Kent Minerals and Waste Local Plan

Planning for the future of minerals and waste in Kent

The 1st Local Aggregate Assessment for Kent

December 2012

Kent County Council

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i Abbreviations

AMR	Annual Monitoring Report
AWP	Aggregate Working Party
BGS	British Geological Survey
CDE	Construction, Demolition & Excavation
DCLG	Department for Communities and Local Government
EiP	Examination in Public
KCC	Kent County Council
LAA	Local Aggregate Assessment
MASS	Managed Aggregate Supply Systems
MDA	Marine Dredged Aggregates
MPA	Mineral Planning Authority
MPS	Minerals Policy Statement
mt	Million Tonnes
mtpa	Million Tonnes Per Annum
MWLP	Minerals and Waste Local Plan
NPPF	National Planing Policy Framework
PFA	Pulverised Fuel Ash
RAWP	Regional Aggregate Working Party
RSS	Regional Spatial Strategy
SEEAWP	South East England Aggregates Working Party
SEERAWP	South East England Regional Aggregates Working Party *(name used prior to the revocation of RSSs)*

i Abbreviations

1 Introduction

1.0.1 This document is a revised, updated version of the Kent County Council (KCC) Minerals and Waste Local Plan (MWLP)[1] evidence base topic report dated May 2011, 'Construction Aggregates Apportionment and Need'[2].

1.0.2 It was updated in May 2012 to reflect the requirements of the National Planning Policy Framework (NPPF)[3], which states that, *"Mineral Planning Authorities should plan for a steady and adequate supply of aggregates by: preparing an annual Local Aggregate Assessment, either individually or jointly by agreement with another or other mineral planning authorities, based on a rolling average of 10 years sales data and other relevant local information, and an assessment of all of the supply options (including marine dredged, secondary and recycled sources)"*.

Later within the same paragraph in the NPPF, it explains that Mineral Planning Authorities (MPAs) should be *"making provision for the land-won and other elements of their Local Aggregate Assessment in their mineral plans taking account of the advice of the Aggregate Working Parties and the National Aggregate Co-ordinating Group as appropriate. Such provision should take the form of specific sites, preferred areas and/or areas of search and locational criteria as appropriate"*.

1.0.3 The draft Kent Local Aggregate Assessment (LAA) report was published for consultation at the same time as the Mineral Sites Plan and Waste Site Plan consultation documents at 'Preferred Options' stage. This consultation ran for 8 weeks between May 28th and July 23rd 2012. Since then, the Department for Communities and Local Government (DCLG) have prepared and published new mineral planning guidance on the subject of Managed Aggregate Supply Systems (MASS) which includes guidance on Local Aggregate Assessments[4].

1.0.4 Both the NPPF and the 2012 guidance on MASS require MPAs to take account of the advice of the relevant Aggregate Working Party on LAAs. The May 2012 Draft Kent LAA report was discussed at the October 2012 meeting of the South East England Aggregates Working Party (SEEAWP). The Aggregate Working Party provided its collated comments in relation to the May 2012 Draft LAA in a letter to KCC dated 21st November 2012. The SEEAWP letter is included as Appendix A.

1.0.5 The draft LAA was updated again in December 2012 in order to take into consideration the views of various consultees which were received in response to the May 2012 consultation, as well as the letter received from SEEAWP. In order to align it to the Annual Monitoring Report (AMR), it also now includes data from the 2011 aggregate survey. It includes additional information on exports, imports and

1 Previously referred to as the Minerals and Waste Development Framework (MWDF)
2 KCC (May 2011). Kent Minerals and Waste Development Framework. Minerals Topic Report 1: Construction Aggregate Apportionment and Need
3 DCLG (March 2012). National Planning Policy Framework, paragraph 145
4 DCLG (October 2012). Guidance on the Managed Aggregate Supply System

consumption of aggregates as well as future supply options for aggregates in Kent, as required by the 2012 guidance on MASS. This report is now being published as the first Kent LAA.

1.0.6 The 2012 guidance on the MASS strongly encourages MPAs to include the LAA within any AMRs as part of their responsibility of keeping the demand and supply of aggregates under regular review. As this first Kent LAA has been prepared separately from the AMR, it is proposed to keep the two documents separate for the first year of its preparation.

1.0.7 This LAA report now contains details of the following:-

- An introduction to the report;
- Marine dredged aggregate supply;
- Imports of crushed rock and other construction aggregates into Kent;
- Recycled and secondary aggregates supply in Kent;
- Sub-regional apportionment for land-won construction aggregates and a comparison with the rolling average of 10 years sales data for both sand and gravel and crushed rock;
- Assessment of permitted reserves;
- Assessment of required provision up to the end of 2030;
- Provision for different types of land-won construction aggregates;
- Future Supply of Aggregates in Kent;
- Conclusions; and
- References.

1.0.8 Construction aggregates are quantitatively the most significant group of minerals worked in Kent. A number of different types of construction aggregate have traditionally been extracted from quarries in Kent, including flint and sandstone gravels, ragstone and building sand. In addition, Kent has an important role in providing importation facilities for crushed rock and other imported land-won[5] aggregates as well as marine dredged aggregates which are landed at Kent's wharves and imports of crushed rock brought into Kent by rail.

5 Land-won aggregates are sand and gravel, crushed rock and building sand resources which are obtained from quarries

1.0.9 Construction aggregate supply in England has been managed through the MASS which has been intended to assist planning bodies and MPAs in the timely preparation and revision of their spatial strategies and preparation of strategic plans in a way that addresses effectively the geographical imbalances between the supply of, and demand for, aggregates at national level.

1.0.10 DCLG's role in relation to aggregate supply policy has covered two main areas:

- The preparation of Minerals Policy Statements (MPSs) and the associated practice guides setting out both policy and guidance for minerals planning across England[6]; and

- Determination of National and Regional Guidelines for Aggregate Provision in England. These provide an overall aggregate supply target for England and for each region, including London and are given overleaf in Table 1[7].

6 The suite of MPSs has now been replaced by the NPPF and the associated Technical Guidance to the NPPF (DCLG March 2012)

7 DCLG (June 2009). National and Regional Guidelines for Aggregate Provision in England 2005–2020

Table 1 - National and Regional Guidelines for Aggregate Provision 2005–2020 (figures refer to million tonnes, for the period 2005–2020, i.e. 16 years)

	Guidelines	Guidelines	Assumptions	Assumptions	Assumptions
Regions	**Land-won Sand and Gravel**	**Land-won crushed rock**	**Marine Sand and Gravel**	**Alternative Materials**	**Net Imports to England**
South East	195	25	121	130	31
London	18	0	72	95	12
East of England	236	8	14	117	7
East Midlands	174	500	0	110	0
West Midlands	165	82	0	100	23
South West	85	412	12	142	5
North West	52	154	15	117	55
Yorkshire and Humber	78	212	5	133	3
North East	24	99	20	50	0
England	**1028**	**1492**	**259**	**993**	**136**

1.0.11 DCLG is also committed to the on-going funding of Aggregate Working Parties (AWPs) which were established to provide technical information on construction aggregate supply and demand at a regional level[8]. In the past Regional Aggregate Working Parties (RAWPs) have undertaken annual monitoring of aggregates production, by type and use, and levels of permitted reserves; and every fourth year an expanded survey that includes data on transportation of aggregates, which allow levels of consumption of, and thus, demand for aggregates by region to be assessed. An expanded survey was last completed for 2009 data. Collated aggregate monitoring data for 2011 has been published in the KCC AMR[9]. The South East England Aggregates Working Party report, reference SEERAWP 11/06, includes aggregates monitoring data for the South East of England for the 2010 calendar year[10].

1.0.12 Regional guidance and policies for aggregate minerals has been delivered through the Regional Spatial Strategy (RSS) for the South East. The Government has announced its intention to abolish RSSs through the Localism Act 2011 however, currently RSSs are still a part of the development plan and so their relevance to planning for aggregates is recognised here.

1.0.13 At a local level MASS has been delivered through Minerals Planning Authorities (MPAs). As the MPA for Kent, KCC has needed to establish the level of provision to be made for land-won aggregates through the Minerals and Waste Plan (previously the Core Strategy) and its proposed Mineral Sites Plan.

1.0.14 KCC has been an active member of the AWP for the South East of England. It will continue to participate in the operation of the South East AWP in the future and recognises the importance of its work.

8 The role of the renamed 'Aggregate Working Parties' is identified in paragraph 145 of the NPPF

9 KCC (2012). 8th Annual Minerals and Waste Monitoring Report: 1st April 2011 to 31st March 2012

10 SEERAWP 11/06 (October 2011). South East Aggregates Monitoring Report 2010

2 Marine Dredged Aggregates

2.0.1 Planning Policy Officers from KCC, in conjunction with Medway Council carried out a survey of mineral importation facilities in Kent and Medway in 2010. The results were incorporated into the 2010 Kent and Medway Mineral Imports Study[(11)]. Whilst the 2010 imports study covered the areas of both Kent and Medway, the subject of this LAA is Kent only. Medway Council is making provision for its own aggregate provision within Medway Local Plans. The 2010 imports study built upon and updated an earlier joint Kent and Medway Imports study undertaken in 2006.

2.0.2 The 2010 Kent and Medway Mineral Imports Study summarised the policy context for considering mineral importation facilities in both Kent and Medway and confirmed the importance of safeguarding all of the existing Kent and Medway mineral importation facilities in order to comply with national minerals policy.

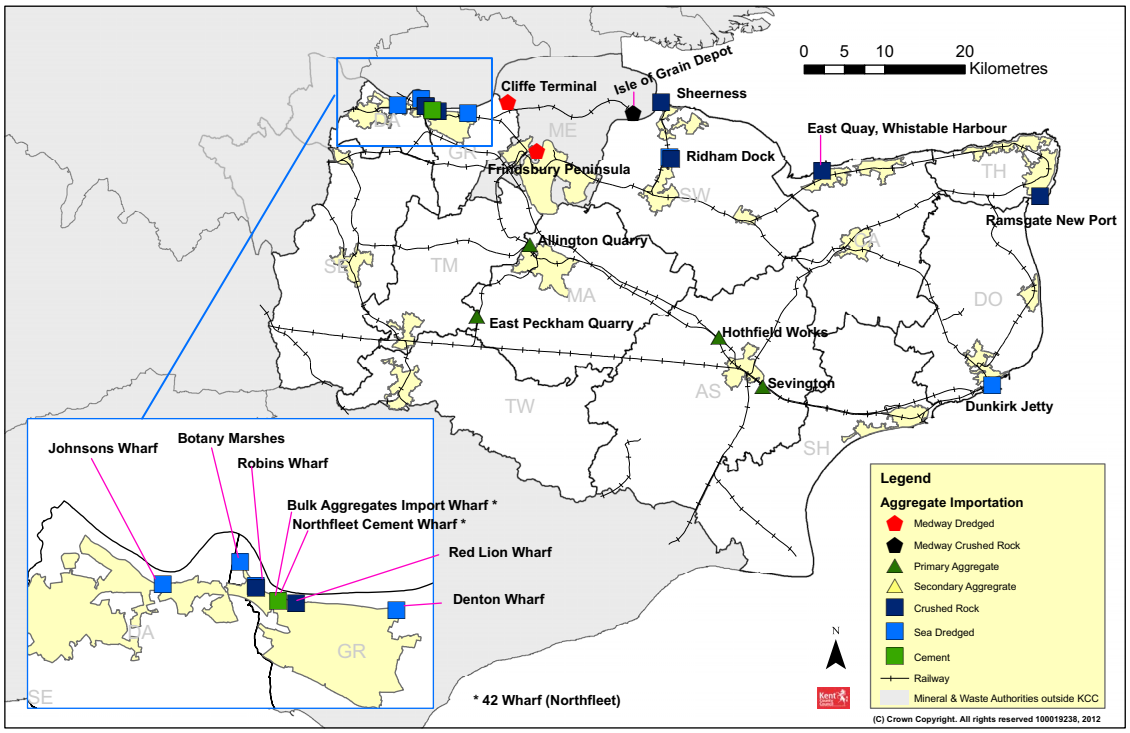
2.0.3 It identified the importance of Kent and Medway wharves and railheads for the importation of Marine Dredged Aggregates (MDA), crushed rock, other land-won aggregates, recycled and secondary aggregates, as well as other minerals including cement and salt.

2.0.4 There are currently fifteen active aggregate importation wharves in Kent and Medway (three of which are in Medway - Cliffe (Site I), Eurowharf, Frindsbury (Site K) and Isle of Grain (Site M)), and an additional one in Kent which has been granted planning permission but is not operational for aggregates - Wharf 42 (Northfleet) Site P in Table 3)[(12)]. There are four active railheads in Kent. The location of the wharves and railheads in Kent and Medway is shown on Figure 1 opposite and site location plans are given in Appendix B.

11 KCC and Medway Council (March 2011). Kent and Medway Imports Study

12 Old Sun Wharf, Crete Hall Rd, Gravesend was granted planning permission by Gravesham Council in February 2012 for the continued use of the site as a ready mixed concrete batching plant and construction of maritime jetty for import of sand and stone by river. This is a relatively small site and it is not known by the MPA whether the jetty will be constructed to enable the importation of sand and stone by river. It is not currently proposed to include it within the list of safeguarded wharves and railheads in Kent

Figure 1 - Existing Wharves and Rail Aggregate Depots in Kent and Medway



Existing Wharves and Rail Aggregate Depots in Kent and Medway

2.0.5 The 2010 Kent and Medway mineral imports study identified that at the time of the survey that the following types of construction aggregates were being imported into Kent and Medway (by ship, dredger and rail):

- Primary aggregates including land-won crushed rock, land-won sand and marine dredged aggregates. Land-won aggregates from elsewhere in the UK are brought into the Kent and Medway wharves and railheads from Glensanda (Scotland), Belfast, Somerset, Devon, Leicestershire and Wales. Land-won sand is also imported into one of the wharves on the North Kent coast from Denmark. Much of the crushed rock imported into Kent is from Norway. Granite is also imported from Calais and Northern Ireland. In the past limestone has been imported into one of the North Kent wharves from Morocco;

- Secondary and recycled aggregates including slag (imported into three of the North Kent wharves from locations in France as well as Flushing (the Netherlands), and Pulverised Fuel Ash (PFA) from Spain and Denmark, and recycled aggregates from Rotterdam (Holland) which is imported into one of the North Kent wharves; and

- Marine dredged aggregates imported into the Kent and Medway wharves which are generally derived from dredging grounds in the Eastern English Channel, Thames Estuary, off the Isle of Wight (South Coast region) and Eastern England. The plans in Appendix C show the location of these dredging grounds.

2.0.6 Marine dredged sand and gravel is a major source of construction aggregates for Kent and some of the material imported into Kent is shipped onwards to other parts of the South East of England, London and East Anglia. The 2010 Kent and Medway Mineral Imports Study identifies that since 1999, wharves in Kent have enabled the county to be the biggest importer of marine dredged sand and gravel in the South East Region (in 9 out of 10 years up to 2008). In addition Medway is now the second biggest importer of marine dredged sand and gravel in the South East. Combined, Kent and Medway were responsible for 57% of all the marine dredged aggregates imported into the South East in 2008. More recent data (up to and including 2010) is given in the SEERAWP South East Aggregates Monitoring Report 2010 (October 2011)[13].

2.0.7 The 2010 mineral import study report remains valid as it gives summary results of the site visits and operator interviews which were conducted in 2010. Since 2010 there have been no known closures or significantly changes in relation to the facilities. It is proposed to update the Kent and Medway 2010 Mineral Imports Study in 2013, to coincide with the publication of the pre-submission edition of the Kent Minerals and Waste Plan (formerly the Core Strategy).

2.0.8 Data for Marine Dredged Aggregate Landings at Kent Wharves between 2002 and 2011 is given below in Table 2. Data for Medway wharves is recorded separately in this survey. The figure for 2011 is considerably higher than that identified by the Crown Estate by about 300,000 tonnes (given in paragraph 2.0.21 below). The figures in Table 2 below are taken from operator responses to the annual aggregate monitoring survey and include marine dredged aggregates transferred from wharves in other regions as well as maintenance dredged materials.

Table 2 - Landings of Marine Dredged Sand and Gravel in Kent Wharves 2000–2011 (thousand tonnes per year)

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average
1856	1804	1498	1669	1818	2062	1813	1409	1340	1845	1711.5

2.0.9 Table 3 opposite is taken from the 2010 imports study and shows Marine Dredged Aggregate imports (by sea) into Kent and Medway in 2009. This data was primarily taken from the Crown Estate Licences Summary of Statistics 2009[14]. More recent data for 2010 and 2011 has now been published, but this is not so easy to disaggregate into individual wharves. A summary of Kent and Medway marine dredged aggregate import data for 2011 is given in Table 4 (page 10).

13 SEERAWP (October 2011). South East Aggregates Monitoring Report 2010 South East England Aggregates Working Party

14 Crown Estate (2009). Marine Aggregates: The Crown Estate Licences Summary of Statistics 2009

Table 3 - Imports of Marine Dredged Aggregates into Kent and Medway (by Sea) Using Crown Estate Licences 2009 Statistics (Sites shown in Red are in Medway)

Site	Operator	Site Code	Crown Estate Region	Tonnes
Ridham Dock	Tarmac	E	Thames Estuary	148,778
Johnson's Wharf	Lafarge	F	Thames Estuary	231,478
Robin's Wharf	AI	G	*3	
Denton Wharf	Clubb	H	Thames Estuary	256,371
Cliffe	Brett	I	Thames Estuary	1,115,606
East Quay, Whitstable	Brett	J	*3	
Eurowharf (Frindsbury)	Hanson	K	Thames Estuary	286,886
Red Lion Wharf	Stema	L	*3	
Isle of Grain	AI	M	*3	
Ramsgate New Port	Brett	N	*2	*2
Robins Wharf	Brett	O	Thames Estuary	*1
42 Wharf (Northfleet)	Lafarge	P	*4	*5
Dunkirk Jetty, Dover	Brett	Q	East English Channel	110,931
Ridham Dock	Brett	R	*3	
Northfleet Wharf	Lafarge	S	*3	
Sheerness	AI	T	Thames Estuary	13,464
Botany Marshes	Cemex	U	Thames Estuary	661,646*1

Footnotes:

- *1 - Botany Marshes and Robins Wharf (Brett) marine dredged aggregate landings are reported as one figure for 'Northfleet' in the Crown Estates 2009 data charts.

- *2 - Brett started to import processed marine dredged aggregates from another wharf in another region into Ramsgate in 2009. Therefore the Ramsgate landings are counted in a different region and do not appear in the Crown Estate data.
- *3 - The other wharves listed in this chart, but not showing any marine dredged aggregate tonnage, are importing crushed rock from a variety of locations, secondary and recycled aggregates including slag and PFA, as well as some land-won sand from sites in Europe. Some of the wharves also import other minerals including salt and cement in bulk.
- *4 and *5 - 42 Wharf (Northfleet) was granted Planning Permission in 2010 subject to the resolution of legal agreements. The legal agreements are now agreed, but it does not at present import marine dredged aggregates, but continues to be used to import cement.
- Sites I, K and M are shown in red font as they are situated in Medway.
- Wharf 42 (Northfleet) is reported as Bevans Wharf in the 2010 Kent and Medway Minerals Imports study and in the SEEAWP Annual Monitoring Report for 2010.

2.0.10 The Crown Estate Licences Marine Aggregates Summary of Statistics for 2011 has provided the following information for the Kent and Medway wharves.

Table 4 - Imports of Marine Dredged Aggregates into Kent and Medway (by Sea) Using Crown Estate Licences 2011 Statistics (Sites shown in Red are in Medway)

Landing Locations	Wharves and Alternative Names that this Location Includes	Tonnes
Cliffe	Alpha Wharf, Cliffe, North Sea Terminal	957,071
Denton	Denton, Denton BAD, Denton Sand	429,737
Greenhithe	Greenhithe	341,128
Northfleet	Northfleet, Northfleet Brett, Robins Wharf	905,926
River Medway and Swale wharves	Queenborough, Ridham, Rochester, Rochester Hanson, Sheerness	389,867
Dover	Dover	99,248
Total	**3,122,977**	

2.0.11 The 2006 import study classified sites as Small (up to 0.1 million tonnes per annum (mtpa)), Medium (0.1–0.35mtpa), Large (0.35–0.75mtpa) and Major (over 0.75mtpa). The classification was based on capacity of site as developed, not on average throughput. Table 5 below gives the site classification for aggregate wharves(using the same criteria) for both 2006 and 2010 studies.

Table 5 - Comparison of Kent and Medway Aggregate Import Facilities 2006 & 2010 (Sites I, K and M are in Medway and shown in red)

Site	Operator	Site Code	Site Size 2006 Survey	Site Size 2010 Survey	Change between 2006 and 2010
Allington Rail Sidings	Hanson	A	Large	Major	Increase
Sevington Rail Depot	Brett	B	Small	Medium	Increase
Hothfield Works	Tarmac	C	Medium	Medium	No change
East Peckham	Clubb	D	Not recorded	Medium	Additional Site (operational)
Ridham Dock	Tarmac	E	Medium	Large	Increase
Johnson's Wharf	Lafarge	F	Medium	Large	Increase
Robins Wharf Northfleet	AI	G	Medium	Medium	No change
Denton Wharf	Clubb	H	Large	Major	Increase
Cliffe	Brett	I	Major	Major	No change
East Quay Whitstable	Brett	J	Medium	Medium	No change
Eurowharf Frindsbury	Hanson	K	Large	Major	Increase
Red Lion Wharf	Stema	L	Large	Major	Increase
Isle of Grain	AI	M	Major	Major	No change
Ramsgate New Port	Brett	N	Small	Small	No change

Site	Operator	Site Code	Site Size 2006 Survey	Site Size 2010 Survey	Change between 2006 and 2010
Robins Wharf Northfleet	Brett	O	Medium	Large	Increase
42 Wharf (Northfleet)	Lafarge	P		Large	New aggregate site (not yet operational for aggregates)
Dunkirk Jetty Dover	Brett	Q	Medium	Medium	No change
Ridham Dock	Brett	R	Medium	Medium	No change
Sheerness	AI	T		Small	New site
Botany Marshes	Cemex	U	Large	Major	Increase

2.0.12 Several of the site operators reported major expenditure in relation to their site infrastructure since the 2006 survey, including major investment in new processing plant, weighbridges, site offices, conveyor systems and 'value added' facilities at the wharves and railheads including concrete and bagging plants. In addition some of the site operators reported the possibility of increasing capacity at their sites when the economic climate improves by running double shift systems or the possibility of increasing the capacity of their storage areas.

2.0.13 During the site visits in 2010, at nine of the sites, operators reported an increase in productive capacity at their facilities. In addition the railhead at East Peckham was not reported upon in 2006, but is now operational. The Lafarge site at 42 Wharf (Northfleet) which is used for cement importation now has planning permission for aggregate importation and so is included in the table as a new aggregate facility.

2.0.14 The wharves which have the greatest capacity are those reported in the table as 'Major', situated on the deep water part of the North Kent and Medway coast, including Isle of Grain, Cliffe, Eurowharf, Botany Marshes, Denton Wharf and Red Lion Wharf. Botany Marshes, Denton Wharf and Red Lion Wharf are situated in Kent.

2.0.15 It would be both difficult and contravene site operator confidentiality requirements to give an accurate estimate of annual capacity at each site. It is however, realistic to state that the existing handling capacity at the Kent and Medway wharves and railheads is far greater than the operational throughputs in recent years

during the recession. However, estimates of productive capacity for both the marine dredged aggregate wharves and those importing other aggregates are given in Section 10.

2.0.16 At least two of the wharves have the infrastructure and capability to process marine dredged aggregates and then to reload the processed aggregates into smaller barges or boats for transshipment by water along the Thames into London and South Essex/Thurrock. This type of sustainable transshipment also takes place for crushed rock from at least one of the North Kent wharves. Only one of the active wharves is connected to an operational railhead; that is Cliffe (which is in Medway). However, Lafarge have been granted planning permission for a rail connected aggregate importation facility at Wharf 42, Northfleet, subject to Section 106 legal agreements. Ridham Dock has existing rail facilities which have potential for future use by one of the operators.

Marine Aggregate Resources

2.0.17 The Crown Estate provided details to the Kent Minerals Plan 'Preferred Options' consultation regarding marine aggregate resources in July 2012. The Crown Estate letter and attachments can be viewed on the consultation portal. The web link to the consultation is given below:

Mineral Sites Plan 'Preferred Options' May 2012[15]

2.0.18 The following text is taken from the Crown Estate's comments:

"Over 900 million tonnes of marine sand and gravel (aggregate) has been dredged from offshore seabed over the last 50 years and at least 1,250 million tonnes is available for sustainable supply of construction aggregate over the next 50 years and beyond. Currently marine sand and gravel supply some 20% of the county's demand.

The marine aggregate resource available in the East Coast, Thames Estuary and East English Channel areas and which are used to supply Kent wharves is 994 million tonnes of which 31.25 million tonnes is permitted for extraction per annum. Kent wharves only received some 1.3 million tonnes (4.2% of total permitted per annum) in 2010, but increased in 2011 with 1.55 million tonnes (5%).

There is therefore a long term viable and sustainable supply of marine dredged aggregate both for construction uses and for direct beach nourishment by vessel delivery. The current rate of extraction by all companies to all marine aggregate wharves in the UK and on the European mainland is some 45% of the permitted per annum (amount) thus reinforcing the sustainability and long term viability and requirement of marine aggregate wharves in Kent".

15 http://www.kent.gov.uk/environment_and_planning/planning_in_kent/minerals_and_waste/mineral_sites_plan/preferred_options.aspx

3 Importation of Crushed Rock and other aggregates into Kent by Sea and Rail

3.0.1 The SEEAWP report 11/06[16] provides data on the imports of crushed rock by sea in the South East region. That information is tabulated below (Table 6).

Table 6 - Imports of Crushed Rock By Sea 2001–2010 (thousand tonnes per year)

County	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
East Sussex	37	176	176	176	93	93	181	145	26	145
Hampshire	328	436	385	360	360	313	c	c	c	c
Isle of Wight	c	c	c	c	c	N/A	c	c	c	c
Kent and Medway	3159	3142	2973	2561	1980	2098	2780	2067	1344	1602
West Sussex	236	264	223	43	47	N/A	c	c	c	c
Totals	**3790**	**4050**	**3800**	**3170**	**2500**	**2500**	**3000**	**2300**	**1500***	**1881**

Footnotes to Table 6:

- c = *confidential, or if identified will release another confidential figure*
- *Medway is included with Kent, otherwise all data would have to be shown as confidential*
- * = *The total figures are rounded tol avoid revealing a confidential figure*
- *Marine dredged sand and gravel is not included in this table*

3.0.2 Since 1999, wharves in Kent and Medway have consistently been the most important destinations (by quantity) for crushed rock imported into the South East by sea. The proportion of crushed rock imported into the South East region through Kent and Medway wharves has risen from 79% in 1999 to 89.9% in 2008. However, imports of crushed rock by sea into the region have seen a considerable drop since year 2000 when over 5 million tonnes (mt) was imported into the region (83.6% of which was into Kent and Medway) to 1.8mt in 2010 (88.3% of which was into Kent and Medway).

3.0.3 Table 6 shows the importance of Kent and Medway wharves in providing suitable locations for the landing of crushed rock into the region from abroad. It also shows how West Sussex wharves have diminished in importance for the importation of crushed rock since 2003. It is thought that this is because access for large vessels with deep water requirements is limited off the West Sussex coast and as the vessels that import crushed rock from Norway get larger and larger, so the usefulness of shallow water or restrictive access wharves diminishes. In comparison with that situation, the deep water wharves of North Kent and Medway provide suitable offloading facilities close to the demand for the aggregates.

Table 7 - Sales of Aggregate at Rail Depots 2003–2010 (thousand tonnes per year) with Kent Figure for 2011 Added

County	2003	2004	2005	2006	2007	2008	2009	2010	2011
Berks and Hants	2095	2299	1762	1737	1935	1369	1094	1054	
Bucks, Milton Keynes and Oxfordshire	996	689	790	791	887	733	447	729	
Surrey and West Sussex	594	587	557	557	669	657	621	888	
Kent	359	582	575	572	594	581	414	356	446
Totals	**4044**	**4157**	**3685**	**3657**	**4085**	**3340**	**2576**	**3027**	

Footnotes to Table 7:

- *MPAs were grouped in the table to overcome confidentiality issues*
- *90% of the aggregate received at the rail depots is crushed rock*
- *The 10% sand and gravel includes small amounts from within the South East*

3.0.4 Whilst the sales of aggregates at rail depots in Kent had been at a fairly steady level of just over half a million tonnes per annum between 2004 and 2008, they have fallen to 414,000 tonnes in 2009 and 356,000 tonnes in 2010, but increased to 446,000 tonnes in 2011. The rail depots in Kent are situated near Ashford and Maidstone, that is away from sources of imported marine dredged aggregates or crushed rock imported by sea. Supplies of aggregates at the Kent railheads are important in reducing the need to transport aggregates by road from alternative supply sources including the North Kent wharves.

3.0.5 The following chart (Table 8) taken from the 2010 Kent and Medway Mineral Imports study identifies which of the Kent and Medway sites import primary aggregates (other than crushed rock) and secondary and recycled aggregates.

3.0.6 At the time of the survey in 2010, Red Lion Wharf was importing sand from Denmark. Six facilities in Kent were importing secondary and recycled aggregates from a diverse range of European sources including slag (imported into three of the North Kent wharves from a diverse range of sources in France as well as Flushing (the Netherlands) and Pulverised Fuel Ash (PFA) from Spain and Denmark, and recycled aggregates from Rotterdam (Holland).

Table 8 - Current Importation Sites in Kent and Medway (Medway sites shown in a red font)

Site Name	Operator	Site Code	Marine Dredged Aggregates	Crushed Rock	Other Land-won Aggregates	Secondary/ Recycled	Other Minerals
Allington	Hanson	A		♦			
Sevington Rail Depot	Brett	B		♦			
Hothfield Works	Tarmac	C		♦		♦	
East Peckham	Clubb	D		♦			
Ridham Dock	Tarmac	E	♦	♦			
Johnsons Wharf	Lafarge	F	♦				
Robins Wharf Northfleet	AI	G		♦			
Denton Wharf	Clubb	H	♦			♦	
Cliffe	Brett	I	♦				
East Quay Whitstable	Brett	J		♦		♦	
Eurowharf Frindsbury	Hanson	K	♦	♦			♦
Red Lion Wharf	Stema	L		♦	♦	♦	
Isle of Grain	AI	M		♦			
Ramsgate New Port	Brett	N	♦	♦		♦	

Site Name	Operator	Site Code	Marine Dredged Aggregates	Crushed Rock	Other Land-won Aggregates	Secondary/ Recycled	Other Minerals
Robins Wharf Northfleet	Brett	O	♦				
42 Wharf (Northfleet)	Lafarge	P					♦
Dunkirk Jetty Dover	Brett	Q	♦				
Ridham Dock	Brett	R		♦		♦	
Sheerness	AI	T	♦	♦			♦
Botany Marshes	Cemex	U	♦				

4 Secondary and Aggregate Recycling in Kent

4.0.1 KCC's Core Strategy - Strategy and Policy Directions (May 2011) draft Policy CSM5 states that sufficient, specific sites will be identified to provide the capacity to recycling 1.4mt per year of secondary and recycled aggregates for the duration of the plan period (to the end of 2030).

4.0.2 The target capacity of 1.4mt is a minimum requirement (derived from the relevant South East Plan policy) and the County Council are keen to promote the more sustainable practise of aggregate recycling, as opposed to extracting virgin materials. Draft Policy CSM5 therefore also includes a criteria for assessing any further site proposals, which would be considered in addition to the allocated sites within the final Minerals Plan.

4.0.3 A Revised Waste Needs Assessment[17] for arisings in Kent has been carried out as part of the supporting evidence base for this consultation. The main findings were as follows:

- No indication of any growth in arisings of CDE waste in recent years.
- Aggregate recycling capacity has decreased to 1.9 million tonnes per year.
- The new Waste Framework Directive target for CDE waste recovery is lower than the SE Plan target which has been used in the assessment of future capacity. Therefore, the target rate of recycling remains the same (i.e. to increase to 60% by 2020).
- By 2020 and through to the end of the plan period, 1,560,000 tonnes per year of aggregate recycling capacity will be required which is lower than the current capacity of existing facilities.
- Some existing facilities are temporary and more sites will need to be identified for the development of permanent aggregate recycling facilities to ensure that a minimum of 1,560,000 tonnes per year capacity is still available at the end of the plan period.

4.0.4 However, the above conclusions are based upon the capacity calculated from data returns from industry in the annual Aggregate Monitoring Survey.

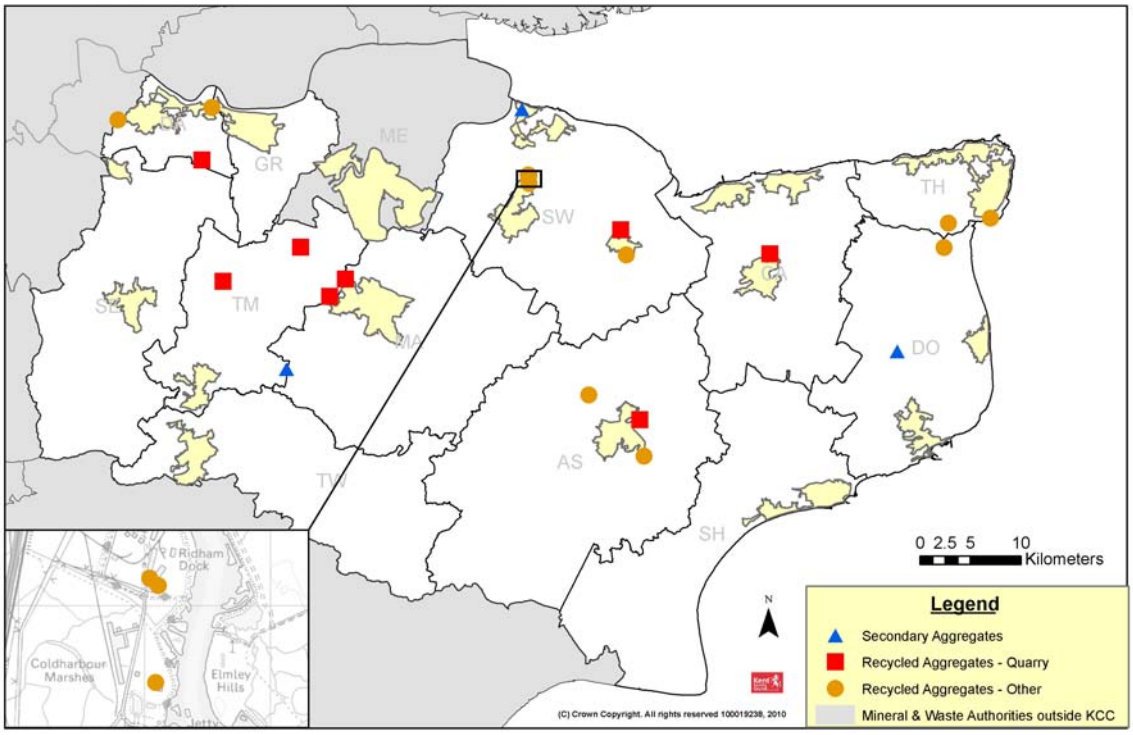
4.0.5 The results from recent Kent Minerals and Waste Annual Monitoring Surveys[18] (which are summarised in the Minerals Topic Report on Secondary and Recycled Aggregates[19]) regarding sales of secondary and recycled aggregates are

17 Jacobs (2012). Revised Needs Assessment Report
18 KCC (December 2011). 7th Annual Minerals and Waste Monitoring Report: 1st April 2010 to 31st March 2011
19 KCC (May 2011). Minerals Topic Report 2: Secondary and Recycled Aggregates

shown in Table 9 below, with data for 2011 added. These data sets show the information gathered from aggregate operators. In the past there have been poor response rates however, in the 2010 survey only one known operator failed to provide a response to the survey.

4.0.6 The Annual Monitoring Survey only collates data in relation to secondary and aggregate recycling at fixed sites. No account is taken of the recycled aggregate produced by mobile crushers on building sites and similar short term developments. The most recent annual monitoring report identifies that Kent has a good spread of secondary and recycling facilities across the county. Figure 2 below (taken from Minerals Topic Report 2: Secondary and Recycled Aggregates) shows this.

Figure 2 - Secondary and Recycled Sites in Kent



4.0.7 The table below collates annual monitoring data for the years when data for secondary and recycled aggregate information for Kent sites was available.

Table 9 - Secondary and Recycled Aggregate Sales in Kent 2003–2011 (tonnes)

2003	2004	2007	2008	2009	2010	2011	Average[20]
475,985	678,521	1,294,636	956,283	548,004	892,576	678,405	789,201

Footnote to Table 9: There is no data available for years 2001, 2002, 2005 or 2006.

20 Average of the 7 years for which data is available.

4.0.8 An in-house study is currently being conducted to assess the capacity of all aggregate recycling facilities in the county. So far the initial results show a dramatic underestimate of capacity. For example, one site with a recorded annual capacity of 260 tonnes per year is actually capable of producing over 250,000 tonnes per year[21]. This study has also found that permanent facilities have a capacity of 1,084,378 tonnes per year. A considerable amount of additional capacity exists in temporary locations situated in quarries, such that the South East Plan target of 1.4 million tonnes per year could be achieved if sufficient material was available for recycling[22].

4.0.9 In order to meet the forecast for the aggregate recycling capacity requirement of 1,560,000 tonnes per year at the end of the plan period, new permanent sites will be identified that can provide a minimum additional capacity of 475,622 tonnes per year.

4.0.10 A total of 14 secondary and recycled aggregate sites were submitted for consideration by the County Council. Allocation of the following sites would provide an additional capacity of 455,000 tonnes per year. The 'Preferred Options' are:

- Site 21: Conway Rochester Way, Dartford.
- Site 65: Land North of Stevens and Carlotti, Richborough.
- Site 72: Unit 14, Canterbury Industrial Estate, Hersden, Near Canterbury.
- Site 91: Animal Products Site, Faversham.
- Site 99: Broomway Ltd, Swanscombe.

4.0.11 Aggregate recycling sites located in industrial estates and in existing mineral operation sites and waste management locations would also be considered appropriate in principle under the emerging policy CSM5. The allocation for aggregate recycling uses on industrial estates would prevent the land from being developed for other industrial uses. Sites proposed in industrial estates will therefore not be allocated.

4.0.12 In addition, substantial reserves of colliery spoil remain at Tilmanstone (west of Deal in Dover District). In the past, colliery spoil has provided raw material for brickmaking at an on site brickworks. Whilst the brickworks have been mothballed and are now closed, there is the possibility that Timanstone colliery spoil could be used for secondary aggregates in the future.

21 This is a temporary permission which will expire before the end of the plan period and does not affect the conclusions of the revised study

22 KCC (May 2011). Minerals Topic Report 2: Secondary and Recycled Aggregates

5 Exports, Imports and Consumption of Primary Aggregate

5.0.1 The 2009 Aggregate Mineral Survey for England and Wales (AM2009)[23] provides an in-depth understanding of regional and national sales, inter-regional flows, transportation, and consumption and permitted reserves of primary aggregates. These in-depth reports have been carried out on four yearly intervals since 1973. Table 10 below, which is derived from the 2009 Aggregate Mineral Survey (AM2009), shows where the primary aggregates which were sold from Kent sources in 2009 were distributed. It provides data for land-won sand and gravel (which includes both soft sand and sharp sand and gravel), land-won crushed rock and marine dredged aggregates imported into Kent wharves.

5.0.2 The AM2009 survey refers to 'sales' of aggregates. The term relates to material leaving a quarry or wharf as measured at the weighbridge. The term, 'sales' is more accurate than 'production' used in some previous surveys (these distribution figures were not collected in the 2010 or the 2011 aggregate monitoring survey and so the 2009 data is the most recent data set for this information).Most of the sand and gravel and crushed rock sold from Kent quarries was used locally within Kent and Medway (81% and 86% respectively). Relatively small amounts were sold in other parts of South East England and elsewhere. Similarly, the majority of the marine dredged aggregates imported into Kent wharves were used in Kent and Medway in 2009 (86%).

Table 10 - Destinations of Primary Aggregates Sold From Kent in 2009

	Marine Dredged Aggregates	Marine Dredged Aggregates	Sand and Gravel	Sand and Gravel	Crushed Rock	Crushed Rock
Destination	**Thousand Tonnes**	**(%)**	**Thousand Tonnes**	**(%)**	**Thousand Tonnes**	**(%)**
Kent and Medway	1442	86	1103	81	760	86
South East	55	3	75	6	26	3
Elsewhere	171	10	177	13		
Unallocated			8	1	97	11
Total	**1668**		**1362**		**883**	

23 DCLG, BGS and Welsh Assembly Government (Second Edition 2011). Collation of the Results of the 2009 Aggregate Mineral Survey for England and Wales (AM2009)

5.0.3 Unfortunately the data sources in Tables 10 and 11 are not directly comparable as some relate to Kent alone and some relate to Kent and Medway (combined).

Table 11 - Imports, Exports and Consumption of Primary Aggregates in Kent in 2009 (data relates to thousand tonnes). Data for rows (B) to (E) is derived from Table 10 of AM2009 which shows import and consumption of aggregates by sub region

	Land-won sand and gravel	Marine Dredged Aggregates	Crushed Rock	All Primary Aggregates
(A) Produced (or landed) in Kent	1362	1668	883[24]	3913
(B) Exported out of Kent and Medway	259	226	123	608
(C) Consumed in Kent and Medway	1103	1442	760	3305
(D) Imported into Kent and Medway	76	186	340[25]	602
(E) Total Consumption in Kent and Medway	**1179**	**1628**	**1100**	**3907**

5.0.4 Table 10 shows that in 2009 Kent was a relatively small net exporter of land-won sand and gravel and marine dredged aggregates but it imported more crushed rock into its railheads than it exported from the Kent quarries. Table 11 above shows that the total consumption of primary aggregates in 2009 in Kent and Medway combined was comparable with the total produced at Kent quarries (land-won sand and gravel and crushed rock) combined with marine dredged aggregates imported into Kent wharves and all aggregates imported into its railheads.

24 This figure is considered to reflect only crushed rock that is extracted from quarries in Kent and is derived from the AM2009 survey

25 This figure is considered to relate to sales from railheads and NOT those of imported crushed rock into the wharves from Scotland and abroad. Landings of sea-borne crushed rock into Kent and Medway wharves in 2009 were 1,344,000 tonnes, with most of these considered to be imported into Kent

Table 12 - Total Primary Aggregates Sold from Kent Sources in 2009. Data in rows 1–3, 5 & 6 are obtained from the South East Aggregates Monitoring Report 2009 prepared by SEEAWP (February 2011)

2009 Primary Aggregates Sales Data	Thousand Tonnes	(%)
(1) Imports of Crushed rock by sea for 2009 into Kent and Medway	1,344	
(2) Sales of aggregates at Rail Depots for 2009 in Kent	414	8.2
(3) Landings of Marine Dredged Aggregates in Kent	1,409	27.9
(4) Assumed Imports of Crushed rock into Kent wharves in 2009	1,000	19.8
(5) Sales of Land-won sand and gravel from Kent Quarries	1,362	27.0
(6) Sales of Land-won crushed rock from Kent Quarries[26]	(c) but estimated at 867	17.1
(7) Total Primary Aggregates sold from Kent Sources in 2009[27]	**6,396**	**100**

Footnote to Table 12: It is guesstimated that out of the 1.3mt of crushed rock imported into Kent and Medway wharves in 2009, 1mt was brought into the Kent wharves.

5.0.5 If the additional quantities of sea-borne crushed rock brought into Kent wharves is considered, Kent was a net exporter of aggregates in 2009.

5.0.6 The majority of aggregates imported into Kent and Medway in 2009 were used in Kent and Medway.

26 This figure has been derived from data available and concurs with a note supplied by the Technical Secretary of the AWP to KCC in 2012 which helped to inform the LAA. It differs slightly to that given in table 11 due to the different data sources. The difference between the two data sets is very small (circa 2%)

27 The sum of rows 2–6 above

5.1 2011 Summary Data of all Aggregate Sales in Kent

5.1.1 Construction Aggregate sales data for 2011 is included in the 8th Annual Monitoring Report and is summarised in Table 13 below.

Table 13 - All Construction Aggregate Sales in Kent in 2011

Type of Aggregate	Total Sales in 2011	%
Land-won Sand and Gravel	1,068,496 tonnes	
Land-won crushed rock	Confidential	
Imported Sand and Gravel	128,095 tonnes	
Marine Dredged Sand and Gravel	1,844,558 tonnes	
Imported Crushed Rock	807,373 tonnes	
Rail Depot Sales of Sand and Gravel	56,921 tonnes	
Rail Depot Sales of Crushed Rock	389,006 tonnes	
Total Rail Depot Sales	445,927 tonnes	
Total Sand and Gravel Sales	3.1 million tonnes	55.6
Total Crushed Rock Sales	1.8 million tonnes	32.3
Total Recycled and Secondary sales	678,405 tonnes	12.2
Total (estimated)	**5.578 million tonnes**	**100**

5.1.2 The 2011 data in Table 13 shows a considerable drop in total aggregate sales compared with those in 2009 (reported in Table 12). This reflects the continued low level of construction activity during the year. The drop in land-won sand and gravel sales is offset by an increase in marine dredged aggregate sales.

6 Sub-regional Apportionment for Land-won Construction Aggregates and Comparison with the 10 Year Rolling Average

6.0.1 Forecasts for construction aggregate demand at a national and regional level are set out in National and Regional Guidelines for aggregate provision. The most recent guidelines (2009) are for the period 2005–2020, and are provided in Section 1 of this document[28]. For the South East these guidelines indicate provision of 12.18 million tonnes of land-won sand and gravel per annum and 1.56 million tonnes of crushed rock per annum in the period 2005–2020. The 2009 guidelines recommend lower levels of provision than the previous set issued in 2003. These regional guidelines have been tested and apportioned at a sub-regional level through the RSS to determine whether the regional guideline can be met at an acceptable environmental cost.

6.0.2 The guideline figures for land-won primary aggregates[29], identified in the National and Regional Guidelines, take into account the alternative sources of construction aggregates available including marine dredged aggregates, recycled and secondary aggregates[30] and imports.

6.0.3 The South East Plan Policy M3 has provided details of sub-regional apportionments for land-won construction aggregates[31]. This originally required that Kent and Medway maintain a landbank of at least seven years of planning permissions which is sufficient, throughout the plan period, to provide 2.53 million tonnes of sand and gravel per annum and that Kent maintain a landbank of at least 10 years of planning permissions sufficient to provide 1.2mtpa of crushed rock[32].

6.0.4 At a regional level, building sand (soft sand), flint gravels and sandstone gravels (sharp sand and gravel) have been covered by one sub-regional apportionment.

28 DCLG (2009). National and Regional Guidelines for Aggregates Provision

29 Land-won aggregates are those obtained from quarries. Primary aggregates are those aggregates which are obtained from naturally occurring mineral deposits, extracted specifically for use as aggregate and used for the first time (BGS/DCLG (2007). Mineral Planning Factsheet: Construction Aggregates)

30 Recycled aggregates are derived from reprocessed materials previously used in construction. Examples include recycled concrete from construction and demolition waste (C&DW)material and railway ballast. Secondary aggregates are usually by-products of other industrial processes not previously used in construction. Secondary aggregates can be further subdivided into manufactured and natural. Examples of manufactured include pulverised fuel ash (PFA) and metallurgical slags. Natural secondary aggregates include china clay sand and slate aggregate (Ibid.)

31 Government Office for the South East (May 2009). Regional Spatial Strategy for the South East of England

32 There is no crushed rock within the Medway area

6.0.5 Kent and Oxfordshire are the only MPAs in the South East region required to make provision for land-won crushed rock. In the case of Kent, ragstone extracted from the Hythe Formation is the only source of land-won crushed rock.

6.0.6 A partial review of the RSS (the South East Plan) on aggregate minerals apportionment was well advanced in mid 2010 when Government announced that the RSS was to be abolished. Previous sub regional apportionments had reflected the past pattern of sales (production) of land-won aggregates. The partial review developed options for apportionment reflecting a broader set of criteria (such as past sales, population, new housing provision, the pattern of mineral resources located outside national and international environmental designations) that were considered to be important in deciding the strategic distribution of the provision to be made for land-won construction aggregates. The options were based on the application of different weightings applied to these criteria and provided for separate apportionments for Kent and Medway.

6.0.7 The RSS partial review was the subject of an Examination in Public (EiP) in 2009 and Proposed Changes were published by the Secretary of State in March 2010[33]. The EiP Panel recommended that the apportionment figure for the South East of England should be 11.12mtpa for sand and gravel and 1.44mtpa for crushed rock[34]. On this basis the Panel concluded that the apportionment to sub-regions should reflect the option that provided a balance between the demand for and the presence of the resource having regard to environmental factors "capable of assessment consistently across the region at a level of detail commensurate with the purpose of a regional spatial strategy"[35]. With this approach the sub-regional apportionment for Kent was 1.63mtpa for sand and gravel and 0.78mtpa for crushed rock. Medway's apportionment was separated from that of Kent in the revised policy. The Secretary of State's Proposed Changes accepted these recommendations. In responding to consultation on the Proposed Changes, KCC accepted the revised apportionment acknowledging the significant change in the annual apportionment to Kent in comparison with the South East Plan adopted in 2009.

33 Government Office for the South East (March 2010). The Secretary of State's Proposed Changes: Regional Spatial Strategy for the South East Policy M3 - Primary land-won aggregates and sub-regional apportionment

34 This is lower than the published National and Regional Guidelines but reflects the outcome of a sensitivity test on the guidelines published by DCLG in August 2009, which reduced the forecast requirement for land-won aggregates from the region by 8.6%

35 Government Office for the South East (November 2009). Partial Review of the Regional Spatial Strategy for the South East - Aggregates

Table 14 - Primary Aggregates Apportionment: Kent

	South East Plan (2009)	South East Plan: Partial Review (2010)
Sand and Gravel	2.53mtpa*	1.63mtpa
Crushed Rock (Ragstone)	1.2mtpa	0.78mtpa

** - includes Medway*

6.0.8 KCC has continued to support the revised figures as they are an accurate representation of past sales in the county.

6.0.9 The NPPF now requires MPAs to plan for a steady and adequate supply of aggregates by preparing an annual LAA, either individually or jointly by agreement with another or other MPAs, based on a rolling average of 10 years sales data and other relevant local information, and an assessment of all supply options (including marine dredged, secondary and recycled sources).

Land-won Sand and Gravel

6.0.10 Production of land-won sand and gravel in Kent has averaged 1.447mtpa over the last five years for which data is available (see Table 15 overleaf) and 1.603mtpa over the past 10 years. However, sales of land-won sand and gravel in Kent have been decreasing since 2005 with a big drop in sales between 2010 and 2011. Details of existing quarries in Kent are given in Appendix D.

Table 15 - Sales of Land-won Sand and Gravel in Kent 2002–2011

Year	Tonnes
2002	1,663,500
2003	1,839,600
2004	1,687,400
2005	1,711,600
2006	1,692,446
2007	1,823,149
2008	1,595,258
2009	1,362,171
2010	1,385,497
2011	1,068,496
Average 2009–2011 (3 years)	**1,272,055**
Average 2007–2011 (5 years)	**1,446,914**
Average 2002–2011 (10 years)	**1,602,561**

6.0.11 The ten year rolling average for land-won sand and gravel is therefore now marginally lower than the revised South East Plan Policy M3 apportionment of 1.63mtpa. The large drop in sales between 2010 and 2011 has had an effect on the 10 year, 5 year and 3 year rolling averages.

6.0.12 The NPPF requires MPAs to consider "other relevant local information as part of the Local Aggregate Assessment, as well as an assessment of all supply options". There is one issue which is pertinent to the consideration of the apportionment figure which is to be used for the calculation of land-won sand and gravel landbank requirements for Kent. At one of the largest sand and gravel sites in Kent, production moved over the county border into the adjacent county during 2011. Therefore the predicted drop in annual returns for the sales of aggregate from Kent for that site are likely to be substantially reduced in 2011 onwards compared with annual returns for the site over the last 10 years. This is also likely to result in a further significant drop in sales from Kent sand and gravel sites in 2012. It is therefore likely that the 10 year rolling average figures for land-won sand and gravel will continue to drop year on year in the future.

Crushed Rock (Ragstone)

6.0.13 The revised South East Plan Policy M3 apportionment for crushed rock is 0.78mtpa. Table 16 below shows sales of land-won crushed rock (ragstone) from Kent quarries between 1998 and 2011. The table includes data from the years 1998–2000 as all crushed rock data for Kent after 2001 is confidential due to there only being two producing sites. The Technical Secretary of SEEAWP has confirmed in 2012 (by email to KCC) that, "the crushed rock sales for Kent in the AM reports for the SE region have been recorded as confidential over the last 10 years because there have been only one or two quarries operating. However, if the figure for Oxfordshire is subtracted from the published totals, and in the knowledge that sales in the Isle of Wight and West Sussex are very small, I agree that it is reasonable for you to draw the conclusion that sales in Kent have reflected the SE Plan apportionment".

6.0.14 Therefore, the revised SE Plan apportionment figure for crushed rock remains relevant and credible, and will continue to be used in this LAA as a substitute for the rolling 10 year rolling average.

Table 16 - Kent Crushed Rock: Sales 1998–2011

Year	Thousand Tonnes
1998	700
1999	700
2000	954
2001	1,240 (figure rounded to preserve confidentiality)
2002–2011	c
Average 2001–2011	c

Footnote to Table 16:

c = confidential figure, or figure which cannot be identified without it revealing a confidential figure

6.0.15 Local plans should be drawn up over an appropriate timescale, preferably a 15 year time horizon, take account of longer term requirements, and be kept up to date[36]. The plan horizon envisaged for the Kent Minerals and Waste Plans (up to the end of 2030) conforms with this requirement as the anticipated adoption date of the Minerals and Waste Plan (formerly the Core Strategy) is in 2014 and the Mineral Sites Plan is in 2015.

36 DCLG (March 2012). NPPF, paragraph 157

6.0.16 By multiplying the length of the plan (2013–2030, which is 18 years) by the ten year rolling average for land-won sand and gravel (1.603mtpa) and for crushed rock (0.78mtpa), it is possible to calculate the level of provision for land-won sand and gravel and crushed rock required in the plan. A total provision of 28.85 million tonnes of sand and gravel and 14.0 million tonnes for crushed rock is required. However, these figures need to be reviewed in the light of information regarding existing permitted reserves.

7 Assessment of Permitted Reserves

7.0.1 Permitted construction aggregate reserves remaining unworked at the start of the Minerals and Waste Local plan period (2013) will contribute to both the total provision and landbank requirements[37] to be identified through the Minerals and Waste Plans. Permitted reserves of construction aggregates remaining unworked in Kent at the end of 2011 are shown in Table 17 overleaf[38].

7.0.2 The landbank is the sum in tonnes of all permitted reserves with valid planning permission including dormant sites and current non-working sites, but not those defined in the relevant schedules to the Planning and Compensation Act 1991 and the Environment Act 1995 at a specified time. Previous guidance on the calculation of landbanks required the re-consideration of sites which have not been worked for 10 years to assess whether production is likely to begin again. Those dormant and inactive sites, which industry agrees are unlikely to be worked again, should be excluded from the landbank calculation. In the case of Kent sand and gravel sites, none of the sites which benefit from an extant planning permission for extraction of construction aggregates have been excluded from the landbank calculation. Whilst one site has been largely inactive over the last ten years or so, the operator has confirmed that they have full planning permission to extract the mineral reserves and fully intend to work this site so it should not be considered to be dormant or inactive.

7.0.3 There is a discrepancy between the sand and gravel landbank at the end of 2010 and that at the end of 2011[39]. It appears that some operators have recalculated their reserves in a few sites and this is the reason for the slight reduction in the landbank figure. This is not an unusual occurrence[40].

37 A landbank is the total quantity of minerals contained within a stock of planning permissions

38 KCC (December 2012). 8th Annual Minerals and Waste Monitoring Report: 1st April 2011 to 31st March 2012. The data for construction aggregates is collected on the basis of the calendar year, not the financial year

39 The difference in landbank figure between 2010 and 2011 data is greater than the sum of sales of aggregate in 2011

40 Re-assessment of Reserves - it should be noted that the reserve figures that are used to derive these figures stem from returns made to KCC annually by representatives of each operating company. It has been noted by the Technical Secretary of SEEAWP in response to the Mineral Sites Plan consultation in July 2012 that, a "major re-assessment" of reserves was undertaken in 2008. This reduced the sand and gravel reserves, which had been twice the soft sand reserves, to a more even split. However, the returns for the end of 2009 reverted back to the former pattern before changing again at the end of 2010. The current split between reserves (with the majority of consented reserves being soft sand) was checked at the time of the 2011 survey and it is considered to be correct

Table 17 - Permitted Reserves: Construction Aggregates at the end of 2011

Type of Construction Aggregate	Total Reserves (Million Tonnes)
Sharp Sand and Gravel (including sandstone gravels)	4.304
Soft Sand	14.370
Total Sand and Gravel	18.674
Crushed Rock (Ragstone)	> 27.0

8 Assessment of Required Provision

8.1 Sand and Gravel

8.1.1 Permitted sand and gravel reserves at the end of 2011 are substantial, at 18.674mt. Draw-down figures equivalent to the rolling ten year average are being used to calculate reserves required during the plan period, even though this figure is considerably higher than sales in recent years. Additional provision would need to be made for 23mt to maintain a seven-year landbank throughout the plan period. The calculations are shown in Table 18 below. They are based on the starting point of 18.674mt of consented sand and gravel at the beginning of 2012.

Table 18 - Landbank Calculations for Land-won Sand and Gravel for the Plan Period

Year	Reserves at Start of Year (mt)	Draw down during year (mt)	Reserves Remaining at end of Year (mt)	Reserves Required to Maintain 7 year landbank (mt) (=11.22mt)
2012	18.674	1.603	17.071	0
2013	17.071	1.603	15.468	0
2014	15.468	1.603	13.865	0
2015	13.865	1.603	12.262	0
2016	12.262	1.603	10.659	0.561
2017	10.659	1.603	9.056	2.164
2018	9.056	1.603	7.453	3.767
2019	7.453	1.603	5.850	5.370
2020	5.850	1.603	4.247	6.973
2021	4.247	1.603	2.644	8.576
2022	2.644	1.603	1.041	10.179
2023	1.041	1.603	-0.562	11.782
2024	-0.562	1.603	-2.165	13.385
2025	-2.165	1.603	-3.768	14.988
2026	-3.768	1.603	-5.371	16.591

Year	Reserves at Start of Year (mt)	Draw down during year (mt)	Reserves Remaining at end of Year (mt)	Reserves Required to Maintain 7 year landbank (mt) (=11.22mt)
2027	-5.371	1.603	-6.974	18.194
2028	-6.974	1.603	-8.577	19.797
2029	-8.577	1.603	-10.18	21.400
2030	-10.18	1.603	-11.783	23.003

8.1.2 KCC had earlier proposed to plan for an additional 10% of land-won sand and gravel over and above the minimum amount required by the apportionment figure. However, it was explained in the Mineral Sites 'Preferred Options' consultation document (May 2012) that it was not possible to identify sufficient deliverable sustainable sites to make provision for the landbank requirement for the whole of the plan period plus an additional 10%. This remains the case. The Mineral Sites plan will make provision for sufficient aggregate for the plan period based upon calculations using the 10 year rolling average sales figure.

8.1.3 Both the Sustainability Appraisal commentary report and the majority of responses from the Core Strategy 'Issues' consultation (September 2010), supported the provision of an additional 10% over and above the required land bank levels, if conditions allowed. However, at the next consultation stage, the Strategy and Policy Directions consultation for the Core Strategy (May 2011), responses on this issue were more balanced with five people supporting the additional 10% and four people objecting to it, with two people only commenting.

8.2 Crushed Rock

8.2.1 Kent would need to plan for 14mt of crushed rock (ragstone) for the 18 year plan period, based upon the assumed 10 year rolling average figure of 0.78mtpa. Existing permitted reserves of crushed rock (ragstone) are considered to be around 30mt (although the operators of the two Kent ragstone quarries have not submitted returns for 2011 and so the calculations used in the May 2012 draft LAA are repeated below. Using the assumed 10 year rolling average sales figure over the period to the end of 2030 as the drawdown rate, existing reserves would provide a landbank of 14mt at the end of the plan period. This is equivalent to a residual landbank of at least 17 years - and would be significantly above the 10 year landbank requirement in national policy (NPPF) even at the end of the plan period. The calculations are shown in Table 19 opposite.

Table 19 - Landbank Calculations for Land-won Crushed Rock (Ragstone) for the Plan Period

Year	Reserves at Start of Year (mt)	Draw down during year (mt)	Reserves Remaining at End of Year (mt)	Reserves Required to Maintain 10 Year Landbank (mt) (=7.8mt)
2011	30	0.78	29.22	0
2012	29.22	0.78	28.44	0
2013	28.44	0.78	27.66	0
2014	27.66	0.78	26.88	0
2015	26.88	0.78	26.1	0
2016	26.1	0.78	25.32	0
2017	25.32	0.78	24.54	0
2018	24.54	0.78	23.76	0
2019	23.76	0.78	22.98	0
2020	22.98	0.78	22.20	0
2021	22.20	0.78	21.42	0
2022	21.42	0.78	20.64	0
2023	20.64	0.78	19.86	0
2024	19.86	0.78	19.08	0
2025	19.08	0.78	18.30	0
2026	18.30	0.78	17.52	0
2027	17.52	0.78	16.74	0
2028	16.74	0.78	15.96	0
2029	15.96	0.78	15.18	0
2030	15.18	0.78	14.4	0

8.2.2 Whilst the landbank for crushed rock is more than sufficient for the plan period, the reserves are located at only two sites and primarily at one large site (Blaise Farm, West Malling). There is a high proportion of hassock in this reserve which impacts on the overall quality of the mineral. As such it is currently only being worked on a campaign basis to serve contracts which will accept the quality of the ragstone from this reserve. In contrast, the ragstone at Hermitage Quarry is better quality with less hassock within the deposit and after processing is suitable for end uses requiring high grade aggregates including asphalt and concrete.

8.2.3 KCC resolved to grant permission for a major westerly extension to the Hermitage Quarry site, Hermitage Lane, Aylesford, in May 2011. The application proposed to extract 16.2mt of ragstone from the application site which is an area of ancient woodland called 'Oaken Wood', over a period of 23 years, with final restoration being completed in 2037. The application was 'called in' by the Secretary of State and is the subject of a Public Inquiry in late 2012.

8.2.4 In resolving to permit the Oaken Wood proposals, KCC accepted that the length of the crushed rock landbank was only one issue that should be considered when determining the application. Having regard to real need and real supply, KCC was satisfied that there were other factors in favour of the proposals, namely:-

- the proposed reserves at Oaken Wood were comparable in quality to those at Hermitage Quarry and of a significantly higher quality than those at Blaise Farm Quarry such that they that they could more readily be used to supply a wider range of more valuable end uses (where strength and suitability for quality construction aggregate use is required);

- it was questionable whether the reserves at Blaise Farm Quarry will continue to be worked such that the site could become inactive and be unable to contribute to real supply (the operator previously decided to mothball the site);

- once the remaining reserves at Hermitage Quarry were exhausted, permitted reserves would be dominated by a single outlet such that competition would be stifled;

- to date the reserves at Blaise Farm Quarry have not made a significant contribution to crushed rock output in Kent;

- the reserves at Oaken Wood could be sterilised if they were not worked through Hermitage Quarry; and

- mineral supplies should be sourced indigenously where possible to reduce the need to transport minerals over long distances and minimise carbon emissions.

8.2.5 The NPPF recognises that MPAs should ensure that large landbanks bound up in very few sites do not stifle competition[41]. Given these considerations, notwithstanding the scale of the landbank for crushed rock in Kent, there is a case for policies in the Minerals and Waste Plan which give flexibility to overcome such situations. It is proposed that the Minerals and Waste Plan will contain a policy covering situations where 'exception' sites should be considered favourably for such reasons.

8.2.6 Safeguarding of ragstone resources for the longer term is proposed within the lead policy document, the Minerals and Waste Plan and the Key Proposals Diagrams[42].

8.2.7 Only two site specific proposals for crushed rock came forward in response to the KCC Minerals and Waste Development Framework 'Call for Sites'. Those two sites were the western extension at Hermitage Quarry and the East Kent underground limestone mine proposal. In view of the large land-won crushed rock landbank, there is no need for the East Kent limestone mine to be included in the plans as a site allocation. Instead, the Minerals and Waste Plan policies will give support to resource investigation and prospecting for underground limestone.

8.2.8 The Sustainability Appraisal commentary and the responses to the Core Strategy 'Issues' document agreed that there was a sufficient landbank for crushed rock to meet the requirements of the plan period and beyond (plus an additional 10%). The majority of the responses to this issue in relation to the Core Strategy at Strategy and Policy Directions consultation stage (May 2011) also supported the view that further crushed rock sites do not need to be identified as the landbank is more than sufficient for the plan period and beyond (taking into account an extra 10% for flexibility). Nine responses supported this view, four commented and one objected.

41 DCLG (March 2012). National Planning Policy Framework, paragraph145
42 See KCC (May 2011). Topic Report 4: Mineral Safeguarding

9 Provision for Different Types of Land-won Construction Aggregate

9.0.1 Up until now Kent Minerals Local Plans have sought to distinguish between crushed rock, mainly flint derived sand and gravels, mainly sandstone derived sand and gravels, and soft (building) sand. Separate provision for each mineral has been made in previous minerals plans. This stance has recognised that the materials have different properties, are of different quality and have traditionally been considered suitable for different end uses. However, working practises are increasingly allowing some interchangeability between the raw materials used for specific end uses. For example, evidence from Kent suggests that ragstone can, under certain circumstances and with suitable levels of investment in processing facilities, be used in the production of high quality concrete and recycled aggregates can be used in concrete manufacture. However, only crushed rock is normally suitable for use in asphalt.

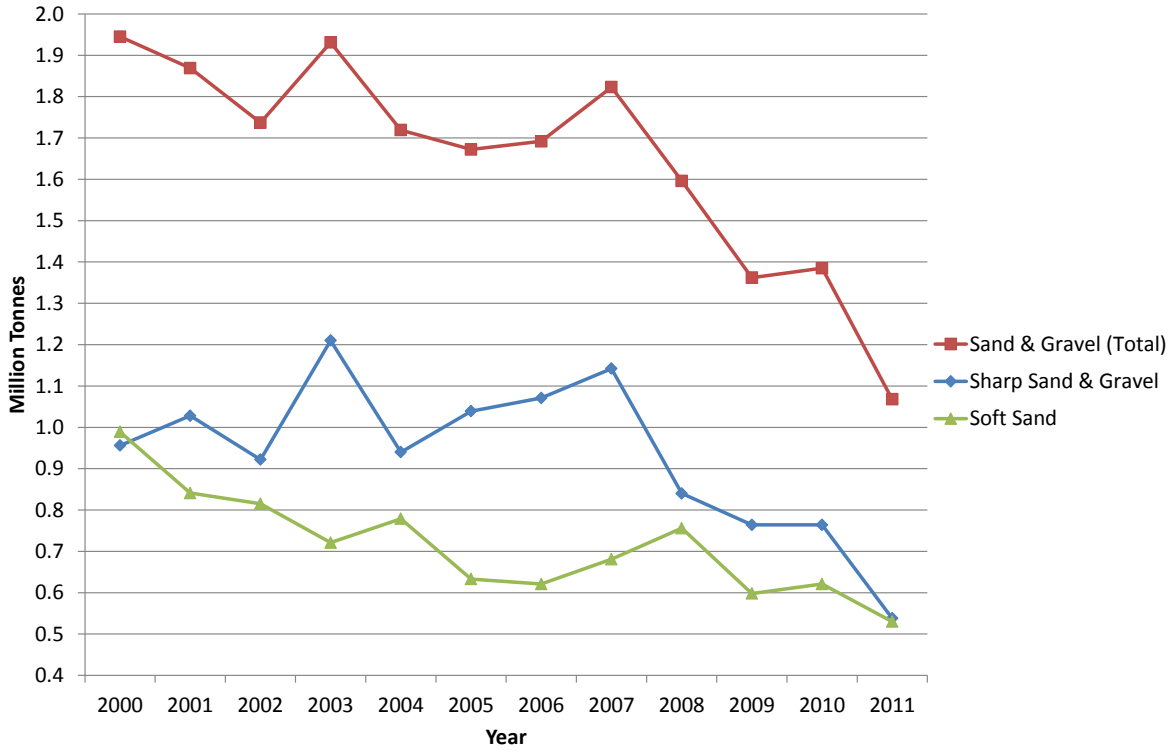
9.0.2 National and Regional Aggregate Guidelines and the revised South East Plan policy M3 have not differentiated between different types of sand and gravel (soft sand/sharp sand and gravel). However, the NPPF requires MPAs to calculate and maintain separate landbanks for any aggregate materials of a specific type or quantity which have a distinct and separate market. Paragraph 28 of the October 2012 Guidance on the Managed Aggregate Supply System states that "where there is a distinct market for a specific type or quality of aggregate such as a high specification rock, asphalting sand, building sand or concreting sand, a separate landbank calculation based on provision to that market **may** be justified for that material or those materials" *(emphasis added)*.

9.0.3 The following section explains why it is not proposed to make provision for separate landbanks for soft sand and sharp sand and gravel.

9.1 Sand and Gravel

9.1.1 Kent has experienced a decline in annual sales of land-won sand and gravel over the last 10 years (Figure 3) despite the maintenance of healthy levels of reserves (18.674mt at the end of 2011 – equivalent to a landbank of more than 11 years based on an annual provision of 1.603mt).

Figure 3 - Sales of Land-won Sand and Gravel in Kent



9.1.2 A distinction can be drawn between soft sand and sharp sand and gravel. Soft sand, obtained from the Folkestone Formation, is predominantly used in the production of mortar and asphalt. Sand which does not meet the specifications can be used as constructional fill material. Sharp sand and gravel, derived from superficial river terrace and storm beach deposits, is used in the production of concrete and related concrete products. Sharp sand and gravel can also be used as drainage material, constructional base material and for road surfacing.

9.1.3 Sand and gravel from the Lower Medway Valley has historically been used as a construction fill material, due to the low quality of the deposit. However, at one Kent quarry which extracts Lower Medway Valley deposits, the operators blend the indigenous materials with imported crushed rock to enable it to meet the specifications for use in concrete. Lower Medway valley deposits have been included with 'sharp sand and gravel' deposits for data analysis purposes.

9.1.4 Recent sales figures give the best indication of proportionate demand but these are influenced by the respective availability of permitted reserves and the wider pattern of other available resources. Sales of both land-won sharp sand and gravel and land-won soft sand have shown a downward trend since 2003.

9.1.5 Sharp sand and gravel has accounted for 57% of land-won sand and gravel sales in Kent over the last 10 years for which data is available, compared with 43% for soft sand. However, the balance between the two types of sand and gravel has been changing in recent years. In 2011 the ratio of sales for soft sand and sharp sand and gravel was 50:50.

Table 20 - Average Kent Sales: Land-won Sharp Sand and Gravel and Soft Sand 2000–2011

Year	Sand & Gravel Total Sales (mtpa)	Sharp Sand and Gravel Sales (mtpa)	% Sharp Sand and Gravel	Soft Sand Sales (mtpa)	% Soft Sand
2000	1.945	0.956	49.2	0.989	50.8
2001	1.869	1.028	55.0	0.841	45.0
2002	1.737	0.922	53.1	0.815	46.9
2003	1.931	1.210	62.7	0.721	37.3
2004	1.719	0.940	54.7	0.779	45.3
2005	1.672	1.039	62.2	0.633	37.8
2006	1.692	1.071	63.3	0.621	36.7
2007	1.823	1.142	62.6	0.681	37.4
2008	1.596	0.840	52.6	0.756	47.4
2009	1.362	0.764	56.1	0.598	43.9
2010	1.385	0.764	55.2	0.621	44.8
2011	1.068	0.538	50.4	0.530	49.6
Average (3 years) 2009–11	**1.272**	**0.689**	**53.9**	**0.583**	**46.1**
Average (5 years) 2007–11	**1.447**	**0.810**	**55.4**	**0.637**	**44.6**
Average (10 years) 2002–2011	**1.599**[43]	**0.923**	**57.3**	**0.676**	**42.7**

43 This figure differs slightly from the rolling 10 year average given elsewhere in this report (1.603mtpa) due to the use of rounded data in this table

9.1.6 The use of average sales figures for the last 3 and 5 years provides an indicator of the recent pattern of demand and smoothes the effects of changes in the market over the period. This data suggests that if the sand and gravel landbank is to be split into sharp sand and gravel and soft sand, using the rolling 10 year average sales figures, provision should be weighted towards sharp sand and gravel in a ratio of 57:43.

9.1.7 If separate landbanks were to be provided based on the rolling ten year average sales figures and taking account of the pattern of extant reserves (4.30mt sharp sand and gravel and 14.37mt of soft sand at the end of 2011), the additional reserve requirements would be as follows:

Table 21 - New Sand and Gravel Allocation Requirements if Separate Landbanks are to be Provided on the Basis of the 10 year Rolling Average of Past Sales

Type of aggregate	Required Provision (%)	Required Provision for Plan Period (up to end of 2030) (mt)	Less Current Provision in Existing Consents (landbank situation at end of 2011) (mt)	Required Provision for Plan period (up to end 2030) (mt)
Soft sand	43	17.92	14.37	17.92-14.37=**3.55**
Sharp Sand and Gravel	57	23.75	4.30	23.75-4.30=**19.45**
All sand and gravel	100	41.67	18.67	**23.0**

9.1.8 Reliance on the past pattern of sales as the basis for future provision to be made for separate sand and gravel landbanks does not reflect the relative pattern of economically workable resources of sharp sand and gravels and soft sand respectively. Nor does it consider the degree to which resources for the future are constrained by important environmental constraints or the availability of alternatives for sharp sand and gravel, including marine dredged aggregates, imports and secondary and recycled materials.

9.1.9 Sales of all land-won sand and gravel in 2011 were 33% below the rolling ten year average and have continued to fall since 2003.

9.1.10 Kent's sources for high quality flint gravels have been concentrated in areas where flints derived from the chalk have been deposited by river and marine action. These were essentially the three main river valleys of the Darent, Medway and Stour, and the beach deposits along the coast (particularly at Dungeness). As far back as the 1970s planning studies[44] identified the lack of alternatives to the flint gravels as a critical issue. Flint gravel resources in the river valleys were becoming exhausted

44 For the Kent Structure Plan 1975

and increasing weight has been accorded to nature conservation and water resource constraints in the Dungeness area which in the past has provided an area of extensive working and substantial resources. Flint dominant head gravel resources near Herne Bay, previously identified as plan proposals (Kent Minerals Plan 1993) have proved to be disappointing and have effectively been abandoned by the industry. The sandstone dominant gravels in the Medway Valley upstream of Maidstone became the subject of increasing interest from operators as other deposits became worked out, although their contribution to the production of high quality concreting aggregates has not normally been possible. Only one Medway Valley sandstone gravel quarry remains operational at the time of writing and that site benefits from a railhead which imports crushed rock for blending with the indigenous sandstone gravels to produce aggregates suitable for concrete.

9.1.11 An additional consideration in relation to the provision of separate landbanks is the availability of secondary and recycled aggregates and mineral imports. Recycled aggregates can, in some circumstances, provide a replacement for sharp sands and gravels in concrete. Kent also benefits from many aggregate wharves around its coastline, into which are landed significant quantities of marine-dredged sharp sand and gravels (MDA) which can provide an alternative to land-won sources in meeting market demand for concreting aggregates. Kent is the largest importer of MDA in the South East of England, importing 1.8mt of MDA into its wharves in 2008[(45)]. As a coastal county, Kent fulfils an important role in the importation of minerals including imports of a range of construction aggregates (many of which are from Europe) as well as the importation of sea-dredged marine aggregates.

9.1.12 As such, there is a need to consider the current dominance of sales of land-won sharp sand and gravels in view of the following factors:-

- the widespread availability of alternatives to land-won sharp sand and gravel in Kent;
- the impact of high level (national/international) environmental constraints upon the remaining potential resource areas, particularly in relation to flint gravels;
- the lack of deliverable sharp sand and gravel sites promoted to the Kent Minerals Plan to maintain a separate landbank for the two types of material based on past sales data. It has only been possible to allocate five sharp sand and gravel sites as 'Preferred Options'. These have a combined reserve of 6.47mt;
- The current imbalance in the landbank of permitted reserves in the County with the landbank being dominated by soft sand reserves; and
- The relative abundance of soft sand supplies in Kent, which are scarce in other parts of the South East.

45 Kent Minerals and Waste Development Framework Evidence Base Mineral Topic Report 7: Kent and Medway Imports Study May 2011

9.1.13 Insufficient deliverable sharp sand and gravel sites came forward for consideration as part of the MWLP 'Call for Sites' to deliver enough land-won sharp sand and gravel sites to sustain the ratio of sales of sharp sand and gravel to soft sand experienced over the past 10 years. Only three of the proposed sharp sand and gravel sites were not allocated in the Mineral Sites Plan 'Preferred Options' consultation by the MPA. Another 3 sharp sand and gravel sites were withdrawn by the operator. Details of all of the non-allocated sharp sand and gravel sites are given in Table 22 below.

Table 22 - Sharp Sand and Gravel Sites which were proposed by operators for consideration for the Mineral Sites Plan, which were not allocated

Site No.	Site Name	Estimates Reserves (t)	Reasons for Not Allocating Site
3	Arnolds Lodge Farm West, East Peckham	200,000	Withdrawn by the operator
4	Woodfall's Farm, Yalding	1,500,000	Withdrawn by the operator
5	Filston Lane, Shoreham	600,000	Site lies in the Kent Downs AONB and in the Green Belt. Mineral extraction here is unlikely to meet the 'exceptional circumstances' test required under the NPPF regarding development in the AONB. Also, the site is not suitable due to poor highway access from the rural lane network
25	Ham Farm, Faversham		Withdrawn by the operator as the site was determined to be uneconomic following the completion of a test drilling survey
26	Hollowshore, Faversham	1,150,000	Forms part of the Swale Estuary and Marshes SPA/Ramsar site. Sand and gravel extraction will destroy or damage the Ramsar features on site and significantly disturb the bird interest. Inclusion of the site would not meet the requirements of the Conservation of Habitats and Species Regulations 2010
73 (E)	Allens Bank Quarry Extension	300,000	It is adjacent to the Allen's Bank Quarry area. The Allen's Bank Quarry permission requires the mineral to be taken off site by rail. Apart from some initial permission

Site No.	Site Name	Estimates Reserves (t)	Reasons for Not Allocating Site
			implementation works, the site has not been operational. The addition of this small extension would be unlikely to affect the delivery of the main deposit. Quarrying would impact upon known extensive important archaeological remains, particularly those of Roman and medieval origin

9.1.14 It is not proposed to make provision for separate landbanks of sharp sand and gravel and soft sand. Whilst site allocations will include sites for sharp sand and gravel(including sandstone gravels) and soft sand, the ratios for allocation of sites for these materials cannot be related directly to past sales figures.

9.1.15 If the demand for sand and gravel continues during the plan period in accordance with the pattern established in the rolling 10 year average figures, there will be a shortfall of 13mt of land-won sharp sand and gravel over the plan period (an average shortfall of 0.72mtpa). However, it is not considered that this is likely to happen, due to:-

- ongoing falls in sales of land-won sand and gravel; and
- the changing ratio of sales of soft sand: sharp sand and gravel.

9.1.16 In 2011 sales of all land-won sand and gravel amounted to 1.07mt, which is 33% lower than the ten year rolling average figure which is being used to calculate provision. In the worst case scenario, this potential shortfall in land-won sharp sand and gravel can be addressed through increased imports of marine dredged aggregates and increased amounts of recycled aggregates utilising existing capacity.

9.2 Crushed Rock

9.2.1 It remains the intention of the Council to make provision for a separate landbank for crushed rock (ragstone), in accordance with the requirements in paragraph 145 of the NPPF.

10 Future Supply of Aggregates in Kent

10.0.1 Kent is one of very few counties in England which supplies a diverse range of sources of aggregates, including land-won sand and gravel, land-won crushed rock, imported marine dredged aggregates, imported crushed rock and other aggregates as well as various recycled and secondary aggregates.

10.0.2 Table 23 overleaf summarises the existing pattern of supply of aggregates in Kent and compares this with the provision during the mid and late plan period. The increase in provision by the middle of the plan period is due to the consented major importation facility at Wharf 42, Northfleet, which is considered to be unlikely to come into production until after 2016. The existing estimated productive capacity and wharves and railheads combined with land-won provision give sufficient flexibility to provide aggregates at a level which is well over and above the supply requirements recorded in recent years.

10.0.3 If Wharf 42 is developed for aggregate use, the capacity will increase considerably during the plan period. It is therefore evident that Kent can ensure that the NPPF requirements for a steady and adequate supply of aggregates for the infrastructure, buildings and goods that the country needs are maintained throughout the plan period. The data in Table 23 shows that there is sufficient capacity at Kent's wharves and aggregate recycling facilities to make up the worst case shortfall in land-won sharp sand and gravel during the plan period.

Table 23 - Comparison of Existing and Future Aggregate Supply Streams

Source of Aggregates	Current (mtpa)	Future (mid to late plan (2021 until 2030) (mtpa)
Land-won sand and gravel (provision)	1.603	1.603
Land-won crushed rock (provision)	0.78	0.78
Recycled Aggregates (capacity)	1.9	1.56
Marine Dredged Aggregates imported into Kent's wharves (estimated capacity)[46]	2.7	3.7
Crushed rock and other aggregates imported through Kent's wharves (estimated capacity)	2.1	4.1
Crushed rock imported through Kent's railheads (estimated capacity)	1.5	1.5
Total supply capacity	**10.58**	**13.24**

46 The capacity of these wharves and those for crushed rock and other aggregates was estimated using the data in Tables 3 and 5

11 Conclusions

11.0.1 This report identifies the types of construction aggregates that are imported into Kent and extracted from quarries in Kent. It identifies the diverse range of supply sources of aggregates across the county.

11.0.2 Monitoring data shows sales of land-won sand and gravel have been falling since 2003. They were at an all time low in 2011 at just over 1mt. The ratio between sales of land-won sharp sand and gravel and soft sand is also changing. In 2011 the sales of the two types of construction aggregates was balanced at a 50:50 ratio, whereas the rolling 10 year average sales figure is skewed in favour of sharp sand and gravel (at a ratio of 57% sharp sand and gravel and 43% soft sand).

11.0.3 The rolling 10 year average for combined land-won sand and gravel sales is now 1.603mtpa, which is marginally below the revised South East Plan policy M3 apportionment of 1.63mtpa, whereas sales of all land-won sand and gravel from Kent quarries in 2011 was 1.068mt, some 33% lower than the rolling 10 year average.

11.0.4 The existing landbank for land-won sand and gravel (combined) at the end of 2011 is over 11 years, but it consists of predominantly soft sand deposits (14.37mt of soft sand compared with 4.3mt of sharp sand and gravel).

11.0.5 The traditional areas of gravel workings in the county are being exhausted or reducing their outputs considerably (such as the Stour Valley between Ashford and Canterbury and the Dungeness Peninsula). The importation of marine dredged aggregates into Kent wharves has increased between 2010 and 2011 to help fill the supply gap.

11.0.6 The NPPF requires MPAs to calculate and maintain separate landbanks for any aggregate materials of a specific type or quality which have a distinct and separate market. However, the more recent DCLG Guidance on MASS gives more flexibility on this subject, stating, "Where there is a distinct market for a specific type or quality of aggregate such as high specification rock, asphalting sand, building sand or concreting sand, a separate landbank calculation based on provision to that market **may**[47] be justified for that material or those materials". A separate landbank will be maintained for crushed rock. The only other aggregate material extracted in Kent which has a 'distinct market for a specific type or quality of aggregate' is soft sand, which cannot be substituted by other types of construction materials in mortar. Whilst soft sand has a separate and distinct market and does not have any substitute materials, Kent has a wealth of soft sand resources available to supply the mortar businesses for the plan period and beyond.

47 Emphasis on the word 'may' has been added

11.0.7 Basing site allocations for an 18 year plan on ratios derived from past sales does not reflect the availability of land-won resources. Past sales data combined with information on existing reserves indicates that future sand and gravel allocations should be predominantly for sharp sand and gravel, whereas the majority of sites put forward for consideration are soft sand sites.

11.0.8 It is proposed to make provision for sufficient land-won sand and gravel sites in the Mineral Sites Plan based upon the rolling average 10 year sales figure for all sand and gravel. There are insufficient deliverable sharp sand and gravel sites available for inclusion in the Mineral Sites Plan to make provision for a separate landbank for sharp sand and gravel on the basis of the rolling 10 year average sales figure. Instead, a mix of sharp sand and gravel and soft sand sites will be identified to make provision for one landbank for all land-won sand and gravel materials.

11.0.9 The worst case scenario situation in relation to the shortage of land-won sand and gravel sites would be a shortage of 13mt of land-won sand and gravel over the plan period (0.72mtpa of sharp sand and gravel). In view of the ongoing reduction in sand and gravel sales since 2003 combined with the changing ratios between sharp sand and gravel and soft sand, this level of shortage is considered to be very unlikely. In any event, evidence in Table 23 shows that there is more than sufficient current and future capacity at existing marine dredged aggregate wharves and aggregate recycling facilities to continue the supply of alternative supplies of sharp sand and gravel into Kent. Evidence in Section 2 shows that there is a long term and viable marine aggregate resource available for landing at Kent's wharves.

11.0.10 The existing landbank of crushed rock reserves is more than sufficient for the plan period.

11.0.11 Sales of crushed rock and marine dredged aggregates supplied from Kent's wharves and railheads continue to play an important role in the supply of aggregates to Kent's economy.

11.0.12 Data from 2009 surveys show that Kent was a relatively small net exporter of land-won sand and gravel and marine dredged aggregates but it imported more crushed rock into its railheads than it exported from its own quarries. About one million tonnes of crushed rock is considered to have been imported into Kent wharves in 2009 with 1.4mt of marine dredged aggregates landed and processed at Kent's wharves. The total amount of primary aggregates sold from Kent sources in 2009 was 6.4mt.

11.0.13 By 2011 primary aggregate sales from all of Kent's supply sources dropped to 4.9mt with an additional 0.678mt of recorded recycled aggregates sold.

11.0.14 Evidence within this LAA shows that Kent will be able to continue to provide a steady and adequate supply of construction aggregates in order to support sustainable economic growth throughout the plan period. Whilst there may be a shortage of land-won sharp sand and gravel sites during the plan period, suitable sufficient alternative supplies will be available to plug any shortfall from marine

dredged and recycled sources. The ongoing safeguarding of Kent's wharves and railheads as well as ensuring that sufficient sites are available for aggregate recycling will provide security of supply for the long term.

12 References

Cabinet Office (2010). The Coalition: Our Programme for Government

Cook, B.C & Offord, C.J (2009). Partial Review of the Regional Spatial Strategy for the South East: Review of Policy M3 Primary Land-won Aggregates and Sub-regional Apportionment – Report of the Panel. The Planning Inspectorate, Bristol

DCLG (March 2012). National Planning Policy Framework

DCLG (2006). Minerals Policy Statement 1: Planning and Minerals. TSO, London (now replaced by the NPPF)

DCLG (2006). Planning and Minerals: Practical Guide TSO

DCLG (2009). National and Regional Guidelines for Aggregates Provision in England 2005–2020. DCLG, London

DCLG (October 2012). Guidance on the Managed Aggregate Supply System

GOSE (2009). The South East Plan: Regional Spatial Strategy for the South East of England. TSO, London

GOSE (2010). The South East Plan: The Secretary of State's Proposed Change Policy M3 - Primary Land-won Aggregates and Sub-regional Apportionment

Hicks, L. (April 2011). The Barriers to Underground Mining of Aggregates - An overview. Published as part of the Aggregate Sustainability Research Programme

SEEAWP (October 2011). South East Aggregates Monitoring Report 2010

Appendix A: SEEAWP letter to KCC (21st November 2012)

Please see overleaf.

SEEAWP

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21 November 2012

Draft Local Aggregates Assessment for Kent

Dear Lillian,

SEEAWP thanks you for making the draft of your Local Aggregates Assessment (LAA) available at its October meeting in accord with the National Planning Policy Framework (NPPF) and the Guidance on the Managed Aggregates Supply System (MASS). SEEAWP welcomed the opportunity to comment. However it was decided that there was not sufficient time for members at the meeting to give a considered response to the draft LAA. Views were asked to be sent to the Secretary in time for a draft SEEAWP response to be circulated to its members before being sent to you. This letter, therefore, is sent after consideration by all SEEAWP members.

This letter seeks to distil out the key points raised and comprises advice from SEEAWP in fulfilment of the role it is given in paragraph 145 of the NPPF and paragraph 8a) of the Guidance on the Managed Aggregate Supply System . SEEAWP supports:

- Provision for land-won sand and gravel and crushed rock supply in the draft LAA which is in accord with NPPF paragraph 145 and is consistent with the Proposed Changes to RSS Policy M3 and the apportionments which SEEAWP supported.
- Provision proposed for recycled and secondary aggregates which is consistent with the RSS Policy M2.
- Provision for land-won sand and gravel supply at a level 10% above the 10 year mean to give flexibility in enabling additional reserves and productive capacity to come forward.
- The identification of additional sand and gravel reserves to provide for sufficient landbanks at the end of the plan period.
- The intention to make provision for additional rock reserves reflecting quality rather than quantity of existing reserves.

The draft LAA provides a comprehensive analysis of current and future provision for aggregates, but was prepared in advance of the Guidance on the MASS.

- The LAA should be revisited to address the requirements set out in paragraph 10. Provision for land-won aggregates is clear, but demand and supply to be made by other sources is less clear, Particularly with regard to Marine sources and imports.
- In revisiting recycling and secondary aggregates and other sources besides land-won, undue reliance should not be placed on provision of throughput capacity leading to the same levels of actual production or supply.

The draft LAA does not propose to make separate provision and landbanks for sharp sand and gravel and soft sands. This stems from the difficulty Kent finds in identifying sufficient sites for sharp sands and gravels. As a consequence the LAA does not make sufficient provision for current sales of land-won sharp sand and gravels to be maintained throughout the plan period and looks to alternative sources to make good the difference, particularly through imports of marine aggregates at wharves and crushed rock at rail depots.

SEEAWP considers that unless sufficient robust evidence is provided to support the Kent view that further acceptable sharp sand and gravel sites cannot be identified, a separate provision should be made for sharp sand and gravel at a level 10% above the 10 year mean.

We thank you again for giving SEEAWP an opportunity to comment on the draft LAA, and hope that this advice will be of assistance. In due course, please let SEEAWP know how far this advice has been taken on board.

Yours sincerely,

John Kilford

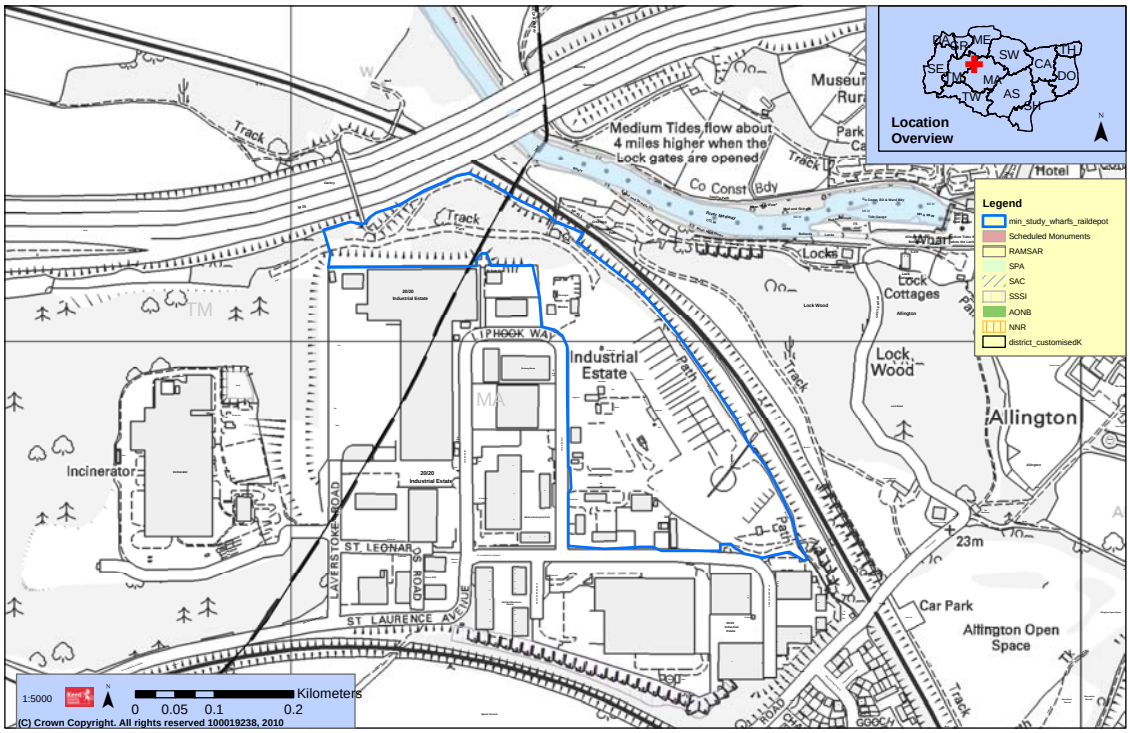
Chairman

Appendix B: Safeguarded Wharves and Rail Importation Facilities

Table 24 - Sites in Kent 2012 (excludes Medway)

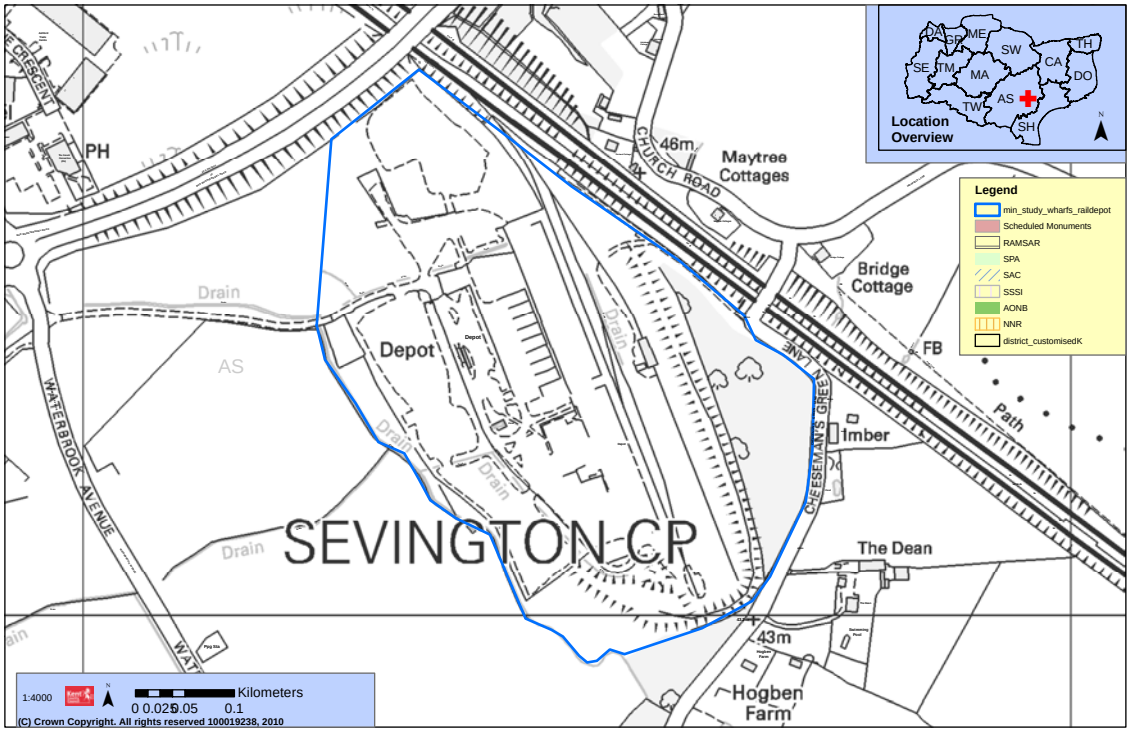
Site Name	Operator	Site Code
Allington	Hanson	A
Sevington Rail Depot	Brett	B
Hothfield Works	Tarmac	C
East Peckham	Clubb	D
Ridham Dock	Brett & Tarmac	E
Johnsons Wharf	Lafarge	F
Robins Wharf, Northfleet	Aggregate Industries & Brett	G
Denton Wharf	Clubb	H
East Quay, Whitstable	Brett	J
Red Lion Wharf	Stema	L
Ramsgate New Port	Brett	N
42 Wharf, Northfleet	Lafarge	O
Dunkirk Jetty, Dover Western Docks	Brett	P
Sheerness	Aggregate Industries	Q
Botany Marshes	Cemex	R

Figure 4 - Site A: Allington



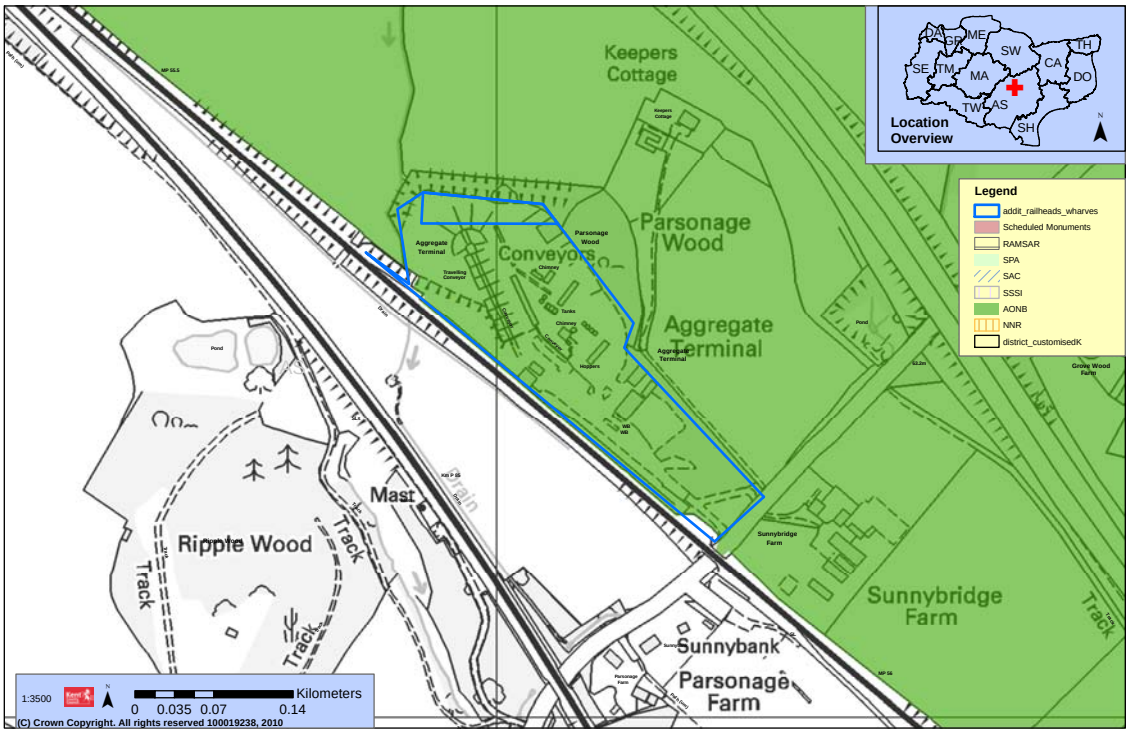
Allington

Figure 5 - Site B: Sevington Rail Depot



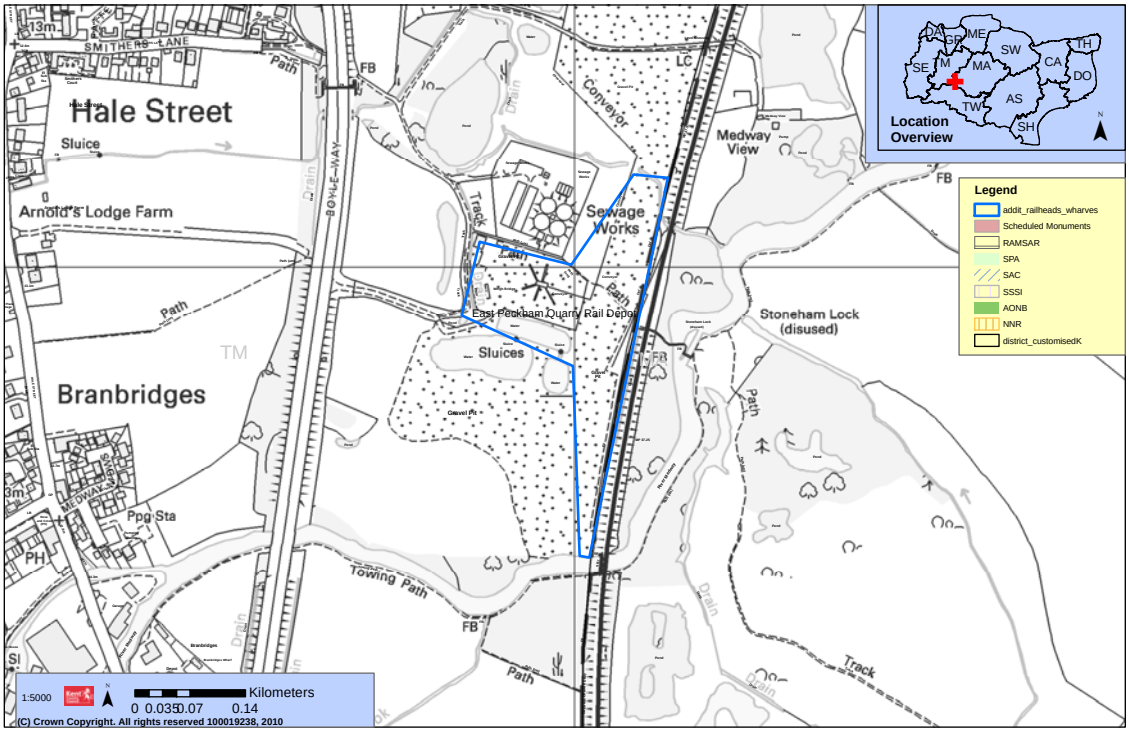
Sevington

Figure 6 - Site C: Hothfield Works



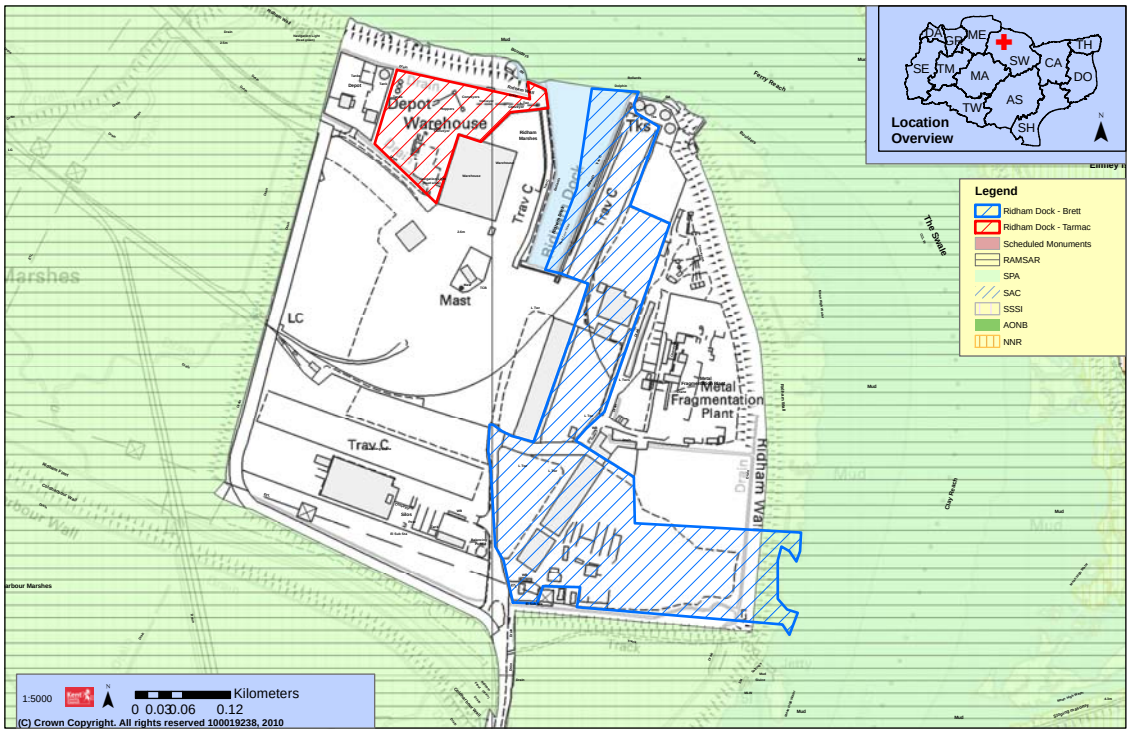
Hothfield Railhead

Figure 7 - Site D: East Peckham Rail Depot



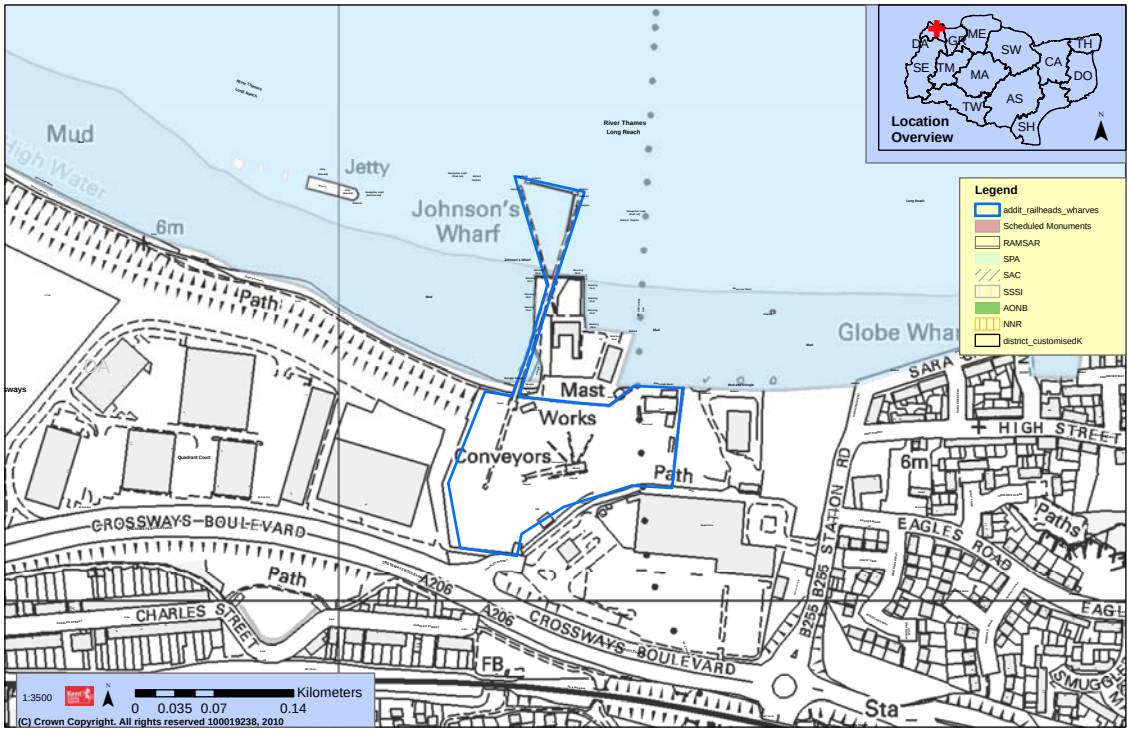
East Peckham Quarry Rail Depot

Figure 8 - Site E: Ridham Dock



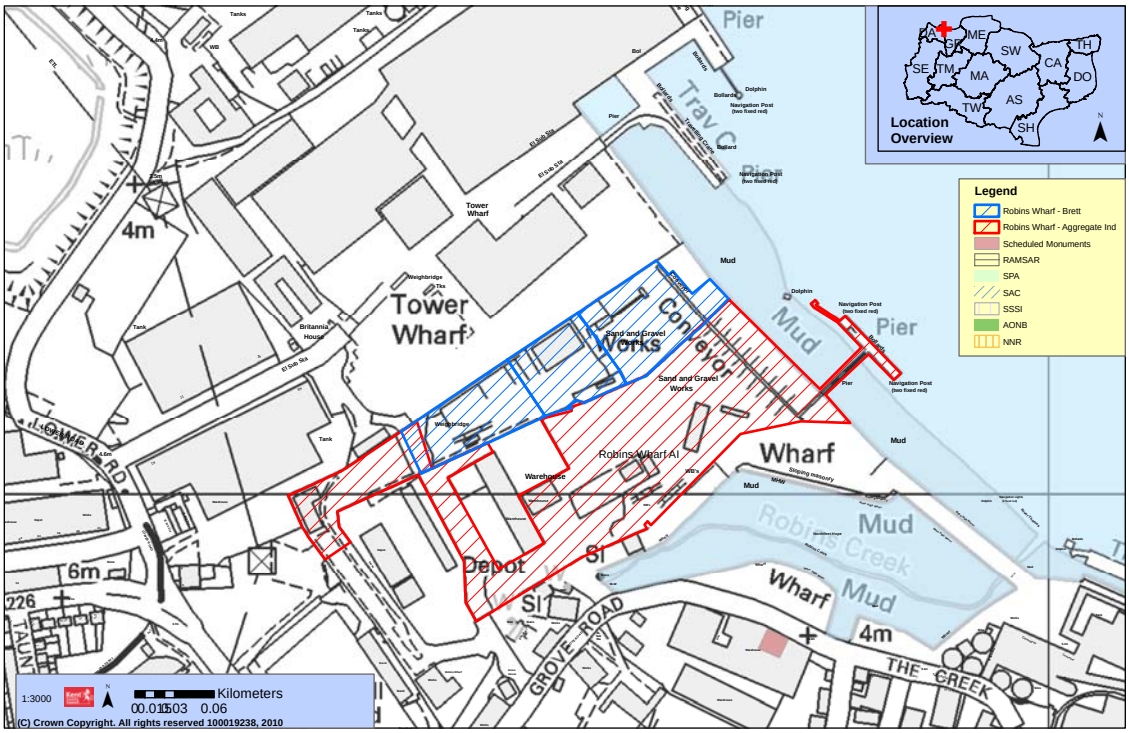
Ridham Dock

Figure 9 - Site F: Johnsons Wharf



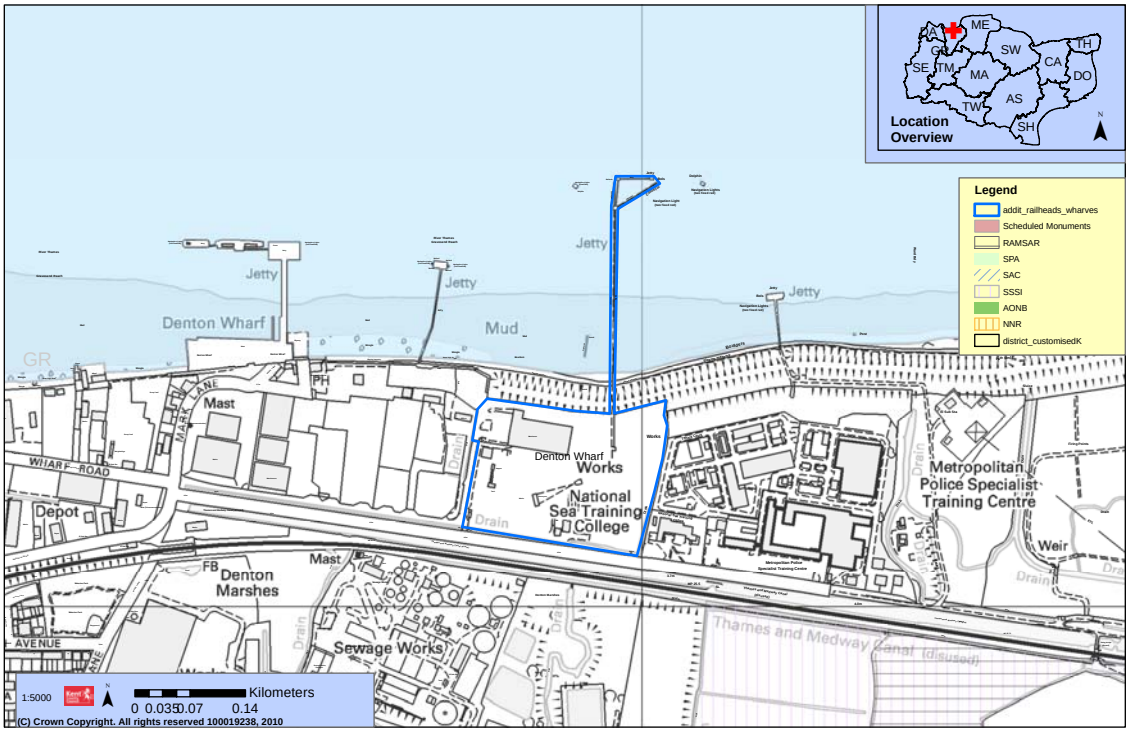
Johnsons Wharf, Greenhithe

Figure 10 - Site G: Robins Wharf



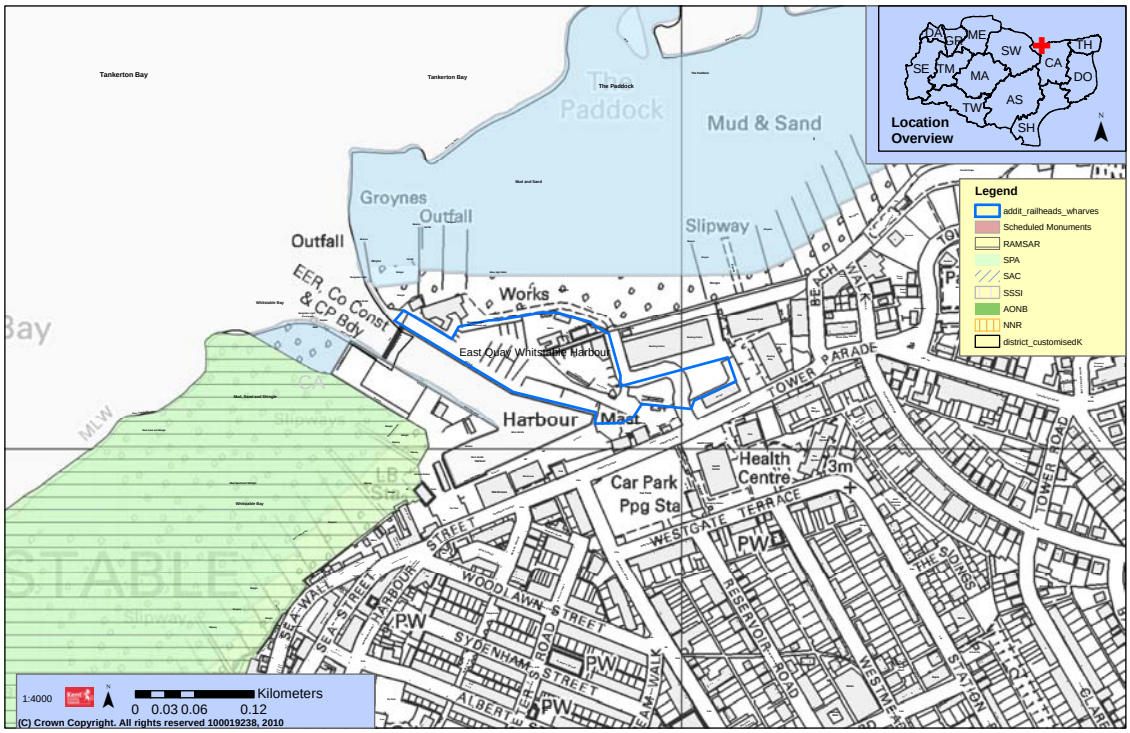
Robins Wharf

Figure 11 - Site H: Denton Wharf



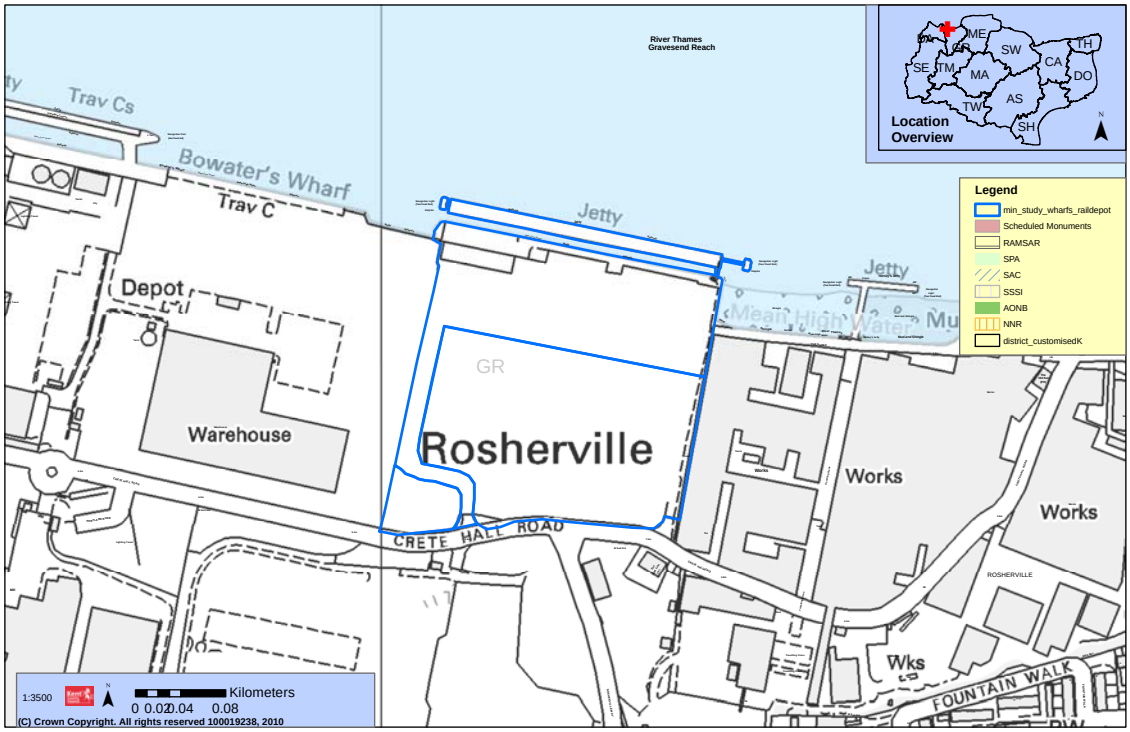
Denton Wharf

Figure 12 - Site J: East Quay, Whitstable



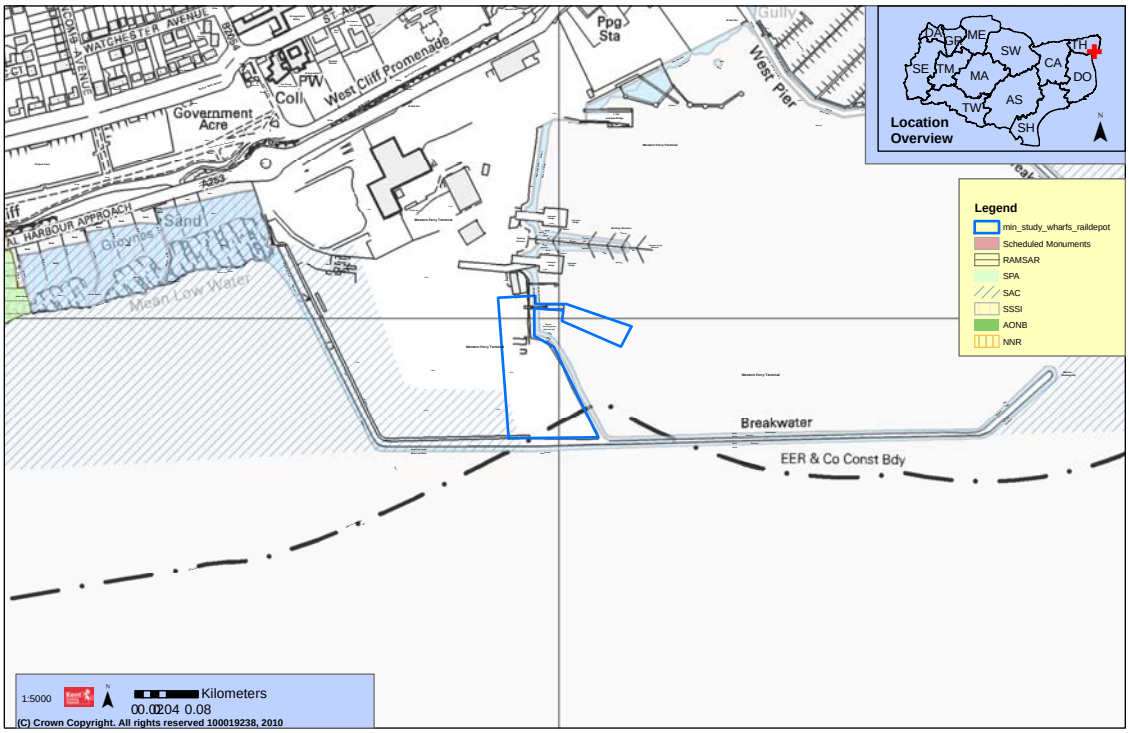
East Quay, Whistable Harbour

Figure 13 - Site L: Red Lion Wharf



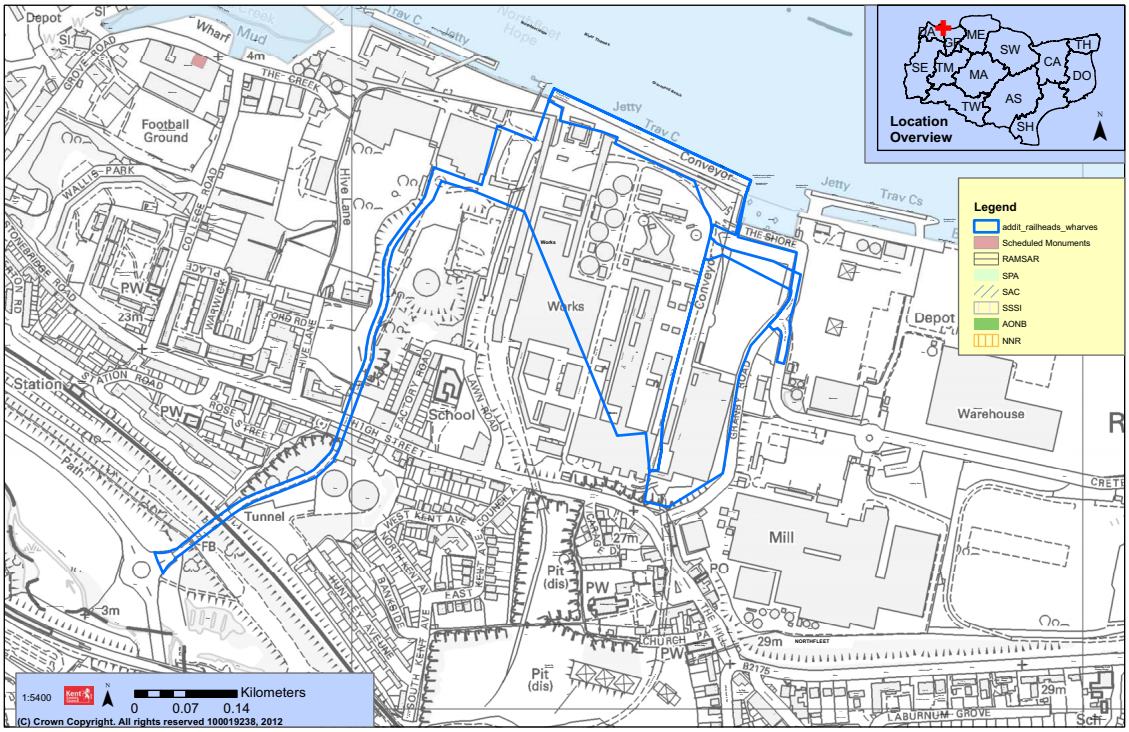
Red Lion Wharf

Figure 14 - Site N: Ramsgate New Port



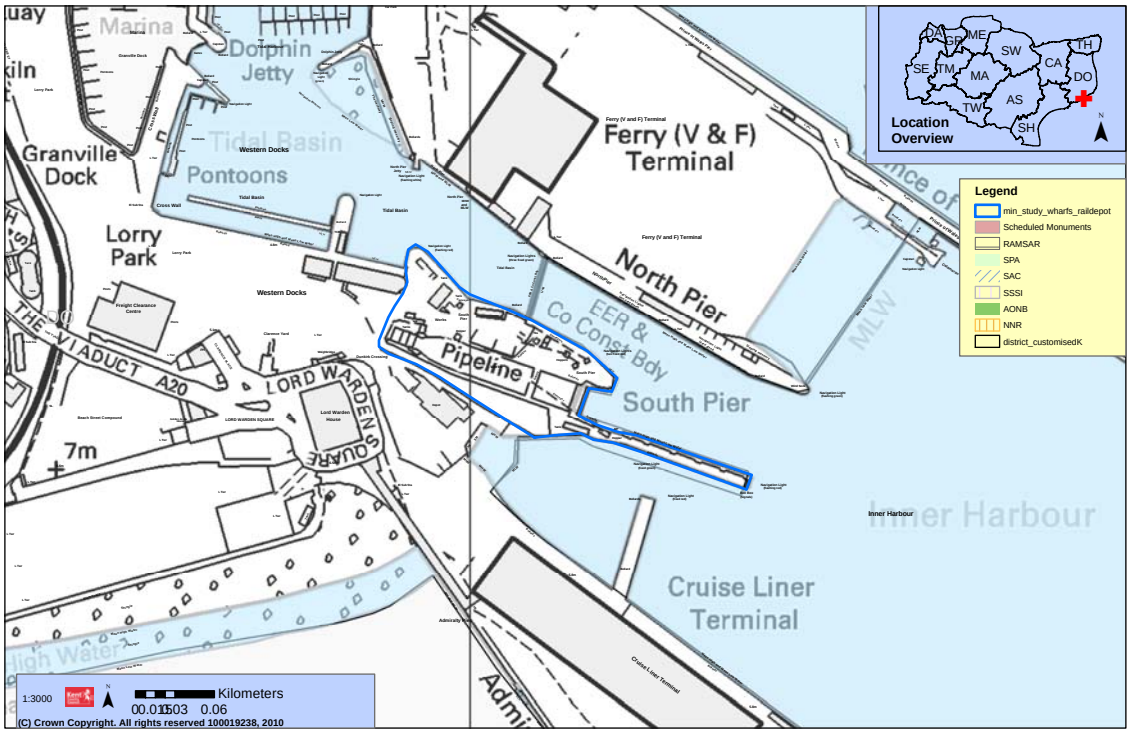
Ramsgate Harbour

Figure 15 - Site O: Wharf 42, Northfleet



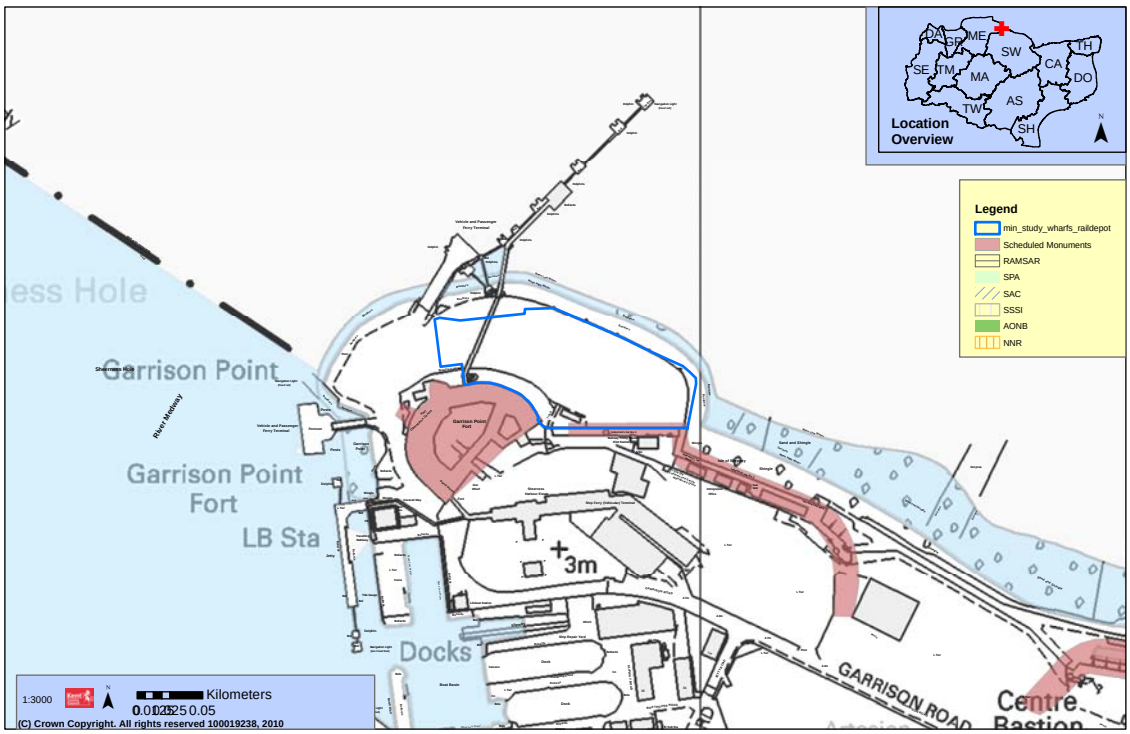
42 Wharf (Northfleet)

Figure 16 - Site P: Dunkirk Jetty, Dover Western Docks



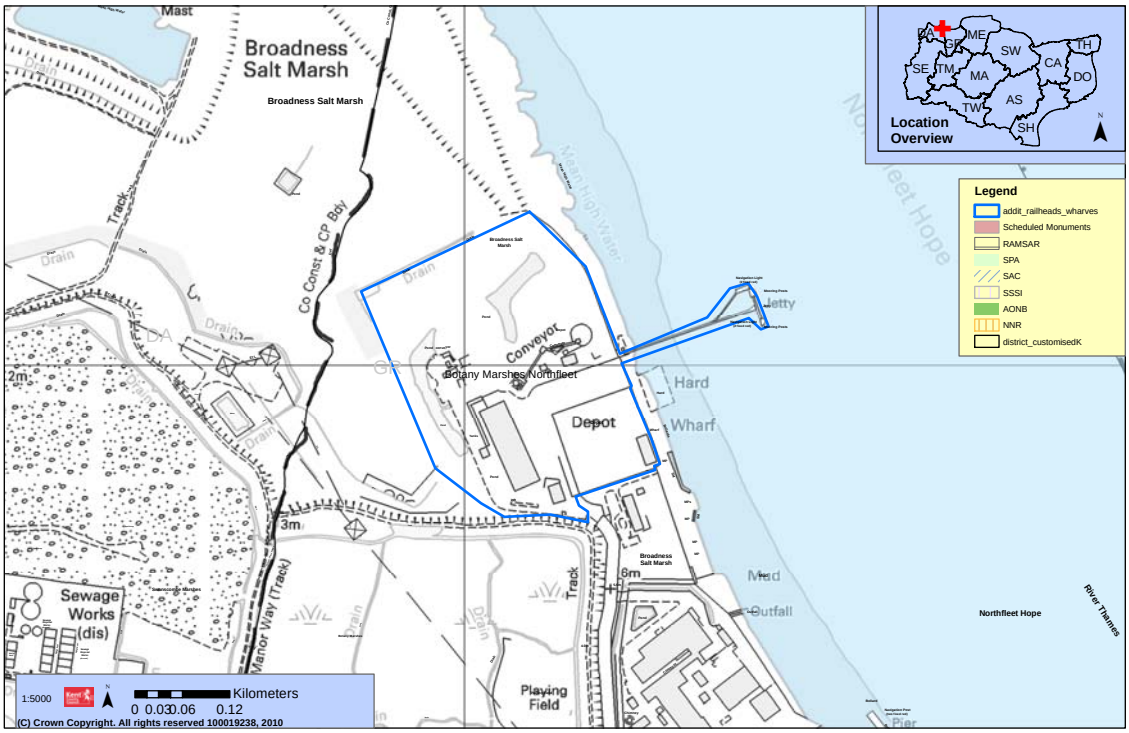
Western Docks, Dover

Figure 17 Site Q: Sheerness Docks



Sheerness

Figure 18 Site R: Botany Marshes



Botany Marshes, Northfleet

Appendix C: Dredging Licence Areas from which Aggregate is Imported into Kent and Medway

Figure 19 - East English Channel Region

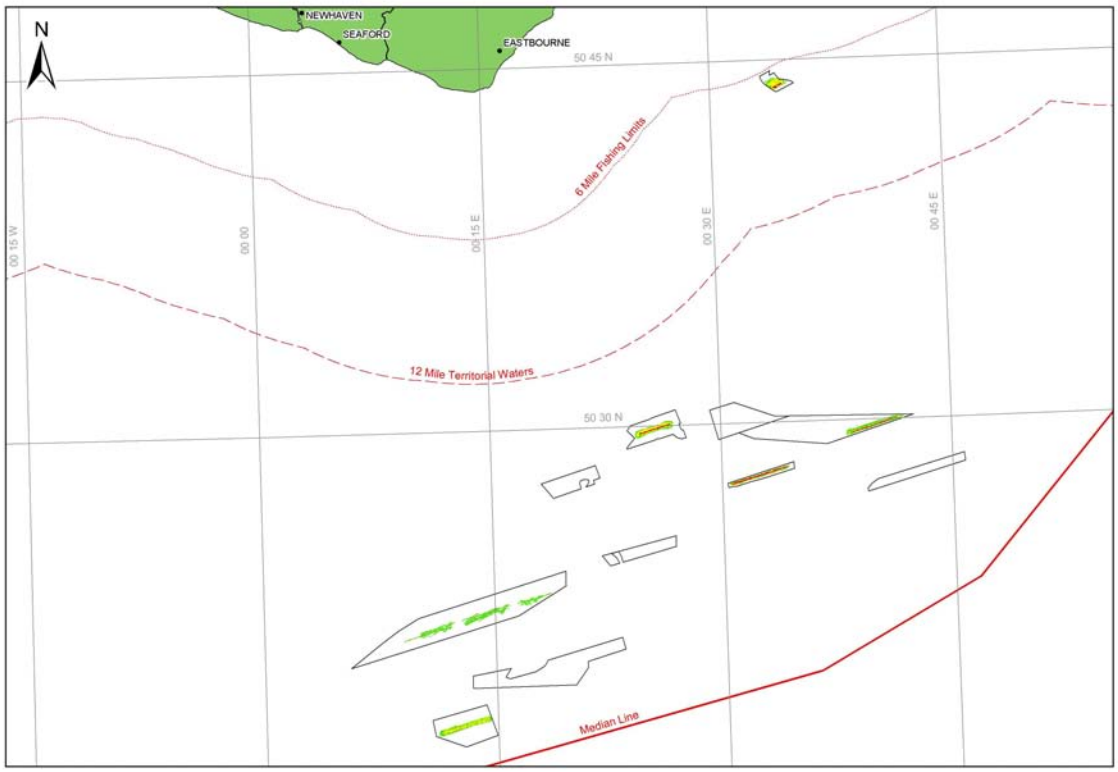


Figure 20 - South Coast Region

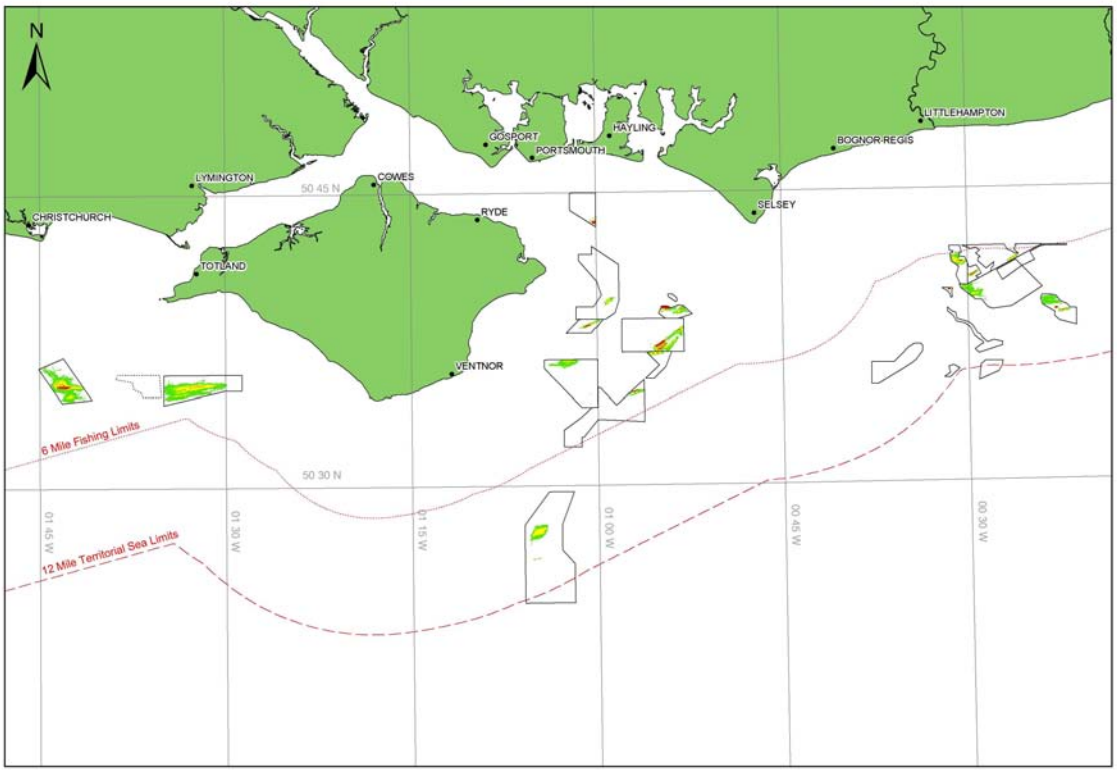


Figure 21 - East Coast Region

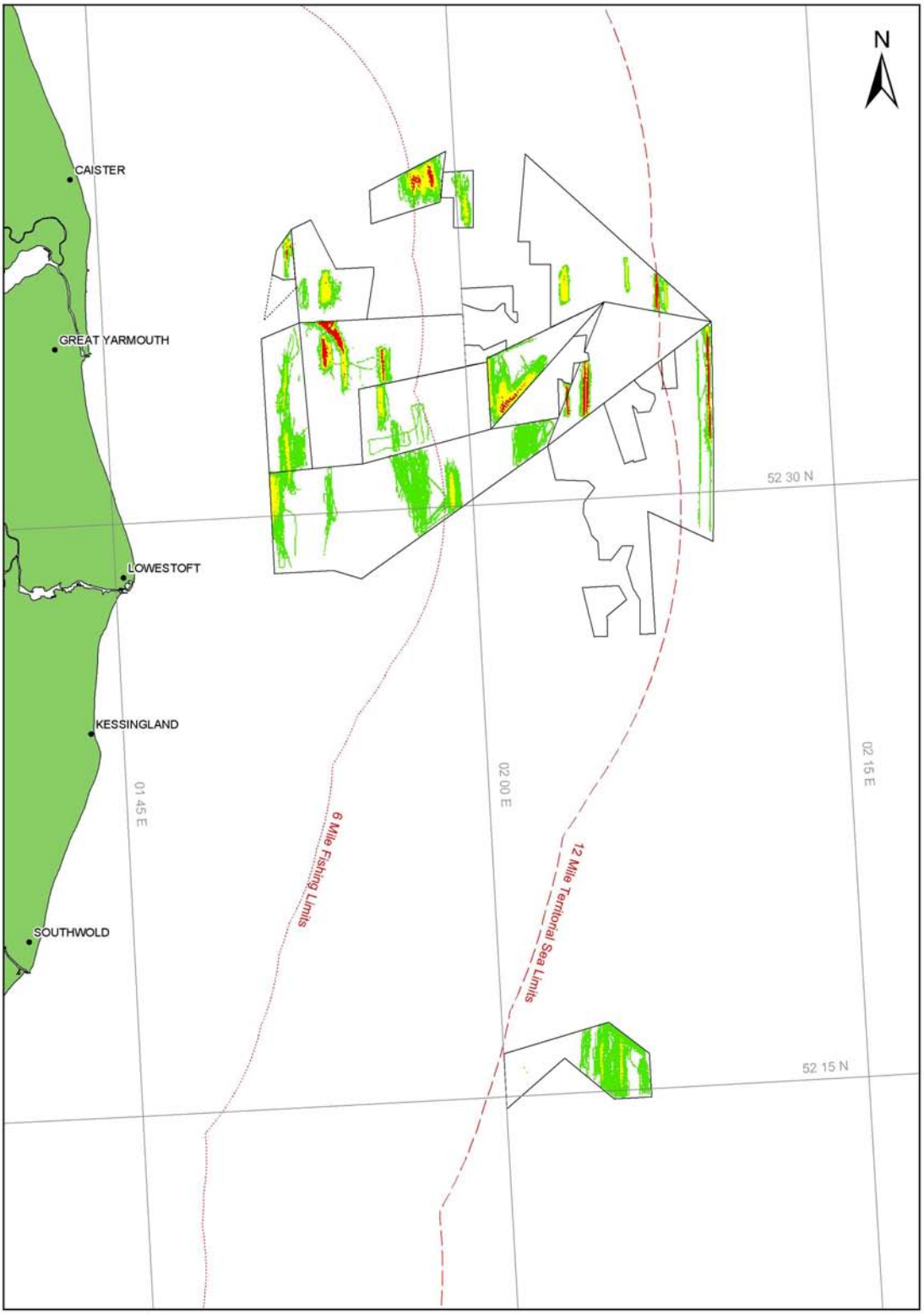
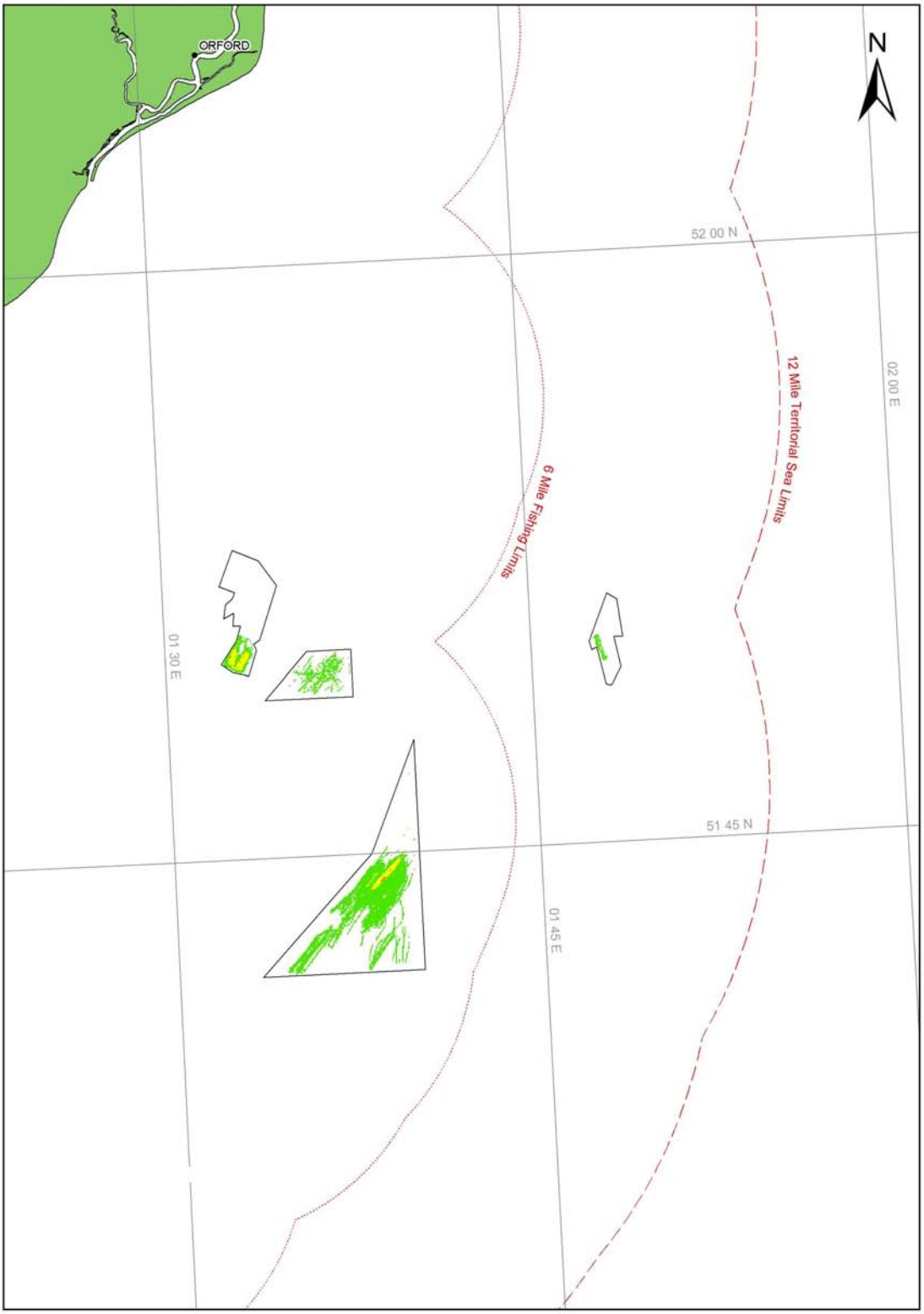


Figure 22 - Thames Estuary Region



Appendix D: Current Aggregate Quarries in Kent

D.1 The most up to date list of aggregate quarries in Kent is given in the SEEAWP 2010 Aggregate Monitoring Report, reference SEEAWP 11/06 (October 2011). The list below is taken from that document:

Table 25 - Active *and Inactive* Sand and Gravel and Ragstone Quarries in Kent

Sand and Gravel Quarry	Operator	Material
Borough Green Sand Pits	Borough Green Sand Pits Ltd	Soft Sand
Charing Quarry	Brett Aggregates Ltd	Soft Sand
Faversham Quarries	Brett Aggregates Ltd	Sand and Gravel
Lydd Quarry (Scotney Court Farm)	Brett Aggregates Ltd	Soft Sand
Milton Manor Quarry	Brett Aggregates Ltd	Sand and Gravel
Aylesford Quarry	CEMEX UK	Soft Sand
Denge Quarry	CEMEX UK	Sand and Gravel
Winterbourne Quarry	Ferns Surfacing Ltd	Soft Sand
Ightham Sand Pit	H & H Celcon Ltd	Soft Sand
Wrotham Quarry (Addington Sand Pit)	Hanson Aggregates	Soft Sand
Darenth and Joyce Green Dartford	J Clubb Ltd	Sand and Gravel
East Peckham Quarry	J Clubb Ltd	Sand and Gravel
Nepicar Sand Quarry	J Clubb Ltd	Soft Sand
Greatness Farm (Sevenoaks Quarry)	Tarmac Ltd	Soft Sand
Allens Bank, Lydd	*Brett Aggregates Ltd*	*Sand and Gravel*
Conningbrook Quarry, Ashford	*Brett Aggregates Ltd*	*Sand and Gravel*
Deanery Farm, Chartham	*Brett Aggregates Ltd*	*Sand and Gravel*
Highstead Quarry, Chislet	*Brett Aggregates Ltd*	*Sand and Gravel*

Sand and Gravel Quarry	Operator	Material
Shepherd's Farm Quarry, Lenham	*Brett Aggregates Ltd*	Soft Sand
Trenley Park Wood	*Brett Aggregates Ltd*	*Sand and Gravel*
Chilston Quarry, Lenham	*CEMEX UK*	*Soft Sand*
Postern Park Quarry nr Tonbridge	*CEMEX UK*	*Sand and Gravel*
Ospringe Brickworks	*Cremer Whiting Ltd*	*Soft Sand*
Joyce Green Quarry	*Hanson (Joyce Green Aggregates)*	*Soft Sand and sand and* gravel
Stone Castle Farm, nr Tonbridge	*Lafarge Aggregates*	*Sand and Gravel*
Squerryes Sand Pit, Westerham	*Monier*	*Sand and Gravel*
Ham Hill Sand Pit (Snodland Quarry)	*Tarmac Ltd*	*Soft Sand*
Ragstone Quarry Name	**Operator**	
Hermitage Quarry Maidstone	Gallagher Aggregates	Ragstone
Blaise Farm, West Malling	Hanson Aggregates	Ragstone