extension of time for extraction until 20th September 2021. This will be updated in future LAAs.

Operator	Site Name	Cessation Date for Planning Permission	District /Borough	Grid Ref / GIS Co-Ordinates (Approx.)
Edviron Ltd	Crumps Farm, Gt Canfield	2031	Uttlesford	TL 584 211
Dewicks	Curry Farm, Bradwell-on-Sea	End on site 2023, restoration by 2024	Maldon	TL 993 059
SRC Ltd	Highwood Quarry, Little Easton	2026	Uttlesford	TL 598 224
Brett Aggregates	Lufkins Farm, Thorrington Road	Commenced January 2019 cessation of extraction January 2022.	Tendring	X - 609625.1 Y - 222106.3
Danbury Aggregates	Royal Oak, Danbury	2029	Chelmsford	TL 805 050
Danbury Aggregates	St Cleres Pit, Danbury	2019 ⁴⁸	Chelmsford	TL 763 058
Tarmac Ltd	Wivenhoe Quarry, Wivenhoe	No extraction occurring on site. Current restoration end date is 30 th June 2020 ⁴⁹ .	Colchester	TM 046 224
Operational Sand & Gravel and Silica Sand Sites with Permitted Reserves				
SRC Ltd	Martells Quarry, Ardleigh	2026 ⁵⁰	Tendring	TM 049 283
Total Active Extraction Facilities in Essex (Sand & Gravel): Of which, is also extracting Silica Sand:				19 1
Sand & Gravel Quarries with Permitted Reserves (Not Actively Extracting Mineral)				
Gent Fairhead & Co Ltd	Rivenhall Airfield (Waste Facility)	Planning Permission for waste management ESS/34/15/BTE was granted in February 2016 includes 100 thousand tonnes material to be extracted prior to development.	Braintree	X - 581819 Y - 221749

⁴⁸ ESS/31/16/CHL requires extraction to cease 31/7/2019 and restoration to be completed by 2022. There is de-minimus extraction (not active) predominantly an infill/minerals processing site. The site is permitted to process the as dug material from Royal Oak, but there remains workable deposits of mineral, which are expected to be extracted within the next two years.

⁴⁹ At the time of writing (August 2020) there is no active extraction at Wivenhoe quarry. However, there is an application ([ESS/80/20/TEN](#)) currently being determined, which is for restoration only: there would be no further extraction.

⁵⁰ During 2019, a Screening Opinion request was submitted and considered with relevant pre-application advice provided (ref: ESS/92/19/TEN/SO), with an application pending validation in August 2020

Operator	Site Name	Cessation Date for Planning Permission	District /Borough	Grid Ref / GIS Co-Ordinates (Approx.)
R W Mitchell & Sons	Elmstead Hall (AKA Elmstead Reservoir)	Not Yet Commenced, Commencement required within 5 years from the approval date of ESS/24/15/TEN (by Nov 2021), cessation 48 months after commencement	Tendring	X – 605769 Y - 225753
SRC	Sheepcotes	Not yet commenced, pre-commencement conditions awaiting discharge. Commencement required within 3 years from the approval date of ESS/01/18/CHL (by Aug 2022), cessation of extraction 5 years after commencement.	Chelmsford	X – 571862 Y - 213954
Tarmac	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
JJ Prior Ltd	Fingringhoe Quarry, Fingringhoe	2042 Extraction has ceased on site	Colchester	TM 042 210
Widdington Recycling	Widdington Pit, Widdington	2022 (with restoration by 2023) Not actively extracting mineral	Uttlesford	TL 528 310
Facilities That Ceased Actively Extracting Minerals during 2019				
Brett Aggregates	Elsenham Quarry, Elsenham	Closed - and containing no further workable permitted reserves and no saleable stockpiles	Uttlesford	TL 545 267
New/Extension Site with Applications Pending Determination/Legal Agreements, Which If Permitted, Would Provide Additional Sand and Gravel Reserves.				
Tarmac Ltd	Wivenhoe Quarry, Wivenhoe	Resolution to approve, subject to legal agreements (ref ESS/17/18/TEN)	Colchester	TM 046 224

Operator	Site Name	Cessation Date for Planning Permission	District /Borough	Grid Ref / GIS Co-Ordinates (Approx.)
Dormant Sand & Gravel Quarries				
S.R. Finch	Straits Mill	N/A	Braintree	TL 768 246
-	Alton Park	N/A	Tendring	X – 615905 Y - 214146
-	Hodgnells Farm	N/A	Tendring	X – 620742 Y - 219329
Devernish Ltd	Hambro Hill	N/A	Rochford	TQ 814 919
Total sites with permitted reserves, but not actively extracting mineral:				12

Source: Essex County Council (2020), as derived from the Aggregate Survey (2020)
 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 5: Permitted Primary Aggregate Sites in Thurrock (31 December 2019)

Operator	Site Name	Cessation Date for Planning Permission	District /Borough	Grid Ref / GIS Co-Ordinates (Approx.)
Operational Sand & Gravel Quarries with Permitted Reserves				
Rio Aggregates	Dansand Quarry, Stanford Road, Orsett	2025	Thurrock	TQ 650 810
Ingrebourne Valley Ltd	Mill House Farm, West Tilbury	2020	Thurrock	TQ 658 791
Ingrebourne Valley Ltd	Orsett Quarry, Stanford le Hope	2042	Thurrock	TQ 677 807
S. Walsh & Sons Ltd	East Tilbury Quarry	2021	Thurrock	TQ 687 778
Total Active Extraction Facilities in Thurrock:				4
Non-Operational Sand & Gravel Quarries with Permitted Reserves				
None				

New/Extension Site with Applications Pending Determination/Legal Agreements, Which If Permitted, Would Provide Additional Sand and Gravel Reserves				
Ingrebourne Valley Ltd	Medina Farm, South Ockendon	Pending Determination	Thurrock	TQ 574 838
Ingrebourne Valley Ltd	Orsett Quarry & Walton Hall Farm, Linford	Pending Determination	Thurrock	TQ 677 807

Source: As derived from Thurrock Council & the Aggregate Survey (2020)

Table 6: Permitted Mineral Transshipment Sites in Essex (31 December 2019)

Operator	Site Name / Address	District/Borough	Grid Ref / GIS Co-Ordinates (Approx.)
Permitted Wharfs			
JJ Prior Ltd	Ballast Quay, Ballast Quay Road Fingringhoe Colchester CO5 7DB (Exporting until stockpiles exhausted)	Colchester	TM 043 210
Potential Wharfs (as Specified in the MLP)			
Hutchison Ports	Port of Harwich (F4) Parkeston Harwich CO12 4SR	Tendring	TM 238 326
Permitted Rail Depots			
Aggregate Industries UK Ltd (Receiving Depot)	Chelmsford Rail Depot Brook Street Chelmsford CM1 1UQ	Chelmsford	TL 712 074
Tarmac Ltd (Receiving and loading point)	Marks Tey Rail Depot North Lane Marks Tey Colchester CO6 1ED	Colchester	TL 918 240
Aggregate Industries UK Ltd / Tarmac Ltd (Both Receiving Depots)	Harlow Rail Depot (x2) Station Approach, Harlow CM20 2EL	Harlow	TL 470 122
Total Transshipment Facilities in Essex		(Permitted):	5
“ “ “ “ “		(Potential)	1

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

Table 7: Permitted Mineral Transshipment Sites in Thurrock (31 December 2019)

Operator	Site Name / Address	District/Borough	Grid Ref / GIS Co-Ordinates (Approx.)
Permitted Wharfs			
Aggregate Industries UK Ltd	DP World Berth 7, London Gateway Drive, Stanford Le Hope, SS17 9PD	Thurrock	TQ 719 823
Tarmac, Thurrock Sand & Gravel Ltd	Thurrock Marine Terminal, Oliver Close, West Thurrock Grays, RM20 3EE	Thurrock	TQ 576 771
Cemex/Hanson	Purfleet Wharf (Inactive) Aveley RM19 1RP	Thurrock	TQ 564 775
Stema Shipping Ltd	1 Berth, Tilbury Docks, Tilbury RM18 7HL	Thurrock	TQ 638 759
Tilbury 2	Tilbury 2 Power Station, Fort Road Tilbury RM18 7NR	Thurrock	TQ 647 752
Permitted Wharfs			
Aggregate Industries UK Ltd	Purfleet Rail Depot Jurgens Road Off London Road Purfleet RM19 1UA	Thurrock	TQ 566 771
Port of Tilbury	Port of Tilbury, Bulk Rail Terminal Tilbury RM18 7EH	Thurrock	TQ 630 765
Tilbury 2	Tilbury 2 Power Station, Fort Road Tilbury RM18 7NR	Thurrock	TQ 647 752
Total Transshipment Facilities in Thurrock			8

Source: As derived from Thurrock Council & the Aggregate Survey (2020)

ANNEX B PERMITTED PROCESSING PLANTS IN GREATER ESSEX (DEC 2019)

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority

		Plants Permitted on Site ⁵¹					
Operator	Quarry / Transportation Facility	Primary Processing	Bagging	Concrete / Mortar Batching	Coated Roadstone	Aggregate Recycling Facility ⁵²	Transshipment Facility ⁵³
Aggregate Industries	Martells Quarry, Ardleigh	✓					
	Chelmsford Rail Depot (MLP – F1) (Receiving Depot)						✓
	Harlow Mill Rail Station (MLP – F2) (Receiving Depot)			✓	✓		✓
	Essex Regiment Way, Chelmsford				✓		
Blackwater Aggregates	Bradwell Quarry, Bradwell/Kelvedon	✓	✓	✓			
Brett Aggregates	Alresford Creek, Alresford	✓		✓ (Permitted by LPA not MPA)			

⁵¹ This only includes processing plants on extraction and transshipment 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).

⁵² There are additional Aggregate Recycling Facilities, which are not co-located with Mineral Extraction/Transshipment Sites. These can be viewed in Annex G.

⁵³ As specified by Network Rail in [Rail served aggregates and minerals handling locations](#) (2016)

Annex B: Permitted Processing Plants in Greater Essex (Dec 2019)

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority

Operator	Quarry / Transportation Facility	Plants Permitted on Site ⁵¹					
		Primary Processing	Bagging	Concrete / Mortar Batching	Coated Roadstone	Aggregate Recycling Facility ⁵²	Transshipment Facility ⁵³
	Brightlingsea Quarry, Brightlingsea	✓					
	Elsenham Quarry, Elsenham	✓				✓	
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	✓		✓			
Hanson Aggregates	Birch Quarry, Birch	✓		✓			
	Bulls Lodge Quarry, Boreham	✓	✓	✓	✓	✓ (Operated Separately by Eurovia)	
JJ Prior Ltd	Fingringhoe Quarry, Fingringhoe						✓ (MLP - D2)
Newport Chalks	Newport Quarry, Newport					✓ (Non-Operational, with Planning)	

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority

		Plants Permitted on Site ⁵¹					
Operator	Quarry / Transportation Facility	Primary Processing	Bagging	Concrete / Mortar Batching	Coated Roadstone	Aggregate Recycling Facility ⁵²	Transshipment Facility ⁵³
						Permission ESS/42/18/UTT)	
Tarmac Ltd	Colchester Quarry, Stanway	✓		✓	✓	✓	
	Harlow Mill Rail Station (MLP – F2) (Receiving Depot)			✓	✓		✓
Tarmac Ltd	Marks Tey Rail Depot (MLP – F3) (Receiving and loading point)						✓
S Walsh and Sons Ltd	East Tilbury Quarry					✓	
Sewells Reservoir Construction	Cobbs Farm, Goldhanger	✓					
	Crown Quarry, Ardleigh	✓	✓ Pending retrospective determination (ESS/07/20/TEN)	✓		✓	
	Highwood Quarry, Little Easton	✓	✓	✓		✓	
	Port or Harwich (MLP – F4)						✓

Annex B: Permitted Processing Plants in Greater Essex (Dec 2019)

All sites in this table are located at exiting mineral facilities, safeguarded by the Mineral Planning Authority

Operator	Quarry / Transportation Facility	Plants Permitted on Site ⁵¹					
		Primary Processing	Bagging	Concrete / Mortar Batching	Coated Roadstone	Aggregate Recycling Facility ⁵²	Transshipment Facility ⁵³
	Sutton Wharf, Rochford				✓		
TOTAL =		15	4	10	6	8	6

Source: Essex County Council (2020)

ANNEX C PERMITTED RESERVES IN GREATER ESSEX (2000 - 2019)

Year	Permitted Sand and Gravel Reserves in Greater Essex, (Millions of Tonnes)
2000	68.42
2001	68.48
2002	57.69
2003	59.64
2004	54.60
2005	51.00
2006	50.12
2007	46.68
2008	39.19
2009	36.71
2010	37.36
2011	37.01
2012	35.50
2013	32.88

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 (2000 to 2019, page 10.

ANNEX D APPORTIONMENT & LANDBANK DATA

Table 8: Greater Essex Annual Sand & Gravel Apportionment Figures

Year Set	Period Covered by Guidelines	Apportionment (Millions of Tonnes Per Annum)
1989	1989 - 1994	6.9Mt for Greater Essex
1994	1994 - 2003	6.2Mt for Greater Essex
2003	2001 - 2016	4.55Mtpa (Essex = 4.41Mtpa, Thurrock = 0.14Mtpa)
2009	2005 - 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 at 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 9: Annualised Landbank held in Greater Essex (2010 – 2019)

Year	Permitted Reserve (a)	Annualised Plan Provision in Mt (b)	Landbank in Years (a/b)
2010	37.36Mt	4.45Mt	8.40
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
2019 Permitted & Pending Reserve*	33.10Mt (permitted reserve) + 5.5Mt (pending reserve) = 38.60*	4.45Mt	8.67

Source: East of England Annual Monitoring Reports;

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 (2010 to 2019), page 13.

Table 10: 10-Year Average Rolling Sales Landbank held in Greater Essex (2010 to 2019)

Year	Permitted Reserve (a)	10-year Average Rolling Sales of Sand and Gravel (b) (2010 to 2019)	Landbank in Years (a/b)
2010	37.36Mt	3.90	9.57
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
2019 Permitted & Pending Reserve*	33.10Mt (permitted reserve) + 5.5Mt (pending reserve) = 38.60*	3.26	11.83

Source: Essex County Council (2020);

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 (2010 to 2019), page 13.

ANNEX E SALES DATA

Table 11: Sales of Land Won Sand & Gravel within Greater Essex (2000 – 2019) (in millions of Tonnes)

Year	Sand and Gravel Sales in Greater Essex	
2000	4.04	
2001	4.23	
2002	4.66	
2003	4.47	
2004	4.30	
2005	4.14	
2006	4.07	
2007	4.09	
2008	3.29	
2009	2.79	
2010	2.99	
2011	2.80	
2012	2.30	
2013	3.18	
2014	4.37	
2015	3.45	
2016	3.40	
2017	3.41	
2018	3.56	
2019	3.17	
Average Annual Sales 2000 to 2019 (20 years)		3.69Mt
10 Year Rolling Average Annual Sales (2010 to 2019)		3.26Mt
3 Year Rolling Average Sales (2017 to 2019)		3.38Mt

Source: Essex County Council Annual Monitoring Reports and East of England Aggregates Working Party Annual Monitoring Reports;

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 (2000 to 2019, 20 years), page 11

ANNEX F MARINE-WON MINERALS

Table 12: Marine Won Mineral Landed in Ports with The Capacity to Serve Greater Essex In Tonnes (2010 to 2019)

	London	Thurrock	Kent	Suffolk	Total
2010	3,178,872	255,527	1,944,763	114,468	5,493,630
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

Source: The Crown Estate, Summary of Statistics, 2010 – [2019](#)

Supporting: Figure 10 Marine-Won Mineral Landed in Ports that Serve Greater Essex (2010 to 2019), page 20

ANNEX G AGGREGATE RECYCLING FACILITIES WITHIN GREATER ESSEX 2019

Table 13: Essex & Southend-on-Sea Aggregate Waste Recovery Facilities

SITE NAME	SITE ADDRESS	SPECIFIC FACILITY TYPE	Capacity (Tonnes per annum)	END DATE	Safeguarded
Pitsea	Pitsea Hall Lane Pitsea Basildon Essex SS16 4UH	Aggregate Recycling Facility	208,000	31/12/2025	Yes
Whites Yard	Archers Fields Close, Basildon, SS13 1DN	Aggregate Recycling Facility	25,000	Permanent	Yes
Hallsford Bridge	Plot 9 Hallsford Bridge Industrial Estate Stondon Road Stondon Massey Ongar Essex CM5 9RB	Aggregate Recycling Facility	2,146	Permanent	Yes
Halstead Highway Depot	Fenn Road, Halstead, CO9 2HG	Aggregate Recycling Facility	1,342	Permanent	No
The Yard	New Parsonage Lane, Gt Saling, Braintree CM7 5ER	Aggregate Recycling Facility		Permanent	No
Bulls Lodge	Bulls Lodge Quarry, Generals Lane, Boreham, Chelmsford, CM3 3HR	Aggregate Recycling Facility	100,000	30/06/2030	Yes
C A Blackwell (Contracts) Ltd,	The Works, Stock Road, West Hanningfield, Chelmsford, Essex, CM2 8LA	Aggregate Recycling Facility		Permanent	No
Colchester Quarry (Colchester Recycling)	Warren Lane, Stanway, Colchester, CO3 0NN	Aggregate Recycling Facility	190,000	31/12/2037	Yes

SITE NAME	SITE ADDRESS	SPECIFIC FACILITY TYPE	Capacity (Tonnes per annum)	END DATE	Safeguarded
Haven Road	Haven Quay Haven Road Colchester Essex CO13 0DA	Aggregate Recycling Facility	75,000	Permanent	Yes
Patterns Yard	Patterns Yard Nayland Road West Bergholt Colchester	Aggregate Recycling Facility	300	Permanent	Yes
Wivenhoe Quarry,	Alresford Road Wivenhoe Colchester Essex CO7 9JY	Aggregate Recycling Facility	50,000	31/12/2018	Yes
Evans Thornwood	Marlow, High Road, Thornwood Common, Epping, CM16 6LU	Aggregate Recycling Facility	77,178	Permanent	No
Harlow Mill	Aggregate Depot, Station Approach, Old Harlow CM20 2EL	Aggregate Recycling Facility		Permanent	Yes
Hill Demolition & Skip Hire	1-3 Edinburgh Place Edinburgh Way Harlow Essex CM20 2DJ	Aggregate Recycling Facility	4,306	Permanent	No
Royden Lea Farm	Roydon Road, Harlow, CM19 5DU	Aggregate Recycling Facility	23,444	Unknown	No
Cottis Yard Recycling Facility	Cottis Yard, Welton Way, Rochford SS4 1LB	Aggregate Recycling Facility	13,303	Permanent	No
Franklin Hire	Unit 1, Rawreth Industrial Estate Rawreth Lane, Rayleigh	Aggregate Recycling Facility	1,711	Permanent	No

SITE NAME	SITE ADDRESS	SPECIFIC FACILITY TYPE	Capacity (Tonnes per annum)	END DATE	Safeguarded
	Essex, SS6 9RL				
JKS	Roach Valley Works, 53 Purdey's Way, Purdey's Industrial Estate Rochford, Essex, SS4 1LZ	Aggregate Recycling Facility	160,000	Permanent	Yes
Stock Road Recycling Facility	25 Stock Rd, Southend-on-Sea SS2 5QF	Aggregate Recycling Facility	33,447	Unknown	No
Devereaux Farm,	Walton Road, Kirby Le Soken, CO13 0DA	Aggregate Recycling Facility	54,916	Permanent	No
Essex Recycling Wix	Lane Farm, Harwich Road, Wix CO11 2SA	Aggregate Recycling Facility	50,000	Permanent	Yes
EWD Carters Haulage Yard	Morses Lane Industrial Estate Brightlingsea Colchester Essex CO7 0SD	Aggregate Recycling Facility	75,000	Permanent	Yes
Martell's	Slough Lane, Ardleigh, Colchester, Essex, CO7 7RU	Aggregate Recycling Facility	10,000	Permanent	Yes
Parkeston Quay	Land at Parkeston Quay, West Dock Road, Harwich, Essex	Aggregate Recycling Facility	350,000	Permanent	Yes
Haigh Recycling	Armigers Farm, Thaxted, Essex, CM6 2NN	Aggregate Recycling Facility	100,000	Permanent	Yes
Land Adjacent to Taylors Farm	Takeley Essex CM22 6LY	Aggregate Recycling Facility		Permanent	Yes
Little Easton - Highwood Quarry	Little Easton Airfield Little Easton	Aggregate Recycling Facility	70,000	25/03/2027	Yes

SITE NAME	SITE ADDRESS	SPECIFIC FACILITY TYPE	Capacity (Tonnes per annum)	END DATE	Safeguarded
	Gt Dunmow CM6 2BB				
Loppingdales	Gaunts End, Elsenham Bishops Stortford CM22 6DR	Aggregate Recycling Facility	90,000	Permanent	Yes
Widdington Pit,	Hollow Road Widdington Saffron Walden Essex CB11 3SL	Aggregate Recycling Facility	65,000	01/01/2023	Yes
ARC Total			225,000		30

Source: Essex County Council (2019) [Authority Monitoring report 1 April 2017 – 31 March 2018](#)

Table 14: Operational Soil Screening Facility List

SITE NAME	SITE ADDRESS	SPECIFIC FACILITY TYPE	Capacity (Tonnes per annum)	END DATE	Safeguarded
Codham Hall Farm	Unit A Codham Hall Lane Gt Warley Brentwood CM13 3JT	Soil Screening	80,000	30/08/2017	Yes
Woolmongers Lane BRW	The Elms Woolmongers Lane Blackmore, Epping Forest Essex CM4 0JX	Soil Screening	9,675	Permanent	Yes
Bateman's Farm,	Great Leighs, Chelmsford, Essex, CM1 2QF	Soil Screening	163,657	Permanent	Yes
Mason Trucking Company	Elm Farm, Elm Ln, Marks Tey, Colchester CO6 1HU	Soil Screening	21,664		No
Harvey Automobile Engineering	Payne's Lane, Nazing, Waltham Abbey EN9 2EX	Soil Screening	20,949	Permanent	Yes
J & R Haulage	Unit 1C , Birchwood Industrial Estate Hoe lane, Nazeing EN9 2RJ	Soil Screening	16,810		No
Curry Farm	New House Mill End Bradwell-Juxta-Mare, Maldon, CM0 7HL	Soil Screening	15,000	31/12/2018 Restoration by 31/12/2019	Yes
Elsenham Recycling Centre,	Hall Rd., Elsenham, Bishops Stortford, CM22 6DJ	Soil Screening	30,000	10/05/2029	Yes
Soil Screening Total			277,763		8

Source: Essex County Council (2019) [Authority Monitoring report 1 April 2017 – 31 March 2018](#)

Table 15: Operational Unspecified Inert Recovery Facility List

SITE NAME	SITE ADDRESS	SPECIFIC FACILITY TYPE	Capacity (Tonnes per annum)	END DATE	Safeguarded
Terminus Drive	Pitsea Hall Lane Pitsea Basildon Essex SS16 4UH	Unclassified Aggregate Recycling Facilities	49,000	Permanent	Yes
TLM Management	2 Courtauld House Cranes Close Basildon Essex SS14 3JB	Unclassified Aggregate Recycling Facilities	14,791		No
Compounds P & Q,	Templewood Estate Stock Road West Hanningfield Chelmsford Essex CM2 8LP	Unclassified Aggregate Recycling Facilities	81		No
GBN - Harlow	Maple River Industrial Estate Off Riverway Harlow CM20 2DP	Unclassified Aggregate Recycling Facilities	24,783		No
Martells	Unit D Martells Industrial Estate Ardleigh Colchester	Unclassified Aggregate Recycling Facilities	37,989		Yes
Mawkinherds Farm	Mawkinherds Farm, Barnston, Great Dunmow CM6 1ND	Unclassified Aggregate Recycling Facilities	17,288		No
Unclassified Aggregate Recycling Facilities Total			94,938		6

Source: Essex County Council (2019) [Authority Monitoring report 1 April 2017 – 31 March 2018](#)

Table 16: Thurrock CD&E Aggregate Recovery Facilities

SITE NAME	SITE ADDRESS	SPECIFIC FACILITY TYPE	Capacity (Tonnes per annum)	END DATE
Clearserve Rainbow Shaw ⁵⁴	Holford Road Linford Essex SS17 0PJ	CD&E Inert & Non-Inert	74,999	2020/21
S Walsh and Sons East Tilbury Quarry ⁵⁵	Princess Margaret Road East Tilbury Essex RM18 8PA	CD&E Inert & Non-Inert	759,000	2020
Rio Aggregates ⁵⁶	Dansand Quarry, Stanford Road, Orsett RM16 3BB	CD&E Inert	75,000	2024/5
Killoughery ⁵⁷	Beacon Hill Industrial Estate Botany Way Purfleet Essex RM19 1SR	CD&E Inert & Non-Inert	75,000	n/a
Sims Milling Burrows Farm	Brentwood Road, Bulphan Essex RM14 3TL	CD&E Inert & Non-Inert	24,999	n/a
Seales Road Haulage	Juliette Way Purfleet	CD&E Inert & Non-Inert	250,000	n/a
Brocks Haulage	Watson Close West Thurrock	CD&E Inert & Non-Inert	75,000	n/a

⁵⁴ These recycling facilities on landfill/mineral sites and subject to the end of landfill operations and restoration of the site.

⁵⁵ These recycling facilities on landfill/mineral sites and subject to the end of landfill operations and restoration of the site.

⁵⁶ These recycling facilities on landfill/mineral sites and subject to the end of landfill operations and restoration of the site.

⁵⁷ The Kiloughery site is located in an area proposed for comprehensive development and may therefore have a limited operational future on the site.

SquibbGroup	Stanhope Industrial Estate, Wharf Road Stanford Le Hope	CD&E	75,000	n/a
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Source: Thurrock Council (2020)

ANNEX H LOCAL PLAN PRODUCTION & INDICATIVE FUTURE HOUSING REQUIREMENTS

Table 17: Future Housing Requirements in Emerging Local Plans

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
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

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
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
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 - 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, 2

Table 18: Emerging Local Plan Progress

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 at 1 April 2019;

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