

South East Capacity Review

Stage 1: Infrastructure Review

Scoping Review Of Recycling & Reprocessing Infrastructure In South East England

Prepared for



Final Issue

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Beyond Waste

www.beyond-waste.com

South East Capacity Review

Stage 1: Infrastructure Review

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Introduction

The South East England Regional Development Agency (SEEDA) commissioned Beyond Waste to undertake a scoping review of recycling and reprocessing capacity and associated infrastructure within the region.

The project is intended to inform the development of a shared regional vision for integrated resource management being guided by SEEDA's Waste Market Development Group. Its prime purpose is to assess the current shape of the regions' recycling and reprocessing infrastructure, to baseline current recycling activity (and thereby identify any gaps) and to anticipate future needs in the light of future anticipated growth in recycling activity (and identify any opportunities presented). In essence the approach is intended to address the infrastructure and capacity related barriers in the recycling cycle illustrated below.

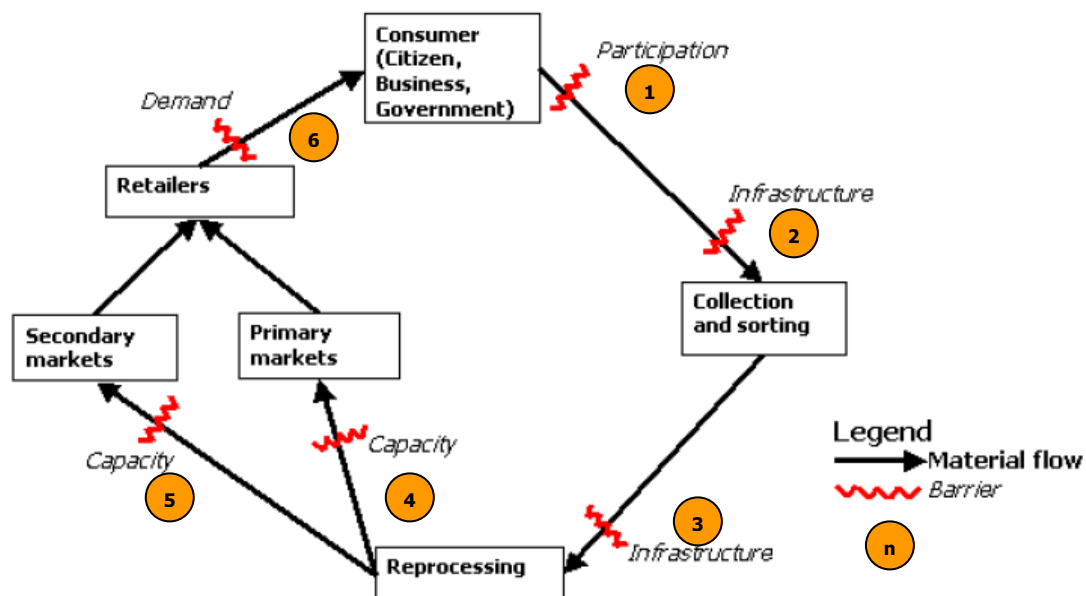


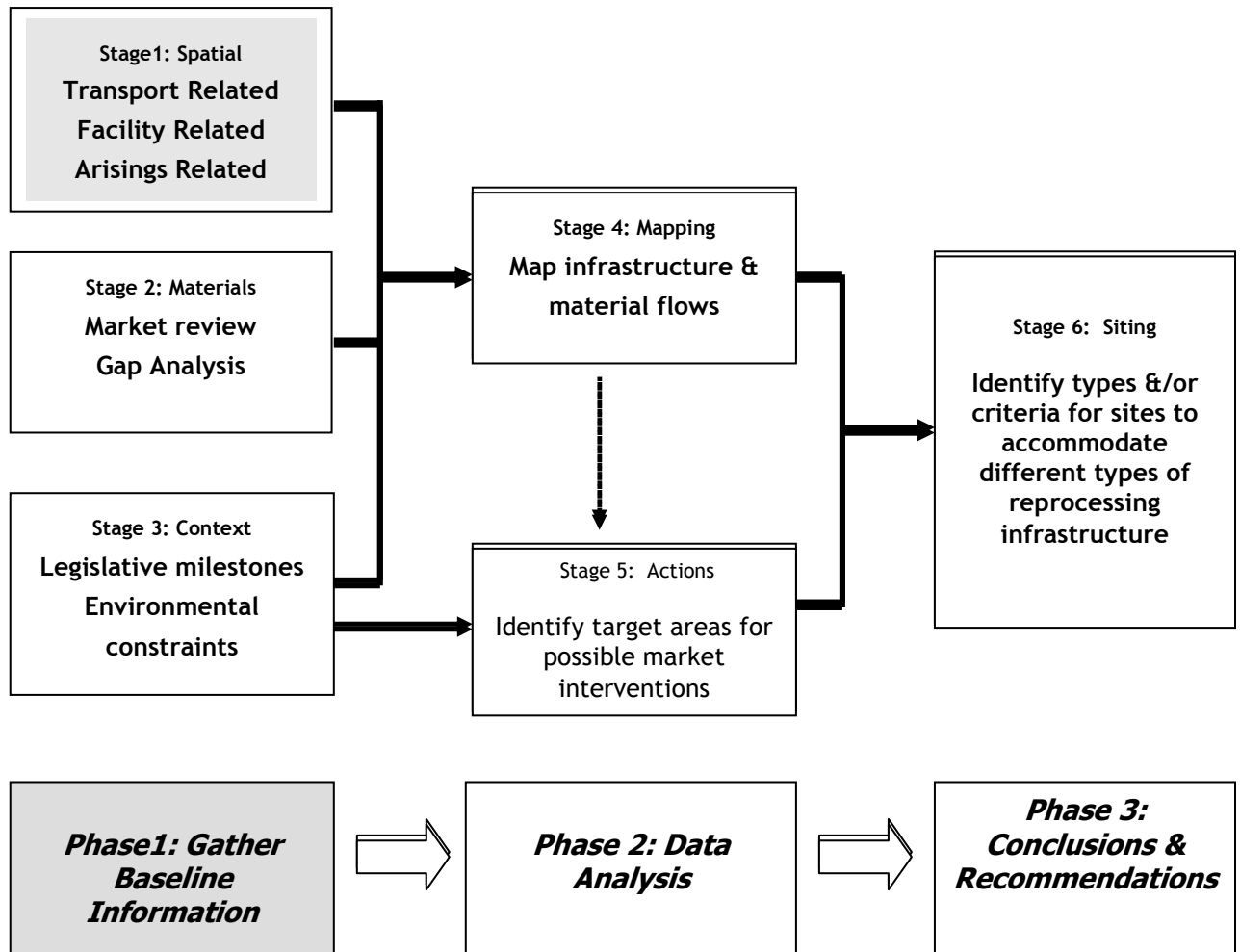
Figure 1: The Recycling Cycle.
(After M Barlaz and D Loughlin¹)

¹ Policies for Strengthening Markets for Recyclables: A Worldwide Perspective Critical Reviews in Environmental Science and Technology, 36:287-326, 2006 ISSN: 1064-3389 print / 1547-6537 online

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Project Structure



This report summarises the findings of our work on Stage 1 of the project focussed on materials. This draws on work undertaken as part of the Sustainable Transport Resources and Waste project (STRAW) as well as other sources.

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Context

The South East region runs in an arc around London, from Kent at the South East extremity along the coast to Hampshire, Southampton and Portsmouth in the south West, and then to Milton Keynes and Buckinghamshire in the North. In total it encompasses 19 counties and unitary authorities and 54 district authorities.

While lacking a single dominant urban centre, the region is home to 7 cities with populations of more than 100,000. In broad terms the economy can be categorised as being advanced, high cost, high income, broadly based and service oriented. The region's economy is closely linked to that of London, and also significantly influenced by its proximity to mainland Europe.²

Methodology

The approach taken for this stage was desk-based research making extensive use of the internet to source information supported by telephone and email contact with key players to verify information obtained.

Table 1 gives a summary of the elements identified by the Waste Market Development Group for investigation and the primary information sources.

Table 1: Elements & Primary Sources Used

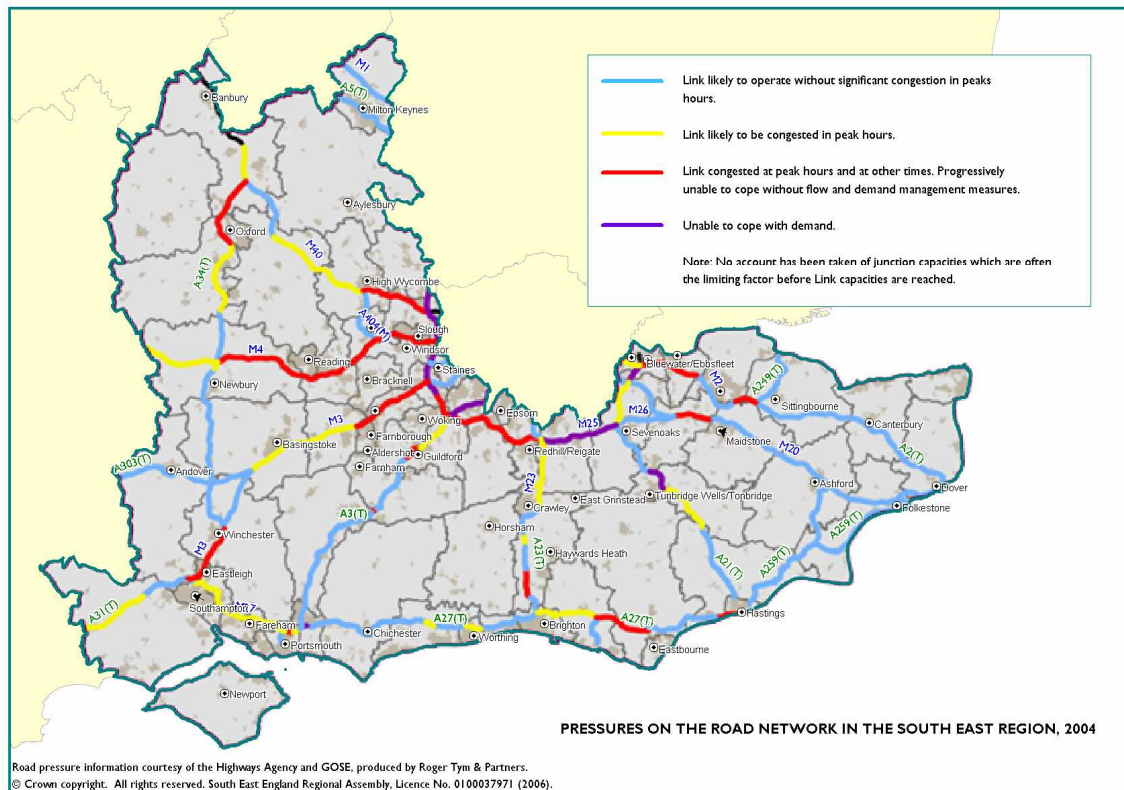
Element	Source
1. Projected road and rail transport infrastructure.	Network Rail, SEEDA Strategy, STRAW for waterways
2. Listing of major rail concentration depot locations.	Network Rail, EWS, SEERA Minerals Strategy Map of Wharves and Railheads
3. Identification of rail gauging pinch points.	STRAW, EWS survey, Network Rail
4. Listing of wharfage 5,000 tonne DW ports.	Sea & Water website
5. Location of major sewerage/ waste water treatment centres.	Operator Survey
6. Location of extant cement plants.	British Cement Association
7. Location of extant CHP and coal fired stn.	CHP Association, RPA, Operator Inquiry, Climate Change Levy List and ROCs accreditation list.
8. Location of 5 hectare plus brownfield sites.	National Land Use Database

² The above text was taken from the [Government Office for the South East website](#)

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Item 1: Road and Rail Transport Infrastructure



Map 1: Road Infrastructure Capacity in South East Region

Map 1 shows current principal road infrastructure within the region plus an indication of capacity. Planned infrastructure is not included. Road infrastructure largely radiates from/to London with the M25 acting as a distribution ring for road based traffic using the motorways connecting the region with others.

Rail Infrastructure

The starting point for our research into rail freight was the STRAW project. This provides an overview of infrastructure at regional level. We then undertook detailed research of various sources to fine tune the information to the region. Finally we ground truthed our findings via detailed inquiries of Network Rail and EWS Freight Services - the principal rail freight operator in the region. The outputs of this study have been reviewed by these organisations.

Our Findings

Six principal rail routes serve the region. Waste related movements occur on 2 of these routes. Further commentary on the different routes is given in Table 1.

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Table 1: Summary of Status of Rail Routes Serving Region

Route	Current Freight Use	Cited Constraints	Future Demand
Kent (Route 1)	Mainly run to the Channel Tunnel (around 10 trains per day), Isle of Grain (7-8 tpd), Hoo Junction (4-5 tpd), Angerstein wharf (3 tpd), Battersea/Stewarts Lane (2-3 tpd), Medway/Isle of Sheppey (2 tpd) and Mountfield (1-2 tpd).	There are very few locations for freight services to be looped or regulated; Freight services generally have to cross lines. This is a low speed move which introduces additional performance risk; and Freight services are restricted by the loading gauge and trailing load limits on certain routes.	Dependent on the strength of the economy, transport policy, the pricing structure for Channel Tunnel freight and the success of railways in France and beyond in getting long distance freight onto railways. A detailed investigation is planned in Network Rail's Freight RUS, with a consultation draft planned for publication in 2006.
Brighton Main Line & Sussex (Route 2)	There is modest freight demand on the core Sussex route (mainly to aggregates terminals) but the West London Line (WLL) has a high number of cross London freight services, primarily aggregates business to and from southeast terminals and international trains running between the West Coast/Great Western main lines and the Channel Tunnel.	The line via Redhill is the only alternative to routing via Catford and Maidstone East for W9 gauge freight traffic, though it requires diesel haulage.	Freight demand on the West London Line is likely to grow modestly as aggregates, Channel Tunnel and other traffic develops.
South West Main Line (Route 3)	The majority of freight demand is from Southampton's docks, container terminals and Eastleigh Yard. A high proportion of freight trains in the area carry containers, but there are also petroleum, metals, aggregates and MOD flows. Freight services on the route mainly run to and from the Eastleigh and Southampton areas from the West Coast Main Line, Western and London areas. There is also some oil traffic between Holybourne and Fawley, and aggregates traffic.	Limited paths for freight services across the entire route; Few locations on the route where it is possible for freight services to be looped or regulated; and Freight services are restricted by the loading gauge and trailing load limits on certain lines.	There is a strong case for enhancing the rail freight route between Southampton container terminals and Reading to enable the retention and expansion of rail market share by accommodating the growing proportion of large containers. The Rail Freight Industry forecasts indicate that the majority of freight growth in the SWML area will be from two key commodity sectors: • Intermodal • Aggregates/Construction Growth is also anticipated in other types of freight.
Reading to Penzance (Route 12)	There is very little through freight movement between the home counties and the far west. The Reading to Westbury section of the route is heavily utilised by long and heavy freight trains conveying aggregates eastwards from the Mendips.	The highest take-up of paths is at the eastern end of the route, between Reading and Newbury, where west of England services have to fit between intensive passenger and freight movements on the immediately adjacent Basingstoke section of the GWML.	The capacity constrained Reading station restricts the ability to deliver additional paths on the route to meet future demand, particularly freight traffic for the construction of the Olympics' sites and Crossrail.
Great Western Main Line (Route 13)	Significant volumes of freight are carried over the route. Aggregates dominate the route to the east of Reading with flows from the Mendip Hills and the East Midlands to London area terminals at	Between Paddington and Reading the route is operating at near capacity for large parts of the day. Nearly all freight through the inner London area of the route requires access to the Acton yard	Road congestion in the major towns and cities on the route is forcing local authorities to seek alternative modes of transport to provide a solution, of which rail service enhancement is considered a key option.

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	Paddington, Acton, Brentford, Hayes, West Drayton, Thorney Mill, Colnbrook and others to the south and east of London. The south coast port of Southampton generates significant volumes of container traffic for the West Midlands, the North and Scotland. <i>Daily train loads of containerised waste to landfill sites at Appleford and Calvert originate from Brentford, and Bristol and Bath respectively.</i>	complex via a single lead connection crossing the Relief Lines. This severely restricts the ability to provide additional paths to meet growth. The Reading station area is a critical 'crossroads' on the east-west and north-south axes for freight flows. The area is further restricted at Reading West Junction where long north-south axis freight services have to cross the GWML at grade. Between Didcot and Oxford the mix of non stop passenger and freight services with local services calling at little used stations reduces the ability to maximise capacity.	Growth in freight services through the Southampton ports, across the route, to the Midlands, the north of England and Scotland is expected to continue.
Chilterns (Route 16)	<i>Freight demand includes significant domestic waste traffic to the landfill site at Calvert. Waste Recycling Group (WRG) continues to seek further business in both domestic and industrial waste. Overnight demand is constrained by operating hours at the landfill site.</i> <i>Four loaded domestic waste services run per day to the Calvert disposal site from Cricklewood, Dagenham, Bristol and Northolt. Services from the London area route via High Wycombe and Aylesbury. Services from Bristol route via Oxford and Bicester. The Calvert site has capacity to accept similar levels of waste for at least the next 20 years.</i> There is currently only one freight train per day each way over the Bicester Town – Claydon section	The route is one of the best performing in the country Significant upgrading would be necessary for reopening of an East-West route linking Oxford, Bletchley, Bedford and Cambridge. A new station is planned at Aylesbury Vale, about two miles north of the present terminus at Aylesbury Town on the freight route to Calvert.	Freight traffic patterns are expected to remain largely unchanged for the foreseeable future, although the regular CTRL spoil traffic from Kings Cross to Calvert has ended as construction of the link approaches completion. However, it is understood that opportunities to use the vacated train paths are being actively explored by other operators. Additionally, Freightliner is looking to expand the operation of aggregate services to a site at Neasden.
Sources: Kent Business Plan http://www.networkrail.co.uk/documents/3132_Route%201%20kent.pdf Sussex Business Plan http://www.networkrail.co.uk/documents/3101_Route%202%20Sussex.pdf South West Mainline Business Plan http://www.networkrail.co.uk/documents/3102_Route%203%20South%20West%20Main%20Line.pdf Reading to Penzance Business Plan http://www.networkrail.co.uk/documents/3110_Route%2012%20Reading%20to%20Penzance.pdf Great Western Business Plan http://www.networkrail.co.uk/documents/3111_Route%2013%20Great%20Western%20Main%20Line.pdf Chilterns Business Plan http://www.networkrail.co.uk/documents/3114_Route%2016%20Chilterns.pdf			

Comment from Network Rail: The table is correct in the detail but creates an impression that access to rail is more difficult than it really is. If someone wanted to open a new container port the size of Southampton in the SE then there would be a need for significant rail upgrades to serve that level of demand. However, for waste terminals generating 1 - 2 trains per day we could find capacity in most locations.

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Item 2: Listing Of Major Rail Concentration Depots.³

Sidings

75 sidings operated by freight companies were identified within the region, through a listing provided on the Network Rail website. These sites were sieved in consultation with EWS Freight Services⁴ - the identified operator of most of the sites - on the following basis:

1. Sites identified as no longer existing as the listing is out of date.
2. Sites with space constraints or fully occupied. Leases may exceed 25 yrs.
3. Lack of intermodal access. Sites that have little or no road access.
4. Sites serving oil terminals except where they are known to have significant additional land available.
5. Sites earmarked for dedicated users such as Cross Rail and nuclear sites.
6. Sites attributed to EWS but unknown to EWS.

Occupied sites have not been excluded as some users with similar loading practices as waste management companies might look at sharing. Others may wish to sublet vacant parts of a site. This indicates that site-specific inquiries would be needed to establish the status and suitability of specific sidings. Network Rail⁵ has confirmed that if specific sites to travel to and from were identified, they could advise on availability of suitable sidings.

The results of the sieving process were cross-checked with Network Rail. From this exercise 38 sites in 27 locations were identified as possibly suitable for further investigation. These are listed in Appendix 1 and have been mapped.

In addition to these sites over 100 privately operated sidings were identified within the region. Due to the diversity of operators it has not been possible to establish their status or screen them. These sites have been mapped.

The final listing was cross-checked with a listing of 20 aggregate rail sites provided by SEERA. This gave a total of 148 rail-linked freight sites within the region.

There is a current rail movement of waste from London for disposal and recycling. As London increases recycling together with a drive towards self-sufficiency in market development, the opportunity to utilise rail infrastructure for inward movement for reprocessing grows. Therefore London railheads have also been mapped.

³ Network Rail advises that the term rail concentration depot is no longer used within the industry.

⁴ Warren Sieroczuk pers comm

⁵ Ian Cleland pers comm

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Map 2: Rail Sidings & Aggregate Depots in the Region & London



Item 3: Identification of Rail Gauging Pinch Points

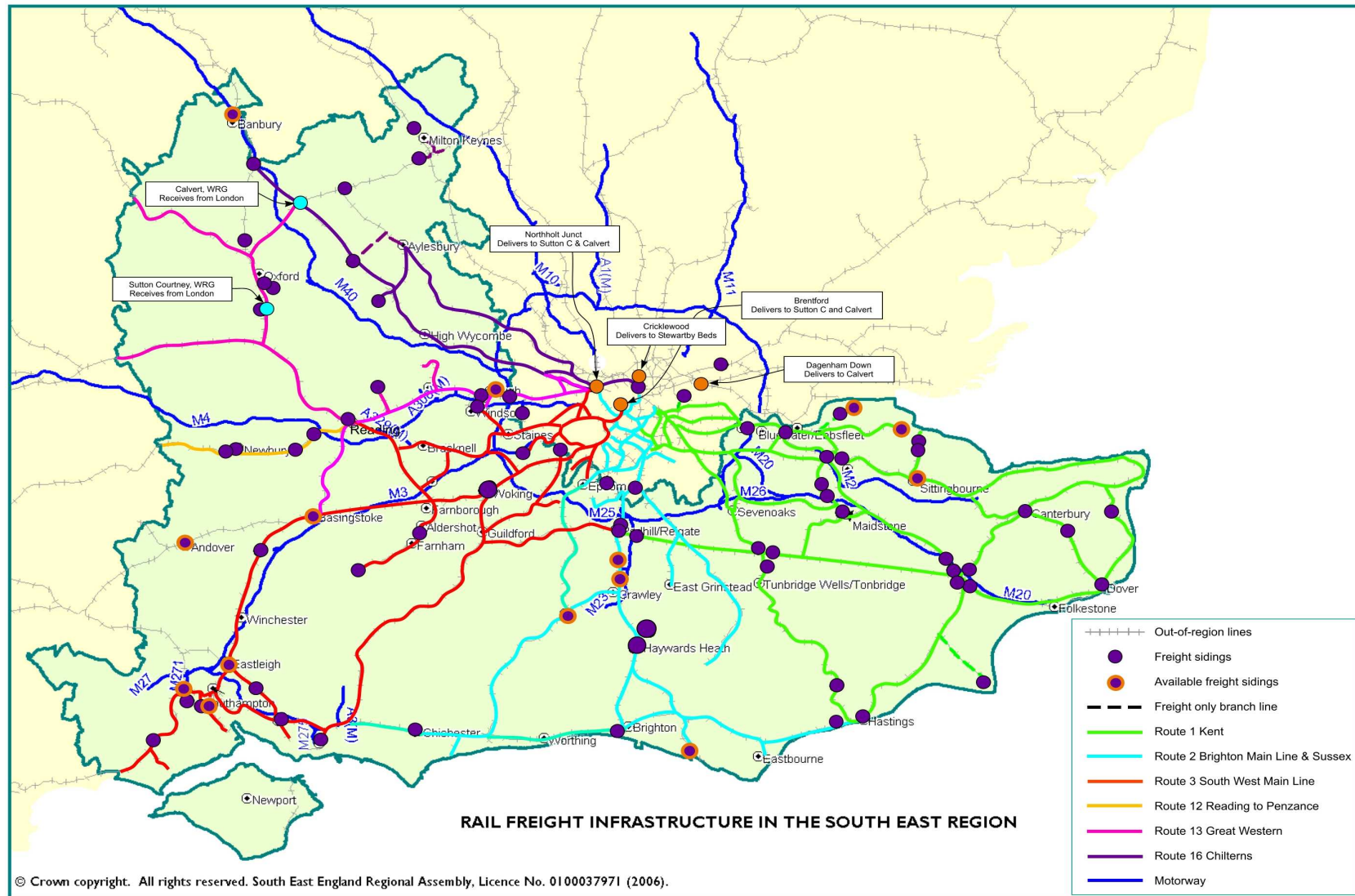
The actual capacity of a rail route section is a complex interaction of many parameters including the mix of trains on a route section, their relative speed, the spacing between signalling and various other factors. Because freight trains may only operate 'as required', and/or may operate between different terminals, Network Rail explores with the freight operating company and end-users the likely requirements for freight services on a terminal by terminal basis.

The STRAW project identified 13 routes as having "significant" bottlenecks, 6 of which might directly affect movement within and to/from the South East. However Network Rail reports that few if any of these bottlenecks would be insurmountable barriers to increased movement by rail. Moreover Network Rail reports that off-peak capacity is available on most lines in the South-East and emphasises this would be without the need for investment. Commentary from the STRAW project on the potential impact on flows is provided in Appendix 1 embellished with comment received from EWS Freight Services and Network Rail.

All information gathered has been brought together to generate Map 3.

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Map 3: Regional Rail Infrastructure - freight sidings and routes

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Intermodal Freight Terminals

Intermodal rail terminals are designed to transfer freight between road and rail. An initial search identified 3 terminals all sited in Southampton⁶. A further trawl of ports within the region identified other terminals offering intermodal capacity. Project resources did not allow more detailed investigation of intermodal potential i.e. actual potential of using multi-modal links at these sites. These are listed in Table 2 below.

Table 2: Intermodal Facilities

Terminal Name	Status
Southampton Docks	Port use only.
Southampton Maritime	Single operator terminal.
Southampton Millbrook	Single operator terminal.
Hoo Junction	Tonnage lift limit should be checked against hard standing strength.
Chatham	Rail connection reinstated via Facilities Grant in 2003.
Medway	Rail services out of Sheerness were reinstated during the 1990s.
<i>Portsmouth</i>	<i>Proposals for a new terminal under development.</i>

This shows that with the exception of Hoo Junction all intermodal facilities are based at ports. This means there is little capacity for transferring road freight to rail for movement out of the region. The Regional Transport Strategy (Chapter 9 of RPG9 July 2004) explicitly recognises the need for up to 3 further inter-modal interchange terminals to be developed within the region. Policy T16 proposes the following criteria:

These facilities should be well related to:

- i. rail and road corridors capable of accommodating the anticipated level of freight movements;
- ii. the proposed markets;
- iii. London.

It is of particular note that the Buckinghamshire Waste Local Plan specifically identifies a site at the junction between the M4, Great Western Line and Grand Union Canal for multi modal transport of waste⁷.

⁶ SRA Website (2004). Sites. www.railfreightonline.co.uk/sites

⁷ Network Rail reports that with modern rubber-wheeled handling vehicles, opening up new intermodal terminals requires fairly low-tech provision of hard standing rather than heavy fixed investment of gantry cranes.

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Item 4: Listing of Wharfage 5,000 Tonne Deep Water Ports.

South East ports are identified in Table 3.

The information below gives a sample of relevant materials movement activities taking place at one of the main ports in the region⁸.

ELV and WEEE related Shipment

The **Thamesteel** plant restarted production in March 2003, producing 10-tonne packs of steel billets from scrap sourced from throughout the South East of England. Initially the plant is expected to produce between 540,000 and 600,000 tonnes of billets per year mostly going to make rebar for construction, and the entire output will be exported to Saudi Arabia through Sheerness with shipments expected on a monthly basis. The plant is expected to step up production steadily to 1.2 million tonnes – all for export.

In addition, Sheerness handles shipment of ro-ro exports including second-hand cars, white goods and other items for West Africa and the Mediterranean on behalf of **Van Uden**.

Van Dalen operates a four-acre site at Chatham, where it can store up to 20,000 tonnes of different raw steel grades. The scrap is sourced from the South East of England and is exported on two or three ships a month – 70% of it going to Spain, and the rest to the Netherlands. It is exporting about 65,000 tonnes from Chatham quay each year, but is looking to increase this to 100,000 tonnes in the next two years. The company is investing in a new crushing and shearing machine with up to 1,000 tonnes capacity which will allow higher volumes to be handled.

Paper & Card Related Shipment

Taken together, the facilities on the Medway are estimated to handle 10% of the UK's total forest products imports, including pulp, newsprint, paper, packaging, plywood and timber. A total of 540,000 tonnes of forest products were handled at Sheerness in 2002. Some changes in the pulp buying policy of local paper producers meant that this was not as high as 2001, but overall the port continues to have a strong presence in this highly competitive sector, handling 539,000 tonnes during 2003.

Recent years have seen a growing proportion of newsprint, paper, packaging paper and board coming in. Sheerness is well placed to serve the pulp needs of Kent's busy papermills. Large volumes of pulp are transhipped from Sheerness to Scotland for papermaking, and via barge to Kimberly Clark's Northfleet tissue factory. The UK paper trade has been facing stiff competition, which has had its effect on pulp imports, but an increase in domestic tissue production augers well for Sheerness, as the key raw material here is eucalyptus pulp which makes up by far the largest proportion of pulp handled at the port.

Nordic Forest operates a terminal at Chatham where it processes and exports newspapers and magazines for recycling. Ongoing expansion will increase capacity for materials reclaimed for recycling from 120,000 to 250,000 tonnes a year, reflecting a wider demand for the recycling material. As well as Sweden, this is now being exported to China, Canada, India and Finland.

Source: <http://www.medwayports.com>

⁸ Medway Ports website <http://www.medwayports.com>

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Table 3: Regional Ports

Port Name	Owner/Operator	Admin Location	Quay Length (metres)	Major port for freight? ⁹	No. berth/ Terminals available for freight	Cargo				Connectivity			Capacity Restrictions	Intermodal?
						General	Aggregates/ Ballast/ Road Stone	Containers	Dry Bulk	Road	Rail	Water		
Chatham Docks	Apart from one berth, Medway Ports does not operate Chatham Docks	Medway		Yes	8						Yes			Rail connection reinstated via Facilities Grant in 2003
Cowes	Cowes Harbour Commissioners	Isle of Wight	342	No	3	Y	y			A3020, A2021		River Medina, south of Cowes		
Dover	Dover Harbour Board	Kent	1561	Yes	9 (8)	Y	y	y		A2, M2, A20, M20			Limited space is available for anchorage in the Outer Harbour to the N of the fairway, max depth 8.2 m	
Folkestone	Folkestone Properties Ltd	Kent	138	No	4 (No Terminal)				y	M20	Yes			
Littlehampton	Littlehampton Harbour Board	W Sussex	259	No	1					A/m27	Yes			
Medway inc. Sheerness, Thamesport, Rochester, Ridham Dock and Queenborough	Medway Ports (a subsidiary of the Mersey Docks & Harbour Company)	Kent	5154	Yes	27			y		A249 to M2	Rail Freight Terminal	River Medway		Yes. Rail services out of Sheerness were reinstated during the 1990s.
Newhaven	Newhaven Port & Properties Ltd	E Sussex	990	Yes	4		y		y	A26 (T)	Rail Freight Terminal SEEDA funded pilot		Vessels of up to 160 metres in length, with a maximum draft of 8 metres.	

⁹ As identified in Port Traffic Statistics Requirements: Administrative Rules (Issue 5, July 2005) http://www.maritimestatistics.co.uk/pdfs/administrative_rules_2005.PDF

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Port Name	Owner/Operator	Admin Location	Quay Length (metres)	Major port for freight? ¹⁰	No. berth/ Terminals available for freight	Cargo				Connectivity			Capacity Restrictions	Intermodal?
						General	Aggregates/ Ballast/ Road Stone	Containers	Dry Bulk	Road	Rail	Water		
Portsmouth	Portsmouth Commercial Port	Hants	1874	Yes	4	Y		y		M275	Joins National Network			Proposals for a new terminal under development
Ramsgate	Port of Ramsgate	Kent	160	Yes	2	Y		y		M2				
Sandwich/ Richborough		Kent	710	No									River Stour	
Rye		E Sussex	183	No	1	Y	y			M20, A259				
Shoreham	Shoreham Port Authority	W Sussex	3801	Yes	3					M23, A23				
Southampton	ABP Southampton	Hants	8329	Yes	7	Y		y		M271, M27, M3, A33, A34, A36	Joins National Network with own rail freight terminal	Rivers Itchen and Test		Own rail freight terminal
Whitstable	Canterbury City Council	Kent	552	No	2					A299, M2				

Source: Sea & Water Water Freight Directory http://80.175.39.96/sw/index.php?option=com_seawater&area=ports&Itemid=40

¹⁰ As identified in Port Traffic Statistics Requirements: Administrative Rules (Issue 5, July 2005) http://www.maritimestatistics.co.uk/pdfs/administrative_rules_2005.PDF

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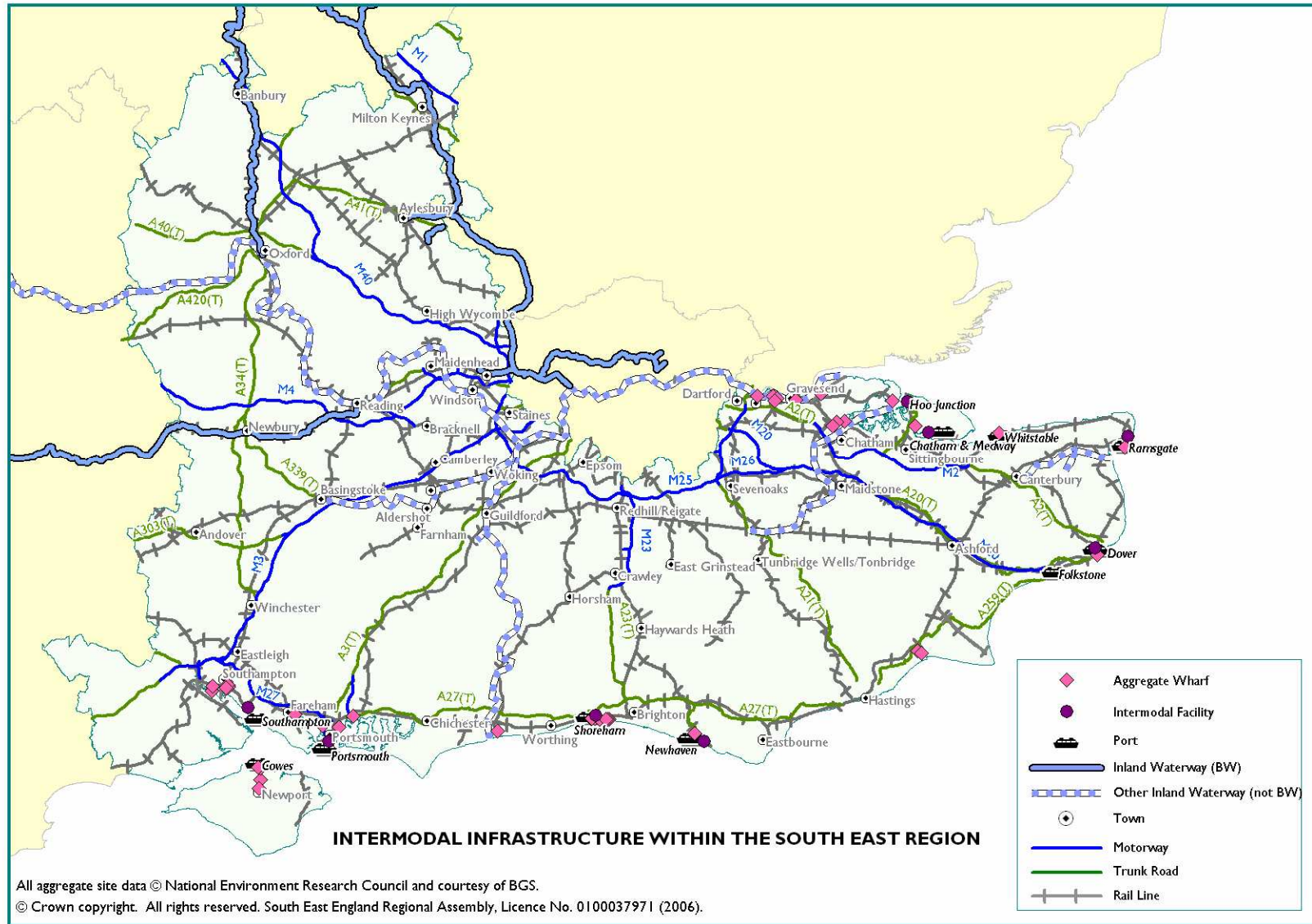
The ports identified as major ports for freight in Table 3 have been plotted and the notional drivetime catchment of 90 minutes calculated for each. These are shown on Map 4. This shows that the ports readily serve all but the north of Oxfordshire and in the case of the Medway ports the catchment extends far beyond the region to East of England and London. These sites have also been mapped with the rail infrastructure map to generate Map 5.



Map 4: Major Freight Ports & Road Catchment (90 minute drivetime)
Catchment colour corresponds to port flag colour

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Map 5: Intermodal Infrastructure in South East

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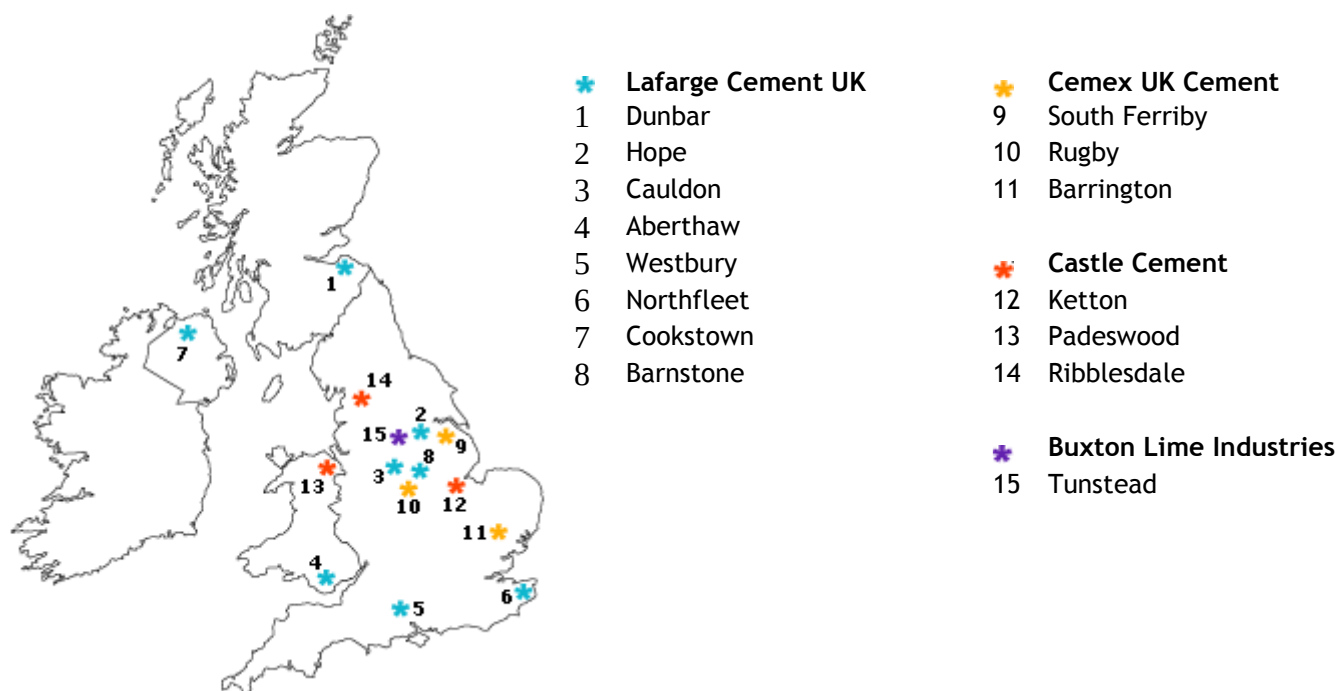
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Item 5: Location of Major Sewerage/ Waste Water Treatment Centres

In response to our approach about possible co-use of Anaerobic Digestion facilities and availability of land for siting facilities adjacent to sewage treatment works, both Southern Water and Thames Water reported they do not have spare capacity within their own facilities. Following a review of their property portfolios they have been unable to identify any suitable landholdings for siting new facilities that might serve needs beyond their own.

Item 6: Location of Extant Cement Plants



Source: British Cement Association website

Figure 2: Location of Operational Cement Kilns in

Cement kilns are identified as significant potential outlet for a range of waste derived fuels including tyres and shredder residue. Only one cement kiln is located in the region - at Northfleet. This is due to close and there is no intention to accept waste-derived fuels. A planned replacement at Medway is currently on hold. If this goes ahead the plant may be designed to accept waste-derived fuels.

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Item 7: Location of Extant Combined Heat and Power (CHP) & Coal Fired Stations.

A search of the listing of CHP plants that qualify as ‘good quality’ for the purposes of the Climate Change Levy was undertaken. Plants classed as small were screened out. Results are shown in Table 4.

Table 4: ‘Good Quality’ Large CHP Plants in region (Dec 04 data)¹¹

Company Name	Scheme Location	Installed Capacity (MWe) ⁽¹⁾	CHP Type
Archer Daniels Midland Ltd	Erith	14.0	Gas Turbine Simple Cycle
Arjo Wiggins Appleton plc	Chartham, Kent	10.9	Heat Recovery Steam Cycle
	Dartford	10.0	Gas Turbine Simple Cycle
Arreton Valley Nursery Ltd	Isle of Wight	33.3	Not declared
BMW UK Manufacturing Ltd	Cowley, Oxfordshire	3.2	I C Engine
Cogenco Ltd	Tangmere Nurseries, Chichester	3.0	Not declared
De La Rue International Ltd	Basingstoke, Hampshire	6.2	Not declared
E.On UK (CHP) Ltd	Grovehurst Energy Ltd, Sittingbourne,	80.6	Gas Turbine Combined Cycle
GlaxoSmithKline Ltd	Wellcome Foundation, Dartford	13.5	Gas Turbine Simple Cycle
Kraft Jacobs Suchard Ltd	Banbury, Oxon	7.2	Gas Turbine Simple Cycle
North Hampshire NHS Trust	Basingstoke Hospital	1.0	I C Engine
RWE Npower Cogen	Esso Oil Refinery, Fawley	135.0	Gas Turbine Combined Cycle
	Aylesford Newsprint Ltd, Kent	98.0	Not declared
Pfizer Ltd	Sandwich, Kent	16.0	Gas Turbine Simple Cycle
Scottish and Southern Energy	Townsend Hook, Kent	52.0	Heat Recovery Steam Cycle
	Hazelwood VHB, Angmering	2.0	I C Engine
	Hedon Salads, Slough	1.9	Not declared
	Buckland Nurseries, Reigate, Surrey	1.9	Not declared
Slough Heat and Power Ltd	Slough Estate	90.0	Gas Turbine Combined Cycle
Thames Water Utilities	Beddington Sewage Treatment Works	3.1	I C Engine
Thameswey Energy	Woking, Surrey	1.4	IC Engine
<i>(1) Total power output includes all capacity at that site, not just that classed as good quality CHP under CHPQA</i>			

Source: DTI Climate Change Levy www.dti.gov.uk/files/file17429.xls

Most if not all the schemes appear to be utilising heat sources that do not use solid fuel. Hence to use wood as a fuel some conversion or new plant would be required. The key opportunity is that an outlet of heat exists and a distribution network is in place.

¹¹ Sites of 1 Megawatt (MW) installed electrical capacity or more that either have agreed to be listed in the Ofgem register of CHP plants or whose details are publicly available elsewhere, or who have provided the information directly to DTI. It excludes CHP sites listed as major power producers.

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This search was embellished by a search of sites within the region classed as eligible for Renewable Obligation Certificates (ROCs). Table 5 lists these.

Table 5: Generating Stations Registered to receive ROCs (2004)¹²

Generating Station Name	Total Installed Generating Capacity (kW)	Operating Company
Fawley Waste to Energy Plant ¹³	8,600	Shanks Chemical Services Ltd ¹⁴
Beddington STW	2,520	Thames Water Utilities
Didcot 'A' Power Station	2,100,000	Innogy plc
Fibrepower (Slough)	12,000	Fibre Power (Slough) Ltd
Kingsnorth Power Station	2,034,000	Powergen UK plc
Littlebrook D Power Station	2220000	RWE npower plc
Longreach STW	2,300	Thames Water Utilities Limited
Npower Cogen Ltd (Aylesford) CHP	99,800	Npower Cogen Ltd
Slough Electricity Contracts Ltd	35,000	Slough Utility Services Ltd

Source: Generators accredited for the Renewables Obligation (RO) OfGem

A search of sites that have sought modifications to their Pollution Prevention & Control (PPC) permits to allow the use of waste-derived fuel (following implementation of the Waste Incineration Directive (WID) in December 2005) was also undertaken. The sites are listed in Table 6.

Table 6: Sites subject to WID application.

Operator	Facility	Sector
Pfizer Ltd	Not declared	Chemicals
Grundon Waste Management Ltd	Colnbrook Incinerator	Clinical Waste
White Rose Environmental Ltd 1	Ashford Incinerator	Clinical Waste
White Rose Environmental Ltd 2	Sidcup Incinerator	Clinical Waste
Rwe Npower Plc 1	Fawley Power Station	Combustion
Rwe Npower Plc 2	Littlebrook D Power Station	Combustion
Shanks Waste Management Ltd	Fawley High Temperature Incinerator	Hazardous Waste
Onyx Hampshire Ltd 1	Marchwood Incinerator	Municipal Waste
Onyx Hampshire Ltd 2	Chineham Incinerator	Municipal Waste
Aylesford Newsprint Ltd	Aylesford Paper Mills	Paper
E.On UK CHP Kemsley Ltd	Kemsley & Sittingbourne Paper Mills	Paper
Slough Heat & Power Ltd	Slough Estates CHP	Combustion
Wellcome Foundation Ltd	Not declared	Pharmaceuticals
Solvent Resource Management Ltd	Rye Harbour Treatment Works	Solvent Recovery
Britannia Refined Metals Ltd	Northfleet Lead Refining site	Metal Smelting

¹² Accredited With A Declared Net Capacity (DNC) Of More Than 50 Kw. The DNC is the maximum rating of the generating station less the power required by itself at which the station can run continuously if required.

DNC represents the nominal maximum capability of a station's supply electricity to consumers

http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/12401_List_of_Accreditations_for_RO&CCL_stations_-_Sept_update.xls?wtfrom=/ofgem/work/index.jsp§ion=/areasofwork/renewobligation

¹³ Accredited under Biomass and Co-firing of biomass with fossil fuel (ROCs issued under either accreditation each month - not both)

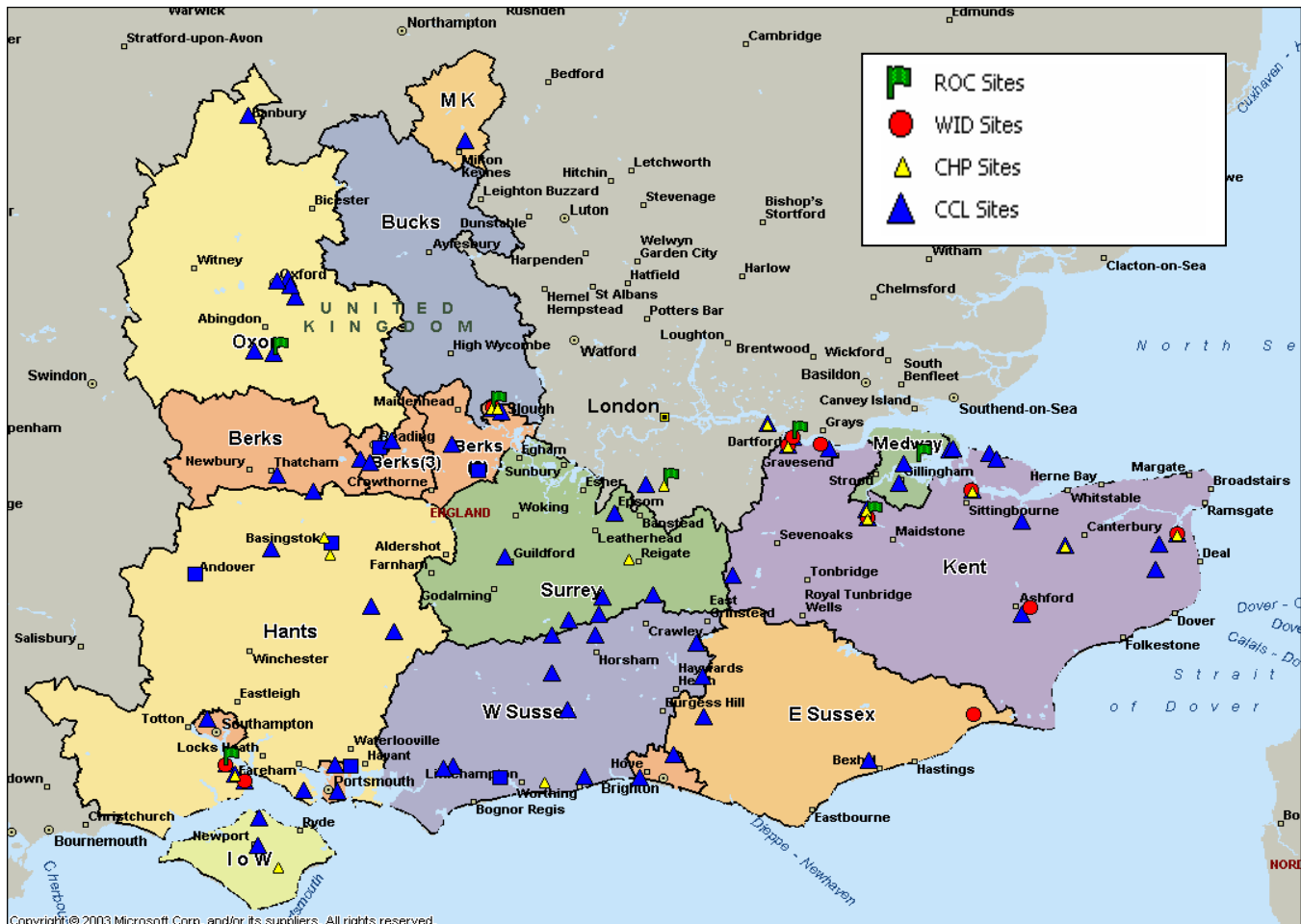
¹⁴ Now owned and operated by Veolia (formerly Onyx)

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Finally a search of industrial boilers subject to the Climate Change Levy (CCL) was undertaken.

The outputs of these four sources have been mapped in Map 6 below.



Map 6: Potential Sites That Might Take Wood As A Fuel

The Government response to the Biomass Task Force¹⁵ report in April 2006 supported the need to divert waste wood suitable for energy generation from landfill. Changes have been made to the Renewables Obligation reducing the qualifying threshold from 98% plant or animal matter content to 90%. A team has been established within DEFRA's Waste Implementation Programme to work with industry to develop markets for waste-derived biomass. The remit of this team will extend to Solid Recovered Fuel (SRF) and Refuse Derived Fuel (RDF) and to developing markets for wood waste as a primary fuel source. The Government's stated aim is to re-direct the landfilled waste wood resource to energy production while preventing other end users of waste wood being compromised.

¹⁵ <http://www.dti.gov.uk/files/file28197.pdf>

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Item 8: Location of 5 Hectare Plus Brownfield Sites (2005)

The National Land Use Database (NLUD) contains information on vacant and derelict sites and other previously developed land and buildings that may be available for development. An initial list of sites of 5 hectares or more were analysed, and sites with a current or proposed land use or allocation for housing were filtered out¹⁶. 122 sites were identified across the region. Appendix 3 gives the detailed outputs of this exercise and these are displayed by area in Map 7 below where size of circle corresponds to site area.



Map 7: 5 Hectare Plus Brownfield Sites

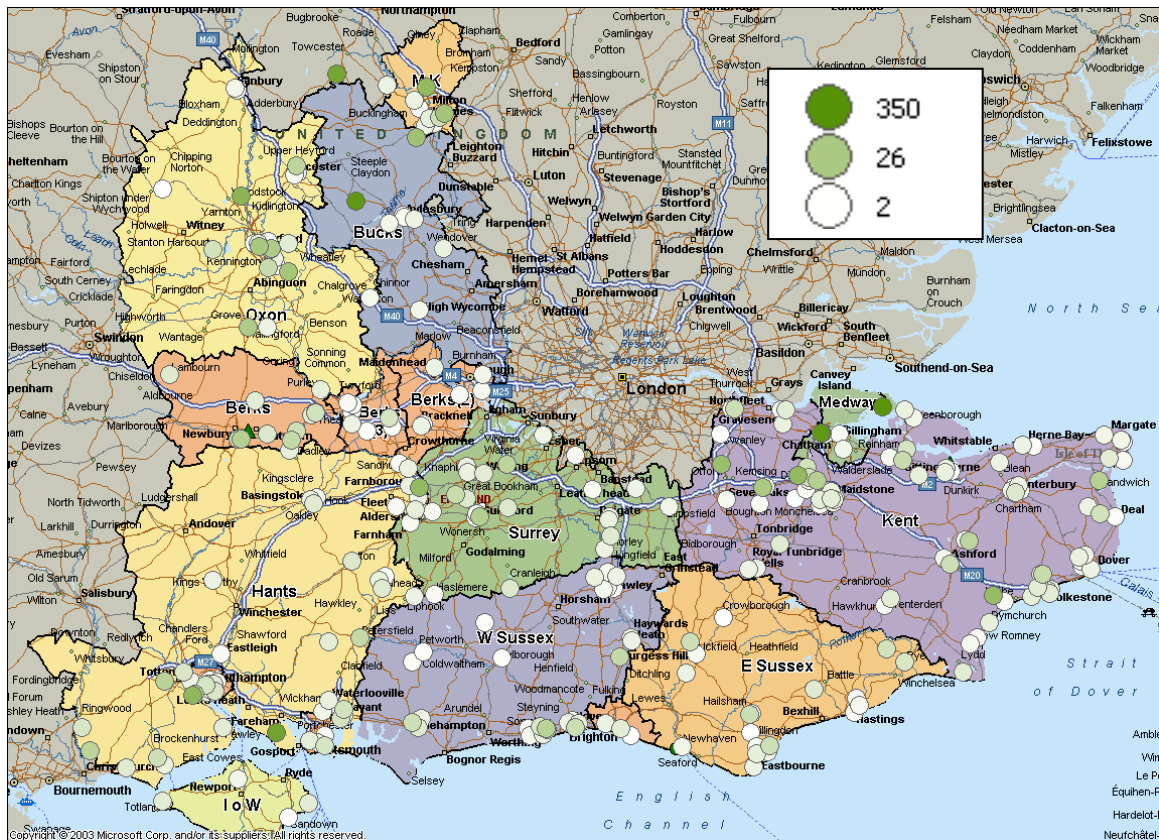
There are a great many hurdles to get over from identifying a potential site to getting a site established. Apart from the planning consent barrier, reaching agreement with landlords about locating waste uses can be a major challenge. This can be for a variety of reasons not least that these developments are perceived as bad neighbour development that may blight the development potential of a site even if it is not identified as being suitable for housing. Also landlords may be reluctant to subdivide larger sites as they may be looking for a complete redevelopment package. This suggests that a steer towards smaller sites might be preferable. If the site search size threshold applied is reduced to around 2 hectares the number of potential sites is more

¹⁶ Data on public sector surplus land was obtained to augment this output but it was not possible to clarify the planning status of this land and so we assumed that its most likely allocation would be for housing.

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than doubled to 255. This is illustrated on Map 6 below where site size is indicated by strength of shading of each point.



Map 8: 2 Hectare Plus Brownfield Sites

This output can be refined through reference to environmental designations, location of existing waste related uses and a survey of Waste Planning Authorities to capture sites within the region already identified as being suitable for waste use in Waste Local Plans. This is dealt with further in the Stage 6 Project Report.

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Arisings Related Data

Having established the locations of key infrastructure and potential sites within the region, the final piece is to broadly determine the principal sources of the target materials that are likely to arise within the region.

Environment Agency data indicates that 32.6 million tonnes of waste was produced in the region in 2002-3. This has been estimated to be broken down on the following basis:

- 5.3 million tonnes of waste from the commercial sector
- 3.6 million tonnes by industry
- 4.5 million tonnes municipal waste
- 15.2 million tonnes of construction, demolition and excavation waste (deposited); and
- 4 million tonnes of agricultural waste.¹⁷

The focus of this study is the municipal (MSW) and the combined commercial and industrial (C&I) waste streams as these were identified as the principal streams from which the target materials destined for recycling would be primarily sourced.

Apportioning Arisings with Streams

Determining the composition of the municipal, commercial and industrial waste is a key part of determining the quantities of specific materials present. Compositional data is limited in its availability. The data used for MSW was derived from a SEERA study Analysis of Practicably Achievable Recycling and Composting Rates B Jones 2003. The C&I stream is considerably more diverse, as it is generated from a wide variety of sectors. We interrogated the Environment Agency 2002/3 Commercial & Industrial waste survey results to generate material specific basis data.

Figure 5 attributes the estimated quantities of materials arising within the MSW and C&I streams applying composition estimates to arisings.

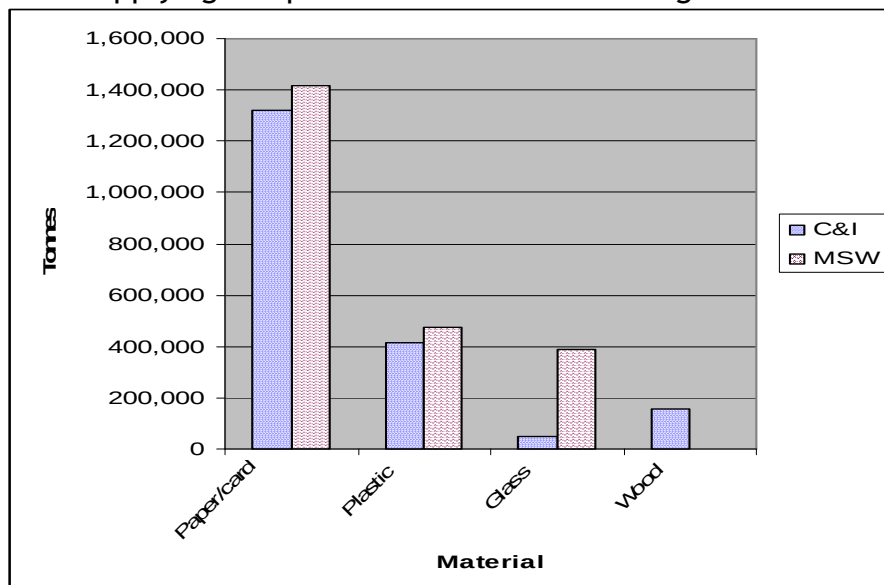


Figure 3: Estimated Occurrence of Target Materials in MSW & C&I streams

¹⁷ 92 percent of this was manure or slurry used on the farm

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Commentary

Figure 3 shows that for some materials there is equivalence between the municipal and C&I streams as sources of materials. For others one or other stream dominance. Taking each material in turn:

Paper/card: These are in fact two different materials that arise in significantly different quantities between the streams. The aggregation of materials in composition studies masks these differences. Even within the paper stream arisings differ - which in turn determines the potential recycling routes. So for example office grade paper follows a different recycling route to newspaper. Cardboard principally arises within the commercial stream while newspaper is the principal arising within the municipal stream. In the absence of more specific compositional data it is not possible to distinguish within this material group.

Plastic: This term masks a diversity of types of materials arising. Plastic containers and plastic film dominate within the municipal stream while a wide range of plastics will arise within the commercial stream. Each of these material types follows its own recycling route.

Glass: This term covers glass containers and flat glass principally. The disparity shown between arising in the stream demonstrates the substantial potential in the municipal stream to be mined for glass to meet Packaging Directive targets which have previously focussed on commercial sources. Extending cooperation between established commercial collection schemes and local authorities is something that is now a focus of attention.

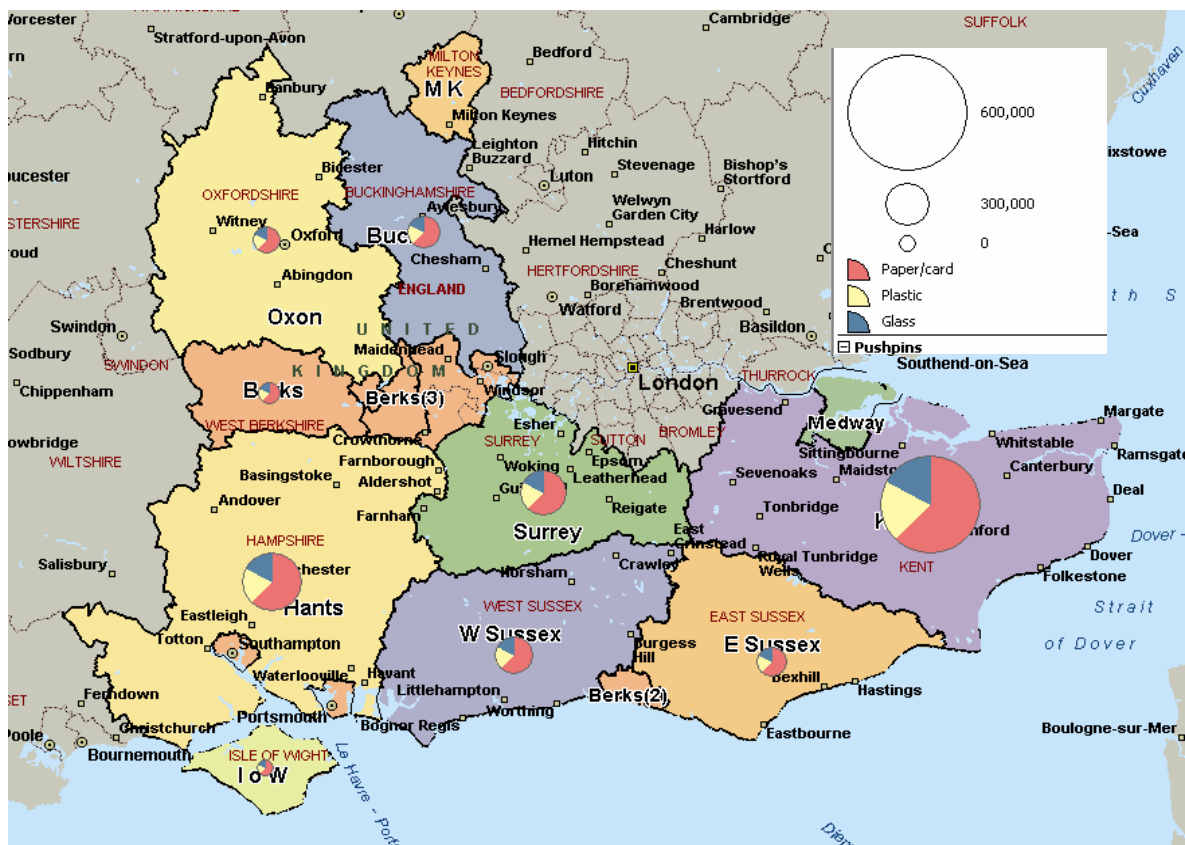
Wood: This term covers primarily wood packaging and offcuts from furniture manufacture that occurs in the C&I stream. Composition data for MSW did not distinguish these materials specifically so a figure has not been derived.

Establishing Distribution of Arisings

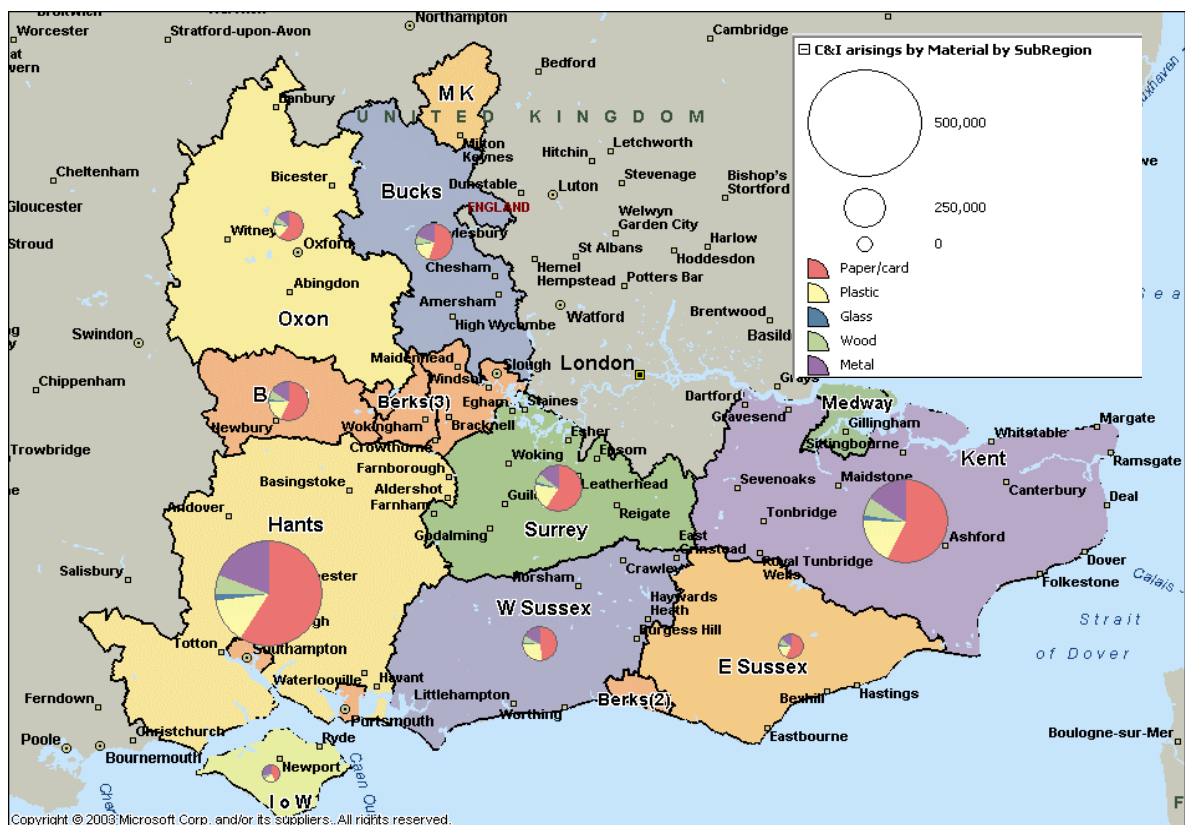
Prior to mapping of flows, maps indicating the current distribution of waste arisings have been generated. Ideally recycling facilities will be located in proximity to principal sources of materials. Therefore to identify preferred locations requires apportioning arisings to the level of county at least.

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Map 9: Indicative Distribution of Materials Arising within the MSW Stream



Map 10: Indicative Distribution of Materials Arising within the C&I Stream

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Commentary

These two maps illustrate the broad distribution of recyclable materials by sub region (county). They show that Hampshire and Kent are the most significant sources although the dominant county depends on the stream selected. i.e. Kent has most paper and card present in MSW stream as opposed to Hampshire in C&I stream.

These maps mask the variation in distribution of sources within each sub-region. So for example while the overall total quantity of materials produced in East Sussex may appear small, a large proportion arises from the Brighton and Hove City which represents one of the largest conurbations in the region. Thus a significant quantity of material can be accessed within a relatively small catchment area. In contrast arisings within Buckinghamshire that lacks a dominant population centre will be distributed fairly evenly across the whole of the county.

Summary

The information presented provides a snapshot of potential at the date of the research. Transport information would ideally be enhanced by indicating where new infrastructure may be planned. If the information collected were to be input into a GIS system that allows the overlaying of the transport infrastructure data with arisings and potential sites and environmental constraints, a broad picture of optimal locations in relation to logistics and potential arisings may emerge. The Stage 6 Project Report addresses this.

Beyond Waste

06.09.06

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Appendix 1

Commentary on Rail Bottlenecks & Potential Impact on Flows

Source: STRAW project plus comment received from EWS Freight Services and Network Rail

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The STRAW project identified 11 lines with capacity bottlenecks classed as ‘significant’ on major routes due to capacity utilisation on a national basis. Of the 13 routes identified, as having “significant” bottlenecks 6 might directly affect movement within and to/from the South East as follows:

Route 4: London - Dartford / Orpington

There are bottlenecks in the Charing Cross - London Bridge area and around a number of other track intersections and flat junctions, reducing overall capacity and operational flexibility over these routes. This could hamper movement of recyclables by rail from Kent into the East London/Essex area or vice versa. It is notable in this context that a proposed PET bottle recycling plant is to be located in Dagenham.

Network Rail reports the maximum capacity applies to peak commuter hours only.

Route 6: Cotswolds: Oxford - Worcester

This section is largely single track, which constrains the implementation of a robust even-interval timetable. This could hamper movement of recyclables by rail from Oxfordshire to facilities within the South West and West Midlands regions or vice versa.

Network Rail reports this is a limited route with no freight at present - but no significant concentrations of industry or population exist along it.

Route 7: Oxford - Leamington Spa

The signaling on the section of route between Banbury and Leamington Spa limits the number of trains that can use this section of line. This could hamper movement of recyclables by rail from Oxfordshire to facilities within the West Midlands region or vice versa.

Network Rail reports there is still some unused freight capacity on this line.

Route 8: Great Western Main Line: Paddington - Reading

The Great Western Main Line runs from London Paddington to Plymouth via Reading, Swindon, Bath, Bristol Temple Meads and Exeter. The current pattern of services constrains the ability to run additional trains to cater for forecast growth. This could hamper movement of recyclables by rail from Oxfordshire, Berkshire and Buckinghamshire to facilities within the South West, West Midlands regions, Wales and London or vice versa.

Network Rail reports there is still some unused freight capacity on this line.

Route 10: Brighton Main Line

There are several points on the Brighton Main Line where capacity is constrained, preventing the operation of additional trains. Capacity at Victoria station presents a particular constraint which is complicated by the close relationship between the mainline and underground stations. This could hamper movement of recyclables by rail from Sussex and Surrey and Kent to facilities within these counties and London or vice versa.

Network Rail reports the maximum capacity applies to peak hours only.

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Route 11: South West Main Line

The route out of Waterloo is running at capacity at peak times, and additional capacity to address current overcrowding and forecast growth cannot be provided. This could hamper movement of recyclables by rail from Oxfordshire to facilities within the South West and Wales or vice versa.

Network Rail reports the maximum capacity applies to peak hours only.

EWS Comment: Of the bottleneck routes identified EWS *only identified 2 as presenting real potential difficulty*: Route 4 London - Dartford / Orpington as it cannot take 8" wide wagons and Route 10: Brighton Main Line problems, again with gauge clearance. Network Rail reports this is a “capability” rather than a capacity issue for which there are technical solutions; there is room for more trains but the larger, new container boxes cannot fit down the lines on standard wagons.

EWS General Comment regarding Rail Routes with Bottlenecks: There are always other avenues to go down. EWS approaches new traffic investigating the flow of traffic bidding for the route with Network Rail. If Network Rail rejects the bid they look at alternatives and bid again. **Pathing** depends on where and when goods are being transported. Moving during the night is easier to get the path required.

Gauging

EWS Comment: Most of the routes have gauging clearance for 20' ISO containers 8' 6" high and 8' wide carried on KFA or similar rail wagons. This type of wagon and container is currently widely used.

Additional Routes: Havant

This line doesn't have gauge clearance which may limit the size of containers. EWS and Network Rail confirm this may be a problem.

Additional Routes: Canterbury

This line doesn't have gauge clearance which may limit the size of containers. EWS Comment that this could just be down to the fact that no container traffic has gone to / from this location and the route has therefore not been given clearance. Network Rail would have to be contacted to apply for gauge clearance.

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Appendix 2

Listing of Available Sidings in the Region operated by Freight Handling Companies

Source: Freight Commercial Services website (manages Network Rail's freight business) <http://www.networkrail.co.uk/freight/connections/existing.htm>

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Subregion	Location	Comments
Berkshire	Reading West Yard	Virtual quarry
	Langley Slough	Available
	Langley Slough	Available
	Langley Junction Slough	Site Occupied but may be possible to sublet part
	Woking Up Sidings	Site Occupied but may be possible to sublet part
Buckinghamshire	Calvert	Fully utilised for incoming trains from London. Scope for return backhaul
E Sussex	Hove	Available
	Newhaven	Available
	Mountfield	Site Occupied but may be possible to sublet part
Hampshire	Southampton Maritime	Intermodal terminal in use
	Southampton Millbrook	Intermodal terminal in use
	Fawley	Available
	Eastleigh	Available
	Eastleigh	Available
	Basingstoke,	Available
	Southampton (Totton)	Available
	Andover	Available subject to lease with Kemira
	Botley	Hanson stone terminal for import into London
	Eastleigh	Site Occupied but may be possible to sublet part
	Portsmouth (Fareham)	Site Occupied but may be possible to sublet part
	Eastleigh	Virtual quarry
Kent	Grain	Available
	Queenborough	Available
	Sittingbourne Princess St	Available
	Hothfield Ashford	Site Occupied but may be possible to sublet part
	Hoo Junction Down Side	Site Occupied but may be possible to sublet part
	Tonbridge	Site Occupied but may be possible to sublet part
Milton Keynes	Bletchley	Site Occupied but may be possible to sublet part
Oxfordshire	Oxford Hinksey Yard	Virtual quarry
	Banbury	Site Occupied but may be possible to sublet part
	Banbury Reservoir	Some room available
	Sutton Courtney landfill	WRG receiving from WLWA Scope for backhaul
Surrey	Salfords	Available. Former stone terminal supplying London
W Sussex	Three Bridges	Some limited facilities
	Nightingale Road Horsham	Available
	Three Bridges	Available
	Ardingly	Site Occupied but may be possible to sublet part
	Chichester North	Site Occupied but may be possible to sublet part

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Appendix 3

Listing Of Brownfield Sites 5 Hectares or more

*Source: National Land Use Database
http://www.iggi.gov.uk/nlud/nlud_default.asp*

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No.	LA_NAME	AREA	LAND TYPE REF	LAND USE CLASS REF	LA COMMENTARY	OWNER REF	PLANNING STATUS	PROPOSED USE REF	POLICY CONSTRAINTS	PHYSICAL CONSTRAINTS	AVAILABLE ON MARKET
1.	Medway (UA) Council	325.0	D	Industry	Large industrial area suitable for a range of industrial uses to further the expansion of Thamesport port facilities. Site also of importance in respect of Thames Gateway proposals reduced area from 570 to 325 as other parts deemed operational.	Private	Allocated in Local Plan	Employment	Yes	Yes	Don't Know
2.	Aylesbury Vale District Council	250.0	D	Industry		Private	Allocated in Local Plan	Employment	Yes	No	Don't Know
3.	Medway (UA) Council	246.0	D	Industry	This site is suitable for energy related industries and for uses which cannot easily be accommodated within the urban area.	Private	Allocated in Local Plan	Employment	Yes	Yes	Don't Know
4.	Waverley BC	213.7	A	Industry	Just over 4½ hectares are the built-up part of the aerodrome; remainder is runway land. Area action plan to be prepared. No decisions taken as yet on proposed uses.	Private	None	None	Yes	Yes	No
5.	Fareham Borough Council	152.3	A	Defence Land and Buildings	Former airfield with various hangars. Allocated countryside strategic gap. MOD moved out in 1997 future of site under consideration as part of MOD review.	Other Public	Allocated in Local Plan	Other	Yes	Don't Know	Yes
6.	Aylesbury Vale District Council	140.0	D	Industry		Private	Allocated in Local Plan	Employment	Yes	No	Don't Know
7.	Dover District Council	94.5	C	Mineral Working or Quarry		Other Public	Allocated in Local Plan	Other	Yes	Yes	Don't Know

LAND TYPE REF KEY

A - Previously developed land now vacant

B - Vacant buildings

C - Derelict land and buildings

D - Previously developed land or buildings currently in use and allocated in local plan or with planning permission

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	LA_NAME	AREA	LAND TYPE REF	LAND USE CLASS REF	LA COMMENTARY	OWNER REF	PLANNING STATUS	PROPOSED USE REF	POLICY CONSTRAINTS	PHYSICAL CONSTRAINTS	AVAILABLE ON MARKET
8.	Cherwell District Council	67.7	C	Mineral Working or Quarry	Current consent for car storage is temporary for 10 years. Identified as major developed site in green belt in the revised Deposit Draft Plan.	Private	Detailed Planning Permission	Other	Yes	Yes	Don't Know
9.	New Forest District Council	55.9	D	Industry	Site of former Marchwood Power Station. Part of site is retained for waste incinerator and new power station. Permission 65908 for b1 b2 b8 uses granted 04 04 2001. Most of the remainder of the site is taken up with open storage uses.	Don't Know	Detailed Planning Permission	Employment	No	Don't Know	Don't Know
10.	Tonbridge and Malling BC	51.0	A	Institutional Buildings	Grounds of hospital in green belt. Built-up area recorded separately under site ref 226500001. Surplus sites such as this are being sold off. Bidding for PFI is ongoing.	Other Public	None	None	Yes	No	Don't Know
11.	Milton Keynes (UA) Council	50.9	D	Landfill Waste Disposal	Mk/1550/03 erection of new 1500 (student?) secondary school.	Other Public	Outline Planning Permission	Mixed Use	Yes	Yes	Don't Know
12.	Shepway District Council	47.0	A	Airport		Private	None	None	Don't Know	Yes	Don't Know
13.	Horsham District Council	43.0	C	Mineral Working or Quarry	3 further hectares of site are contained within Adur District	Private	Allocated in Local Plan	Mixed Use	No	Yes	Don't Know
14.	Aylesbury Vale District Council	34.0	A	Industry		Private	Allocated in Local Plan	Mixed Use	Don't Know	Don't Know	Don't Know
15.	Milton Keynes (UA) Council	30.4	D	Mineral Working or Quarry	In Deposit Local Plan site is allocated for a mixture of uses but housing is only allocated in small area at the bottom of the whole site. Area is on a land fill site.	Other Public	Allocated in Local Plan	Mixed Use	No	Yes	Don't Know
16.	City of Oxford	30.3	D	Industry		Don't Know	With Draft Allocation	Employment	Don't Know	Don't Know	Don't Know
17.	Ashford Borough Council	29.6	C	Industry		Private	None	None	Yes	Don't Know	Don't Know

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	LA_NAME	AREA	LAND TYPE REF	LAND USE CLASS REF	LA COMMENTARY	OWNER REF	PLANNING STATUS	PROPOSED USE REF	POLICY CONSTRAINTS	PHYSICAL CONSTRAINTS	AVAILABLE ON MARKET
18.	Dover District Council	29.6	C	Mineral Working or Quarry	Site is in greenbelt and unlikely to be developed. If developed likely use is unknown.	Other Public	Allocated in Local Plan	Employment	Yes	Yes	Don't Know
19.	City of Oxford	26.9	D	Institutional & Communal Accommodation		Other Public	With Draft Allocation	Other	Don't Know	Don't Know	Don't Know
20.	Tonbridge and Malling BC	24.6	C	Mineral Working or Quarry		Private	None	None	Yes	Yes	Don't Know
21.	City of Oxford	22.4	D	Institutional & Communal Accommodation		Other Public	With Draft Allocation	Other	Don't Know	Don't Know	Don't Know
22.	Vale of White Horse DC	21.8	D	Industry	Interior of high security MOD area.	Don't Know	Allocated in Local Plan	Employment	Don't Know	Don't Know	Don't Know
23.	Dover District Council	21.4	C	Mineral Working or Quarry	Site is contaminated.	Other Public	Allocated in Local Plan	Employment	Don't Know	Yes	Don't Know
24.	Guildford Borough Council	21.3	D	Utilities		Don't Know	Allocated in Local Plan	Employment	Don't Know	Don't Know	Don't Know
25.	Tonbridge and Malling BC	19.8	C	Mineral Working or Quarry	Part of Bushey Wood area of opportunity (1500 units). Safeguarded for future housing, to be subject of detailed evaluation in the next review of the local plan. Site likely to be developed within next 15 years likely use would be mixed.	Private	None	None	Yes	Yes	No
26.	West Oxfordshire DC	19.0	A	Defence Land and Buildings		Private	None	None	Don't Know	Don't Know	Don't Know
27.	Dover District Council	18.8	D	Storage and Warehousing		Private	Allocated in Local Plan	Employment	Don't Know	Don't Know	Don't Know

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	LA_NAME	AREA	LAND TYPE REF	LAND USE CLASS REF	LA COMMENTARY	OWNER REF	PLANNING STATUS	PROPOSED USE REF	POLICY CONSTRAINTS	PHYSICAL CONSTRAINTS	AVAILABLE ON MARKET
28.	West Berkshire Unitary Council	18.8	D	Storage and Warehousing	Reserved matters application 01 01734 for demolition of existing premises and erection of storage and distribution and ancillary facilities approved 17 Oct 2002	Private	Detailed Planning Permission	Employment	Don't Know	No	Don't Know
29.	New Forest District Council	16.5	D	Institutional Buildings	Redundant hospital. Large site in spacious grounds. Policy allows re-use of existing buildings/ new development provided that it does not increase intensity of use. Site lies in national park. 72880 erection of 36-bed mental health unit 28 06 02.	Other Public	Allocated in Local Plan	Other	Yes	Don't Know	Don't Know
30.	Worthing BC	15.9	D	Industry		Private	Detailed Planning Permission	Employment	Yes	Yes	No
31.	Ashford Borough Council	15.3	D	Educational Buildings		Private	Allocated in Local Plan	Other	Yes	No	No
32.	New Forest District Council	15.0	C	Defence Land and Buildings	Former RAF camp used during Second World War but unused in recent times. 100 existing buildings. Subject to greenbelt policies since 1958. Policy to return to agriculture supported by Secretary of State. Not suitable for development.	Other Public	None	None	Yes	Don't Know	Don't Know
33.	Cherwell District Council	14.5	D	Defence Land and Buildings	RAF Bicester proposed to be removed as a draft allocation in the pre-inquiry changes published in June 2004. Pic's(???) propose a new plan policy which seeks to preserve & enhance the RAF Bicester conservation area. In 2002 urban housing capacity study.	Other Public	With Draft Allocation	Mixed Use	Yes	Yes	Don't Know
34.	Tonbridge and Malling BC	14.4	C	Mineral Working or Quarry	Part of Bushey Wood area of opportunity (1500 units) safeguarded for future housing, to be subject to detailed evaluation in next revision of local plan. Site unlikely to be developed within next 15 years. Likely use would be mixed.	Private	None	None	Yes	Yes	No

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	LA_NAME	AREA	LAND TYPE REF	LAND USE CLASS REF	LA COMMENTARY	OWNER REF	PLANNING STATUS	PROPOSED USE REF	POLICY CONSTRAINTS	PHYSICAL CONSTRAINTS	AVAILABLE ON MARKET
35.	Woking BC	14.2	D	Offices	Planning permission granted on appeal by the Secretary of State. Major developed site in the Green Belt.	Private	Detailed Planning Permission	Employment	No	No	Yes
36.	East Hampshire District Council	12.5	C	Derelict Land		Private	None	None	Don't Know	Don't Know	Don't Know
37.	West Berkshire Unitary Council	12.4	D	Industry	Planning application 100092 relaxation of condition to provide extra time for reserved matters permitted 13th March 2001; reserved matters app 01 01449 for b1 office development granted 26 July 02.	Private	Detailed Planning Permission	Employment	Don't Know	Don't Know	Don't Know
38.	Mid Sussex District Council	12.0	C	Utilities	Development of site must take account of the existing gypsy site accessibility and possibility that land is contaminated.	Private	Allocated in Local Plan	Employment	Don't Know	Don't Know	Don't Know
39.	New Forest District Council	12.0	D	Industry	Existing shipyard containing boat building and heavy industry permission 61817. Outline for industrial and commercial development granted 04 08 1999. Recently acquired by SEEDA and subject to agreement to purchase additional land from neighbouring MOD site.	Private	Outline Planning Permission	Employment	No	Don't Know	Don't Know
40.	Shepway District Council	12.0	A	Airport		Private	Allocated in Local Plan	Employment	Don't Know	Don't Know	Don't Know
41.	Guildford Borough Council	11.3	D	Offices	Allocated as major developed site in the Green Belt.	Private	Allocated in Local Plan	Other	Yes	Don't Know	Don't Know
42.	Dover District Council	11.2	A	Vacant Land Previously Developed		Private	Allocated in Local Plan	Employment	Don't Know	Don't Know	Don't Know
43.	City of Oxford	11.0	D	Institutional Buildings	App for new health centre.	Other Public	With Draft Allocation	Other	Don't Know	Don't Know	Don't Know
44.	Shepway District Council	11.0	A	Vacant Land Previously Developed		Private	Outline Planning Permission	Employment	Don't Know	Don't Know	Don't Know
45.	Swale Borough Council	11.0	C	Dock		Private	Outline Planning Permission	Employment	Yes	Yes	Don't Know

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	LA_NAME	AREA	LAND TYPE REF	LAND USE CLASS REF	LA COMMENTARY	OWNER REF	PLANNING STATUS	PROPOSED USE REF	POLICY CONSTRAINTS	PHYSICAL CONSTRAINTS	AVAILABLE ON MARKET
46.	Sevenoaks District Council	10.0	D	Industry		Private	Allocated in Local Plan	Employment	Don't Know	Don't Know	Don't Know
47.	Wealden District Council	10.0	B	Institutional Buildings	Outside any development boundary where new housing is generally resisted. Subject to Local Plan policy for alternative uses which exclude general demand housing. 2 options in Local Plan 1st deposit alternative uses in adopted plan housing 3 to 400	Other Public	Allocated in Local Plan	Other	Yes	No	No
48.	West Berkshire Unitary Council	9.5	D	Landfill Waste Disposal	Planning application 01 00256 for renewal of full permission 144588 for a 9-hole par 3 golf course subject to Local Authority.	Private	Detailed Planning Permission	Other	Yes	Don't Know	Don't Know
49.	Adur District Council	9.4	D	Dock	Part of site now being developed - gas fired power station. Remainder of site allocated for port related use - b2 or b8. Shoreham harbour study identifies the site as remaining as port operational land.	Other Public	Allocated in Local Plan	Employment	Don't Know	Don't Know	Don't Know
50.	Eastbourne Borough Council	9.2	D	Mineral Working or Quarry		Private	Outline Planning Permission	Employment	No	No	Yes
51.	Chichester District Council	9.2	B	Institutional Buildings	Need for employment land. Sufficient housing already allocated in plan period.	Other Public	Detailed Planning Permission	Employment	Don't Know	Don't Know	No
52.	Waverley BC	9.0	C	Mineral Working or Quarry	Surrey Hills AONB. AGLY green- belt area for landscape improvement c6. Site of nature conservation importance c10. Area for landscape enhancement c6. Waste Local Plan preferred area.	Private	None	None	Yes	Yes	Don't Know
53.	West Berkshire Unitary Council	9.0	A	Vacant Land Previously Developed	Important buffer zone of redundant gravel workings between the depot and Aldermaston Wharf. Proposed as a safeguarded rail depot in replacement minerals plan for Berkshire.	Private	Allocated in Local Plan	Other	Don't Know	Don't Know	Don't Know

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Outside designated built-up area.

	LA_NAME	AREA	LAND TYPE REF	LAND USE CLASS REF	LA COMMENTARY	OWNER REF	PLANNING STATUS	PROPOSED USE REF	POLICY CONSTRAINTS	PHYSICAL CONSTRAINTS	AVAILABLE ON MARKET
54.	Milton Keynes (UA) Council	8.9	D	Offices	00/01937/rem renewed planning application.	Private	Planning Permission subject to further agreement	Employment	No	No	Don't Know
55.	Wealden District Council	8.9	A	Defence Land and Buildings	Local plan allocation for a business park. Possible ground contamination being investigated.	Local Authority	Allocated in Local Plan	Employment	Yes	No	No
56.	City of Oxford	8.6	D	Institutional & Communal Accomodation		Other Public	With Draft Allocation	Other	Don't Know	Don't Know	Don't Know
57.	Waverley BC	8.6	A	Railway	Previous use sub-classes previously developed land, Now vacant and vacant buildings Cycle route. Adjacent area of strategic visual importance. Access problems. Railway under consideration by tram operator as poss traincare depot.	Private	Allocated in Local Plan	Employment	Yes	Yes	No
58.	New Forest District Council	8.5	D	Industry	Most employment now taken up. Permission 79914 granted 19 11 03 for new hospital on southern quarter of the site.	Private	Allocated in Local Plan	Mixed Use	No	Don't Know	Don't Know
59.	Ashford Borough Council	8.4	D	Industry		Private	Allocated in Local Plan	Employment	Yes	Yes	Don't Know
60.	Havant Borough Council	8.3	B	Industry	Planning brief adopted by Council in 2004 with the following mix: 4.26 ha residential 3 ha employment 1ha community uses.	Private	None	None	Yes	Don't Know	Don't Know
61.	Guildford Borough Council	8.2	D	Industry	Allocated as major developed site. Outline planning permission for class B1 uses a b c on 23 08 2002. New car dealership.	Don't Know	Allocated in Local Plan	Other	Yes	Don't Know	Don't Know
62.	West Oxfordshire DC	8.0	B	Defence Land and Buildings		Private	None	None	Don't Know	Don't Know	Don't Know
63.	Dover District Council	8.0	C	Mineral Working or Quarry		Other Public	Allocated in Local Plan	Employment	Yes	Yes	Don't Know

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	LA_NAME	AREA	LAND TYPE REF	LAND USE CLASS REF	LA COMMENTARY	OWNER REF	PLANNING STATUS	PROPOSED USE REF	POLICY CONSTRAINTS	PHYSICAL CONSTRAINTS	AVAILABLE ON MARKET
64.	Vale of White Horse DC	7.9	C	Railway	Council will resist development that would prejudice the reopening of Grove Station.	Private	None	None	Don't Know	Don't Know	Don't Know
65.	Tonbridge and Malling BC	7.7	A	Industry		Private	Outline Planning Permission	Employment	No	No	Yes
66.	Waverley BC	7.7	D	Mineral Working or Quarry	AGLY access a problem area for landscape improvement. Designated as an industrial/commercial site in local plan.	Private	Outline Planning Permission	Employment	Yes	Yes	Don't Know
67.	Tonbridge and Malling BC	7.6	C	Storage and Warehousing	Part of a larger site; this site and land to north approved for industrial warehouse development under tm001526 subject to s106 agreement.	Private	Outline Planning Permission	Employment	No	Yes	Yes
68.	City of Oxford	7.5	D	Industry		Don't Know	With Draft Allocation	Mixed Use	Don't Know	Don't Know	Don't Know
69.	West Berkshire Unitary Council	7.5	D	Mineral Working or Quarry	Waste Local Plan preferred area.	Private	Allocated in Local Plan	Other	Don't Know	Don't Know	Don't Know
70.	Dover District Council	7.4	D	Industry		Private	Allocated in Local Plan	Employment	Don't Know	Don't Know	Don't Know
71.	City of Southampton (UA)	7.3	D	Industry		Don't Know	With Draft Allocation	Employment	Don't Know	Don't Know	Don't Know
72.	Swale Borough Council	7.3	C	Derelict Land		Private	Outline Planning Permission	Employment	Yes	Yes	Don't Know
73.	Vale of White Horse DC	7.2	C	Industry		Don't Know	None	None	Don't Know	Don't Know	Don't Know
74.	Wokingham (UA) Council	7.1	D	Industry		Private	Allocated in Local Plan	Employment	Don't Know	Don't Know	Don't Know
75.	City of Portsmouth (UA)	6.9	D	Institutional Buildings	Covered by tree preservation order and subject to application for designation as town. Green and listed building.	Other Public	Allocated in Local Plan	Other	Yes	Yes	No

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	LA_NAME	AREA	LAND TYPE	LAND USE CLASS REF	LA COMMENTARY	OWNER REF	PLANNING STATUS	PROPOSED USE REF	POLICY CONSTRAINTS	PHYSICAL CONSTRAINTS	AVAILABLE ON MARKET
76.	Havant Borough Council	6.8	D	Storage and Warehousing	Allocation in 1st deposit district-wide Local Plan site is within existing ind area and close to the a27t. Significant landscaping provision needed. Intended for high-tech employment uses. Relocation of existing waste recycling facility required.	Local Authority	Allocated in Local Plan	Employment	No	Don't Know	Don't Know
77.	Vale of White Horse DC	6.8	C	Airport	Site is protected for employment use in local plan.	Private	Allocated in Local Plan	Employment	Don't Know	Don't Know	Don't Know
78.	Medway Council	6.8	A	Mineral Working or Quarry	Planning application submitted on this site.	Private	None	None			Don't Know
79.	City of Portsmouth	6.7	A	Utilities	Potential contamination issues from previous use.	Other Public	Outline Planning Permission	Employment	Yes	Yes	Don't Know
80.	City of Southampton	6.6	D	Industry		Don't Know	With Draft Allocation	Employment	Don't Know	Don't Know	Don't Know
81.	Rother District Council	6.6	C	Industry	Within Rye Harbour employment area. Access and ground condition constraints. Awaiting flood alleviation scheme.	Private	Within a zone allocated in the Local Plan	Employment	No	No	Don't Know
82.	New Forest District Council	6.6	A	Vacant Land Previously Developed	Vacant employment site available for employment development. Now includes large works to the north. NB this allocation site is contaminated in part. Not suitable for housing.	Private	Allocated in Local Plan	Employment	No	Yes	Don't Know
83.	Waverley BC	6.5	C	Mineral Working or Quarry	SSSI c9 aglv c3 countryside beyond green belt c2 area for landscape enhancement c6 heritage features he10	Private	None	None	Yes	Yes	Don't Know
84.	City of Portsmouth	6.4	A	Utilities	Potential site contamination from gas works use includes site 313.	Other Public	Outline Planning Permission	Employment	Yes	Yes	Yes
85.	City of Southampton	6.4	A	Landfill Waste Disposal	Available for development in 2004. Site has contamination and access difficulties and is safeguarded for industrial uses in	Local Authority	With Draft Allocation	Employment	Don't Know	Yes	Don't Know

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local plan review

	LA_NAME	AREA	LAND TYPE	LAND USE CLASS REF	LA COMMENTARY	OWNER REF	PLANNING STATUS	PROPOSED USE REF	POLICY CONSTRAINTS	PHYSICAL CONSTRAINTS	AVAILABLE ON MARKET
86.	Worthing BC	6.1	D	Offices	No schemes considered so boundary is not a true reflection of the 'developable' site, in reality probably smaller.	Private	Allocated in Local Plan	Employment	No	Yes	No
87.	East Hampshire District Council	5.9	A	Vacant Land Previously Developed		Private	Outline Planning Permission	Employment	Don't Know	Don't Know	Don't Know
88.	Guildford Borough Council	5.8	D	Institutional & Communal Accommodation	Allocated as major developed site.	Don't Know	Allocated in Local Plan	Other	Don't Know	Don't Know	Don't Know
89.	City of Canterbury	5.7	D	Educational Buildings	Allocated in first review deposit draft for educational use. It is likely that the college will redevelop its existing campus to improve teaching accommodation.	Other Public	With Draft Allocation	Other	Don't Know	Don't Know	Don't Know
90.	West Berkshire Unitary Council	5.6	D	Industry	Protected employment area and waste local plan preferred area.	Private	Allocated in Local Plan	Other	Don't Know	Don't Know	Don't Know
91.	Guildford Borough Council	5.6	D	Educational Buildings	Allocated as major developed site in the green belt.	Don't Know	Allocated in Local Plan	Other	Yes	Don't Know	Don't Know
92.	Dartford Borough Council	5.5	A	Vacant Land Previously Developed		Private	Allocated in Local Plan	Mixed Use	No	No	Don't Know
93.	Waverley BC	5.5	C	Mineral Working or Quarry	Special advertisement control. Site of nature conservation importance. Countryside beyond the greenbelt cz(. Contaminated land 'special site'.	Private	None	None	Yes	Yes	Yes
94.	Worthing BC	5.5	C	Landfill Waste Disposal	Landfill site: contamination survey required. Site development depends upon East Worthing access road. Permission granted for a civic amenity site.	Local Authority	None	None	Yes	Yes	No
95.	Basingstoke and Deane BC	5.2	A	Vacant Land Previously Developed	Tree preservation order; site adjoins motorway identified in urban capacity study for residential development September 2003. No development commenced yet. 50 units planned in 2009/10.	Private	Detailed Planning Permission	Employment	Yes	Yes	Don't Know

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	LA_NAME	AREA	LAND TYPE	LAND USE CLASS REF	LA COMMENTARY	OWNER REF	PLANNING STATUS	PROPOSED USE REF	POLICY CONSTRAINTS	PHYSICAL CONSTRAINTS	AVAILABLE ON MARKET
96.	Tonbridge and Malling BC	5.1	D	Industry	Under-used site; no signs of planning permission for employment. Redevelopment being implemented	Private	Detailed Planning Permission	Employment	No	Yes	Don't Know
97.	City of Southampton (UA)	5.1	D	Industry		Don't Know	With Draft Allocation	Employment	Don't Know	Don't Know	Don't Know
98.	Rother District Council	5.1	A	Vacant Land Previously Developed	English Heritage not interested in taking this site forward.	Other Public	None	None	No	No	No
99.	Swale Borough Council	5.1	C	Derelict Land		Private	Outline Planning Permission	Employment	Don't Know	Don't Know	Don't Know
100.	Reigate and Banstead BC	5.0	D	Storage and Warehousing	Necessary to fund access improvements. Em 9 site proposed for industrial storage and distribution.	Private	Allocated in Local Plan	Employment	Don't Know	Don't Know	Don't Know
101.	New Forest District Council	5.0	D	Storage and Warehousing	Allocated for employment purposes. Part of site has permission for open storage of aggregates and car parking.	Private	Allocated in Local Plan	Employment	No	No	Don't Know
102.	West Berkshire Unitary Council	5.0	A	Utilities	Situated within an important strategic gap/countryside location; outside defined settlement of Theale; local plan objection site.	Private	None	None	Don't Know	Don't Know	Don't Know
103.	West Berkshire Unitary Council	5.0	D	Storage and Warehousing	Protected employment area and Waste Local Plan preferred area	Private	Allocated in Local Plan	Other	Don't Know	Don't Know	Don't Know
104.	West Berkshire Unitary Council	5.0	D	Industry	Area of outstanding natural beauty and Waste Local Plan preferred area and designated as a protected employment area in local plan econ.1 & 2.	Private	Allocated in Local Plan	Other	Don't Know	Don't Know	Don't Know

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	LA_NAME	AREA	LAND TYPE	LAND USE CLASS REF	LA COMMENTARY	OWNER REF	PLANNING STATUS	PROPOSED USE REF	POLICY CONSTRAINTS	PHYSICAL CONSTRAINTS	AVAILABLE ON MARKET
105.	East Hampshire District Council	5.0	D	Defence Land and Buildings	Planning application for residential use 175b dwellings. Refused October 2002.	Other Public	Outline Planning Permission	Mixed Use	Don't Know	Don't Know	Don't Know
106.	Chichester District Council	4.9	C	Utilities		Private	None	None	Yes	Yes	No
107.	Brighton and Hove Borough (UA) Council	4.8	A	Offices	Under construction	Private	Allocated in Local Plan	Mixed Use	Don't Know	Don't Know	Don't Know
108.	Shepway District Council	4.8	A	Vacant Land Previously Developed		Other Public	Allocated in Local Plan	Employment	Don't Know	Don't Know	Yes
109.	Woking BC	4.8	C	Landfill Waste Disposal	Former tip / contamination / ground conditions.	Local Authority	None	None	Don't Know	Don't Know	Don't Know
110.	Dover District Council	4.8	A	Industry		Private	Allocated in Local Plan	Employment	Don't Know	Don't Know	Don't Know
111.	City of Oxford	4.7	D	Offices		Private	Outline Planning Permission	Employment	Don't Know	Don't Know	Don't Know
112.	Guildford Borough Council	4.7	D	Storage and Warehousing		Private	Detailed Planning Permission	Employment	Don't Know	Don't Know	Don't Know
113.	Reading Borough (UA) Council	4.7	D	Industry	Change of use from general industrial units to church and community centre.	Private	Detailed Planning Permission	Other	Don't Know	Don't Know	Don't Know
114.	West Berkshire Unitary Council	4.7	A	Mineral Working or Quarry	154977 reserved matters permission 29th August 00 for b2 business park. Application 01069 reserved matters permission for b1 business park. Reserved matters application 01 01266 for b1 business park granted 16th January 02.	Other Public	Detailed Planning Permission	Employment	Don't Know	Don't Know	Don't Know
115.	Isle of Wight (UA) Council	4.6	D	Airport		Private	Allocated in Local Plan	Employment	Don't Know	Don't Know	Don't Know
116.	East Hampshire District Council	4.6	B	Defence Land and Buildings	Planning policy position is for limited development sufficient to remove existing buildings and return site to Downland.	Other Public	None	None	Don't Know	Don't Know	Yes

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isolated location

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117.	Shepway District Council	4.6	B	Storage and Warehousing		Private	Allocated in Local Plan	Employment	Don't Know	Don't Know	Don't Know
118.	Shepway District Council	4.6	D	Utilities		Private	Detailed Planning Permission	Employment	Don't Know	Don't Know	No
119.	New Forest District Council	4.6	D	Industry	Comments as for other petro-chemical works sites. Totally unsuitable for housing development.	Private	Allocated in Local Plan	Employment	Don't Know	Don't Know	Don't Know
120.	Ashford Borough Council	4.6	D	Storage and Warehousing		Private	Allocated in Local Plan	Employment	Yes	No	Don't Know
121.	Shepway District Council	4.5	D	Recreation	Part of site could be used for housing assessed through comprehensive development plan.	Private	Allocated in Local Plan	Mixed Use	Yes	No	Don't Know
122.	Thanet District Council	4.5	B	Institutional Buildings		Other Public	Detailed Planning Permission	Mixed Use	Don't Know	Don't Know	Don't Know