



# **Essex Local Aggregate Assessment**

**December 2018**



**Essex County Council**



## EXECUTIVE SUMMARY

This is the fifth Local Aggregate Assessment (LAA) produced on behalf of the Greater Essex authorities<sup>1</sup>, reflecting the position at the end of 2017.

### ***Extraction and Processing Facilities within Greater Essex***

At the end of 2017, there were 27 sand and gravel quarries (21 were operational), of which one specifically produced silica sand<sup>2</sup>. There were a further four dormant sand and gravel quarries<sup>3</sup>. There are no hard rock quarries in Greater Essex, whilst brick clay and chalk are not reported on, as they are not classed as aggregates<sup>4</sup>. In conjunction with primary extraction facilities, there were 37<sup>5</sup> processing facilities that add value to mineral products.

### ***Sand & Gravel Sales***

Sales have increased between 2008 and 2017, from 3.29 million tonnes (mt) to 3.41mt. Within this time, the highest sales were in 2014 (4.37mt) whilst the lowest were in 2012 (2.3mt). The ten-year average sales (2008 to 2017) figure (3.20mt) and the three-year sales (2015 to 2017) average (3.42mt) are below the apportioned tonnage of 4.45 million tonnes per annum (mtpa) in the adopted policy documents. The last three years of sales show a decrease from 3.45mt in 2015 to 3.41mt in 2017, which amounts to a decrease of 1%

### **Sales of Sand & Gravel (Dashboard 2017)**

Sales (Million Tonnes)	% change from 2016	Three Years Average Sales (2015-2017)	% Change from 2014 - 2016	Ten year average sales (2008 – 17)	% Change from 2007 - 2016
3.41	↑ 0% (Negligible)	3.42	↓ 9%	3.20	↓ 2%

Source: Essex County Council (2018)

### ***Sand and Gravel Permitted Reserves & Landbank***

Permitted reserves were 32.0mt in December 2017. When the landbank is calculated using the apportioned figure<sup>6</sup>, it stood at 7.18 years at the end of 2017, whilst calculations using the ten-year sales average results in a landbank of 9.99 years. Under both calculation methodologies, the landbank is above the planned seven-year requirement.

<sup>1</sup> Essex County Council, Southend-on-Sea Borough Council and Thurrock Council.

<sup>2</sup> therefore sales of this mineral are not reported due to commercial confidentiality.

<sup>3</sup> Therefore are omitted from the landbank and permitted preserve calculations.

<sup>4</sup> For the purposes of an LAA.

<sup>5</sup> One of which is located at a transshipment facility. (Harlow Mill)

<sup>6</sup> 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.

**Reserves & Landbank (Dashboard 2017)**

Reserves (Million Tonnes)	% change from 2016	Landbank based on 10 year average (2008 – 17)	Change from 2016 (Years)	Landbank based on sub- national apportionment	Change from 2016 (Years)
32.0	↓ 10%	9.99 years	↓ 0.84	7.18 years	↓ 0.77

Source: Essex County Council (2018)

***Marine-Won Sand and Gravel***

Greater Essex is served by the Thames and East of England dredging regions. In combination, 6.7 million tonnes of material was removed from the seabed in 2017 in these areas. The combined permitted reserve is 11.5 million tonnes per annum which equates to 16 years of supply.

***Imports and Exports***

Across Greater Essex, there are five mineral transshipment facilities. Over 1mt of material was imported during 2017, whilst only approximately 0.1mt was exported via rail head s and wharves.

***Secondary and Recycled Aggregate***

In March 2017<sup>7</sup>, the combined capacity of aggregate recycling facilities with planning permission in Greater Essex totalled 3.9mtpa. There are 47 operational and three inactive facilities. Operational capacity is 3.87mtpa. Some of these sites are temporary in nature, so there will be a reduction in aggregate recycling capacity as temporary permissions expire unless further permissions are granted.

<sup>7</sup> Data regarding CD&E recycling is collected on a financial year basis, rather than sales for Sand & Gravel at extraction sites.

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# 1. INTRODUCTION

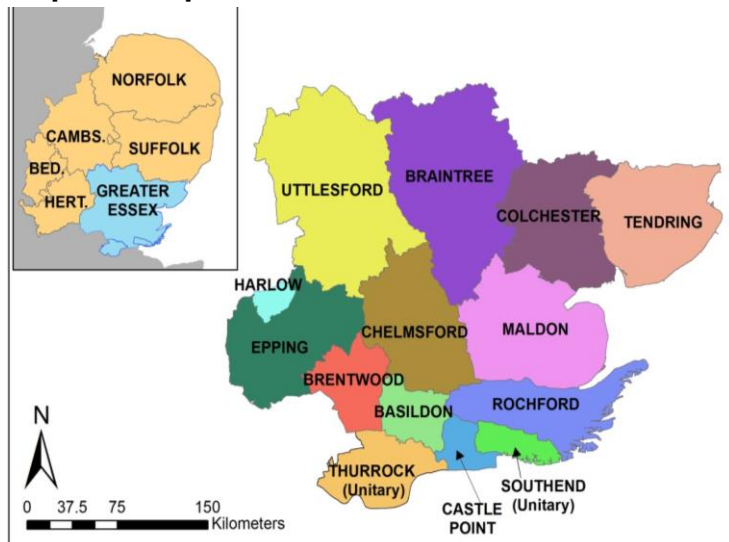
## 1.1. Background

- 1.1.1. Mineral Planning Authorities (MPAs) are required by the Revised National Planning Policy Framework (NPPF, July 2018) to produce a Local Aggregate Assessment (LAA) on an annual basis. The role of the LAA is to assist in monitoring aggregate supply, to ensure that a steady and adequate supply of aggregates is being provided.
- 1.1.2. This is the fifth LAA produced for Greater Essex and it reports on the position as of December 2017. Due to the limited number of facilities in Thurrock and Southend-on-Sea, data is amalgamated with that from Essex for reasons of commercial confidentiality. Whilst data is amalgamated, the Plan Area pursuant to the Essex Minerals Local Plan (2014) covers 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, and borders the counties of Hertfordshire, Suffolk, Cambridgeshire and Kent, as well as 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

**Map 1: Spatial Context of Greater Essex**



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 12 local authorities.

## 1.3. Development Trends

- 1.3.1. The level of demand for mineral resources and the generation of waste are key considerations and will be dependent on the expected housing growth and the delivery of enabling infrastructure to assist in facilitating this growth.
- 1.3.2. Eleven of the 12 local authorities<sup>8</sup> are preparing new Local Plans, underpinned by an objective assessment of their housing requirement<sup>9</sup> beyond 2030. It is expected that Essex and Southend will need to build approximately 140,000 new homes in the next 20 years: a significant uplift in

<sup>8</sup> With the exception of Maldon District Council

<sup>9</sup> Through a Strategic Housing Market Assessment (SHMAA) and Strategic Housing Land Availability Assessment (SHLAA)

the delivery of additional housing compared to previous forecasts. The majority of this growth is being directed to the existing major centres in the County, along with strategic urban extensions and, at present, seven Garden Communities. Such levels of development will need to be supported by significant new physical and social infrastructure.

- 1.3.3. Either planned, programmed or underway in Essex and/or in adjoining authorities, which include:
- 21 Major Highway Projects;
    - Widening A12/M25 junction to Chelmsford (junctions 11 to 15)
    - Widening of the A12 between junction 19 (Boreham interchange) and junction 25 (Marks Tey interchange)
    - M25 Junction 28 improvement – upgrade of the junction, potentially including dedicated left-turn lanes and improvement of the gyratory system.
  - Lower Thames River Crossing;
  - Crossrail/Crossrail 2;
  - London Gateway (DP World);
  - Harwich International Port;
  - London Stansted Airport;
  - London Southend Airport;
  - Bradwell Nuclear Power Station;
  - New Garden Communities in South West and north Essex.
- 1.3.4. The above listed development within Greater Essex will affect the demand for minerals so it is crucial the MPAs can secure and aid the supply of sufficient mineral to realise this growth and maintain existing infrastructure, whilst also preventing mineral sterilisation<sup>10</sup>.

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<sup>10</sup> Mineral sterilisation occurs when permanent, non-mineral development takes place over mineral bearing land before that mineral can be extracted. The mineral is considered to be 'sterilised' as it can no longer be worked in the future. Encroaching development may also compromise the operation of mineral infrastructure, particularly if the proposed development is sensitive to noise, such as residential dwellings.





## 2. AT A GLANCE: MINERALS IN GREATER ESSEX

### 2.1. Geology

- 2.1.1. Geology dictates where mineral resources occur and consequently where extraction can take place. Within Greater Essex, the predominant economic mineral is sand and gravel, but geology also provides for silica sand, brick clay and chalk<sup>11</sup>. Figures within this report only relate to sand gravel, and imported crushed rock, as brick clay and chalk are not classed as aggregates<sup>12</sup>. .

### 2.2. Primary Land-won Aggregate Facilities

- 2.2.1. As of December 2017, the position regarding sand and gravel quarries is presented in Figure 1. There are a further four facilities extracting other minerals within the Greater Essex area:

- One site specifically extracting silica sand
- Two brick clay
- One chalk

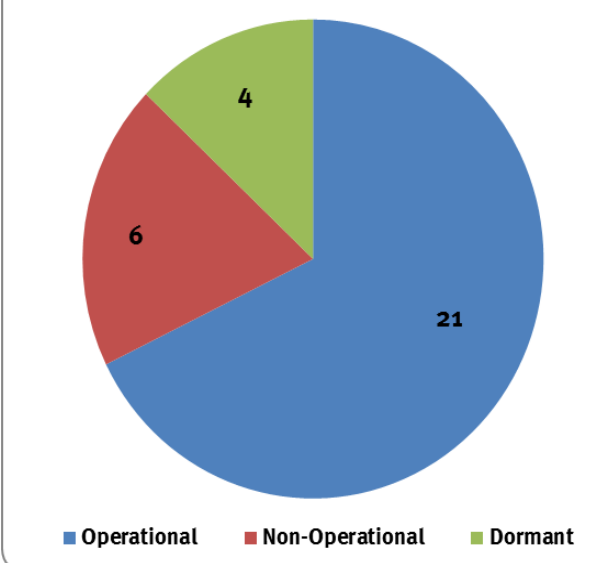
### 2.3. Transshipment Facilities

- 2.3.1. These facilities can be thought of as 'virtual quarries' as mineral can be sold and distributed from these sites. There are the following safeguarded Transshipment sites:

- Four rail facilities
- Two wharves

- 2.3.2. The location of mineral facilities is shown in Map 2 below.

**Figure 1: Sand & Gravel Quarries<sup>1</sup>**

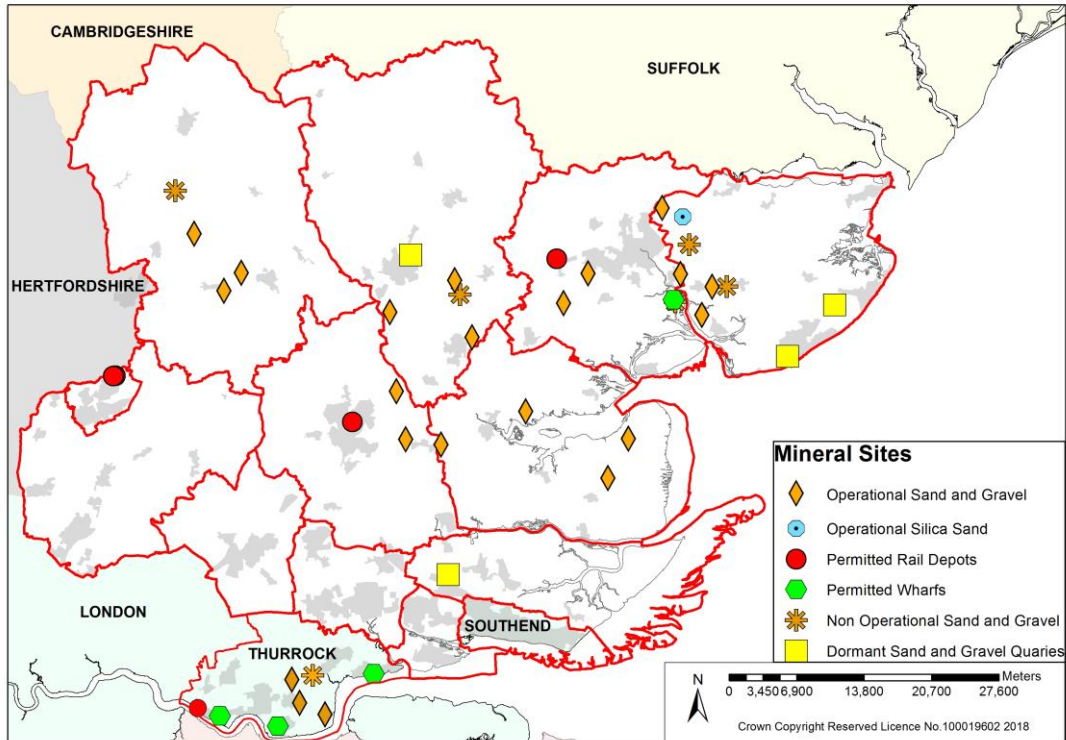


Source: Essex County Council (2018)

<sup>11</sup> Brick clay and chalk are not classed as aggregates, so not reported on through a Local Aggregate Assessment. There is only a single silica sand extraction site in Greater, so sales are not reported due to commercial confidentiality.

<sup>12</sup> For the purposes of an LAA.

## Map 2: Mineral Extraction & Transshipment Sites (31 December 2017)



Source: Essex County Council (2018). The data that informs this table is in Annex A.

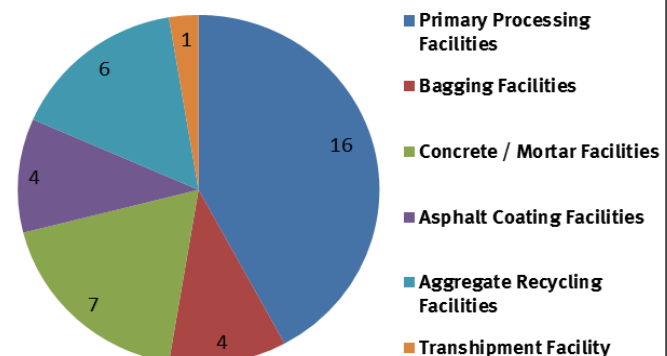
### 2.4. Processing Plants in Greater Essex

2.4.1. On a number of these extraction sites, primary processing occurs that produces a higher quality final product and, which subsequently enables a higher and more sustainable use of aggregates. 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 and coated roadstone, 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.

**Figure 2: Processing Plant At Mineral Extraction Sites**



Source: Essex County Council (2018)

### 3. LAND-WON SAND & GRAVEL

#### 3.1. Introduction

- 3.1.1. All Mineral Planning Authorities (MPAs) should plan for a steady and adequate supply of aggregates by maintaining landbanks of at least 7 years for sand and gravel<sup>13</sup>. This is determined by comparing the permitted reserve and the estimate of the demand of mineral per annum.
- 3.1.2. Should the landbank fall below seven years,<sup>14</sup> planning applications can be bought forward on land not allocated within the Mineral Local Plan and would then be assessed in light of there being a need for the mineral that is not currently being provided for through existing sites. Such an approach leads to the weakening of the Plan-led system that is at the forefront of planning policy.
- 3.1.3. Within Greater Essex the method of calculating landbank is through the annualised apportionment as adopted through policy. This was informed by the “National and Sub-national Guidelines for Aggregates Provision in England”, which covers the period 2005 – 2020, which provided a figure of 4.45mtpa for Greater Essex. The revised NPPF (2018) requires that an MPA takes account of the published National and Sub National Guidelines on future provision, which should be used as a guideline when planning for the future demand for and supply of aggregates;
- 3.1.4. The revised 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 NPPG. For the purposes of this years’ edition of the LAA the 10 year average sales is calculated from 2008 to 2017. Henceforth, any reference to 10 year average sales is describing this time period.
- 3.1.5. Both of these landbank calculation methods are presented in this section, to ensure that the adopted policy in the Minerals Local Plans (MLPs) is accurately reflected, whilst also acknowledging the Revised NPPF preferred methodology.

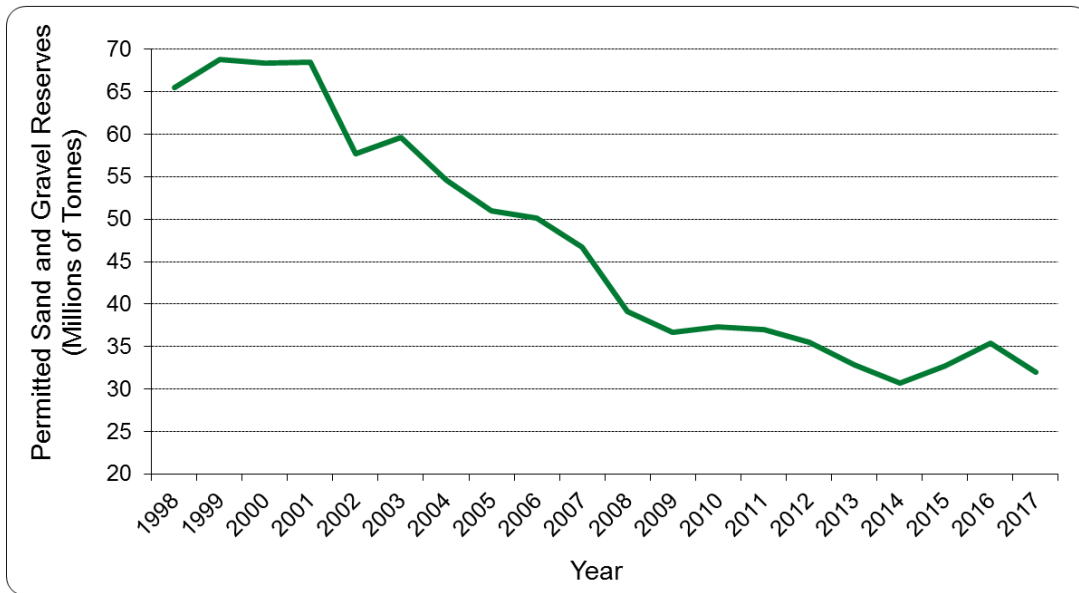
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<sup>13</sup> Revised NPPF (July 2018) Paragraph 207,f

<sup>14</sup> That is, it would be exhausted within seven years or less

### 3.2. Sand & Gravel Permitted Reserves

**Figure 3: Permitted Sand & Gravel Reserves in Greater Essex (1998 to 2017)**



Source: Essex County Council (2018).

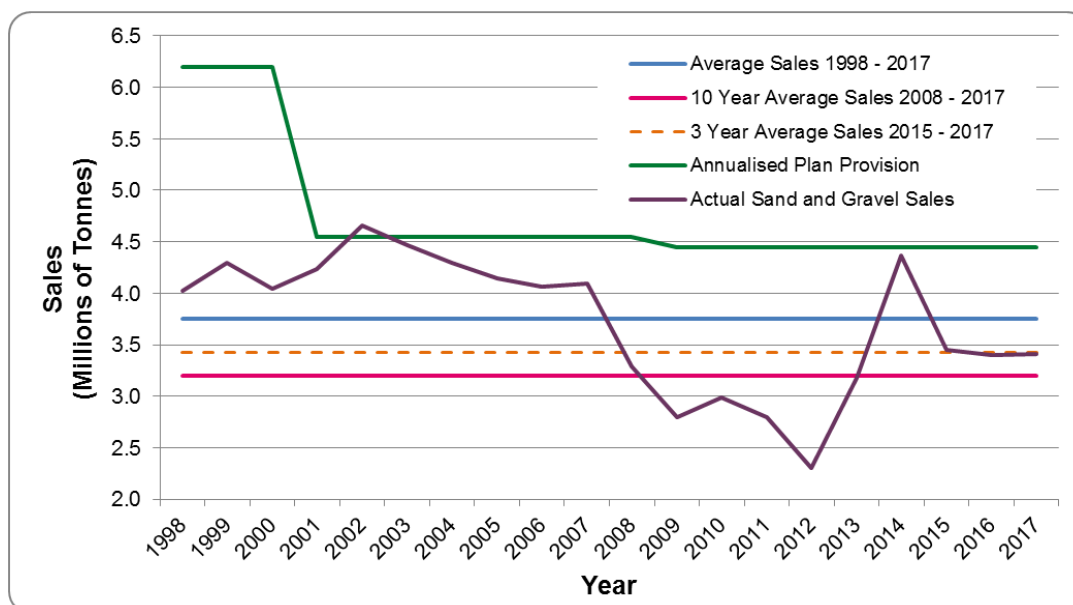
Note: Y axis not at zero. The data that informs this table is located in Annex C

- 3.2.1. There has been a clear reduction in the amount of mineral permitted for extraction in Greater Essex over the last 20 years. Permitted reserves were 65.52 million tonnes (mt) in 1998, but at the end of 2017 stood at 31.95mt. This equates to a reduction of 11% from the 2016 value (35.37mt). This 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 problematical until it results in the landbank falling below the national statutory minimum of seven years.
- 3.2.2. The East of England Monitoring Report<sup>15</sup> notes that in 2017, Greater Essex held 26% of the permitted reserves held in the area covered by the East of England Aggregate Working Party.
- 3.2.3. Despite handling a large number of applications during 2017, none of the permissions granted in Greater Essex resulted in any increase in permitted reserves as these applications were for operational changes and/or extensions of time. However, there are a number of further applications yet to be granted permission, most significantly, the proposed new quarry at Broadfield Farm (Braintree District) would provide an additional 3.66mt of sand and gravel, helping demonstrate that proposals for further reserves are coming forward.

<sup>15</sup> EoEAWP (2018) Annual Monitoring Report 2017, Figure 3, page 15

### 3.3. Sales of Sand & Gravel

**Figure 4: Greater Essex Sales of Land Won Sand & Gravel (1998 to 2017)**



Source: Annual collated minerals survey data.

Note: Y axis not at zero. The data that informs this table is located in Annex D.

- 3.3.1. Similarly to that seen in the amount of permitted reserves, there has been a downward trend in sand and gravel sales in the previous 20 years, although this has not been uniform. Sales in 1998 were recorded as 4.02mt but in 2017 were 3.41mt, representing a level consistent with the sales recorded in 2016 which amounted to 3.40mt.. The recession in 2007 had a clear impact on the annual sales of sand and gravel but sales can be seen to recover in 2013, peaking in 2014, before reducing slightly in 2015 where they have since remained relatively stable.
- 3.3.2. The East of England Monitoring Report<sup>16</sup> notes that in 2017, Greater Essex contributed 27% of the EoEAWP sales.

#### Comparison of 'Need'

- 3.3.3. Table 1 below identifies the annual mineral 'need' through the differing methodologies: annualised apportionment and ten year sales average, as well as a consideration of three year average sales. It also includes historic sales average) as shown in Figure 4 for reference. It also identifies how the various MPAs contribute to the Greater Essex apportionment figure.

<sup>16</sup> EoEAWP (2018) Annual Monitoring Report 2017, Figure 2, page 12



**Table 1: Comparison of Sand & Gravel Landbank Within Greater Essex**

	Annualised Plan Provision (Apportionment)	Ten Year Sales Average 2008-2017	Three Year Sales Average 2014 - 2017	Historic Sales Average 1998 - 2017
Greater Essex	4.45mtpa	3.20mt (↓)	3.42mt (↑)	3.72mt
Essex	4.31mtpa	3.06mt	3.28mt	3.58mt
Thurrock	0.14mtpa	0.14mt	0.14mt	0.14mt
Southend-on-Sea	0mtpa	0mt	0mt	0mt

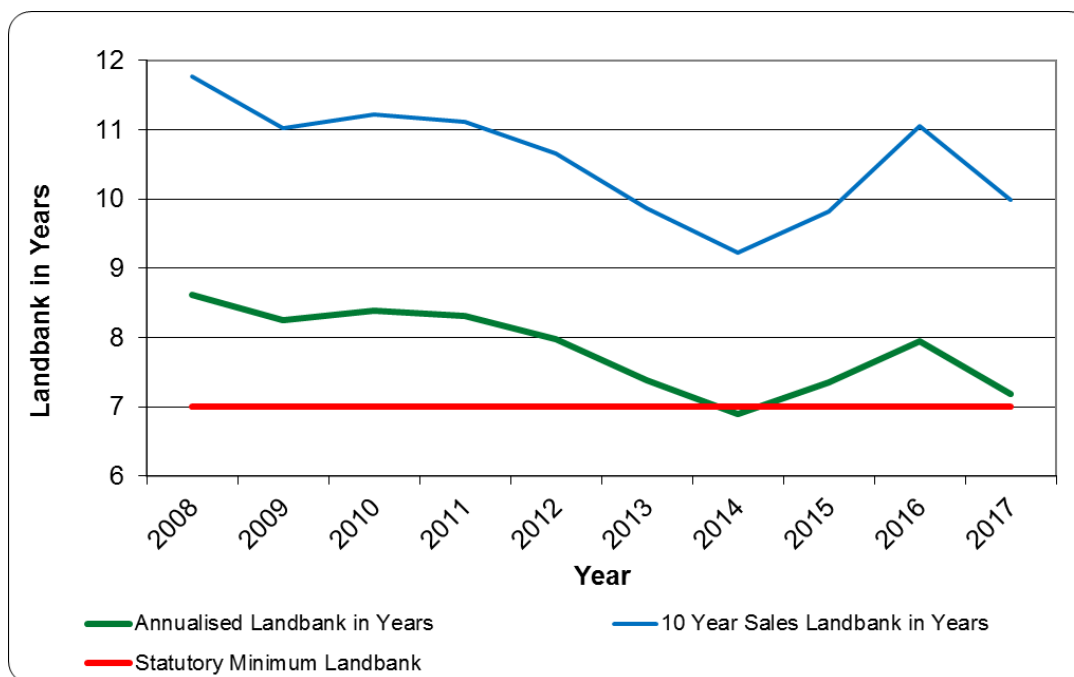
Source: Essex County Council (2018)

- 3.3.4. When comparing actual 2017 sales (3.41mt, as noted above) with the values from Table 1 it can be seen the level of sales is broadly in line with the 3 year average sales figure (2015 – 2017) of 3.42mt and represents a small increase (6.7%) over the 10 year average sales figure (2008 – 2017) of 3.20mt. The 10 year average sales figure fell slightly (2.1%) from the average of 3.27mt recorded over the previously reported 10 year period (2007 – 2016) described in the last edition of the Greater Essex LAA.
- 3.3.5. The annualised plan provision apportionment value is now 23% higher than the 2008-2017 ten-year average sales value, with sales not exceeding the apportionment value since 2002. However, the ten-year average sales figure of 3.20mt is below actual sales since 2014, which would question the appropriateness of adopting that figure as a basis for mineral provision. The current ten year average figure currently includes the period of recession identified above which is acting to depress the average ten year sales relative to the current level of sales.

### 3.4. Sand & Gravel Landbank

- 3.4.1. A landbank is calculated by dividing the total permitted reserve by the annual amount of mineral permitted to be extracted, and is reported in years. This yearly value is the time the landbank will last before it is exhausted, if no further mineral is permitted for extraction.
- 3.4.2. As of December 2017, when using the annualised plan provision method of calculation, the landbank stood at 7.18 years, a slight reduction from December 2016 when it stood at 7.9 years. When using the ten years sales method, the landbank is calculated as being 9.99 years, compared to 10.8 years recorded in the previous year. Both of these values are presented in the figure below, which also identifies the landbank value at the end of each year.

**Figure 5: Greater Essex Landbank (2008 to 2017)<sup>17</sup>**



Source: Essex County Council (2018)

Note: Y axis not at zero. The data that informs this table is located in Annex D

- 3.4.3. It can be seen that both methods of calculating the landbank have similar peaks and troughs, although the ten-year sales method consistently results in a higher landbank than the apportionment method. Both identify smaller landbanks than in 2008.
- 3.4.4. The dip in 2014 is considered a result of site operators not submitting planning applications for mineral extraction prior to the conclusion of the 2013 Examination in the Public for the Essex MLP and its subsequent adoption. These major new mineral applications may have been considered as being “premature” immediately prior to the plan being adopted.
- 3.4.5. Importantly, with respect to the adopted annualised apportionment method of calculating the landbank, it currently stands just above the minimum seven years. It must however be noted that the permitted reserves figure calculated for 2017, do not include 3.66mt at Rayne Quarry. The application for this new facility was taken to the December 2017 Committee Meeting, where it received a resolution to approve, subject to the completion of S106 agreements. Once the s106 agreements are resolved satisfactorily there will be a positive effect on the landbank, bringing it further above the seven year minimum (to 8.0 years (apportionment methodology) and to 11.13 years (ten year sales methodology)).

### Landbank Summary

- 3.4.6. Despite a difference of approximately 2.8 years between the calculation methodologies, the current landbank stands in excess of the statutory minimum of seven years, meaning the current level of permitted reserves is considered sufficient. It is also important to note that subject to the agreement of a s106, an additional 3.66mt would be added to the permitted reserves, thus increasing the landbank significantly.

<sup>17</sup> Prior to 2009 the apportionment was 4.55mtpa, and 4.45mtpa from 2009 onwards.

### **3.5. Silica Sand Provision**

- 3.5.1. Silica sand is produced in too few sites within Greater Essex to provide sales data, for reasons of commercial confidentiality. The single largest producer is Martells Quarry, Ardleigh. The currently extant permission for the site is planning permission reference ESS/23/15/TEN, which was implemented 23 October 2017.
- 3.5.2. At the time of developing the now adopted Minerals Local Plan, the 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.
- 3.5.3. 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

## 4. MARINE-WON SAND & GRAVEL

- 4.1.1. Marine-won aggregates are an alternative source of aggregates to those extracted from the land. They can be used for some of the same purposes including a variety of construction purposes including mortar, road sub-base, land reclamation and beach nourishment.

### 4.2. Dredging Areas & Wharf Facilities Serving Greater Essex

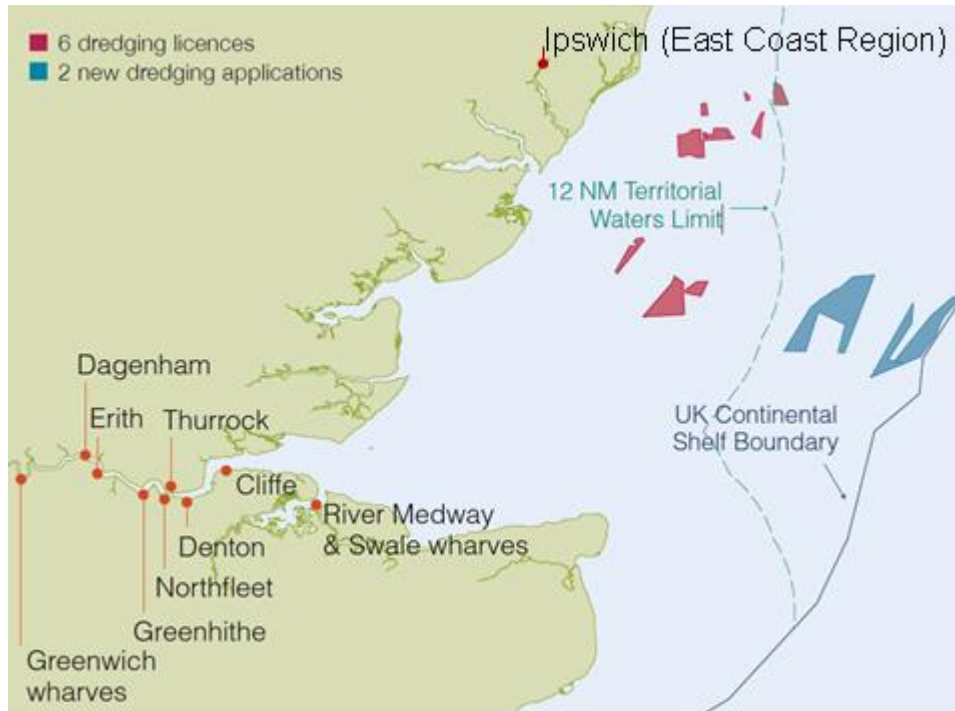
- 4.2.1. Ports can be considered as 'virtual quarries' as mineral can be sold/distributed from here, whilst many also have processing facilities. The marine-won sand and gravel landed in the East of England is mainly sourced from the Thames Estuary Licensed Area.
- 4.2.2. The National and Regional Guidelines for Aggregate Provision in England 2005 – 2020 assumed 14 million tonnes of marine sand and gravel would be landed during that time. This equates to 0.93 million tonnes per year, although is not apportioned to individual authorities.
- 4.2.3. Marine won minerals contribute to the supply of minerals in Greater Essex. There are no ports in Essex or Southend-on-Sea that accept marine won aggregate, with the closest landing points being in adjoining authorities, namely Ipswich and the Thames Estuary. The ports serving Greater Essex are shown in Table 2 and Map 3, below, The map also identifies the ports and licensed dredging areas closest to Essex, alongside new dredging application areas and exploration areas.

**Table 2: Wharves with the Capacity to Serve Greater Essex (2017)**

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

Source: The Crown Estate: Marine Aggregates Summary of Statistics (2017)

**Map 3: Marine Dredging Areas in Proximity to Greater Essex (2017)**



Source: Adapted from Crown Estate: [Marine Aggregates – Capability and Portfolio](#) (2017) pages 7 and 8

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.

- 4.2.4. Paragraph 204,e of the Revised NPPF states (inter-alia) that MPAs should safeguard existing, planned and potential facilities for bulk mineral transport which would include marine-dredged materials.
- 4.2.5. There has been a reduction in wharf availability for mineral dredging in Thurrock during recent years. In similarity to 2016, only one wharf (immediately to the East of the QEII bridge) is used to import marine dredged sand and gravel. The remainder of the wharf facilities in Thurrock are used for other mineral related purposes

### 4.3. Marine Aggregate Landings

- 4.3.1. The Crown Estate collects statistics regarding marine-won mineral landed at its ports, although these do not define the mineral's final destination. Resultantly, the figures do not relate to the amount of marine-won aggregate used within Greater Essex, rather it is the amount landed within or in close proximity, which could be used within Essex, Thurrock, Southend-on-Sea, Kent, Suffolk, London and potentially 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 will be used in the surrounding vicinity. BGS<sup>18</sup> studies suggest that 60km is the maximum typical distance bulk aggregates travel by road.
- 4.3.2. The most recent Crown Estate report<sup>19</sup> stated that during 2017, 92.0% of material extracted from the Thames Estuary dredging areas was delivered to

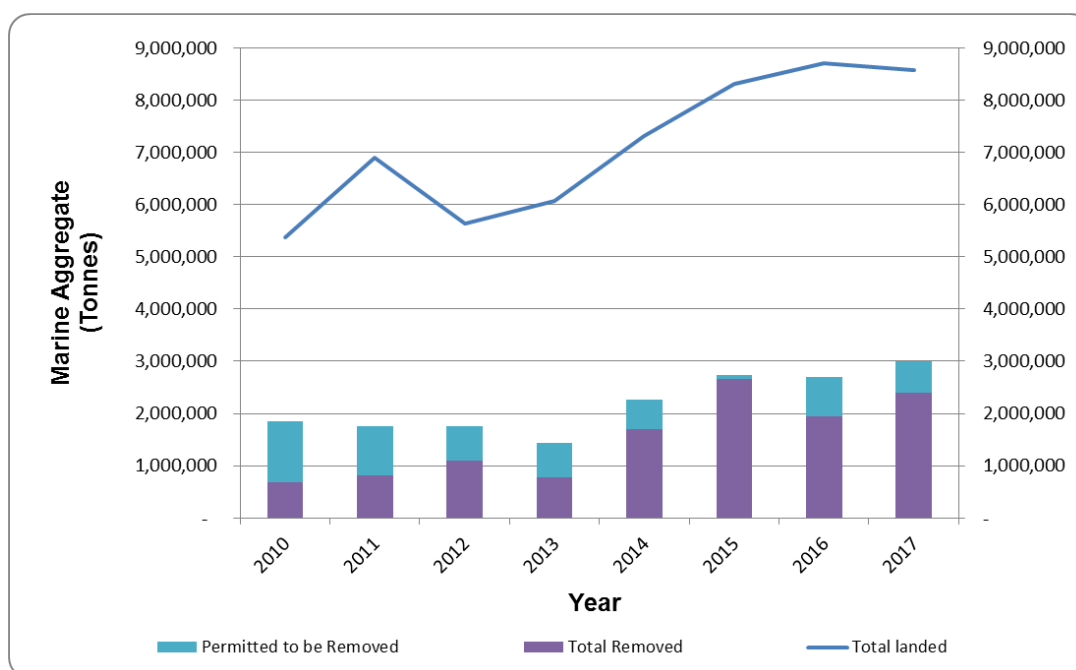
<sup>18</sup> British Geological Survey

<sup>19</sup> Crown Estate (2018) Marine Aggregates – Capability & Portfolio 2017

the Thames Estuary region ports, with the remainder going to the East Coast, Humber, South Coast and mainland Europe. The resources in the Thames Estuary consist of a variety of grade of sand ranging from fine sand to coarse gravels. Currently 3.0mtpa of material is permitted for extraction annually from the six licences within this region. Current estimates suggest there are 16 years of primary marine aggregate production permitted within the Thames Estuary Region. There were two application/exploration areas for licences that could, if approved, increase the permitted tonnage by 3.6 million tonnes (mt).

- 4.3.3. A further Crown Estate Report<sup>20</sup> identifies dredging and landing statistics, 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 2.4mt of marine aggregate were removed from the sea bed in 2017, meaning 80% of the annually permitted extraction occurred. In 2016, 72% of the permitted removal occurred, with the last eight year average being 64%.

**Figure 6: Marine Aggregate Extraction in the Thames Estuary Region (2017)**



Source: Essex County Council (2018), as derived from data contained within the Marine Aggregates - The Crown Estate Licences, Summary Of Statistics (Crown Estate) reports between 2010 and 2017.

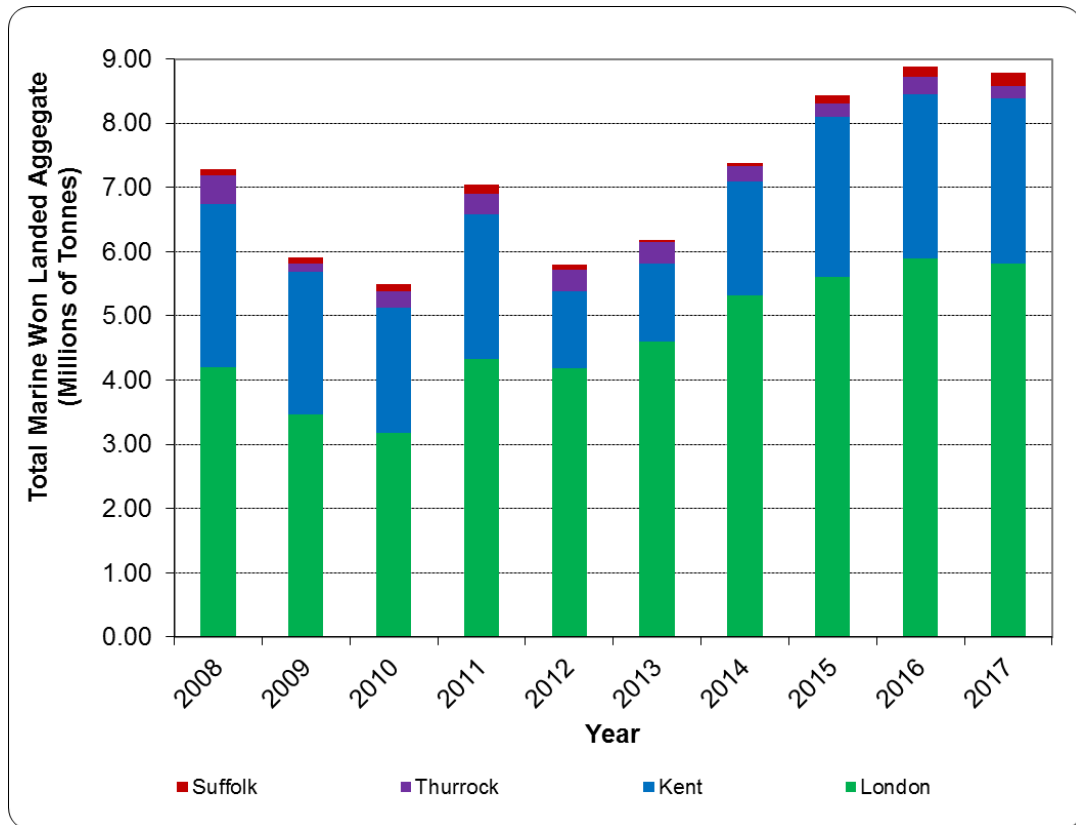
- 4.3.4. From the above figure, it is interesting to note that there was a total of nearly 8.6mt landed within the Thames Estuary area, which is significantly more than the total removed (2.4mt). This shows a significant quantity (6.2mt) was extracted from other licenced areas (such as the East Coast) and landed here, to assist with the significant amount of mineral required for development in the Greater London Area.

<sup>20</sup>Crown Estate (2018) [Marine Aggregates - The Crown Estate Licences, Summary Of Statistics 2017](#)



- 4.3.5. Regarding the East Coast Region in 2016, 86.5% of material extracted was delivered to the Thames Estuary region, with the remainder delivered to mainland Europe and Humber. The resources range from fine sand to medium gravel. Currently 8.5mtpa of material is permitted for extraction from the 12 licences, although there is only one wharf in the region that receives mineral. Current estimates suggest that there are 16 years of primary marine aggregate production permitted within the East of England Region. There was one application/exploration area for a licence that could, if approved, increase the permitted tonnage by 0.6mt. Only 208 thousand tonnes were landed within the East Coast region, whilst nearly 4.3mt were removed through extraction. This means that a significant amount was extracted but landed in other regions.
- 4.3.6. The following figure details the amount of marine won mineral landed in ports within London, Thurrock, Kent and Suffolk. It is considered that marine dredged minerals landed at these ports have the capacity to be used in Greater Essex.

**Figure 7: Marine-Won Mineral Landed in Ports that Serve Greater Essex (2008 to 2017)**



Source: The Crown Estate, Summary of Statistics, 2007 – 2017  
The data that informs this table is located in Annex F.

- 4.3.7. There has been a general increase in the amount of marine-won aggregate landed between 2008 and 2017, from 7.28mt to 8.79mt, representing an increase of 21%. Despite this general increase however, 2016 has 1% higher landings than 2017.
- 4.3.8. When ports are analysed by administrative region, since 2008 there has been an overall increase in the marine-won aggregate coming into London ports, (39%). Kent, comprising of three wharves, has seen an increase of only 1% since 2007, whilst during the same time frame, Suffolk comprising

of a single wharf, has more than doubled the amount of aggregate landed and Thurrock comprising a single wharf saw a decrease of 55%.

#### **4.4. Offsetting Land-won Production**

- 4.4.1. 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 directly substitutable in any event.
- 4.4.2. It can however be concluded, from the data within this section 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 the ability to access the market, which is determined by the capacity and location of wharves and associated infrastructure.
- 4.4.3. 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. It is not however considered appropriate to reduce land-won reserves such that they are replaced by marine-won reserves for the reasons articulated above.
- 4.4.4. Further to the above, the revised NPPF (July 2018) contains 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.



## 5. IMPORTS & EXPORTS OF LAND-WON AGGREGATE

- 5.1.1. Historically, approximately 75% of the mineral extracted within Greater Essex has been used in Greater Essex, with the majority of that exported going to London. Greater Essex is heavily reliant on hard rock importation, used as construction material and rail ballast as well as limestone specifically used in cement making. A pattern of long-distance supply has emerged, with Greater Essex exporting its sand and gravel, whilst importing hard rock<sup>21</sup>.

### 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 offers route flexibility and the ability to deliver to any final destination. Rail and water however provides 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 the following safeguarded mineral transshipment sites in Greater Essex:
- **Chelmsford Rail Depot (Essex)**, used for the import of limestone and export of sand and gravel;
  - **Harlow Mill Rail Station (Essex)**, used for the import of limestone and export of sand and gravel;
  - **Marks Tey Rail Depot (Essex)**, used for the export of sand and gravel;
  - **Ballast Quay, Fingringhoe (Essex)**, a wharf for the export of sand and gravel originating from the associated quarry to London;
  - **Jurgens Road, (Purfleet, Thurrock)**, used for coated roadstone production using aggregate delivered by road and rail. Historically, crushed rock was imported but Thurrock Council is not aware that it was ever used for the importation of sand and gravel. No use of the river is being made at present.
- 5.2.3. 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. Imports & Exports of Sand & Gravel

- 5.3.1. The import and export data reported below, is gathered through the Mineral Survey undertaken by each Authority within the East of England Aggregate Working Party (EoE AWP). This Greater Essex information is also used to inform section 6 of the [East of England Aggregates Working Party Annual Monitoring Report 2017](#).
- 5.3.2. 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.

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<sup>21</sup> From areas such as the East Midlands and limestone from the South West.

### Importation of Minerals

- 5.3.3. The table below shows the amount, type and source of material that was imported in to Greater Essex during 2017.

**Table 3: Imports of Minerals (2017)**

Total tonnage of aggregate imported into Greater Essex	Source Of Material	Types of Material
1,118,319	Norway, Scotland & East Midlands	Limestone & Granite

Source: Annual collated minerals survey data.

- 5.3.4. Over 1mt of material was imported during 2017. Data was not presented in 2016, due to confidentiality reasons, as too few Greater Essex facility operators responded to the 2016 mineral survey, so the 2016 figure cannot be compared to the current figure.
- 5.3.5. The [EoEAWP AMR 2017](#) stated that 2.8mt of aggregate was imported in to the region<sup>22</sup>, in 2017, meaning Greater Essex's share of imports totalled 39% of the regions imports.

### Exportation

- 5.3.6. The table below shows the amount, type and source of material that was exported from Greater Essex during 2017.

**Table 4: Exports of Minerals (2017)**

Total tonnage of aggregate exported from Greater Essex	Source Of Material	Types of Material
137,074	East of England	Land & marine won sand & gravel

Source: Annual collated minerals survey data.

- 5.3.7. There was much less material exported than imported through the transshipment sites in 2017, which equated to approximately 0.1mt. Data was not presented in 2016, due to confidentiality reasons, as too few Greater Essex facility operators responded to the 2016 mineral survey, so the 2016 figure cannot be compared to the current figure.
- 5.3.8. The [EoEAWP AMR 2017](#) stated that nearly 0.6mt of aggregate was exported from the region<sup>23</sup>, meaning Greater Essex's share of exports totalled 17% of the regions exports.

<sup>22</sup> East of England Aggregate Working Party (2018) East of England Aggregates Working Party Annual Monitoring Report 2017, Paragraph 6.2

<sup>23</sup> East of England Aggregate Working Party (2018) East of England Aggregates Working Party Annual Monitoring Report 2017, Paragraph 6.4

## 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. 'Secondary' aggregates are created as a by-product of a construction or industrial process<sup>24</sup>. 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 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 development plans and policies. However, this does not mean increasing the importation of CD&E waste to be recycled would always be acceptable.

### 6.2. Recycled Aggregate Throughput and Capacity

- 6.2.1. The following table and map details the capacity of CD&E waste recycling facilities within Greater Essex<sup>25</sup>.

**Table 5: Total Aggregate Recycling Facilities (31st March 2017)**

Location	Facility Status	Number of Facilities	Total Estimated Capacity (tonnes)
Essex & Southend	Operational	39	2,245,547
	Under Construction	1	Capacity Unknown
	Just with the Benefit of Planning Permission	1	100,000
Thurrock	Operational	8	1,408,998
	Under Construction	0	0
	Just with the Benefit of Planning Permission	0	0
<b>All Greater Essex Facilities</b>		<b>50</b>	<b>3,900,326</b>

Source: As adapted from ECC (2018) Authority Monitoring Report (1<sup>st</sup> April 2016 – 31<sup>st</sup> March 2017) and information provided by Thurrock Council (2018).

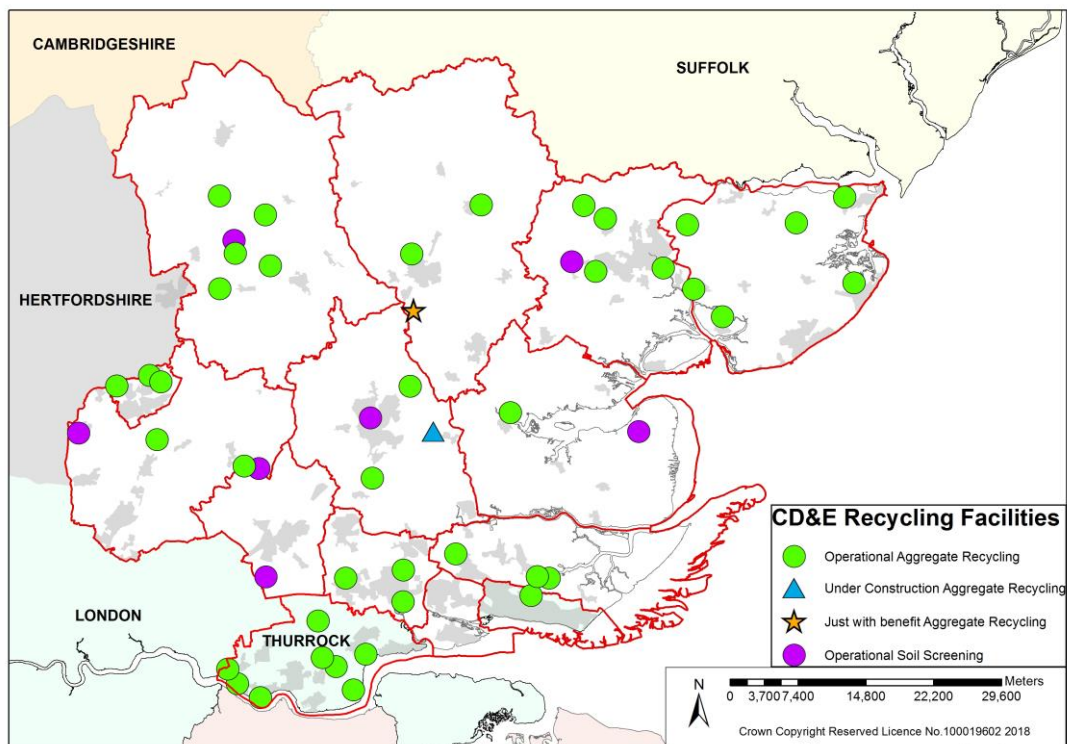
Note: A list of all recycled aggregate facilities in Essex, Southend-on-Sea and Thurrock are presented in Annex G.

<sup>24</sup> 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.

<sup>25</sup> As set out in the most recent and up to date Essex Authority Monitoring Report (1<sup>st</sup> April 2016 – 31<sup>st</sup> March 2017) and updates from Thurrock Council (2018)



**Map 4: Locations of CD&E Materials Recovery Facilities (31 March 2017)**



Source: As adapted from ECC (2018) Authority Monitoring Report (1st April 2016 – 31<sup>st</sup> March 2017) and information provided by Thurrock Council (2018)

- 6.2.2. Recycled aggregate is largely an assumed supply, due to difficulty in obtaining throughput figures, which is an issue acknowledged nationally.
- 6.2.3. The Essex and Southend-on-Sea Waste Local Plan is based on 2014 evidence<sup>26</sup> estimating 3.311 mtpa of CD&E waste arises within the plan area. Furthermore, it stated that there was an immediate recycling/ recovery capacity “shortfall of 1.5mtpa increasing over time as the time limited consents close”. This evidence also stated that most CD&E Waste will originate from the plan area, but there is thought to be some importation due to the significant development occurring in Greater London. This importation constitutes 9% of the total projected arisings of CD&E waste annually.
- 6.2.4. CD&E recovery allocations were included within the Essex and Southend-on-Sea WLP (2017). It is also important that existing and allocated sites are safeguarded to prevent reduced CD&E waste recovery capacity. The revised NPPF (July 2018), also provides additional support/ safeguarding for existing facilities, from the future development of ‘sensitive’ uses, through the ‘Agent of Change’ Principle (para 182).
- 6.2.5. Within Thurrock, there are eight authorised sites, which 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

<sup>26</sup> section 2.5.3 of SD 20 - Topic Paper 1 - Waste Capacity Gap Update (December 2015)

the future. There are no non-operational sites. These facilities are also detailed in Annex G.

- 6.2.6. 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 with 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. 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. Thus for Thurrock it would be inappropriate to reduce primary aggregate provision as perhaps suggested by the Revised NPPF when the supply of recycled material is underpinned by imports of waste.



## 7. CONCLUSION

- 7.1.1. Greater Essex currently has sufficient permitted reserve and allocations to satisfy the assessed sand and gravel mineral requirement over the period of the current Minerals Local Plan. The current sand and gravel landbank is over the statutory minimum of seven years under both the plan apportionment (7.18 years) and rolling ten-year sales (9.99 years) calculation methods.
- 7.1.2. Total sales of sand and gravel in 2017 in Greater Essex were recorded as 3.41 million tonnes (mt). This is higher than the ten-year rolling sales average of 3.20 million tonnes per annum (mtpa), but below 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
- 7.1.3. Greater Essex is served by the Thames and East of England dredging regions. In combination, 6.7 million tonnes of material was removed from the seabed in 2017 in these areas. The combined reserve is 11.5 million tonnes per annum expected to provide for 16 years. It appears any constraints on Marine Aggregate supply would lie with the capacity and/or location of landing facilities. Greater Essex Authorities are working with the East of England Aggregate Working Party to identify specific issues in this area.
- 7.1.4. With regard to recycled/recovered aggregate, given the current significant gap between Construction, Demolition and Excavation (CD&E) waste arisings and recovery capacity, which will increase as existing permissions expire, it is important that additional CD&E waste recovery capacity is provided across Greater Essex. The Mineral Planning Authorities will continue to safeguard aggregate recovery facilities from incompatible development to ensure their continued operation, thus maintain this source of aggregate for the market.
- 7.1.5. It is not considered appropriate to seek to directly offset land-won primary aggregate through an increased reliance on marine 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, whilst it is considered that production capacity is constraining supply rather than demand.
- 7.1.6. 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 6: Permitted Primary Aggregate Sites in Essex (31 December 2017)**

Operator	Site Name	Cessation Date for Planning Permission	District /Borough
<b><i>Operational Sand &amp; Gravel Quarries with Permitted Reserves</i></b>			
Brett Aggregates	Alresford Creek, Alresford	2042	Tendring
G&B Finch Ltd	Asheldham Quarry, Southminster	2029	Maldon
Hanson Aggregates	Birch Quarry, Birch	2018	Colchester
Frank Lyons Plant Services Ltd	Blackleys Quarry, Great Leighs	2045	Chelmsford
Blackwater Aggregates	Bradwell Quarry, Silver End	2022	Braintree
Brett Aggregates	Brightlingsea Quarry (aka Maveron's Farm)	2026	Tendring
Hanson Aggregates	Bulls Lodge Quarry, Boreham	2030	Chelmsford
SRC Ltd	Cobbs Farm, Goldhanger	2019	Maldon
Tarmac Ltd	Colchester Quarry, (aka Stanway Quarry)	2042	Colchester
Brice Aggregates	Colemans Quarry, Witham	2036	Braintree
SRC Ltd	Crown Quarry, Ardleigh	2028	Tendring
Edviron Ltd	Crumps Farm, Gt Canfield	2029	Uttlesford
Dewicks	Curry Farm, Bradwell-on-Sea	End on site 2018, restoration by 2019	Maldon
Brett Aggregates	Elsenham Quarry, Elsenham	2030	Uttlesford
SRC Ltd	Highwood Quarry, Little Easton	2026	Uttlesford
Danbury Aggregates	Royal Oak, Danbury	2029	Chelmsford
Danbury Aggregates	St Cleres Pit, Danbury	2019 <sup>27</sup>	Chelmsford
Tarmac Ltd	Wivenhoe Quarry, Wivenhoe	2018 New application being determined for Sunnymead Extension (July 2018)	Colchester

<sup>27</sup> 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

Operator	Site Name	Cessation Date for Planning Permission / Comments	District /Borough
<b><i>Non-Operational Sand &amp; Gravel Quarries with Permitted Reserves</i></b>			
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
Stephen Poole & George Wright	Lufkins Farm, Thorington Road, Great Bentley	Not Yet Commenced, pre-commencement conditions awaiting discharge. Commencement required within 5 years from the approval date of ESS/41/15/TEN (by Nov 2021), cessation three years after commencement.	Tendring
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
JJ Prior Ltd	Fingringhoe Quarry, Fingringhoe	2042 Extraction has ceased on site	Colchester
Widdington Recycling	Widdington Pit, Widdington	2025 Not actively extracting mineral	Uttlesford
<b><i>Dormant Sand &amp; Gravel Quarries</i></b>			
S.R. Finch	Straits Mill	N/A	Braintree
-	Alton Park	N/A	Tendring
-	Hodgnells Farm	N/A	Tendring
Devernish Ltd	Hambro Hill	N/A	Rochford
<b><i>Operational Silica Sand Sites with Permitted Reserves</i></b>			
SRC Ltd	Martells Quarry, Ardleigh	2026	Tendring

Please 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 7: Permitted Primary Aggregate Sites in Thurrock (31 December 2017)**

Operator	Site Name	Cessation Date for Planning Permission	District /Borough
<b><i>Operational Sand &amp; Gravel Quarries with Permitted Reserves</i></b>			
Rio Aggregates	Dansand Quarry, Stanford Road, Orsett	2025	Thurrock

Operator	Site Name	Cessation Date for Planning Permission	District /Borough
S. Walsh & Sons Ltd	East Tilbury Quarry	2021 <sup>28</sup>	Thurrock
RJD Ltd	Mill House Farm, West Tilbury	2017	Thurrock
<b><i>Non-Operational Sand &amp; Gravel Quarries with Permitted Reserves</i></b>			
Ingrebourne Valley Ltd	Orsett Quarry - Stanford-le-Hope	2042	Thurrock

Source: Thurrock Council (2018)

**Table 8: Mineral Transhipment Sites in Essex (31 December 2017)**

Operator	Site Name	District/Borough
<b><i>Permitted Wharfs</i></b>		
JJ Prior Ltd	Ballast Quay, Fingringhoe	Colchester
<b><i>Permitted Rail Depots</i></b>		
Aggregate Industries UK Ltd	Chelmsford Rail Depot	Chelmsford
Tarmac Ltd	Marks Tey Rail Depot	Colchester
Aggregate Industries UK Ltd/ Tarmac Ltd	Harlow Rail Depot x2	Harlow

Source: Essex County Council (2018)

**Table 9: Operational Mineral Transhipment Sites in Thurrock (31 December 2017)**

Operator	Site Name	District/Borough
<b><i>Permitted Wharfs</i></b>		
Aggregate Industries UK Ltd	London Gateway, Berth 7, DP World	Thurrock
Thurrock Sand & Gravel, - Lafarge Aggregates Ltd	Thurrock Marine Terminal, Oliver Close, West Thurrock	Thurrock
Stema Shipping Ltd	Tilbury Docks	Thurrock
<b><i>Permitted Rail Depots</i></b>		
Aggregate Industries UK Ltd	Purfleet Rail Depot	Thurrock

Source: Thurrock Council (2018)

<sup>28</sup> Date the majority of the site has to be restored by

## ANNEX B PERMITTED PROCESSING PLANTS IN GREATER ESSEX (DEC 2017)

Operator	Quarry / Transportation Facility	Plants Present on Site					
		Primary Processing	Bagging	Concrete / Mortar	Asphalt Coating	Aggregate Recycling	Transshipment Facility
Aggregate Industries	Martells Quarry, Ardleigh	✓					
Blackwater Aggregates	Bradwell Quarry, Bradwell/Kelvedon	✓	✓	✓			
Brett Aggregates	Alresford Creek, Alresford	✓	✓				
	Brightlingsea Quarry, Brightlingsea	✓					
	Elsenham Quarry, Elsenham	✓				✓	
Widdington Recycling Ltd	Widdington Pit, Widdington	✓				✓	
Danbury Aggregates	Royal Oak, Danbury						
Dewicks	Curry Farm, Bradwell-on-Sea	✓					
Edviron	Crumps Farm, Great Canfield	✓					
Frank Lyons Plant Services	Blackley Quarry, Great Leighs	✓					
G&B Finch	Asheldham Quarry, Asheldham	✓		✓			
Hanson Aggregates	Birch Quarry, Birch	✓		✓			

Operator	Quarry / Transportation Facility	Plants Present on Site					
		Primary Processing	Bagging	Concrete / Mortar	Asphalt Coating	Aggregate Recycling	Transshipment Facility
	Bulls Lodge Quarry, Boreham	✓	✓	✓	✓		
JJ Prior Ltd	Fingringhoe Quarry, Fingringhoe						✓
Tarmac Ltd	Colchester Quarry, Stanway	✓		✓	✓	✓	
	Wivenhoe Quarry, Wivenhoe	✓			✓	✓	
S Walsh and Sons Ltd	East Tilbury Quarry					✓	
Sewells Reservoir Construction	Cobbs Farm, Goldhanger						
	Crown Quarry, Ardleigh	✓		✓			
	Highwood Quarry, Little Easton	✓	✓			✓	
	Harlow Rail Head			✓	✓		

Source: Essex County Council (2018)

# ANNEX C PERMITTED RESERVES IN GREATER ESSEX (1996 - 2017)

Permitted Sand and Gravel Reserves in Essex, Thurrock & Southend  (Millions of Tonnes)	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
	74.55	69.28	65.52	68.76	68.42	68.48	57.69	59.64	54.6	51.00	50.12

Permitted Sand and Gravel Reserves in Essex, Thurrock & Southend  (Millions of Tonnes)	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	46.68	39.19	36.71	37.36	37.01	35.5	32.88	30.72	32.69	35.37	31.95

Source: Essex County Council Annual Monitoring Reports and East of England Annual Monitoring Reports
Note: Dormant mineral developments are not included in the calculations in this section
Supporting: Figure 3 - Permitted Sand & Gravel Reserves in Greater Essex (1998 to 2017), page 7.



## ANNEX D APPORTIONMENT & LANDBANK DATA

**Table 10: Greater Essex Annual Sand & Gravel Apportionment Figures**

Year Set	Period Covered by Guidelines	Apportionment (Millions of Tonnes Per Annum)
1989	1989 - 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

**Table 11: Annualised Landbank held in Greater Essex (2008 – 2017)**

Year	Permitted Reserve (a)	Annualised Plan Provision in mt (b)	Landbank in Years (a/b)
2008	39.19mt	4.55mt	8.61
2009	36.71mt	4.45mt	8.25
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

Source: East of England Annual Monitoring Reports, Supporting: Figure 5, Greater Essex Landbank (2008 to 2017), page 10

**Table 12: 10 Year Average Sales Landbank held in Greater Essex (2008 to 2017)**

Year	Permitted Reserve (a)	10 years Average Annual Sales of Sand and Gravel (b) (2008 to 2017)	Landbank in Years (a/b)
2008	39.19mt	3.20mt	11.77
2009	36.71mt	3.20mt	11.02
2010	37.36mt	3.20mt	11.22
2011	37.01mt	3.20mt	11.11
2012	35.5mt	3.20mt	10.66
2013	32.88mt	3.20mt	9.87
2014	30.72mt	3.20mt	9.23
2015	32.69mt	3.20mt	9.82
2016	35.35mt	3.20mt	10.62
2017	31.95mt	3.20mt	9.99

Source: Essex County Council (2018), Supporting: Figure 5, Greater Essex Landbank (2008 to 2017), page 10

## ANNEX E SALES DATA

**Table 13: Sales of Land Won Sand & Gravel within Greater Essex (1996 – 2017) (in millions of Tonnes)**

Sand and Gravel Sales in Essex, Thurrock and Southend	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
	4.18	4.02	4.02	4.30	4.04	4.23	4.66	4.47	4.30	4.14	4.07
Sand and Gravel Sales in Essex, Thurrock and Southend	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	4.09	3.29	2.79	2.99	2.80	2.30	3.18	4.37	3.45	3.40	3.41

Average Annual Sales 1998 to 2017 (20 years)	3.72mt
10 Year Average Annual Sales (2008 to 2017)	3.20mt
3 Year Annual Sales (2015 to 2017)	3.42mt

Source: Essex County Council Annual Monitoring Reports and East of England Aggregates Working Party Annual Monitoring Reports  
Supporting: Figure 4, Greater Essex Sales of Land Won Sand & Gravel (1998 to 2017), page 8

## ANNEX F MARINE-WON MINERALS

**Table 14: Marine Won Mineral Landed In Ports With The Capacity To Serve Greater Essex In Tonnes (2008 to 2017)**

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>London</b>	4,192,187	3,466,777	3,178,872	4,319,908	4,188,757	4,606,442	5,316,369	5,613,006	5,898,302	5,808,273
<b>Thurrock</b>	439,723	121,852	255,527	329,376	329,376	329,376	238,331	204,276	263,756	198,753
<b>Kent</b>	2,550,640	2,226,380	1,944,763	2,252,864	1,200,040	1,211,574	1,771,156	2,489,490	2,553,793	2,574,808
<b>Suffolk</b>	100,941	87,459	114,468	148,483	83,865	27,931	57,085	119,421	171,083	208,015
<b>Total</b>	<b>7,283,491</b>	<b>5,902,468</b>	<b>5,493,630</b>	<b>7,050,631</b>	<b>5,802,038</b>	<b>6,175,323</b>	<b>7,382,941</b>	<b>8,426,193</b>	<b>8,886,934</b>	<b>8,789,849</b>

Source: The Crown Estate, Summary of Statistics, 2008 – [2017](#)

Supporting: Figure 7 Marine-Won Mineral Landed in Ports that Serve Greater Essex (2008 to 2017), page 15



## ANNEX G AGGREGATE RECYCLING FACILITIES WITHIN GREATER ESSEX 2017

**Table 15: Essex & Southend-on-Sea Aggregate Waste Recovery Facilities**

Site Name	Site Address	Specific Facility Type	Capacity <sup>29</sup>	End Date?
<b>Operational</b>				
GBN - Archer's Fields	Archers Fields, Burnt Mills, Basildon, SS15 6DX	Aggregate Recycling Centre	25,000	Permanent
Pitsea	Pitsea Hall Lane Pitsea Basildon Essex SS16 4UH	Aggregate Recycling Centre	208,000	31/12/2025
Whites Yard	Archers Fields Close, Basildon, SS13 1DN	Aggregate Recycling Centre	25,000	Permanent
Hallsford Bridge	Plot 9 Hallsford Bridge Industrial Estate Stondon Road Stondon Massey Ongar Essex CM5 9RB	Aggregate Recycling Centre	2,146	Permanent
Halstead Highway Depot	Fenn Road, Halstead, CO9 2HG	Aggregate Recycling Centre	1,342	Permanent
The Yard	New Parsonage Lane, Gt Saling, Braintree CM7 5ER	Aggregate Recycling Centre	0	Permanent
Bulls Lodge	Bulls Lodge Quarry, Generals Lane, Boreham, Chelmsford, CM3 3HR	Aggregate Recycling Centre	100,000	30/06/2030
C A Blackwell ( Contracts ) Ltd, (Mobile Plant)	The Works, Stock Road, West Hanningfield, Chelmsford, Essex, CM2 8LA	Aggregate Recycling Centre	0	Permanent

<sup>29</sup> Capacity is either the maximum capacity stated in the planning permission, or if this is unavailable the average recorded on the Environment Agency's Waste Data Interrogator.

Site Name	Site Address	Specific Facility Type	Capacity <sup>29</sup>	End Date?
Colchester Quarry (Colchester Recycling)	Warren Lane, Stanway, Colchester, CO3 0NN	Aggregate Recycling Centre	190,000	31/12/2037
Colchester Skip Hire	Greenacres Old Packards Lane Wormingford Colchester Essex CO6 3AH	Aggregate Recycling Centre	15,000	Permanent
Haven Road	Haven Quay Haven Road Colchester Essex	Aggregate Recycling Centre	75,000	Permanent
Patterns Yard	Patterns Yard Nayland West Bergholt Colchester	Aggregate Recycling Centre	300	Permanent
Wivenhoe Quarry,	Alresford Road Wivenhoe Colchester Essex CO7 9JY	Aggregate Recycling Centre	50,000	31/12/2015
Evans Thornwood	Marlow, High Road, Thornwood Common, Epping, CM16 6LU	Aggregate Recycling Centre	77,178	Permanent
Harlow Mill	Aggregate Depot, Station Approach, Old Harlow CM20 2EL	Aggregate Recycling Centre	0	Permanent
Hill Demolition & Skip Hire	1-3 Edinburgh Place Edinburgh Way Harlow Essex CM20 2DJ	Aggregate Recycling Centre	4,306	Permanent
Royden Lea Farm	Roydon Road, Harlow, CM19 5DU	Aggregate Recycling Centre	23,444	

Site Name	Site Address	Specific Facility Type	Capacity <sup>29</sup>	End Date?
Green Recycling	Quayside Industrial Estate, Bates Road, Off the Causeway Maldon, CM9 5FA	Aggregate Recycling Centre	15,182	Permanent
Cottis Yard Recycling Facility	Cottis Yard, Welton Way, Rochford SS4 1LB	Aggregate Recycling Centre	13,303	Permanent
Franklin Hire	Unit 1, Rawreth Industrial Estate Rawreth Lane, Rayleigh Essex, SS6 9RL	Aggregate Recycling Centre	1,711	Permanent
JKS	Roach Valley Works, 53 Purdey's Way, Purdey's Industrial Estate Rochford, Essex, SS4 1LZ	Aggregate Recycling Centre	160,000	Permanent
Stock Road Recycling Facility	25 Stock Rd, Southend-on-Sea SS2 5QF	Aggregate Recycling Centre	33,447	
Essex Recycling Wix	Lane Farm, Harwich Road, Wix CO11 2SA	Aggregate Recycling Centre	50,000	Permanent
EWD Carters Haulage Yard	Morses Lane Industrial Estate Brightlingsea Colchester Essex CO7 0SD	Aggregate Recycling Centre	75,000	Permanent
Martell's	Slough Lane, Ardleigh, Colchester, Essex, CO7 7RU	Aggregate Recycling Centre	10,000	Permanent
Parkeston Quay	Land at Parkeston Quay, West Dock Road, Harwich, Essex	Aggregate Recycling Centre	350,000	Permanent
Silverton Aggregates	Devereaux Farm, Walton Road, Kirby Le Soken, CO13 0DA	Aggregate Recycling Centre	54,916	Permanent



Site Name	Site Address	Specific Facility Type	Capacity <sup>29</sup>	End Date?
Haigh Recycling	Armigers Farm, Thaxted, Essex, CM6 2NN	Aggregate Recycling Centre	100,000	Permanent
Land Adjacent to Taylors Farm	Takeley Essex CM22 6LY	Aggregate Recycling Centre	0	Permanent
Little Easton - Highwood Quarry	Little Easton Airfield Little Easton Gt Dunmow CM6 2BB	Aggregate Recycling Centre	70,000	25/03/2027
Loppingdales	Gaunts End, Elsenham Bishops Stortford CM22 6DR	Aggregate Recycling Centre	90,000	Permanent
Widdington Pit,	Hollow Road Widdington Saffron Walden Essex CB11 3SL	Aggregate Recycling Centre	65,000	01/01/2023
Ferns Surfacing Ltd	Unit A Codham Hall Lane Gt Warley Brentwood CM13 3JT	Soil Screening	100,968	30/08/2017
Woolmongers Lane BRW	The Elms Woolmongers Lane Blackmore, Epping Forest Essex CM4 0JX	Soil Screening	9,675	Permanent
Bateman's Farm,	Great Leighs, Chelmsford, Essex, CM1 2QF	Soil Screening	163,657	Permanent
Mason Trucking Company	Elm Farm, Elm Ln, Marks Tey, Colchester CO6 1HU	Soil Screening	20,023	
Harvey Automobile Engineering	Payne's Lane, Nazing, EN9 2EX	Soil Screening	20,949	Permanent

Site Name	Site Address	Specific Facility Type	Capacity <sup>29</sup>	End Date?
Curry Farm	New House Mill End Bradwell-Juxta-Mare, Maldon, CM0 7HL	Soil Screening	15,000	31/12/2018 Restoration by 31/12/2019
Elsenham Recycling Centre,	Hall Rd., Elsenham, Bishops Stortford, CM22 6DJ	Soil Screening	30,000	10/05/2029
<b>Under Construction</b>				
St Cleres	St Cleres Pit Main Road Danbury Essex CM3 4AR	Aggregate Recycling Centre	0	12 years from commencement
<b>Just with the benefit of Planning Permission</b>				
Blackley Quarry	Blackley Quarry, Great Leighs	Aggregate Recycling Centre	100,000	5/06/2045

Source: Essex County Council (2018) Authority Monitoring report 1 April 2016 – 31 March 2017

**Table 16: Thurrock CD&E Aggregate Recovery Facilities**

SITE NAME	SITE ADDRESS	SPECIFIC FACILITY TYPE	PLANNING PERMISSION / EA AVERAGE	END DATE
Clearserve Rainbow Shaw <sup>30</sup>	Holford Road Linford Essex SS17 0PJ	CD&E Inert & Non Inert	74,999	2018/19
S Walsh and Sons East Tilbury Quarry <sup>31</sup>	Princess Margaret Road East Tilbury Essex RM18 8PA	CD&E Inert & Non Inert	759,000	2020
Rio Aggregates <sup>32</sup>	Dansand Quarry, Stanford Road, Orsett	CD&E Inert	75,000	2024/5

<sup>30</sup> These recycling facilities on landfill/mineral sites and subject to the end of landfill operations and restoration of the site.

<sup>31</sup> These recycling facilities on landfill/mineral sites and subject to the end of landfill operations and restoration of the site.

<sup>32</sup> These recycling facilities on landfill/mineral sites and subject to the end of landfill operations and restoration of the site.

RM16 3BB				
Killoughery <sup>33</sup>	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 +Non-Inert	250,000	n/a
Brocks Haulage	Watson Close West Thurrock	CD+E +Non-Inert	75,000	n/a
Squibb Group	Stanhope Industrial Estate, Wharf Road Stanford Le Hope	CD+E	75,000	n/a
<b>Under Construction</b>				
NONE				
<b>Just with the benefit of Planning Permission</b>				
NONE				

Source: Thurrock Council (2018)

<sup>33</sup> The Kiloughery site is located in an area proposed for comprehensive development and may therefore have a limited operational future on the site.

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