

**Essex County Council, Southend-on-Sea Borough
Council and Thurrock Council**

**Local Aggregate Assessment
for
Greater Essex**

November 2016

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1. Executive Summary

This is the third Local Aggregate Assessment (LAA) produced by Essex County Council on behalf of the Greater Essex authorities (Essex County Council, Southend-on-Sea Borough Council and Thurrock Council). The purpose of the LAA is to annually report upon aggregate supply and demand, including sales, permitted reserves and landbank within the aforementioned area.

Please note that in the early half of 2017, a Thurrock-only LAA will be published to support the development of the Thurrock Local Plan Issues and Options document. Where information relating to Thurrock specifically is absent in this report, it will be included within this document.

1.1 Minerals within Greater Essex

As of December 2015, there were 25 sand & gravel quarries (21 operational) across Greater Essex, of which one also produces silica sand, as well as two brick clay sites and a single chalk site. There are also a further four sand & gravel quarries which are currently dormant. These dormant quarries are omitted from the calculation of the 'landbank' and 'permitted reserves'.

Greater Essex also has reserves of brick clay, silica sand and chalk but figures are not presented for these minerals due to either an absence of working or commercial confidentiality.

1.2 Permitted Reserves

There has been a reduction in permitted reserves over the last 20 years; in 1996 reserves were 74.55mt and by 2015 these have fallen to 32.69mt. However, there has been an increase in reserves between 2014 and 2015 as a result of the granting of several planning permissions post adoption of the Essex Minerals Local Plan 2014 (MLP).

1.3 Sand and Gravel Sales

Sales of sand and gravel have generally decreased between 2006 and 2015, from 4.07mt to 3.45mt. However, within this ten year period, the highest level of sales were recorded in 2014 at 4.37mt. The lowest sales were recorded as 2.3mt in 2012. The 2015 sales value is equal to the three year average figure (3.45mt), above the ten year average figure of 3.3mt and below the apportionment value of 4.45mtpa.

The last three years of sales show an overall increase from 3.18mt to 3.45mt representing an increase of 8.5%. This overall increase is despite a decrease in sales between 2014 and 2015 from 4.37mt to 3.45mt, which represents a proportional decrease of 21%.

1.4 Sand and Gravel Landbank

The Greater Essex landbank calculated using the apportionment captured in the Essex Minerals Local Plan 2014 and the Thurrock Core Strategy and Policies for Management of Development 2015 (4.45mtpa across both authorities) reduces over the last ten years, from 11.02 years in 2006 to 7.35 years in 2015.

When calculated using the current ten year average (3.3mt), the Greater Essex landbank is naturally higher for the same period, being calculated as 15.05 years in 2006 and reducing to 9.82 years in 2015. Under both methodologies, the landbank is above the national requirement of seven years for sand and gravel.

1.5 Marine Won Sand and Gravel

Marine won sand and gravel landed in ports either within or in counties adjacent to Greater Essex (plus London) has increased between 2007 and 2015, from 7.44mt to 8.43mt. This increase has been year-on-year since 2012.

1.6 Imports and exports

Across the plan area, there are currently mineral transshipment facilities located at Chelmsford, Harlow, Fingringhoe, Marks Tey and Purfleet.

In 2014, of the 4,329,000mt of sand & gravel consumed in Greater Essex, 60% - 70% of this came from Essex. A further 20% - 30% originated from East London, with Thurrock and Kent also contributing between 1% - 10%. A further nine mineral planning areas contributed less than 1% to the total amount consumed.

In 2014, of the 1,525,000mt of crushed rock consumed in Greater Essex, 60% - 70% of this came from Somerset. A further 10% - 20% originated from Leicestershire with the same amount also being imported from outside of England and Wales. Powys contributed between 1% - 10%. A further 11 mineral planning areas contributed less than 1% to the total amount of crushed rock consumed.

In terms of the export of sand & gravel, 20 – 30% of the sand & gravel exported from Greater Essex went to East London. 10% - 20% was exported to Hertfordshire and another 10% - 20% was exported to Suffolk. A further ten mineral planning authorities receive sand & gravel from Greater Essex.

1.7 Secondary and recycled aggregate

As of March 2015, there was a total of 41 aggregate recycling facilities in Essex and Southend-on-Sea, with a combined capacity of 2,102,073t. Of these, 38 are operational, one is under construction and a further two have planning permission which has not yet been implemented. Operational capacity is recorded as 2,064,073t.

Approximately one third of this capacity only benefits from temporary planning permission and it is forecasted that by the end of the emerging Waste Local Plan period (2032), there could potentially only be approximately 1.4mtpa of aggregate recycling capacity.

Within Thurrock there are seven authorised sites which process recycled aggregate as well as screen soils associated with this type of aggregate. Of these seven sites, three are associated with mineral and landfill sites and are thus of a temporary nature, and four are 'permanent' sites. However one of the latter is within an area proposed for comprehensive redevelopment and thus is likely to be lost at some time in the future.

It should be noted that although the planning permissions for these sites do not impose capacity limitations by reference to tonnages, capacities are in some instances limited by reference to maximum vehicle movements.

2. Introduction

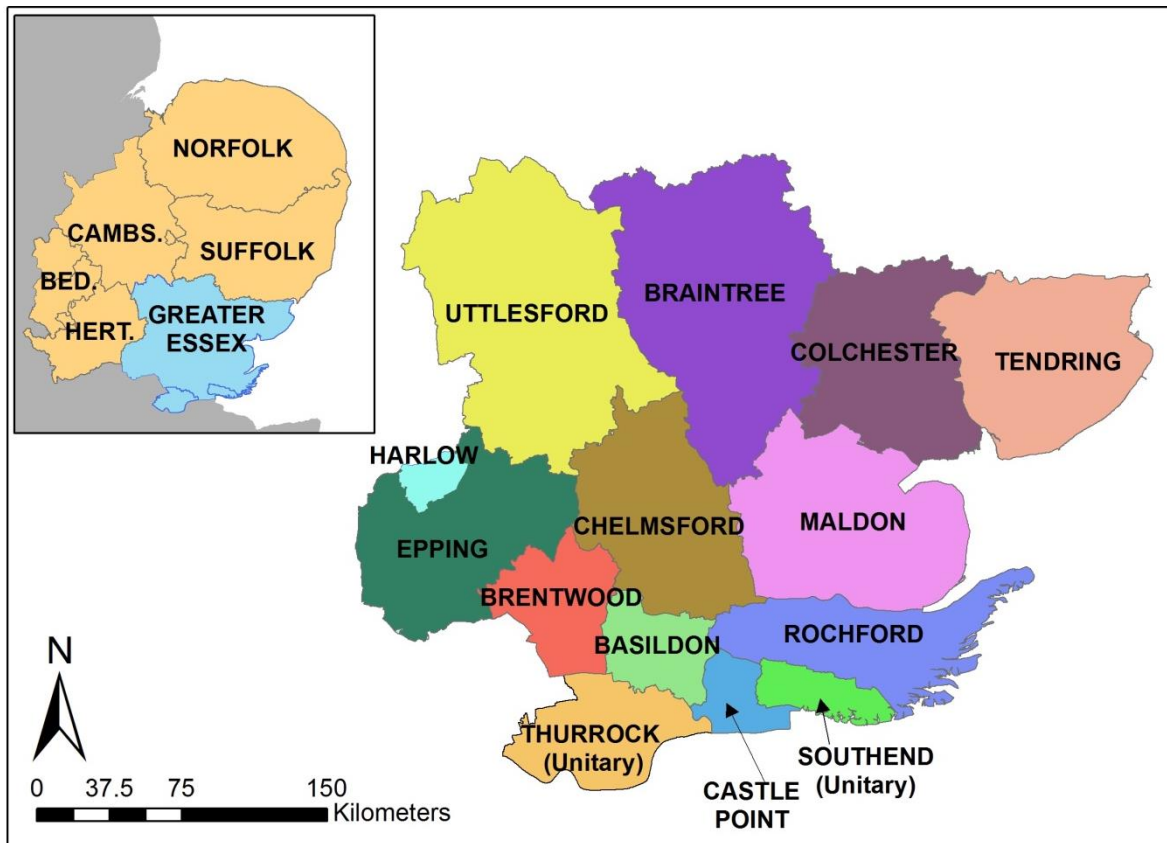
Background

- 2.1 Paragraph 145 of the National Planning Policy Framework (NPPF) requires Mineral Planning Authorities (MPAs), either individually or jointly by agreement, to produce a Local Aggregate Assessment (LAA) every year. The role of the LAA is to aid in the determination of the amount of mineral provision required to facilitate development, and to monitor this supply, to ensure that a steady and adequate provision of minerals is provided throughout the period covered by a Minerals Local Plan (MLP).
- 2.2 This LAA covers the administrative areas of the County of Essex and the unitary authorities of Southend-on-Sea and Thurrock. Information relating to these three administrative areas has historically been amalgamated due to the relatively small amount of workings which take place in Thurrock, which creates issues around commercial confidentiality, and the absence of mineral working in Southend-on-Sea due to its tightly defined, urbanised administrative area. Collectively, Essex, Southend-on-Sea and Thurrock are known as Greater Essex and will be referred to as such throughout this report.
- 2.3 Please note that whilst all minerals data relating to Essex is amalgamated with that pertaining to Southend-on-Sea and Thurrock, 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.

Spatial Context

- 2.4 Essex is located to the north-east of London within the East of England region and borders the counties of Hertfordshire, Suffolk, Cambridgeshire and Kent. The administrative area of Essex also borders the unitary authorities of Southend-on-Sea and Thurrock as well as a number of London Boroughs. The two-tier administrative system which operates within Essex includes 12 district, borough and city councils. Essex, Southend-on-Sea and Thurrock combined are known as Greater Essex, and this is the reporting tier which informs much of this LAA.

Figure 1: Spatial Context of Greater Essex



Source: Essex County Council (2016)

- 2.5 In July 2016, DCLG released 2014-base household projections for the period 2014 to 2039. These projections indicate a growth of 22,000 households in Greater Essex between 2014 and 2039 compared with a growth of 16,000 between 1991 and 2013. Within Thurrock, the Core Strategy provides for over 18,500 new homes by 2021 and up to 4750 more by the end of the plan period, 2026. The Thurrock jobs target is 26,000 over their Plan period.
- 2.6 There are also a number of significant infrastructure schemes either planned or potentially programmed for Essex or adjoining authorities up to 2029 which is the end of the plan period for the Essex Minerals Local Plan. A major infrastructure project, Crossrail, linking Maidenhead (Berkshire) to Shenfield (Essex) is currently being constructed. HS2 is another significant rail infrastructure project which could potentially make a call on Greater Essex reserves. Planning permission has been granted at Shellhaven (Thurrock) for the UK's largest container port and a major business park and logistics centre, whilst at Bathside Bay (Harwich) planning approval has been granted for the construction of one of the largest container terminals in the UK.
- 2.7 Further, the National Infrastructure Plan details Crossrail and a potential 'new Lower Thames crossing', the Essex Economic Growth Strategy 2012 contains a number of growth projects and initiatives whilst Essex is also a part of the South East Local Economic Partnership (SELEP) which was formed in November 2010 and who

produced their Growth Deal and Strategic Economic Plan in March 2014. Within this document, SELEP commit to spending £100m of their own funds in Essex to supporting early-stage development to help projects get off the ground and leverage extra support, as well as delivering £1bn of infrastructure investment by 2021 to support economic growth.

- 2.8 Additionally, all completed and emerging Local Development Framework documents produced by the district, borough and city councils within Essex, as well as Southend-on-Sea and Thurrock Council, predict and support growth. As such it is crucial that Essex County Council (ECC) and Thurrock Council, as the Minerals Planning Authority for their administrative areas, are able to secure and aid in the supply of sufficient mineral to realise these growth aims and maintain the infrastructure already developed. This is within the context of ever changing and competing interests for land threatening the sterilisation of Greater Essex's mineral resources, where the completion of developments supporting growth could potentially take place over mineral-bearing land which would subsequently be lost. As such the respective Mineral Local Plans contain safeguarding policies to ensure that mineral bearing land is not lost to non-mineral development before extraction can take place. Encroaching development may also compromise the operation of mineral infrastructure, particularly if the proposed development is sensitive to noise, such as would be the case with residential dwellings. As such, safeguarding policies also ensure that the operation of mineral infrastructure is not compromised by proximal non-compatible development.

3. Minerals in Greater Essex

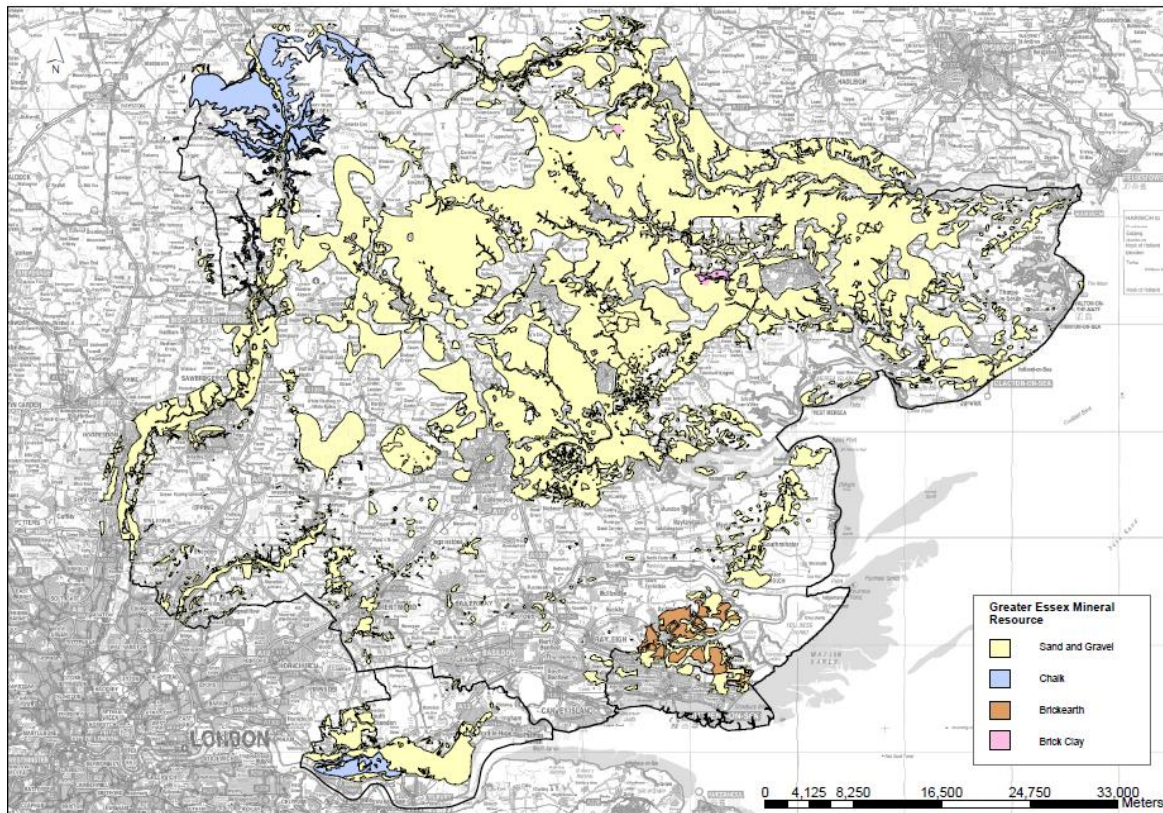
Geology

- 3.1 The geology of Greater Essex dictates where mineral resources will occur and consequently where their extraction can take place. The geology of Greater Essex provides for economically viable concentrations of sand & gravel, silica sand, brick clay and chalk. Although given that there are just two brick clay sites, a single chalk and a single silica sand site with Permitted Reserves in Greater Essex, it is not possible to include detailed information relating to these three resources for reasons of commercial confidentiality. As such figures within this report will relate to marine-won and land-won sand & gravel only, as well as crushed rock which is imported from outside the county.

Economically Viable Mineral Resources within Greater Essex

- 3.2 The map below, based on information supplied by the British Geological Survey (BGS), depicts both known and inferred mineral resources within Greater Essex. When a new minerals application is submitted, Essex and Thurrock Councils require that a geological survey is carried out by the applicant to support their application. This allows for the geological yield and quality of the mineral from the proposed site to be accurately estimated. Subsequently, Essex and Thurrock can then gain a strategic understanding of the deposits being worked which enables calculations to be made relating to existing mineral supply and from that the rate of necessary future provision of mineral sites.

Figure 2: Known and Inferred Mineral Resources in Greater Essex



Source: Based on information supplied by the British Geological Survey, 2002. Depicts both known and inferred mineral resources within Greater Essex.

Sand & Gravel

- 3.2.1 Greater Essex has extensive river terrace and glacio-fluvial sand & gravel deposits. The majority of these deposits are part of the Kesgrave Formation of river terrace sands and gravels that were laid down as superficial (drift) deposits during the Quaternary period. Thanet sand is an exception having been deposited under marine conditions approximately 60 million years ago and overlies what is referred to as the 'Bullhead Bed', resting directly on Cretaceous Chalk and below London Clays. River terrace deposits are found not only along current river valleys but in historic river channels that are now dry. These are often associated with early paths of the River Thames and River Medway. Glacio-fluvial deposits were deposited as retreating glaciers dropped material they had scoured and picked up during their advance. These deposits are also known as Plateau Deposits, and are usually well sorted (meaning each part of the deposit is of a similar grain size to other proximal deposits). Heavier cobbles were dropped first followed by progressively finer material until the last material was deposited, which is boulder clay.
- 3.2.2 The resource of sand & gravel in Greater Essex is:
- Significant in the regional and national context i.e., we are one of the largest producers in the UK;

- Most extensive in the centre and north i.e. the Districts of Uttlesford, Braintree, Colchester, Tendring and Chelmsford although there are also significant deposits in Thurrock;
- Least extensive in the south east where deposits appear smallest and least workable;
- Used as a raw material to produce concrete, mortar, asphalt and construction fill which is used in the construction industry and for roads.

Silica Sand

3.2.3 Silica sand is classed as industrial sand and its distinction from construction sand is based on application and market specification. It contains a high proportion of silica in the form of quartz and has a narrow grain size distribution compared to other sand in Greater Essex.

3.2.4 The resource of silica sand in Greater Essex:

- Is extracted for industrial purposes at Ardleigh, north-east of Colchester from the Kesgrave formation and has been since before the Second World War. Industrial uses include glass making, foundry casting, ceramics, chemicals and water filtration rather than any direct application in the construction industry.
- Was noted in a planning appeal decision to be suitable for purposes as diverse as geotechnical testing, horticultural composts, resin coating, building repair and restoration, nuclear technology, asphalt roofing, concrete floor levelling and other specialist uses;
- Has a selling price 20 times higher than that of regular construction aggregates, allowing them to serve a wider geographical market.

Brickearth

3.2.5 Brickearth was formed by aeolian (windblown) processes during peri-glacial periods (over the last 25,000 years) and is found in shallow seams in the south east, particularly in Rochford District. It varies in thickness from less than 1m to greater than 6m and is generally a structureless silty deposit formed as a fluvial overbank deposit, a loess (a windblown, fine grained deposit), or a mixture of the two. The deposit is not worked to its full depth; instead the top metre or so is skimmed off when the conditions are dry.

3.2.6 As its name suggests, brickearth is used in the manufacture of bricks and tiles and many of the deposits in Greater Essex were worked back in Tudor times. Brick earth is not currently being extracted in Greater Essex as there are no brick works to currently serve, but there is no compelling reason why it could not potentially be extracted in the future. This material is not an aggregate and therefore it does not

come under the landbank requirement. It is however an important resource and remains safeguarded.

Brick Clay

- 3.2.7 Brick clay, was formed under different processes to brickearth around the same period. It is a sedimentary mudstone that results from the weathering of London Clay. It is located in isolated pockets and in particular to the south west of Sudbury and west of Colchester. Essex was at the forefront of the development of the brick industry in the medieval and early post medieval period. The remaining two sites actively extracting and processing brick clay in Essex have been doing so for centuries.
- 3.2.8 Brick clay is currently used in the manufacture of bricks, roof tiles and clay. Brick clay is extracted and processed for specialist brick and tile manufacture at Bulmer and Marks Tey. Bulmer Brickworks works an outcrop of London Clay which contains volcanic ash bands giving a particular character to the products at this site. The site at Marks Tey, which had been operated as a family concern since the 1800's, was taken over by a large brick company in the 2010s. The clay worked here is unusual in that it is a lake deposit and part of the site is a geological SSSI (Site of Special Scientific Interest).

Chalk

- 3.2.9 Chalk is one of the mainstays of 'solid geology' under Greater Essex and is the oldest rock exposed at the surface. It is a sedimentary rock that was formed in relatively deep marine conditions during the cretaceous period (between 80m and 100m years before the present). It occurs extensively under the surface but outcrops only in the north-west (particularly in Uttlesford) and the south-west within Thurrock. Chalk is one of the two principal ingredients in the manufacture of Portland Cement, the other being clay. London Clay and Chalk occur close together in Thurrock and the Portland Cement industry operated here for several decades until the 1980s when factories closed and all chalk extraction ceased. Historically, and this is a position maintained in the Essex Minerals Local Plan 2014, chalk is extracted for agricultural purposes in Essex rather than as an industrial mineral, and as such it is not necessary to define a separate landbank for this resource.
- 3.2.10 As of September 2016, chalk is extracted at one site (in the form of white chalk at Newport Quarry) and it is used mostly for agricultural use, although small quantities are used by the pharmaceutical industry.

4. Existing Minerals Sites in Greater Essex

- 4.1 Information on aggregate sales is collected on an annual basis for all Mineral Planning Authorities (MPAs) in the East of England by the East of England Aggregates Working Party (EEAWP), and this information is included in individual Annual Monitoring Reports (AMR) for each MPA. A MPA plans for the amount of land won mineral that is to be provided over the period of a plan but has no jurisdiction over aggregate won from the marine environment.

Primary Sand & Gravel Development in Greater Essex

- 4.2 This section details all mineral developments relating to sand & gravel within Greater Essex. These include the extraction sites themselves as well as their associated developments, including processing plants and transhipment sites.

Primary Land-won Aggregate Sites in Greater Essex

- 4.2.1 'Primary' aggregates are those aggregates which are sourced through direct extraction. There are two types of 'primary' aggregate, namely 'land won' and 'marine won', and this refers to whether the aggregate was extracted from the land or the sea bed. Land won minerals are assessed in this section with an analysis of marine won minerals presented in Section 7.
- 4.2.2 Table 1 below captures all the operational and non-operational primary mineral sites with planning permission within Greater Essex.
- 4.2.3 As of December 2015, there were 25 sand & gravel quarries (21 operational) across Greater Essex, of which one also produces silica sand, as well as two brick clay sites and a single chalk site. There are also a further four sand & gravel quarries which are currently dormant. These dormant quarries are omitted from the calculation of the 'landbank' and 'permitted reserves'.

Table 1: Permitted Primary Aggregate Sites in Greater Essex, as of December 2015

Operator	Site Name	Cessation Date for Planning Permission	District /Borough
Operational Sand & Gravel Quarries with Permitted Reserves			
Blackwater Aggregates	Bradwell Quarry, Silver End	2022	Braintree
Frank Lyons Plant Services Ltd	Blackleys Quarry, Great Leighs	2015	Chelmsford
Hanson Aggregates	Bulls Lodge Quarry, Boreham	2030	Chelmsford

Operator	Site Name	Cessation Date for Planning Permission	District /Borough
Danbury Aggregates	Royal Oak, Danbury	2014	Chelmsford
Hanson Aggregates	Birch Quarry	2018	Colchester
Tarmac Ltd	Colchester Quarry, Stanway	2042	Colchester
JJ Prior Ltd	Fingringhoe Quarry	2042	Colchester
Tarmac Ltd	Wivenhoe Quarry	2015	Colchester
G&B Finch Ltd	Asheldham Quarry	2014	Maldon
Sewells Reservoir Construction Ltd	Cobbs Farm	2017	Maldon
Dewicks	Curry Farm, Bradwell-on-Sea	2014	Maldon
Brett Aggregates	Alresford Creek, Alresford	2042	Tendring
Brett Aggregates	Brightlingsea Quarry	2026	Tendring
Sewells Reservoir Construction Ltd	Crown Quarry	2028	Tendring
S. Walsh & Sons Ltd	East Tilbury Quarry	2021 ¹	Thurrock
Rio Aggregates	Dansand Quarry, Stanford Road, Orsett	2025	Thurrock
RJD Ltd	Mill House Farm, West Tilbury	2017	Thurrock
Brett Aggregates	Elsenham Quarry	2030	Uttlesford
Sewells Reservoir Construction Ltd	Highwood Quarry, Little Easton	2026	Uttlesford

¹ Date the majority of the site has to be restored by

Operator	Site Name	Cessation Date for Planning Permission	District /Borough
Carr & Bircher Ltd	Widdington Pit	2025	Uttlesford
Edviron Ltd	Crumps Farm, Gt Canfield	2029	Uttlesford
Non Operational Sand & Gravel Quarries with Permitted Reserves			
Gent Fairhead & Co Ltd	Rivenhall Airfield (Waste Facility)	Planning Permission for waste management ESS/34/15/BTE was granted in February 2016.	Braintree
Danbury Aggregates	St Cleres Pit, Danbury	2016	Chelmsford
Brett Aggregates	Lufkins Farm, Thorington Road, Great Bentley	Commencement within 5 years from July 2014, cessation three years after commencement.	Tendring
Ingrebourne Valley Ltd	Orsett Quarry - Stanford-le-Hope	2042	Thurrock
Dormant Sand & Gravel Quarries			
S.R. Finch	Straits Mill		Braintree
-	Alton Park		Tendring
-	Hodgnells Farm		Tendring
Devernish Ltd	Hambro Hill		Rochford
Operational Silica Sand Sites with Permitted Reserves			
Aggregate Industries UK Ltd	Martells Quarry, Ardleigh	2026	Tendring
Operational Brick Clay Sites with Permitted Reserves			
Bulmer Brick & Tile Co	Bulmer Brickworks	2027	Braintree

Operator	Site Name	Cessation Date for Planning Permission	District /Borough
W H Collier Ltd	Marks Tey Brickworks	2042	Colchester
Operational Chalk Sites with Permitted Reserves			
Needham Chalks Ltd	Newport Chalk Pit	2042	Uttlesford

Source: Essex County Council and Thurrock Council, 2016

- 4.2.4 The location of active and inactive mineral sites across Greater Essex is shown in Figure 3 below.

Mineral Transhipment Sites

- 4.2.5 A minerals transhipment site is an intermediate minerals facility, where minerals are bought in and then transported to another destination. A minerals transhipment site will typically take the form of either a rail depot or a wharf, and allow for the sustainable long distance movement of minerals outside of the road network. Table 2 below details the mineral transhipment sites within Greater Essex.

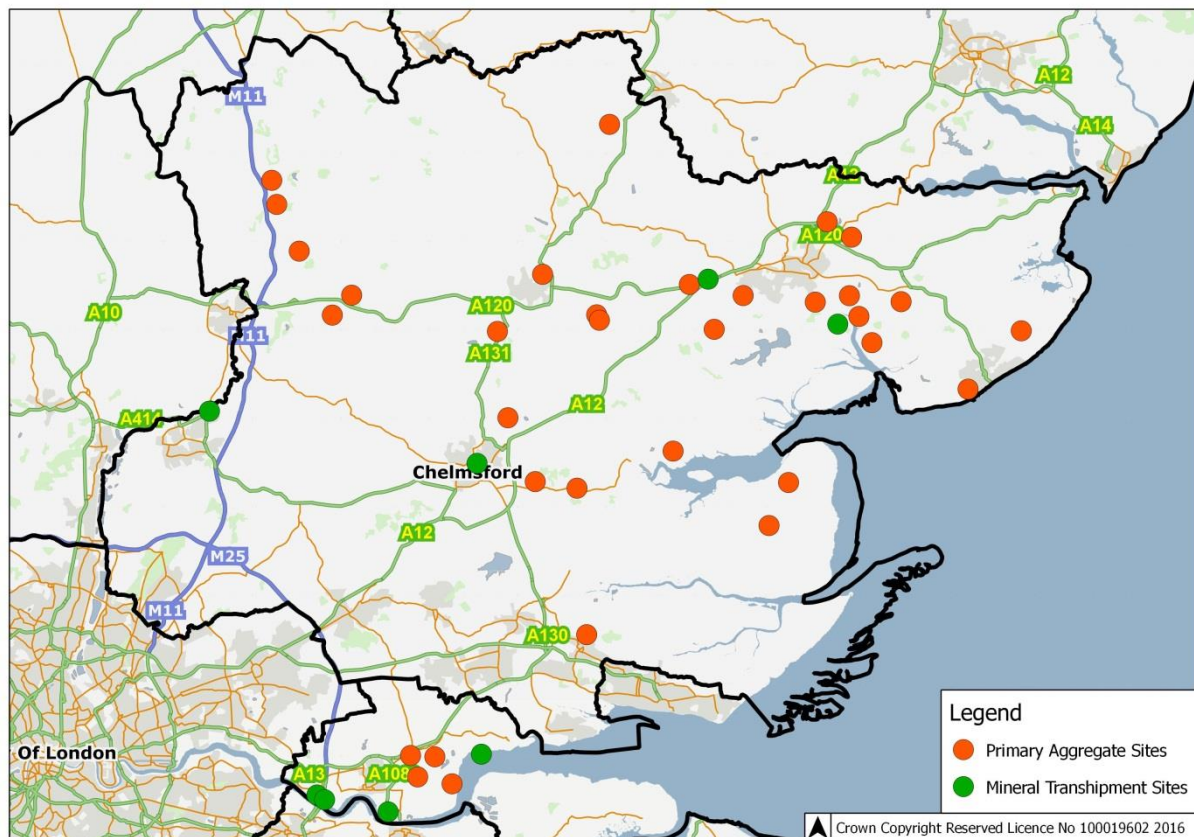
Table 2: Mineral Transhipment Sites in Greater Essex, as of December 2015

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

Operator	Site Name	District/Borough
Aggregate Industries UK Ltd/ Tarmac Ltd	Harlow Rail Depot x2	Harlow
Aggregate Industries UK Ltd	Purfleet Rail Depot	Thurrock

Source: Essex County Council and Thurrock Council, 2016

Figure 3: Permitted Operational and Non-Operational Mineral Extraction Sites, and Transhipment Sites in Essex as of December 2015



Source: Essex County Council, 2016

Processing Plants in Greater Essex

- 4.3 Primary processing can take a number of forms. Extracted material can be crushed or ground into smaller particles and then sieved to ensure that particle sizes in the extracted material are within a certain classification in order to produce a uniform product. A de-watering process is employed to both reduce the volume of extracted material and ensure it is fit to be turned into its final product. The extracted material can also be further concentrated through an exploitation of its physical and/or chemical properties to increase the proportion of valuable mineral in a load and thereby increasing the value of the final product.
- 4.4 Primary processing of the aggregate material on the same site as where the extraction takes place enables a higher and more sustainable use of aggregates. Encouraging such on-site processing reduces the number of lorry movements on the highway network, whilst the importation of non-indigenous material for processing can increase vehicle movements and extend the overall life of a mineral development, thereby potentially prolonging industrial uses within the countryside. The Essex MLP states that all applicants will be required to demonstrate how extracted mineral is to be used in an efficient way by making provision for an on-site primary processing plant.
- 4.5 Secondary processing plant, such as for concrete batching, the manufacture of coated materials (eg asphalt), block/tile/brick making and other concrete products appear on mineral, industrial and transshipment sites and are currently well spread across Greater Essex. They allow for a greater range of products to be produced on site and therefore make contributions to the economic viability of the mineral developments where they are found. Locating secondary processing plants on active quarries again has the benefit of reducing the amount of mineral miles on Greater Essex infrastructure.
- 4.6 Table 3 below details the processing plants associated with each of the quarry sites within Greater Essex.

Table 3: Permitted Processing Plants in Greater Essex as of December 2015

Operator	Quarry	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, Tendring						
	Brightlingsea Quarry, Tendring						
	Elsenham Quarry, Uttlesford						
Carr and Bircher	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						
Hanson Aggregates	Birch Quarry, Birch						
	Bulls Lodge Quarry, Boreham						

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

Source: Essex County Council, 2016

5. Mineral Data Analysis in Greater Essex

- 5.1 Originally Regional Aggregate Working Parties, subsequently aided by Regional Assemblies (who have since been dissolved as a consequence of the current planning system), had the role in conjunction with Mineral Planning Authorities of dividing regional apportionment figures into an annual apportionment for each Mineral Planning Authority. These figures were underpinned by the 'National and Sub National Guidelines for Aggregates Provision in England documents, of which the latest covers the period 2005 – 2020. This practice has seen Greater Essex being attributed with a number of different annual apportionment figures over time, as show in Table 4 below. Each annual apportionment has been lower than that before in recognition of the utilisation of more sustainable construction techniques and an increasing use of secondary and recycled material.
- 5.2 Since 2003, the apportionment for Greater Essex was split into that being expected to be provided in Essex and Thurrock separately. It was agreed that Thurrock Unitary would be responsible for the provision of 0.14mt of the total apportionment which was set in both 2003 and 2009.

Table 4: Greater Essex Historic Annual Sand & Gravel Apportionment Figures, 1994 – 2020 (in Millions of Tonnes)

Year Set	Period Covered by Guidelines	Apportionment
2003	2001 - 2016	4.55mtpa (4.41mtpa for Essex, 0.14mtpa for Thurrock)
2009	2005 - 2020	4.45mtpa (4.31mtpa for Essex, 0.14mtpa for Thurrock)

Source: East of England Aggregates Working Party, 2010 AMR

- 5.3 As explained in Section 2.2, Southend-on-Sea and Thurrock are Unitary Authorities and therefore planning documents published by Essex County Council do not apply to these localities unless jointly prepared. The Essex Minerals Local Plan for example does not cover the Southend-on-Sea or Thurrock authority area.
- 5.4 Due to the number of mineral operations in Thurrock, it is not possible to provide accurate statistics for the industry separately for Essex and Thurrock due to reasons of commercial confidentiality. As such, a proxy has to be used to estimate sales in these individual mineral planning areas. Through negotiation it was agreed that of the 4.45mtpa of sand & gravel to be provided across Greater Essex, 4.31mtpa was to be provided in Essex and 0.14mtpa was to be provided by Thurrock. Therefore when assessing sales data, it is assumed that every year the amount of mineral sold in the Thurrock minerals planning area equates to 0.14mt.

- 5.5 Southend-on-Sea is not required to make a contribution due to it being a constrained urban authority.

Table 5: Difference in Annual Apportionment and Ten Year Sales Average of Sand & Gravel between Greater Essex and its Constituents

	Annual Plan Provision	Ten Year Sales Average 2006-2015
Greater Essex	4.45mtpa	3.33mt
Essex	4.31mtpa	3.19mt
Thurrock	0.14mtpa	0.14mt
Southend-on-Sea	0mtpa	0mt

Source: Essex County Council 2016

- 5.6 All statistics in this report will be at the reporting level of Greater Essex which is in line with all other mineral reporting documents both nationally and sub-nationally.

The Introduction of the ‘Ten Year Sales’ and ‘Three Year Sales’ Method

- 5.7 The NPPF states that future mineral provision should be based on an average of the previous ten year sales rather than on a figure calculated and then apportioned to each MPA through successive iterations of the ‘National and Sub National Guidelines for Aggregates Provision’. In recognition of the fact that the Essex MLP and the Thurrock Core Strategy provide mineral on the basis of the previous apportionment system, landbank figures presented in Section 6 are calculated on the basis of both the apportionment and the last ten year sales.
- 5.8 National Planning Policy Guidance states that MPAs should also look at the average of the previous three year sales to identify the general trend of demand as part of the consideration of whether it might be appropriate to increase mineral supply. This is presented in Section 6.

6. The Provision of Sales of Sand and Gravel in Greater Essex

- 6.1 The minerals accounted for in this section do not equate to the total mineral supply either required by Greater Essex or used within Greater Essex as minerals are the subject of importation and exportation. Whilst an MPA can set the quantity of mineral that can be extracted in its planning area, it has no jurisdiction over where this mineral is sold. Import and export of sand & gravel is assessed in Section 8. Contributions are also made by recycled aggregate which are assessed within this report in Section 9.
- 6.2 The data presented in this section details the position as of December 2015, which is the latest information available.

Permitted Reserves in Greater Essex²

Table 6: Permitted Reserves in Greater Essex in Millions of Tonnes, 1996 – 2015

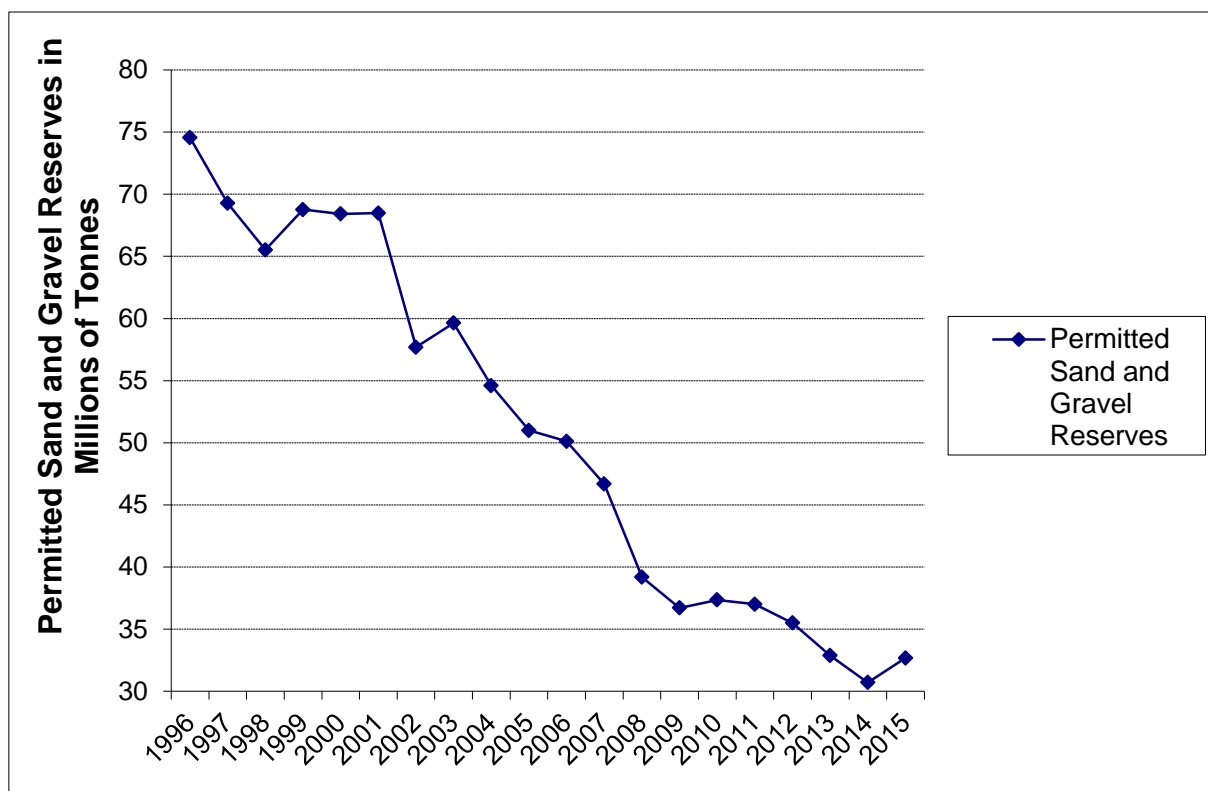
Permitted Sand and Gravel Reserves in Essex, Thurrock & Southend	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
	74.55	69.28	65.52	68.76	68.42	68.48	57.69	59.64	54.6	51.00

Permitted Sand and Gravel Reserves in Essex, Thurrock & Southend	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
	50.12	46.68	39.19	36.71	37.36	37.01	35.5	32.88	30.72	32.69

Source: Essex County Council Annual Monitoring Reports and East of England Annual Monitoring Report 2014 and 2015

² Dormant mineral developments are not included in the calculations in this section

Figure 4: Permitted Reserves in Greater Essex in Millions of Tonnes, 1996 – 2015



Source: Essex County Council 2016

- 6.3 There has been a clear reduction in the amount of mineral that Greater Essex has permitted for extraction over the last 20 years. Permitted reserves were 74.55mt in 1996, which then decreased yearly until 1999 where permitted reserves increased to 68.76mt. A general pattern of reduction continues again with the exception of 2001 where reserves rise to 68.48mt. There is a year-on-year reduction between 2003 and 2009 followed by an increase to 2010 before further yearly reductions until 2014. The landbank subsequently increases to 32.69mt from 30.72mt between 2014 and 2015.
- 6.4 The 2015 permitted reserve equates to 44% of that recorded in 1996. The general trend of a falling reserve is the result of sales being higher than the amount of material being added to the reserve by planning permissions. A declining permitted reserve within Greater Essex is however comparable to the national picture. The principle reason for this downturn nationally was identified by the British Geological Survey in a 2008 report (BGS: Reasons for the Decline in Aggregate Reserves in England, 2008) as being due to insufficient planning applications coming forward relating to extraction rather than too conservative an approach on behalf of Mineral Planning Authorities in awarding planning permissions. Further, a reduction in permitted sand and gravel reserves only reaches particular significance when such a reduction results in the landbank within a minerals planning area falling below the national statutory minimum of seven years.

- 6.5 The upturn shown in the recent period is partly due to a reduction in sales but also to the awarding of planning permissions to extract, these include Bradwell Quarry (Application number: ESS/24/14/BTE) and Stanway Quarry Fiveways Fruit Farm (Application number: ESS/23/14/COL).

Sand & Gravel Landbank held in Greater Essex

- 6.6 The landbank of any mineral reserve is calculated by dividing the total amount of permitted reserve by the annual amount of mineral permitted to be extracted. There is a statutory requirement to maintain a sand & gravel landbank of at least seven years. Should the landbank fall below this minimum, planning applications could be bought forward on land not allocated as a Preferred Site and be assessed in light of there being a need for the mineral which isn't currently being provided for through existing sites. Such an approach leads to the weakening of the Plan-led system which is at the forefront of planning policy.
- 6.7 The NPPF states that this annually permitted value should be based on an average of the previous ten years of sales in the first instance, which replaces the previous method of calculating an annual national mineral requirement which is then apportioned to each MPA through successive iterations of the 'National and Sub National Guidelines for Aggregates Provision'. The previous three years of sales should also be taken into account to ensure that the previous ten year average remains an appropriate level of provision.
- 6.8 However, in recognition of the fact that the Essex MLP and the Thurrock Core Strategy provide mineral on the basis of the previous apportionment system, landbank figures presented in this section are calculated on the basis of both the apportionment and the last ten year sales.

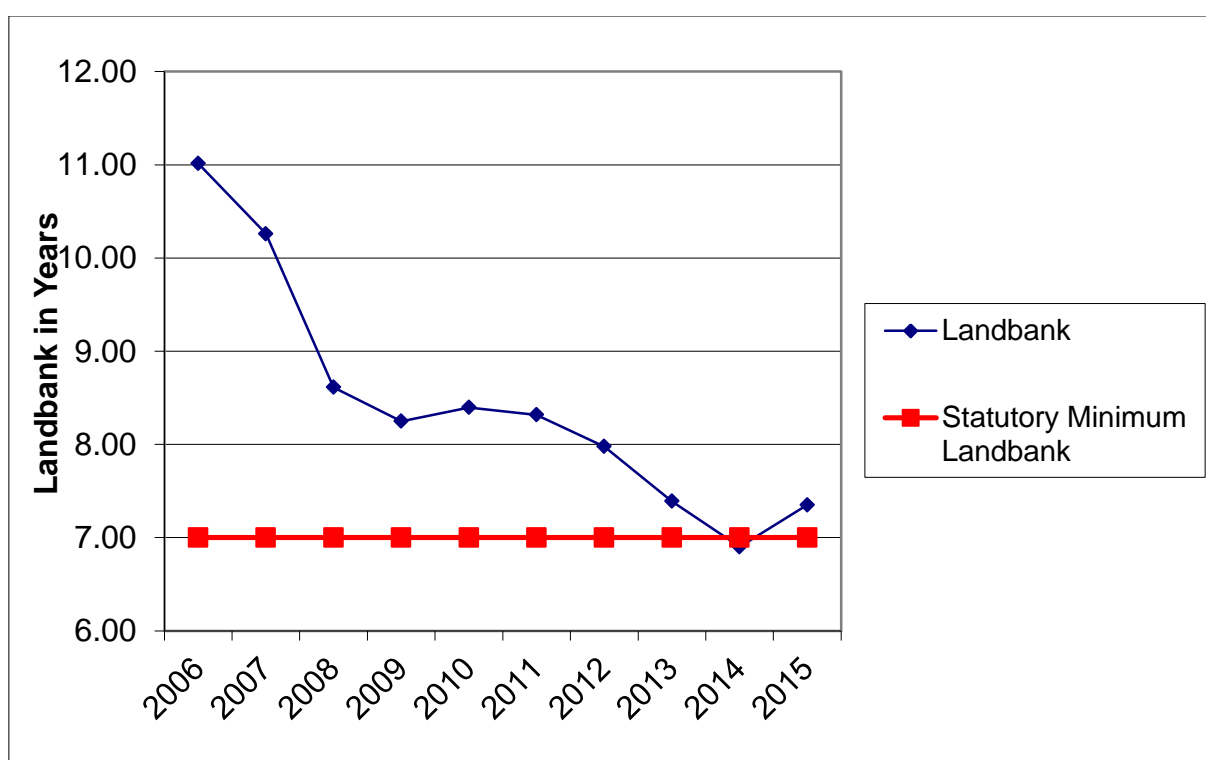
Annualised Plan Provision

- 6.9 It is important to note that the landbank is a figure dependent on a calculation involving the amount of permitted reserve and, based on local policy in Greater Essex, the historic annual apportionment. Throughout the previous ten years, the annual apportionment operating in the Greater Essex area has reduced from 4.55mtpa to 4.45mtpa, therefore the landbank is not directly comparable across the period of study. A lower annual planned provision equates to a lower assumed annual usage rate of the permitted reserves, which manifests as a larger landbank. As such, whilst the amount of permitted reserves has fallen, Greater Essex has partly been able to maintain its seven year landbank due to the annual apportionment figure reducing over time as shown in Table 7 above
- 6.10 The landbank as calculated through the annual apportionment in effect at the time is shown below:

Table 7: Landbank held in Greater Essex, 2006 – 2015

Year	Permitted Reserve (a)	Annualised Plan Provision in mt (b)	Landbank in Years (a/b)
2006	50.12mt	4.55mt	11.02
2007	46.68mt	4.55mt	10.26
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

Source: East of England Annual Monitoring Report 2014 and 2015

Figure 5: Landbank held in Greater Essex, 2006 – 2015

Source: Essex County Council 2016

- 6.11 The landbank held within Greater Essex can be seen to reduce over the previous ten years, from 11.02 years in 2006 to 7.35 years in 2015. The landbank reduces year on year between 2003 and 2009 before a slight increase in 2010. This upturn is as a result of the granting of planning permissions, notably Crown Quarry in Ardleigh, (App no. ESS/57/04/TEN), and Lufkins Farm, Thorrington (App no. ESS/10/13/TEN). From 2011 the landbank again reduced yearly, notably in 2014 to 6.90 years. This is considered to be the result of site operators not submitting planning applications for additional mineral reserves during the 2013 Examination in the Public for the Essex

MLP, as submission of major new mineral applications might have been considered “premature”. However upon adoption of the MLP in 2014, two applications were submitted and determined during the first quarter of 2015. This is highlighted in the increase in landbank for 2015 to 7.35 years.

Sand and Gravel Landbank held in Greater Essex (10 years Average Sales)

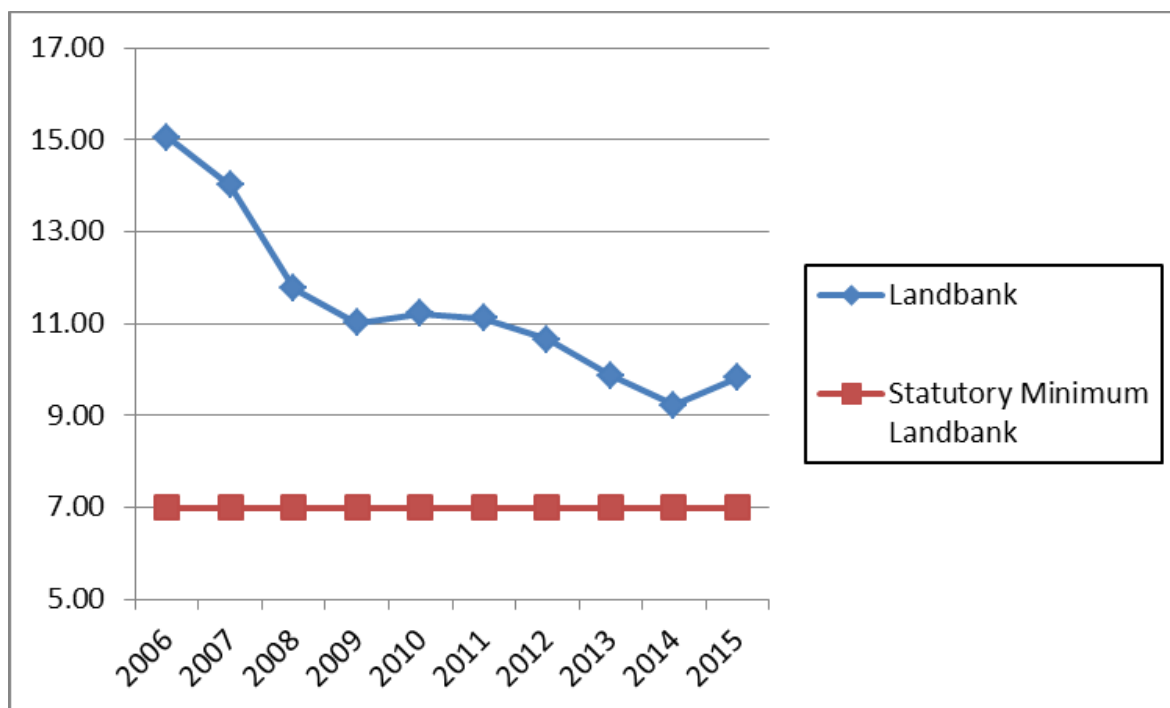
- 6.12 The NPPF abandons the apportionment method and now states that landbanks are to be calculated on the basis of an average of the last ten years of sales. To address this issue, a second landbank figure has been calculated based on the last ten years of sales.

Table 8: Landbank held in Greater Essex, 2006 – 2015

Year	Permitted Reserve (a)	10 years Average Annual Sales of Sand and Gravel (b)	Landbank in Years (a/b)
2006	50.12mt	3.33mt	15.05
2007	46.68mt	3.33mt	14.02
2008	39.19mt	3.33mt	11.77
2009	36.71mt	3.33mt	11.02
2010	37.36mt	3.33mt	11.22
2011	37.01mt	3.33mt	11.11
2012	35.5mt	3.33mt	10.66
2013	32.88mt	3.33mt	9.87
2014	30.72mt	3.33mt	9.23
2015	32.69mt	3.33mt	9.82

Source: East of England Annual Monitoring Report 2014 and 2015

Figure 6: Landbank Held in Greater Essex, 2006 – 2015



Source: Essex County Council 2016

- 6.13 By calculating the landbank in this manner, it is seen to be higher than the statutory minimum figure of seven years across the period assessed above. The general trend is still one of a declining landbank across the last ten years, from 15.05 years in 2006 to 9.82 years in 2015. The 2015 figure is however an upturn from the 9.23 years reported in 2014.
- 6.14 Of significance, the 2014 landbank figure, which is the smallest across the study, is above the statutory minimum of seven years under the ten year sales method. This was not the case under the apportionment method.

Land Won Sales of Sand & Gravel

Historical Sales, 1996 – 2015

- 6.15 Greater Essex is the largest producer of sand & gravel in the East of England. Sales data for primary, land won aggregate has been produced for the period 1996 – 2015, representing a sales period of 20 years inclusive. This sales data is obtained through site operators within Greater Essex filling in an annual mineral survey. The amount of sand & gravel sold is taken as being broadly analogous to that which is extracted. Given the commercial sensitivity of the data, it is necessary to present the data as amalgamated annual totals rather than on a site-by-site basis to ensure that individual operators are not identifiable. This is in accordance with Aggregates Working Party (AWP) requirements.

- 6.16 Figure 7 also incorporates a 20 year sales average, a ten year sales average as per the NPPF requirement and the combined annual plan provision for Greater Essex as detailed in the adopted Essex Minerals Local Plan 2014 and the Thurrock Core Strategy 2011.

Table 9: Sales of Land Won Sand & Gravel within Greater Essex, 1996 – 2015 (in millions of Tonnes)

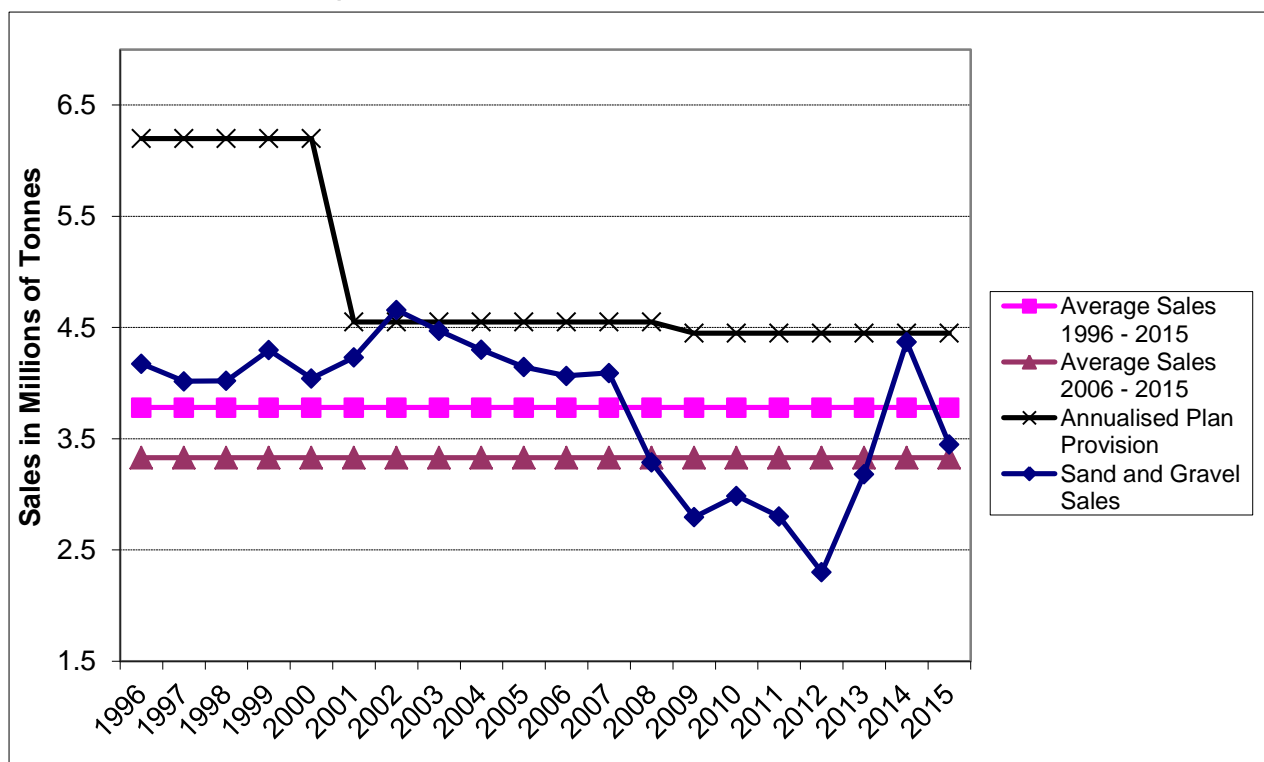
Sand and Gravel Sales in Essex, Thurrock and Southend	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
	4.18	4.02	4.02	4.30	4.04	4.23	4.66	4.47	4.30	4.14

Sand and Gravel Sales in Essex, Thurrock and Southend	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
	4.07	4.09	3.29	2.79	2.99	2.80	2.30	3.18	4.37	3.45

Average Annual Sales 1996 – 2015	3.78mt
Average Annual Sales 2006 – 2015	3.33mt

Source: Essex County Council Annual Monitoring Reports and East of England Aggregates Working Party Annual Monitoring Report 2014 and 2015

Figure 7: Sales of Land Won Sand & Gravel within Greater Essex, 1996 – 2015 (in millions of Tonnes)



Source: Essex County Council Annual Monitoring Reports and Annual Mineral Survey 2014 and 2015

- 6.17 There has been a general downward trend in sand & gravel sales across the period covered in the above figure although this downward trend has not been uniform. The highest sales were reported in 2002 at 4.66mt with the years immediately following 2002 also displaying relatively high sales. Sales in 1996, representing the start of this period of analysis, were recorded as 4.18mt followed by a period of fluctuating but broadly decreasing sales through to 2002 where sales ranged from the aforementioned 4.66mt recorded in 2002 down to 4.02mt in 1997 and 1998.
- 6.18 Following 2002, there was a decrease of sand & gravel sales year-on-year to 2009 other than for a small upturn in 2007. Another up-turn was recorded in 2010 before a further decrease in 2011 and 2012, with sales in 2012 recorded as 2.30mt which is the lowest across the period assessed. 2009 to 2012 marks the only period where sand & gravel sales have dropped below 3mtpa. Sales have increased between 2012 and 2014, with the 2014 sales of 4.37mtpa being the highest sales figure since 2008, with sales in 2014 representing 96% of those recorded in 1996. Sales have since decreased in 2015, with the reduction representing the biggest single annual sales reduction, although the 2015 figure still remained above the ten year average sales figure of 3.33mt. The three year average sales figure of 3.45mt is equal to the sales of 2015.

An Assessment of the Last Ten Years of Sand & Gravel Sales

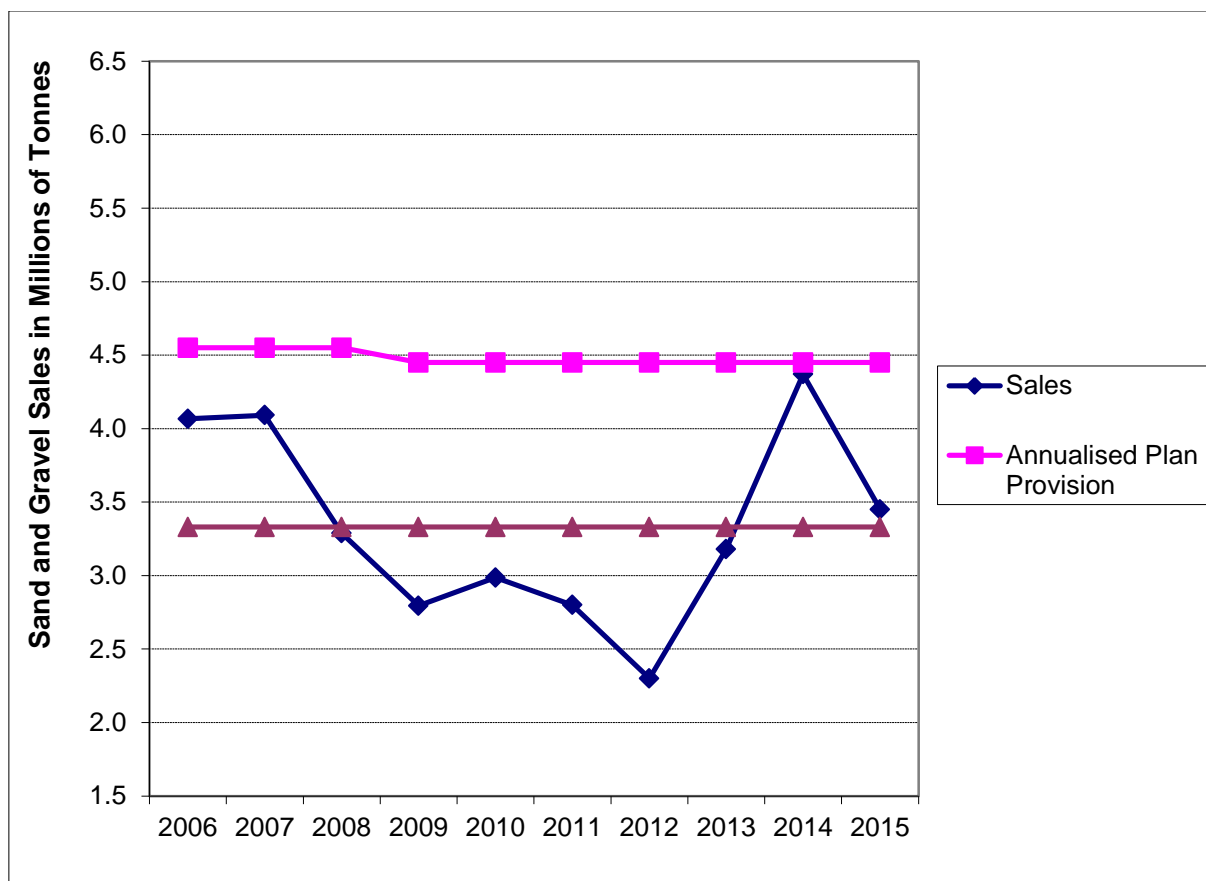
- 6.19 The recession beginning in 2007 has had a marked effect on the sales of sand & gravel within Greater Essex. Prior to the recession, sales were within 10% of the annualised plan provision, suggesting that this was a realistic basis for the provision of minerals within the plan areas making up Greater Essex. Since 2007 however, sales have primarily fallen until 2013, where sales have then increased in 2014 to the highest value over the ten year period. Sales have decreased in 2015, but remain higher than that recorded since 2008. The latest data point represents 78% of the adopted annualised plan provision compared to 98% the year before. The MPAs of both Essex and Thurrock will continue to monitor the pattern of sales and establish whether the current annualised plan provision stated in their respective mineral policies remain an appropriate basis upon which to release mineral.

Table 10: Sales of Sand & gravel within Greater Essex, 2006 – 2015

Year	Sales (mt)	Annualised Plan Provision (mt)	10 Years Sales Average (mt)
2006	4.07	4.55	3.33
2007	4.09	4.55	3.33
2008	3.29	4.55	3.33
2009	2.79	4.45	3.33
2010	2.99	4.45	3.33
2011	2.80	4.45	3.33
2012	2.30	4.45	3.33
2013	3.18	4.45	3.33
2014	4.37	4.45	3.33
2015	3.45	4.45	3.33

Source: East of England Aggregate Working Party Annual Monitoring Report 2014 and 2015

Figure 8: Sales of Sand & Gravel within Greater Essex, 2006 - 2015



Source: East of England Aggregate Working Party Annual Monitoring Report 2014 and 2015

The 'Average Three Year Sales' of Sand & Gravel in Greater Essex and Consequences for Future Supply

- 6.20 National Planning Policy Guidance states that MPAs should also look at the average of the previous three year sales to identify the general trend of demand as part of the consideration of whether it might be appropriate to increase mineral supply. The last three years of sales show an overall increase from 3.18mt to 3.45mt representing an increase of 8.5%. This overall increase is despite a decrease in sales between 2014 and 2015 from 4.37mt to 3.45mt, which represents a proportional decrease of 21%. As stated, sales of sand & gravel will continue to be monitored to ascertain whether this upward trend continues.

Table 11: Sales of Sand & gravel within Greater Essex, 2006 – 2015

Year	Sales (mt)	3 year average sales (mt)
2013	3.18	3.45
2014	4.37	3.45
2015	3.45	3.45

Source: East of England Aggregate Working Party Annual Monitoring Report 2014 and 2015

- 6.21 In terms of future supply, sales have not increased beyond the annual apportionment that Greater Essex policy is based upon in any of the last ten years. If an average of the last ten years sales is used as per NPPF requirements, the Greater Essex landbank stands at 9.82 years which is comfortably above the statutory minimum of seven years. As such, and coupled with what is only a moderate increase in sales over the previous three years, it is considered that the current rate of provision in both the Essex Minerals Local Plan 2014 and Thurrock Core Strategy 2015 is appropriate.

Silica Sand Provision in Greater Essex

- 6.3 Silica sand in Greater Essex is produced at a single site (Martells Quarry, Ardleigh) and it is therefore not possible to provide sales data due to reasons of commercial confidentiality. In order to maintain the statutory ten year minimum landbank for this mineral, and when making allowances for the already permitted reserves at the site (0.42mt as per application reference ESS/18/07/TEN), the proportional split of the resource of 54% silica sand and 46% sand & gravel and the processing plant capacity to produce silica sand which is 0.045mtpa, there was a requirement to allocate an additional 0.39mt of silica sand to maintain the landbank across the plan period. This was achieved through the allocation of a site extension to Martells Quarry at Slough Farm. 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.

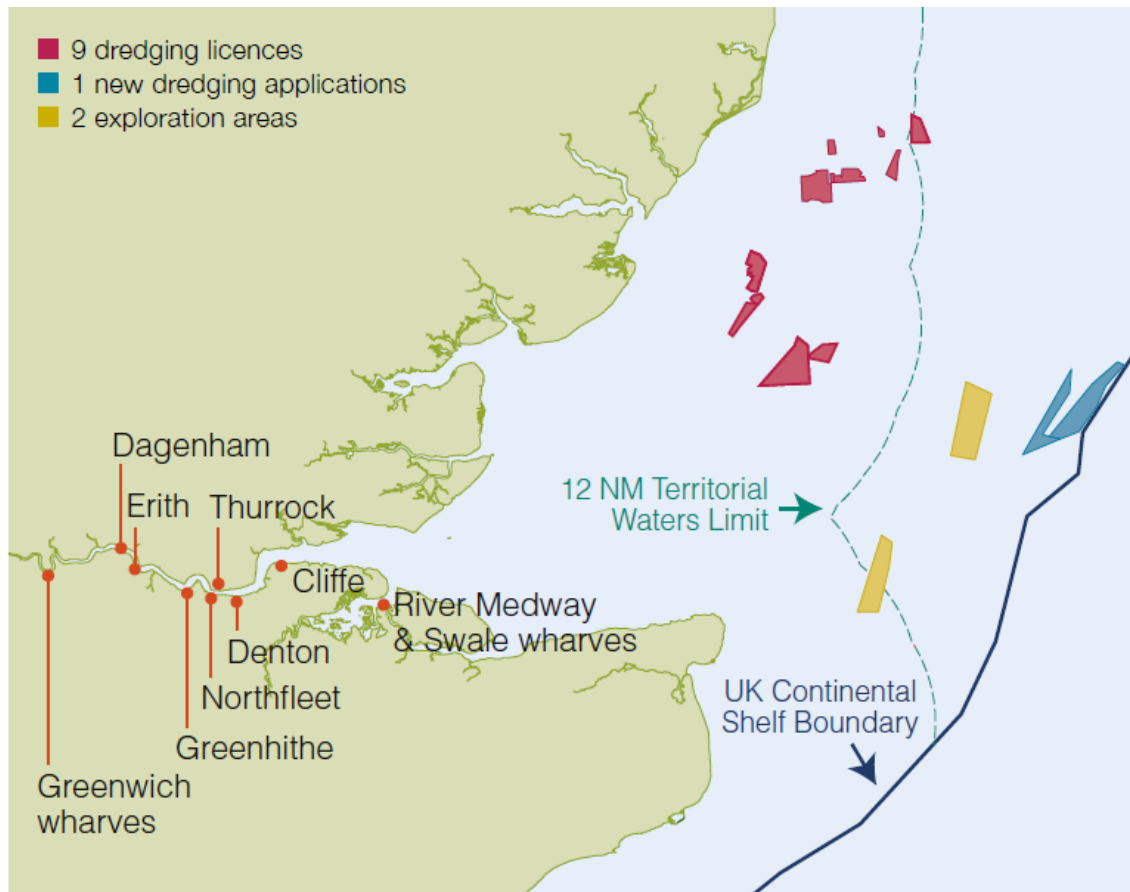
7. Marine Won Sand & Gravel

- 7.1 Marine won aggregates are an alternative to land won aggregates. The marine won sand & gravel landed in the East of England is primarily sourced from the Thames Estuary Licensed Area as shown in Figure 9 below. Like land won aggregate, marine won aggregate can be used for a variety of construction purposes including mortar and road sub-base, to reclaim land from the sea prior to engineering works being carried out and as beach nourishment.
- 7.2 Please note that this section largely identifies the total amount of marine won sand & gravel that is landed within the Thames Estuary region. A broad analysis of the importation of marine won sand & gravel into Greater Essex itself is presented in Section Marine Won Sand & Gravel within Greater Essex0

Dredging Areas

- 7.3 The East of England is a major point of entry for marine dredged aggregates, with the National and Regional Guidelines for Aggregate Provision in England 2005 – 2020 making the assumption that 14mt of marine sand & gravel will arrive in the region between 2005 and 2020. This equates to 0.93mt a year although this figure is not apportioned to individual authorities.
- 7.4 The following figure shows the operational wharf facilities and the nine licensed marine dredging areas in closest proximity to the coast of Essex alongside one new dredging application area and two exploration areas.

Figure 9: Marine Dredging Areas in Proximity to Greater Essex, 2015



Source: Crown Estate: Marine Aggregates – Capability and Portfolio, 2015

Marine Won Sand & Gravel within Greater Essex

- 7.5 Marine landed minerals contribute to the supply of minerals coming into Greater Essex from elsewhere. Essex itself does not have an entry point for marine landed aggregates and instead relies on marine landing points in adjoining authorities, namely Suffolk (Ipswich) and the Thames Estuary (including Thurrock). Ports can be considered to be ‘virtual quarries’ in that they are sites where saleable mineral can be distributed from whilst many ports will also have processing facilities to allow imported mineral to be graded.
- 7.6 Those aggregate landing ports in the Thames Estuary Region as well as those in Ipswich (within the East Coast Region) are shown below. Please note that 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. A full list of operating wharves can be found in Appendix 2.

Table 12: Marine Won Aggregate Landing Ports within or in Counties adjacent to Greater Essex (plus London), 2015

Thames Estuary Region			East Coast Region
London	Thurrock	Kent	Suffolk
Denton	Thurrock	Cliffe	Ipswich
Erith		Northfleet	
Greenhithe		River Medway & Swale	
Greenwich Wharves			
Dagenham			

Source: Adapted from The Crown Estate: Marine Aggregates Summary of Statistics, 2015

Wharves within Greater Essex

- 7.7 Paragraph 143 of the NPPF states (*inter-alia*) that the Minerals Planning Authority 'should safeguard existing, planned and potential rail heads, rail links to quarries, wharfage and associated storage, handling and processing facilities for the bulk transport by rail, sea or inland waterways of minerals, including recycled, secondary and marine-dredged materials.
- 7.8 As previously noted, all wharves within Greater Essex receiving water borne aggregate are located in Thurrock. As of 2015, only one wharf is being used to import marine dredged sand & gravel. This is the Lafarge Aggregates site to the immediate east of the QEII bridge, known as 'Thurrock' within the Crown Estate statistics and Oliver Road, West Thurrock in the Essex Minerals Local Plan, 1996.
- 7.9 The Civil and Marine/Purfleet Aggregates Ltd wharf (on the immediate western side of the QEII bridge, and called Purfleet Wharf in the Essex Minerals Local Plan, 1996) is only being used by Hansen/Civil and Marine for the importation by river of ash used in slag cement production. Purfleet Aggregates have ceased operating. The Yeoman Asphalt (part of Aggregate Industries) site at Jurgens Road, Purfleet is now only being used for coated roadstone production using aggregate delivered by road and rail. Historically, crushed rock was imported by river but Thurrock Council are not aware that it was ever used for the importation of sand & gravel. No use of the river is now made by this wharf.
- 7.10 The former Gibbs Wharf site at Purfleet, formerly used by Foster Yeoman / Aggregate Industries was granted permission in 2012 by the Thurrock Thames Gateway Development Corporation for trailer parking. Proctor and Gamble were the applicants and the company has now implemented the permission having absorbed

the site into their much larger adjacent site. As such, it is considered it may be difficult to re-establish a minerals use.

Marine Aggregate Landings

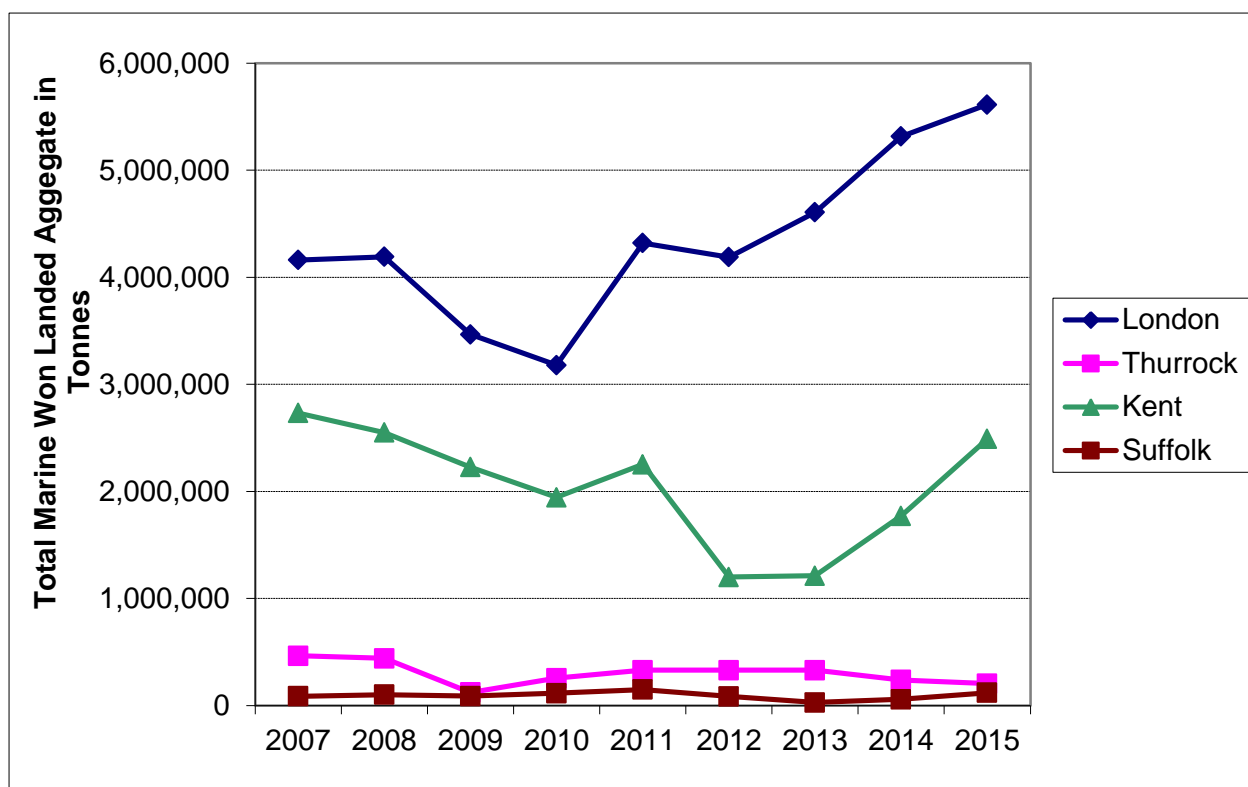
- 7.11 The Crown Estate collects statistics on the amount of marine won mineral that is landed at each of its landing ports although these do not define the final destination of the mineral. As such the figures presented do not relate to the amount of marine won aggregate that is used within Greater Essex, rather it is the amount of marine won aggregate that is landed within or in proximity to Greater Essex and could be used within Essex, Thurrock, Southend, Kent, Suffolk, London and potentially further afield. However it can be said that due to their mass, landed minerals do not have a large economically viable transportation distance, unless transported by rail, and as such minerals landed in the Thames Estuary region and Suffolk will be utilised in the surrounding vicinity. Studies carried out by the British Geological Survey suggests that the cost of a lorry load of primary aggregate doubles at a transportation distance of 40km, with 60km being the maximum typical trading distance by road. Consumption statistics are presented in Section 8.
- 7.12 Marine Aggregates – Capability & Portfolio 2015 (Crown Estate) stated that during 2014, 90.4% of material extracted from the Thames Estuary region was delivered to the Thames Estuary region, with the remainder going to the Humber (including North East), South Coast and mainland Europe. The resources in the region consist of a variety of grade of sand ranging from fine to very coarse sands and fine to coarse gravels. Currently 3.5mt of material is permitted for extraction per annum from the nine licences within this region although over the last ten years on average only, 45% of the permitted tonnage has been dredged from the Thames region. At present there is the opportunity to extract approximately 1mt of extra material per annum whilst additional applications may deliver permits for a further 7mtpa. The report further states that in 2014, 6mt of the marine sand and gravel dredged from UK licences were landed across the nine locations in the Thames Estuary, with 2.5mt going to wharves at Greenwich.
- 7.13 Regarding the East Coast Region, 86.8% of material extracted within the region was delivered to the Thames Estuary region and 11.7% to mainland Europe in 2014. The resources in the region range from fine sand through to very coarse sand and fine to medium gravel. Currently 9.2mt of material is permitted for extraction per annum from the 13 licences within this region although there is only one wharf located in the region that receives sand and gravel. Over the last ten years, on average almost 60% of the permitted tonnage has been dredged.
- 7.14 The following table 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.

Table 13: Amount of Marine Won Mineral Landed in Ports with the Capacity to Serve Greater Essex in Tonnes, 2007 – 2015

	2007	2008	2009	2010	2011	2012	2013	2014	2015
London	4,160,917	4,192,187	3,466,777	3,178,872	4,319,908	4,188,757	4,606,442	5,316,369	5,613,006
Thurrock	464,404	439,723	121,852	255,527	329,376	329,376	329,376	238,331	204,276
Kent	2,731,623	2,550,640	2,226,380	1,944,763	2,252,864	1,200,040	1,211,574	1,771,156	2,489,490
Suffolk	85,608	100,941	87,459	114,468	148,483	83,865	27,931	57,085	119,421
Total	7,442,552	7,283,491	5,902,468	5,493,630	7,050,631	5,802,038	6,175,323	7,382,941	8,426,193

Source: The Crown Estate, Summary of Statistics, 2007 – 2015

Figure 10: Total Marine Won Mineral Landed in Ports with the Capacity to Serve Greater Essex in Tonnes, 2007 – 2015



Source: The Crown Estate, Summary of Statistics, 2007 – 2015

- 7.15 Between 2007 and 2015 there has been an increase in the total amount of marine won mineral landing within the regions assessed, from 7.44mt to 8.43mt, representing an increase of 13%. Between 2007 and 2010 there was a yearly reduction from 7.44mt to 5.49mt before landings increased to 7.05mt in 2011. This figure reduced again in 2012, to 5.8mt, before increasing year on year to 8.43mt in 2015.
- 7.16 When ports are analysed by administrative region, it can be seen that there has been an increase in the amount of marine won aggregate coming into ports within London, whereas there is more fluctuation within Thurrock, Kent and Suffolk. Kent, comprising of three wharves as shown in Table 12 saw a reduction of 9% of the amount of material landed from 2007 to that recorded in 2015, whilst Suffolk comprising of a single wharf, saw an increase of 39% and Thurrock comprising a single wharf also saw a decrease of 56%.

Increasing the Proportion of Marine-won Sand to Offset Land-won Production

- 7.17 With regard to increasing the proportion of marine won sand & gravel to offset the amount of provision that is required to be made from land won material, this is outside of the remit of both Essex County Council and Thurrock Council as marine extraction areas are leased by the Crown Estate with licenses to dredge issued by the Marine Management Organisation (MMO).

- 7.18 Discussions with the MMO evidenced that, within the marine sand resource areas that are currently licensed for dredging, production rates are approximately 50% of the permitted amount that is licensed to be removed. New applications are also proceeding through the licensing process. As such, it can be concluded that marine sources are not constrained by resource availability or by a limit on permitted reserves. Instead, the constraints to the use of marine resources are focussed around production capability which is limited by existing dredger numbers and their production rate, and the ability to access the market, which is largely due to the capacity and location of existing wharfs and associated infrastructure.
- 7.19 MPAs can therefore 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 which may compromise the ability of these marine facilities to carry out their function.

8. Imports and Exports of Land Won Aggregate in Greater Essex

- 8.1 As well as being the largest producer of sand & gravel in the East of England, Greater Essex both imports and exports aggregate. Historically, approximately 75% of the mineral extracted within Greater Essex has been used within the county, with the majority of that exported going to London. Greater Essex is also heavily reliant on the importation of hard rock, used, for example, as rail ballast as well as limestone which is used in cement making. Traditionally, and especially so since the 1940s, a pattern of long-distance supply to Greater Essex has emerged where mineral types absent or scarce in Greater Essex have had to be imported. Important sources of imports are the East Midlands for hard rock and limestone sourced from the South West.

Methods of Mineral Transportation within Greater Essex

- 8.2 There are three bulk transport modes for the movement of minerals in, out and around Greater Essex. These are by road, rail and water. For internal movements the road network is the most effective and heavily utilised form of transportation as this mode offers flexibility of route and provides the ability to deliver to any final destination, reflecting the relatively short journeys to the local Essex Market.
- 8.3 There are safeguarded mineral transshipment sites at the following locations within Essex:
- **Chelmsford Rail Depot** – used both for the import of limestone and the export of sand & gravel
 - **Harlow Mill Rail Station** – used both for the import of limestone and the export of sand & gravel
 - **Marks Tey Rail Depot** – used for the export of sand & gravel
 - **Ballast Quay, Fingringhoe** – a marine wharf used for the export of sand & gravel originating from the associated quarry to the London market
- 8.4 Within Thurrock, the following site operates as a transshipment site:
- **Jurgens Road, Purfleet** – used for coated roadstone production using aggregate delivered by road and rail. Historically, crushed rock was imported by river but Thurrock Council are not aware that it was ever used for the importation of sand & gravel. No use of the river is being made at present.
- 8.5 There is also some cross-boundary movement of aggregate by road into and from neighbouring areas although exportation to London is predominantly by rail. Evidence does however suggest that it is more efficient to transport aggregate over short distances by road.

Land and Marine Won Sand & Gravel Consumed within Greater Essex

Table 14: Land and Marine Won Sand & Gravel Consumed within Greater Essex by Administrative Area of Origin, 2014

Total Land and Marine Won Sand & Gravel Consumed	4,329,000t	
Administrative Area of Origin	Proportion (%)	Assumed Figure (t)
Essex	60-70	2,597,400 - 3,030,300
Greater London East	20-30	865,800 - 1,298,700
Thurrock	1-10	43,290 – 432,900
Kent	1-10	43,290 – 432,900
Hertfordshire	<1	<43,290
Central Bedfordshire	<1	<43,290
Suffolk	<1	<43,290
Norfolk	<1	<43,290
Cambridgeshire	<1	<43,290
Leicestershire	<1	<43,290
Wiltshire	<1	<43,290
Nottinghamshire	<1	<43,290
Staffordshire	<1	<43,290

Source: Aggregate Mineral Survey 2014, BGS

- 8.6 The majority of the total land and marine won sand & gravel consumed within Greater Essex was extracted within Essex, at between 60 – 70% of the total volume consumed. Greater London East was the second largest contributor, with between 20 – 30% of the total amount of land and marine won aggregate consumed originating from authorities within this sub-region. There are a further 10 mineral planning authorities through which Greater Essex received land and marine won sand & gravel, all of which provide <1% with the exception of Kent, which is between 1 - 10%. Dialogue will continue to take place with all of the Mineral Planning Authorities identified in the table above to ensure that the importation arrangements upon which Greater Essex currently depend can be maintained.
- 8.7 Land and marine won imports of sand and gravel can also be assessed separately and are shown in the tables below:

Table 15: Total Land-won Sand & Gravel Consumed within Greater Essex by Administrative Area of Origin, 2014

Total Land Won Sand and Gravel Consumed	3,133,000t	
Administrative Area of Origin	Proportion (%)	Assumed Figure (t)
Essex, Southend & Thurrock	90 - 100%	2,819,007 - 3,133,000
Hertfordshire	1 - 10%	31,330 - 313,300
Cambridgeshire	<1%	<31,330
Central Bedfordshire	<1%	<31,330
Kent	<1%	<31,330
Leicestershire	<1%	<31,330
Norfolk	<1%	<31,330
Nottinghamshire	<1%	<31,330
Staffordshire	<1%	<31,330
Suffolk	<1%	<31,330
Wiltshire	<1%	<31,330

Source: Aggregate Mineral Survey 2014, BGS

- 8.8 The majority of the total land-won sand & gravel consumed within Greater Essex in 2014 was extracted within Greater Essex, at between 90 – 100% of the total volume consumed. Hertfordshire was the second largest contributor, with 1 – 10% of the total amount of land-won aggregate consumed originating from this administrative area. There are a further nine mineral planning authorities through which Greater Essex received land-won sand & gravel, all of which provided <1% of the total consumed.

Table 16: Total Marine-won Sand & Gravel Consumed within Greater Essex by Administrative Area of Origin, 2014

Total Marine-won Sand and Gravel Consumed	1,195,000t	
Landing Port	Proportion (%)	Assumed Figure (t)
Greater London East	70 - 80	836,500 - 956,000
Thurrock	10 - 20	119,500 - 239,000
Kent	1 - 10	11,950 - 119,500

Source: Aggregate Mineral Survey 2014, BGS

- 8.9 The majority of the total marine-won sand & gravel consumed within Greater Essex in 2014 was landed in Greater London East, at between 70 – 80% of the total volume consumed. Thurrock was the second largest contributor, with 10 – 20% of the total amount of land-won aggregate consumed originating from this administrative area. The remainder of marine-won sand & gravel consumed in Greater Essex was landed in Kent, at 1-10% of the total.

Crushed Rock Consumed in Greater Essex

Table 17: Crushed Rock Importation into Greater Essex by Administrative Area of Origin, 2014

Total Crushed Rock Consumed	1,525,000t	
Administrative Area of Origin	Proportion (%)	Assumed Figure (t)
Somerset	60-70	915,000 – 1,067,500
Leicestershire	10-20	152,500 – 305,000
Outside of England and Wales	10-20	152,500 – 305,000
Powys	1-10	15,250 – 152,500
Warwickshire	<1	<15,250
Derbyshire	<1	<15,250
Shropshire	<1	<15,250
Peak District National Park	<1	<15,250
North Somerset	<1	<15,250
Cambridgeshire	<1	<15,250
Gloucestershire	<1	<15,250
Kent	<1	<15,250
North Yorkshire	<1	<15,250
Northumberland National Park	<1	<15,250
Rhodda, Cynon, Taf (Taff)	<1	<15,250

Source: Aggregate Mineral Survey 2014, BGS

- 8.10 As evidenced in Table 17, Greater Essex consumed 1,525,000t of crushed rock but none of this mineral originated from within the combined Minerals Planning Area of Greater Essex. This resource does not exist in Greater Essex and therefore Greater Essex is entirely reliant on the importation of this mineral. The single largest exporter to Greater Essex is Somerset who contributed 60% - 70% of the total proportion of crushed rock consumed. In total Greater Essex is reliant on 14 separate mineral planning areas for their crushed rock supply, with a further 10 – 20% coming from outside England and Wales. Dialogue will continue to take place with all of the Mineral Planning Authorities identified in the above table to ensure that the importation arrangements upon which Essex, Southend and Thurrock currently depend will be maintained. These discussions form the basis of the Duty to Co-operate programme undertaken in the planning areas of Essex and Thurrock.

Exportation of Land and Marine Won Sand & Gravel from Greater Essex

Table 18: Exportation Destination of Land and Marine Won Aggregate Originating from Essex 2014

Destination	Proportion (%)³
Essex, Southend and Thurrock	60-70
East London	20-30
Hertfordshire	10-20
Suffolk	10-20
Norfolk	1-10
Bedfordshire (Central Beds, Beds and Luton)	1-10
Cambridge and Peterborough	1-10
Buckinghamshire and Milton Keynes	1-10
West Sussex	1-10
Unknown but somewhere in Greater London	1-10
Northumberland and National Park	<1
Berkshire	<1
Kent and Medway	<1
Oxfordshire	<1

Source: Aggregate Mineral Survey 2014, BGS

- 8.11 Between 60% – 70% of the sand & gravel extracted within Essex in 2014 was used within Greater Essex. The next largest users are neighbouring authorities, with the East London region recorded as receiving between 20% - 30% of the total sand & gravel extracted in Essex, and Hertfordshire and Suffolk both between 10% - 20%. The other higher percentage destinations (Norfolk, Bedfordshire and Cambridgeshire) are within the East of England, with a number of other authorities from further afield importing less than 1%.

³ A total exportation figure for land and marine won sand & gravel was not given, therefore only a percentage proportion has been provided

9. Secondary and Recycled Aggregate

Introduction

- 9.1 Along with 'primary' aggregate, described in Section 0 as being minerals extracted directly from the ground, there are also 'secondary' and 'recycled' aggregates. 'Recycled' aggregates are those derived via methods analogous to the traditional idea of recycling. Examples include the re-use of brick and concrete obtained from construction and demolition work being re-processed to be used in new developments, rather than being disposed of in a landfill site. 'Secondary' aggregates are created as a by-product of a construction or industrial process. Examples include power station ash resulting from combustion (fly ash) which can be turned into bricks and cement, and slag from iron smelting which can be manufactured into mineral wool and subsequently be used as a heating pipe insulator.
- 9.2 A large amount of recycled and secondary aggregate is processed on redevelopment and construction sites. These can be stand-alone permanent facilities on industrial estates or temporary facilities co-located with existing quarries, landfill sites and recycling sites that remain operational until such a time that quarrying or landfilling ceases.
- 9.3 The benefits for maximising the use of both secondary and recycled aggregate are two-fold. Firstly, the use of these aggregates reduces the need to extract primary material in the first instance, leading to a reduction in the need for quarry sites. Secondly, the re-use of aggregate reduces the amount of waste that needs to be disposed of, reducing the need for landfill sites. Such a reduction in the need for quarry and landfill sites has clear economic, environmental and social benefits.
- 9.4 Essex County Council, Southend-on-Sea and Thurrock Council positively encourage the re-use and recycling of Construction, Demolition and Excavation (CD&E) waste through development plans and policies. Through the Essex MLP, the Southend-on-Sea Development Management DPD 2015 and Thurrock Minerals and Waste Development Plan Document (MWDPD), each authority will enable and encourage the construction industry and mineral industry to invest in creating and maintaining an effective network of aggregate recycling facilities across Greater Essex to meet demand. However this should not be taken to mean that increasing the importation of construction waste into Essex or Thurrock from outside these areas would always be acceptable.
- 9.5 A list of known operational and non-operational aggregate recycling facilities across Greater Essex is provided in Appendix 2.

Recycled Aggregate Throughput and Capacity

- 9.6 Policies in the existing Minerals and Waste Local Plans for Essex, Southend-on-Sea and Thurrock encourage the use of alternative aggregate sources and the development of facilities for the recycling of mineral wastes, and construction and demolition waste. However the supply of recycled aggregate is largely an assumed supply, due in part to the difficulty that Essex County Council, Southend-on-Sea and Thurrock Council have had in obtaining existing throughput figures, which is an issue acknowledged nationally. The 'National and Sub-National Guidelines for Aggregate Provision in England 2005 – 2020' document proposes that the East of England region should provide 117mt of alternative aggregate materials between 2005 and 2020, equating to 7.8mt a year. This is equivalent to 31% of the region's total aggregate supply, so the re-use of recycled and secondary aggregate is expected to be a major feature of mineral supply. There is however no apportionment of the 117mt figure to individual Mineral Planning Authorities in the region.

Total Capacity of Recycled Aggregate Facilities in Essex and Southend-on-Sea

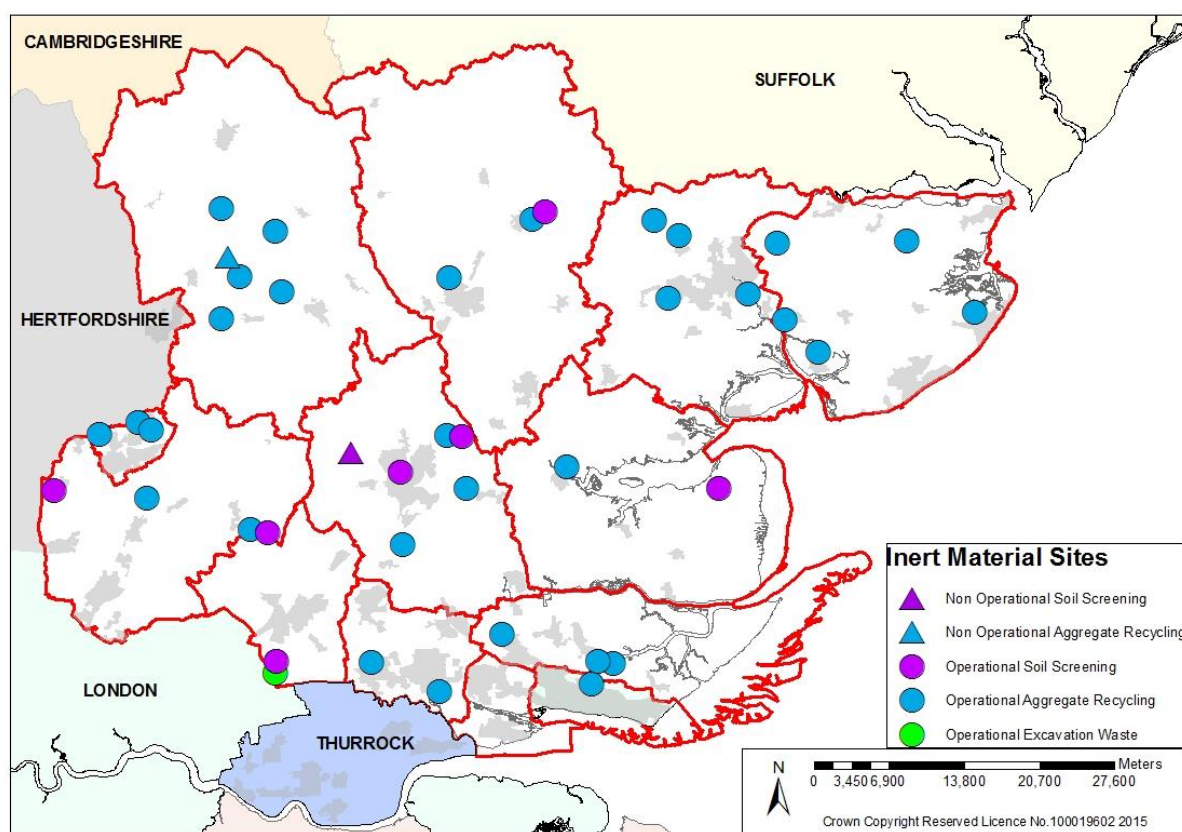
- 9.7 The following table details the capacity of CD&E (also known as Aggregate) Recycling Centres within Essex and Southend-on-Sea which process recycled aggregate as well as screen soils associated with this type of aggregate. Aggregate Recycling Centres have been divided in to operational, under construction and just with the benefit of planning permission, as shown below in the table and map:

Table 19: Total Aggregate Recycling Facilities in Essex and Southend, 31st March 2015

Facility Status	Number of Facilities	Total Estimated Capacity (tonnes)
Operational	38	2,064,073
Under Construction	1	8,000
Planning Permission	2	30,000
Total	41	2,102,073

Source: Essex County Council and Southend-on-Sea Borough Council Capacity Gap Report 2014 (draft)

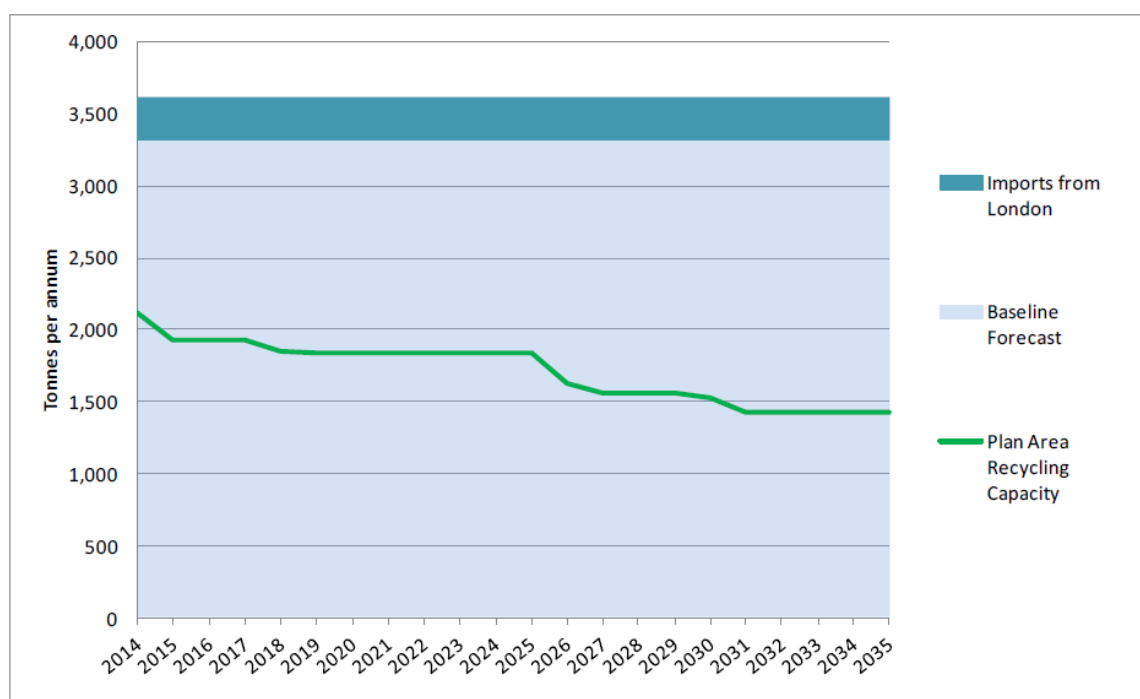
Figure 11: Locations of Construction, Demolition and Excavation Materials Recovery Facilities in the Plan Area as of 31 March 2015



Source: Essex County Council Authority Monitoring Report 2014/15

- 9.7.1 A list of all recycled aggregate facilities in Essex, Southend-on-Sea and Thurrock are presented in Appendix 2.
- 9.7.2 It has been noted that approximately one third of this capacity only benefits from temporary planning permission. It is forecasted that by the end of the emerging Waste Local Plan period (2032), there could potentially only be approximately 1.4mtpa of aggregate recycling capacity. The change in forecasted provision, should no extensions or new allocations come forward is shown below:

Figure 12: Forecasted Construction, Demolition and Excavation Materials Recovery Capacity in Essex and Southend, 2014 - 2032



Source: Essex and Southend on Sea Waste Local Plan – Topic Paper 1: Waste Capacity Update, BPP Consulting 2015

- 9.7.3 The EU Framework Directive requires waste planning authorities to plan on the basis that over time there should be a significant reduction in the amount of CD&E waste that is sent to landfill. This is the key policy driver behind increasing the proportion of CD&E waste that must be reused or recycled. At this current time, all district, borough and city authorities within Essex have aggregate recycling facilities within their administrative area with the exception of Castle Point Borough. New CDE recycling allocations have been included within the emerging Essex and Southend-on-Sea Waste Local Plan which will increase capacity, and this document also includes policies by which further facilities could be bought forward in the future.

Throughput of Recycling Aggregate Facilities in Essex and Southend on-Sea

- 9.8 It is noted that the actual throughput of facilities each year is not the same as theoretical operational capacity. The 'throughput' is a measure of the amount of recycled aggregate that passes through the recycling facilities. This differs from the capacity, which is the total amount of recycled aggregate that could be processed at recycling sites given an infinite supply. There are significant difficulties in estimating this, mainly as this relies on response to surveys by facility operators. The most recent estimate produced was in 2010, with only a 32% response rate, producing an estimation that only 46% of the total capacity is used annually. Through more recent direct liaison with operators, it has been found that potentially some sites could quadruple current operational throughput by improving on site efficiency.

- 9.9 Please note that this study does not account for recycled aggregate that is processed by mobile facilities that can be temporarily located in close proximity to demolition sites, or CD&E waste that may be beneficially reused. Again, no robust data exists to allow such an analysis.

Capacity and Throughput of Recycled Aggregate Facilities in Thurrock

- 9.10 Within Thurrock there are seven authorised sites which process recycled aggregate as well as screen soils associated with this type of aggregate. Of these seven sites, three are associated with mineral and landfill sites and are thus of a temporary nature, and four are 'permanent' sites. However one of the latter 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 Appendix 2.
- 9.11 It should be noted that although the planning permissions for these sites do not impose capacity limitations by reference to tonnages, capacities are in some instances limited by reference to maximum vehicle movements. It is understood from those operators who have volunteered information that total throughput is likely to be substantially less than total permitted capacity. 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 NPPF when the supply of recycled material is underpinned by imports of waste.

10. Conclusion and Future of the Greater Essex Local Aggregate Assessment

Conclusions

- 10.1 Greater Essex currently has sufficient permitted reserve and allocations to satisfy the assessed sand & gravel mineral requirement over the period of the current Minerals Local Plan. The current sand & gravel landbank is over the statutory minimum under both the apportionment (7.35 years) and rolling ten year sales (9.82 years) calculation methods.
- 10.2 Sales of sand & gravel in 2015 in Greater Essex were recorded as 3.45mt. This is over the ten year rolling sales value of 3.3mtpa 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 and as such it is not considered that there is any need to review the Essex Minerals Local Plan 2014 at this time. Thurrock are seeking to initiate an Issues and Options document as part of the preparation of their new Local Plan in 2017. A Thurrock-only LAA will aid in the development of this Local Plan and this may conclude to adopt a different scenario to mineral provision. The impact of this will also be assessed in the context of Greater Essex.
- 10.3 It is not considered appropriate to seek to directly offset land-won primary aggregate through an increased reliance on either marine or recycled / secondary aggregate. Mineral Planning Authorities have no jurisdiction in the marine environment and therefore have little ability to influence the amount of marine-won mineral that could be dredged. An absence of landing facilities in Essex also exacerbates this issue. With regard to recycled aggregate, the availability of data is considered too poor upon which to be able to make robust planning decisions. The Mineral Planning Authorities will however continue to ensure that existing wharf facilities are safeguarding from incompatible development to ensure their continued operation, and include permissive policies for the development of aggregate recycling facilities.

The Future of the Local Aggregate Assessment

- 10.4 The NPPF intends for the LAA to be an annual document and the authorities comprising Greater Essex are committed to updating this LAA on an annual basis. No decision has yet been formally taken regarding the format of updates to this LAA although it is currently envisaged that the authorities will continue with producing a single LAA covering the larger Greater Essex area on an annual basis.
- 10.5 In addition to the above, and as mentioned above, a Thurrock-only LAA will be published as part of the evidence base supporting the Thurrock Local Plan Issues and Options document expected in early-mid 2017. This LAA will explore options around the provision of minerals within Thurrock in more detail.

Appendices

Appendix 1 – Operating Wharves with the Capacity to Serve Greater Essex, 2015

Thames Region	
Barking	Barking, Docklands Wharf
Cliffe	Alpha Wharf, Cliffe, North Sea Terminal
Dagenham	Hanson/ARC Dagenham, Dagenham
Denton	Denton, Denton B.A.D, Denton Sand
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
Thurrock	Purfleet, Purfleet PAL, Thurrock
East Coast Region	
Ipswich	Hanson/ARC Ipswich, Ipswich

Appendix 2 – Known operational and non-operational aggregate recycling facilities within Greater Essex 2015

Essex

STATUS	BROAD FACILITY TYPE	SITE NAME	SITE ADDRESS	SPECIFIC FACILITY TYPE	PLANNING PERMISSION / EA AVERAGE	END DATE
Operational	Inert Materials Recycling / Recovery Facility	Codham Hall Farm	Unit A Codham Hall Lane Gt Warley Brentwood CM13 3JT	Excavation Waste Processing	80,000	30/08/2017
Operational	Inert Materials Recycling / Recovery Facility	Pitsea	Pitsea Hall Lane Pitsea Basildon Essex SS16 4UH	Aggregate Recycling Centre	208,000	31/12/2015
Operational	Inert Materials Recycling / Recovery Facility	Land Adjacent to Taylors Farm	Takeley Essex CM22 6LY	Aggregate Recycling Centre		Permanent
Operational	Inert Materials Recycling / Recovery Facility	Loppingdales	Gaunts End, Elsenham Bishops Stortford CM22 6DR	Aggregate Recycling Centre	90,000	Permanent
Operational	Inert Materials Recycling / Recovery Facility	Haven Road	Haven Quay Haven Road Colchester Essex	Aggregate Recycling Centre	75,000	Permanent
Operational	Inert Materials Recycling / Recovery Facility	Wivenhoe Quarry,	Alresford Road Wivenhoe Colchester Essex CO7 9JY	Aggregate Recycling Centre	50,000	31/12/2015
Operational	Inert Materials Recycling / Recovery Facility	Patterns Yard	Patterns Yard Nayland West Bergholt Colchester	Aggregate Recycling Centre	300	Permanent
Operational	Inert Materials Recycling / Recovery Facility	Colchester Skip Hire		Aggregate Recycling Centre	15,000	Permanent

STATUS	BROAD FACILITY TYPE	SITE NAME	SITE ADDRESS	SPECIFIC FACILITY TYPE	PLANNING PERMISSION / EA AVERAGE	END DATE
Operational	Inert Materials Recycling / Recovery Facility	Evans Thornwood	Marlow, High Road, Thornwood Common, Epping, CM16 6LU	Aggregate Recycling Centre	5,000	Permanent
Operational	Inert Materials Recycling / Recovery Facility	Green Recycling	Quayside Industrial Estate, Bates Road, Off the Causeway Maldon, CM9 5FA	Aggregate Recycling Centre	5,000	Permanent
Operational	Inert Materials Recycling / Recovery Facility	Essex Recycling Wix	Lane Farm, Harwich Road, Wix CO11 2SA	Aggregate Recycling Centre	50,000	Permanent
Operational	Inert Materials Recycling / Recovery Facility	EWD Carters Haulage Yard	Morses Lane Industrial Estate Brightlingsea Colchester Essex CO7 0SD	Aggregate Recycling Centre	75,000	Permanent
Operational	Inert Materials Recycling / Recovery Facility	Martell's Quarry	Slough Lane, Ardleigh, Colchester, Essex, CO7 7RU	Aggregate Recycling Centre	10,000	Permanent
Operational	Inert Materials Recycling / Recovery Facility	Armigers Farm	Armigers Farm, Thaxted, Essex, CM6 2NN	Aggregate Recycling Centre	100,000	Permanent
Operational	Inert Materials Recycling / Recovery Facility	Widdington Pit,	Hollow Road Widdington Saffron Walden Essex CB11 3SL	Aggregate Recycling Centre	65,000	Permanent
Operational	Inert Materials Recycling / Recovery Facility	Hallsford Bridge	Plot 9 Hallsford Bridge Industrial Estate Stondon Road Stondon Massey Ongar Essex CM5 9RB	Aggregate Recycling Centre	1,534	Permanent

STATUS	BROAD FACILITY TYPE	SITE NAME	SITE ADDRESS	SPECIFIC FACILITY TYPE	PLANNING PERMISSION / EA AVERAGE	END DATE
Operational	Inert Materials Recycling / Recovery Facility	Hill Demolition & Skip Hire	1-3 Edinburgh Place Edinburgh Way Harlow Essex CM20 2DJ	Aggregate Recycling Centre	1,947	Permanent
Operational	Inert Materials Recycling / Recovery Facility	Franklin Hire	Unit 1, Rawreth Industrial Estate Rawreth Lane, Rayleigh Essex, SS6 9RL	Aggregate Recycling Centre	1,050	Permanent
Operational	Inert Materials Recycling / Recovery Facility	TJ Cottis	Cottis Yard, Welton Way, Rochford SS4 1LB	Aggregate Recycling Centre	7,098	Permanent
Operational	Inert Materials Recycling / Recovery Facility	Silverton Aggregates	Devereaux Farm, Walton Road, Kirby Le Soken, CO13 0DA	Aggregate Recycling Centre	22,379	Permanent
Operational	Inert Materials Recycling / Recovery Facility	The Yard	New Parsonage Lane, Gt Saling, Braintree CM7 5ER	Aggregate Recycling Centre		Permanent
Operational	Inert Materials Recycling / Recovery Facility	GBN - Archer's Fields	Archers Fields, Burnt Mills, Basildon, SS15 6DX	Aggregate Recycling Centre		Permanent
Operational	Inert Materials Recycling / Recovery Facility	C A Blackwell (Contracts) Ltd,	The Works, Stock Road, West Hanningfield, Chelmsford, Essex, CM2 8LA	Aggregate Recycling Centre		Permanent
Operational	Inert Materials Recycling / Recovery Facility	Royden Lea Farm	Roydon Road, Harlow, CM19 5DU	Aggregate Recycling Centre	17,344	

STATUS	BROAD FACILITY TYPE	SITE NAME	SITE ADDRESS	SPECIFIC FACILITY TYPE	PLANNING PERMISSION / EA AVERAGE	END DATE
Operational	Inert Materials Recycling / Recovery Facility	Stock Road Recycling Facility	SS2 5QG	Aggregate Recycling Centre	9,959	
Operational	Inert Materials Recycling / Recovery Facility	Harlow Mill	Aggregate Depot, Station Approach, Old Harlow	Aggregate Recycling Centre		Permanent
Operational	Inert Materials Recycling / Recovery Facility	Little Easton - Highwood Quarry	Little Easton Airfield Little Easton Gt Dunmow CM6 2BB	Aggregate Recycling Centre	70,000	25/03/2027
Operational						
Operational	Inert Materials Recycling / Recovery Facility	Halstead Highway Depot	CO9 2HG	Aggregate Recycling Centre	350	
Operational	Inert Materials Recycling / Recovery Facility	Bateman's Farm,	Great Leighs, Chelmsford, Essex, CM1 2QF	Soil Screening	25,000	Permanent
Operational	Inert Materials Recycling / Recovery Facility	Curry Farm	New House Mill End Bradwell-Juxta-Mare, Maldon, CM0 7HL	Soil Screening	15,000	31/12/2018 Restoration by 31/12/2019
Operational	Inert Materials Recycling / Recovery Facility	Woolmongers Lane BRW	The Elms Woolmongers Lane Blackmore, Epping Forest Essex CM4 0JX	Soil Screening	5,414	Permanent
Operational	Inert Materials Recycling / Recovery Facility	Harvey Automobile Engineering	Payne's Lane, Nazing, EN9 2EX	Soil Screening	13,687	Permanent
Operational	Inert Materials Recycling / Recovery Facility	Forefront Utilities	CM13 3JT	Soil Screening	95,921	

STATUS	BROAD FACILITY TYPE	SITE NAME	SITE ADDRESS	SPECIFIC FACILITY TYPE	PLANNING PERMISSION / EA AVERAGE	END DATE
Operational	Inert Materials Recycling / Recovery Facility	Land Adjacent To The Cock Inn Public House	CO9 2HG	Soil Screening	29,045	
Operational	Inert Materials Recycling / Recovery Facility	Elsenham Recycling Facility	CM3 3AA	Soil Screening	6,124	
Operational	Inert Materials Recycling / Recovery Facility	Bulls Lodge	Bulls Lodge Quarry, Generals Lane, Boreham, Chelmsford, CM3 3HR	Aggregate Recycling Centre	100,000	30/06/2030
Operational	Inert Materials Recycling / Recovery Facility	Colchester Quarry (Colchester Recycling)	Warren Lane, Stanway, Colchester, CO3 0NN	Aggregate Recycling Centre	190,000	31/12/2037
Operational	Inert Materials Recycling / Recovery Facility	JKS	Roach Valley Works, 53 Purdey's Way, Purdey's Industrial Estate Rochford, Essex, SS4 1LZ	Aggregate Recycling Centre	160,000	Permanent
Under Construction	Inert Materials Recycling / Recovery Facility	St Cleres	St Cleres Pit Main Road Danbury Essex CM3 4AR	Aggregate Recycling Centre		12 years from commencement
Non Operational with Planning Permission	Inert Materials Recycling / Recovery Facility	Elsenham Quarry,	Hall Rd., Elsenham, Bishops Stortford, CM22 6DJ	Aggregate Recycling Centre	30,000	10/05/2029
Non Operational with Planning Permission	Inert Materials Recycling / Recovery Facility	Roxwell	Brittons Hall farm Chignal St James, Chelmsford Essex CM1 4LT	Soil Screening		

Southend

Thurrock

SITE NAME	SITE ADDRESS	SPECIFIC FACILITY TYPE	PERMITTED CAPACITY (Tonnes)	
			Planning Permission	EA Licence
Clearserve Rainbow Shaw	Holford Road Linford Essex SS17 0PJ	CD&E Inert & Non Inert		74,999
S Walsh and Sons East Tilbury Quarry	Princess Margaret Road East Tilbury Essex RM18 8PA	CD&E Inert & Non Inert		759,000
Rio Aggregates	Dansand Quarry, Stanford Road, Orsett RM16 3BB	CD&E Inert		75,000
Killoughery	Beacon Hill Industrial Estate Botany Way Purfleet Essex RM19 1SR	CD&E Inert & Non Inert	No capacity limit	75,000
Sims Milling Burrows Farm	Brentwood Road, Bulphan Essex RM14 3TL	CD&E Inert & Non Inert	No capacity limit	24,999
Seales Road Haulage	Juliette Way Purfleet	CD+E +Non Inert	No capacity limit	250,000
Brocks Haulage	Watson Close West Thurrock	CD+E +Non Inert	No capacity limit	75,000