

Chapter 3: National Analysis



Capabilities on project:
Transportation

3 National Analysis

List of Key Facts:

- There were more vehicles parking overnight (13,708) than there were on site spaces (13,173). This means overall demand out strips supply
- There were 280 lorry parking sites spread throughout England
- South East, West Midlands and East England were busy on site ($\geq 70\%$ utilisation) and had more vehicles parking on and off site than spaces
- 41% of all vehicles recorded were choosing to park off site
- All regions in England had significant levels of off site parking
- The regions with high levels of excess demand and off site parking also had high road freight crime

3.1 Introduction

This chapter provides a national overview of the study results. It aims to inform stakeholders of the broad trends and highlight the key findings at the national level. It discusses the factors influencing demand, including:

- Number of facilities and spaces available;
- The level of on-site parking (utilisation);
- The level of off-site parking (lay-by and industrial estates); and
- Any shortage of spaces created.

This chapter also discusses the different vehicle types of articulated, rigid, UK registered and non-UK registered. These will be analysed in relation to on-site and off-site parking across the regions, to understand if there is any relationship between the types of vehicle and the types of parking they are choosing to use overnight.

The final level of analysis for this chapter is the crime records for 2010⁷. Any trends between the regions of high demand has been checked against regions of high crime.

3.2 Facilities

This section shows the total number and type of facilities in England, and how these are split across regions. This includes the number of spaces provided by each type of facility.

The study identified 280 sites of varying standards and types which allow lorries to park overnight. Table 3.1 shows the number of sites and total number of spaces provided by those sites. Every region apart from London and the North East had between 1,100 and 2,300 spaces and more than 26 sites. This also showed that Trunk Road Service Areas (TRSA) generally had less provision for lorry parking when compared to other types of facility (average of 20 spaces per site).

⁷ Truckpol 2010

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Table 3.1 Number of sites and spaces

Region	Total Sites			Independent Truckstop		Motorway Service Area (MSA)		Trunk Road Service Area (TRSA)		Local Authority and Other	
	Sites	Spaces	Average Space per Site	Sites	Spaces (average)	Sites	Spaces (average)	Sites	Spaces (average)	Sites	Spaces (average)
Eastern	43	2,034	47	21	1,112	10	528	10	114	2	280
East Midlands	26	1,471	57	15	755	7	496	4	220	0	0
London	7	298	43	1	35	3	166	0	0	3	97
North East	7	310	44	3	180	3	100	1	30	0	0
North West	38	2,213	58	13	1,113	22	1,070	2	20	1	10
South East	49	1,992	41	12	595	23	1,214	9	115	5	68
South West	36	1,105	31	14	405	13	562	6	60	3	78
West Midlands	42	2,172	52	17	1,201	18	904	2	14	5	53
Yorkshire and Humber	32	1,578	49	12	789	9	483	7	247	4	59
England	280	13,173	47	108	6,185 (av.57)	108	5,523 (av.51)	41	820 (av.20)	23	645 (av.28)

Figure 3.1 Split of spaces across facility types

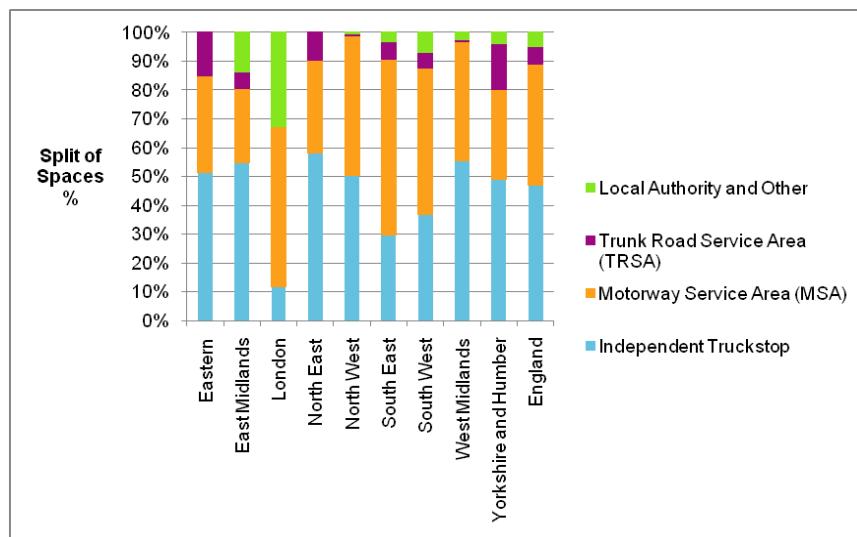
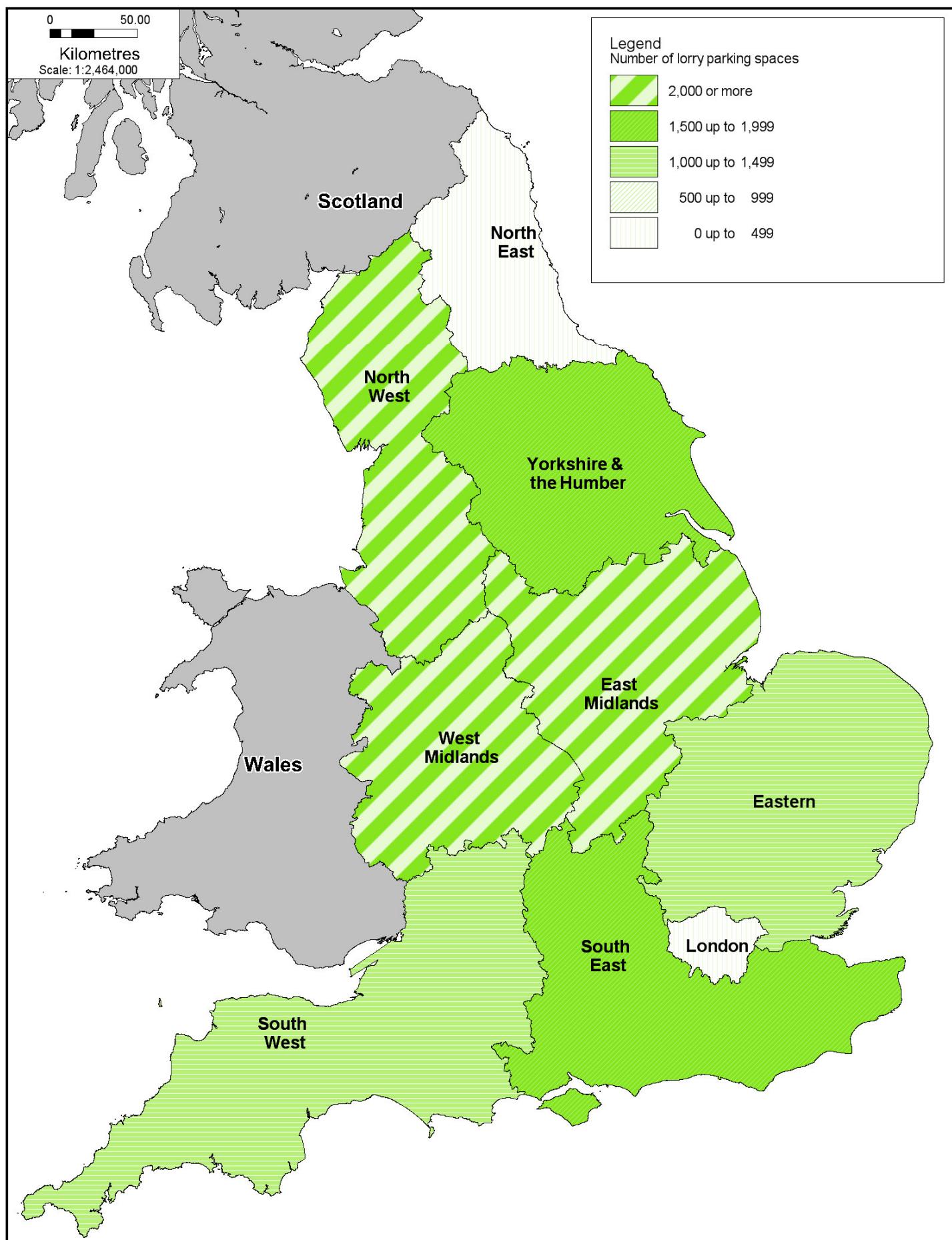


Figure 3.1 shows the percentage of spaces provided by each type of facility in each region. Independent truckstops provided around 50% of spaces apart from in the South West, South East and London, where this figure was lower than 40%.

Map 3.1 shows graphically that the West Midlands, East Midlands and North West had the highest lorry parking capacity, with each having greater than 2,000 spaces. Yorkshire and Humber and the South East had between 1,500 and 2,000, the Eastern and the South West regions also had greater than 1,000 but fewer than 1,500 spaces. This shows that the majority of capacity was focused around the centre of the country and in regions with well developed motorway networks.



Client:
Department for Transport

Title:
National:
Onsite lorry parking capacity

AECOM

Project:
Lorry Parking Study

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Design: T.F

Chk'd: J.M

Date: 14.06.11

Mapinfo: T.F

App'd: S.H

Scale: 1:2,464,000

No: Map 3.1

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3.3 Utilisation

The section explains the level of use of on-site lorry parking and the amount of off-site parking in lay-bys and industrial estates.

3.3.1 On-site Utilisation

Map 3.2 and Table 3.2 shows the level of on-site utilisation was above 40% in every region indicating that lorry parking sites were being used. East England had particularly high on-site utilisation with an average of 80%. Other areas towards the higher end of the scale were South East and West Midlands both with 71% average utilisation. The national average on-site utilisation is 61%, which was slightly higher than the 57% average night time utilisation reported in the 2006 lorry parking audit.⁸ It is important to note that:

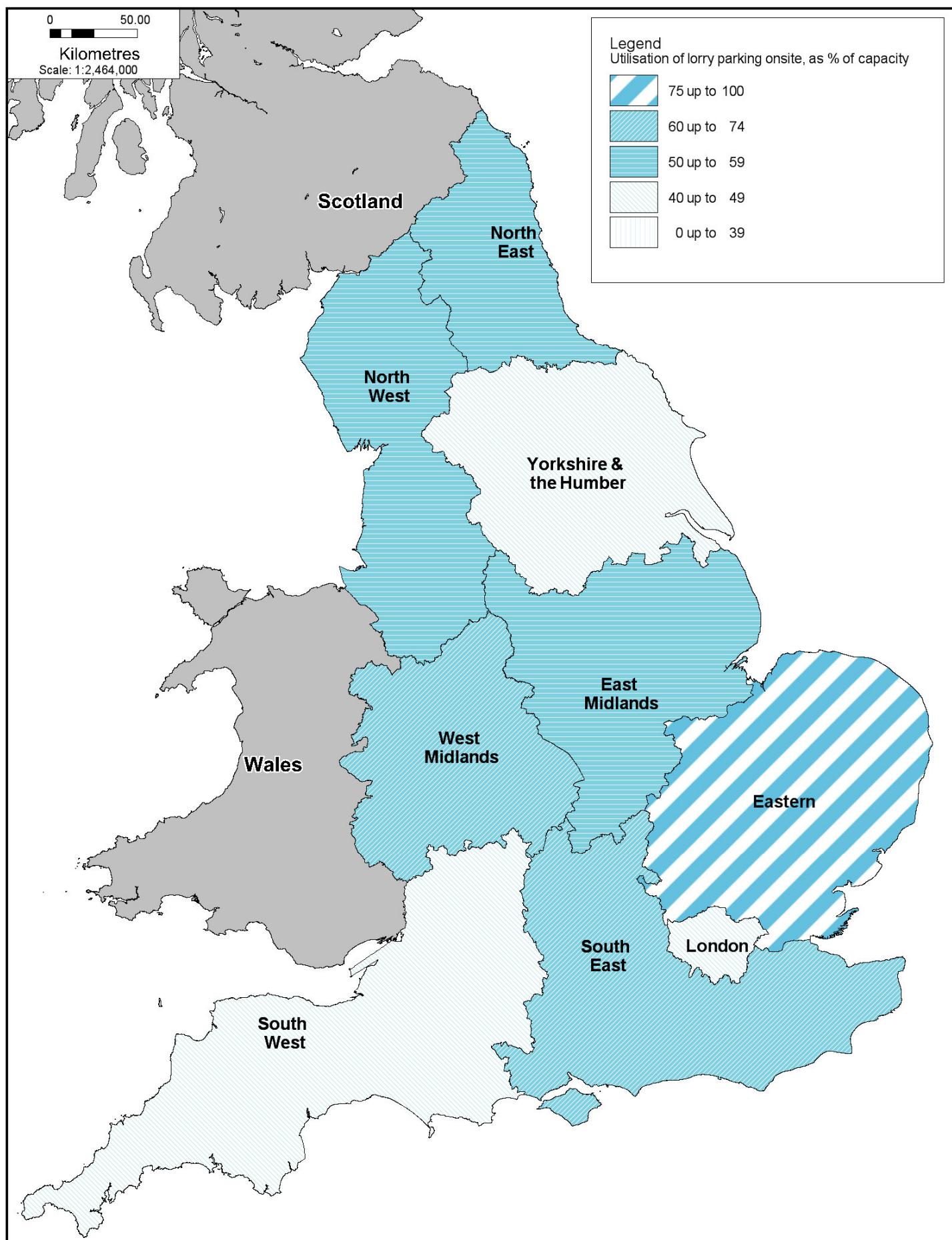
- Average utilisation masks the locations where demand exceeds supply; and
- The surveys were undertaken at average times of year, which means that during peak week's utilisation would be higher.

Table 3.2 Capacity and on-site parking

Region	Capacity	On-Site	On-site Utilisation
East Midlands	2,034	1,130	56%
Eastern	1,471	1,175	80%
London	298	135	45%
North East	310	156	50%
North West	2,213	1,228	55%
South East	1,992	1,415	71%
South West	1,105	512	46%
West Midlands	2,172	1,547	71%
Yorkshire & the Humber	1,578	734	47%
England	13,173	8,032	61%

Figure 3.2 shows that on a regional level the available capacity meets the level of demand for on-site parking. Where there was greater demand there was generally more provision, the main exception being the Eastern region of England. One of the main issues to uncover is whether this spare capacity was in the correct location, in relation to demand.

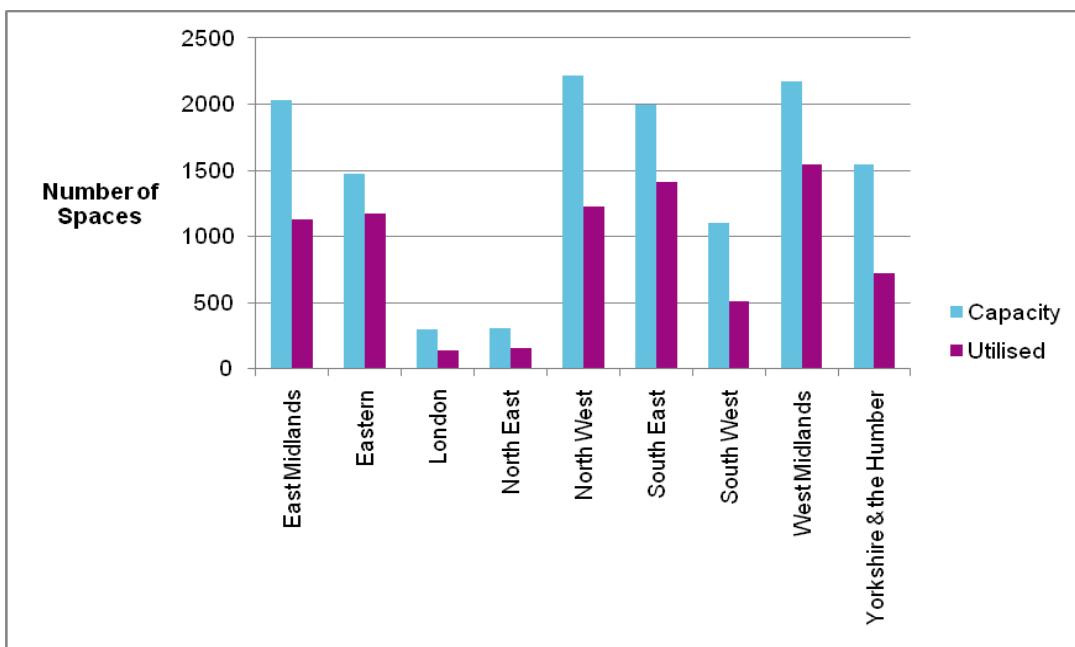
⁸ National Lorry Park Audit, September 2006, Highways Agency



Client: Department for Transport	Title: National: Utilisation of onsite lorry parking	AECOM Lynnfield House Church Street Altrincham, WA14 4DZ	Design: T.F Chk'd: J.M Date: 14.06.11	Mapinfo: T.F App'd: S.H Scale: 1:2,464,000
Project: Lorry Parking Study			Tel: +44 (0) 161 927 8200 www.AECOM.com	No: Map 3.2

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Figure 3.2: Capacity and on-site utilisation



3.3.2 Off-site Parking

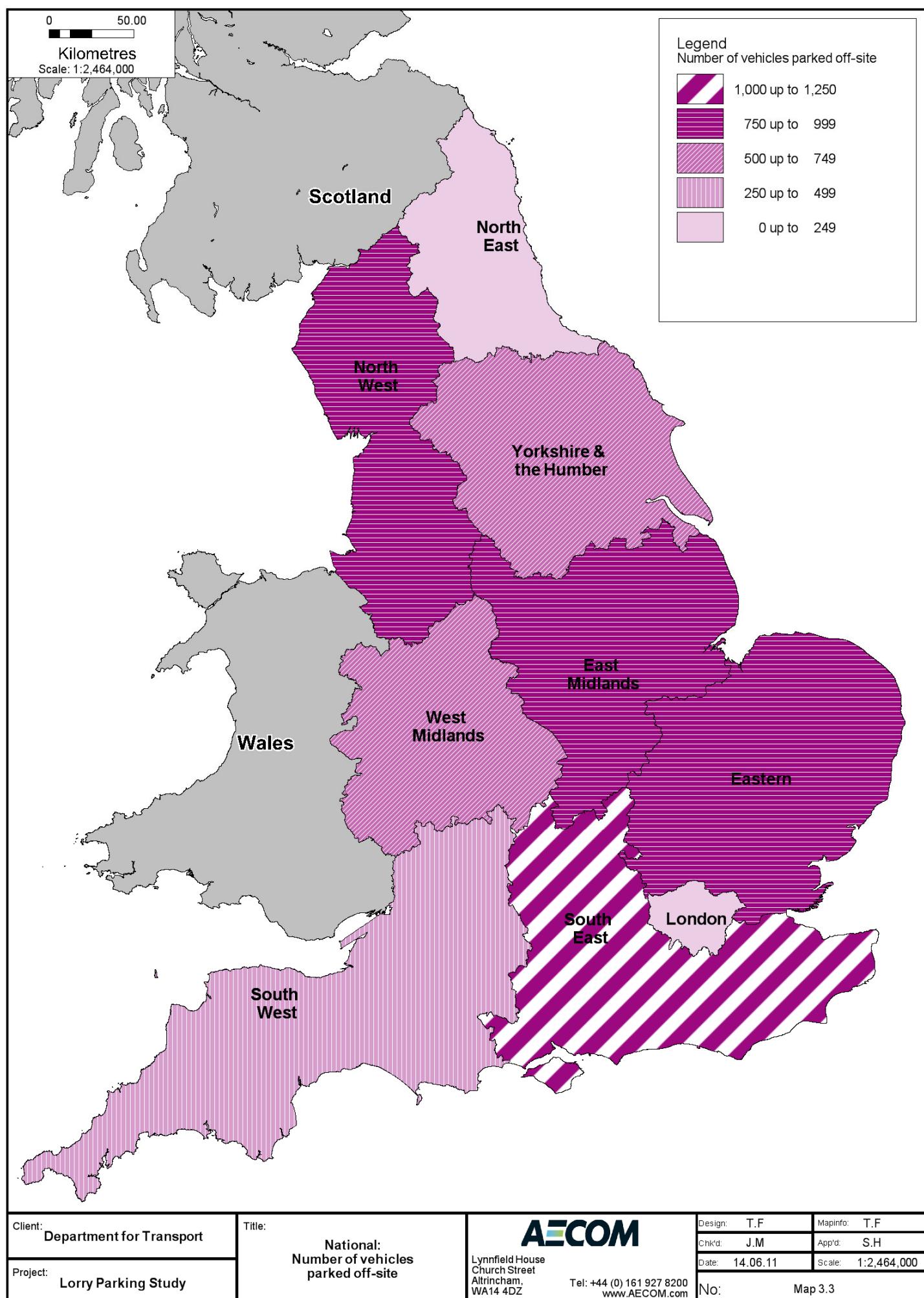
Off-site parking in this survey included vehicles parking in industrial estates and lay-bys.

Table 3.3 below shows the amount of vehicles parking in lay-bys, industrial estates and the level of on-site parking in each particular region. The three regions with the highest on-site utilisation have particularly high levels of off-site parking; Eastern, South East and West Midlands. The East Midlands also had a high level of parking in lay-bys.

Map 3.3 shows that the South East has the highest number of vehicles parking off-site (lay-bys and industrial estates combined) followed by Eastern, West Midlands and the East Midlands.

Table 3.3 Off-site parking

Region	On-site Utilisation	Industrial Estates	Lay-bys	Total Off-site Parking
East Midlands	56%	171	656	827
Eastern	80%	144	767	911
London	45%	0	16	16
North East	50%	127	119	246
North West	55%	480	276	756
South East	70%	228	939	1,167
South West	46%	178	310	488
West Midlands	71%	263	483	746
Yorkshire & the Humber	47%	145	374	519
England	61%	1,736	3,940	5,676



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Figure 3.3 On-site utilisation and vehicles parking in lay-bys per region

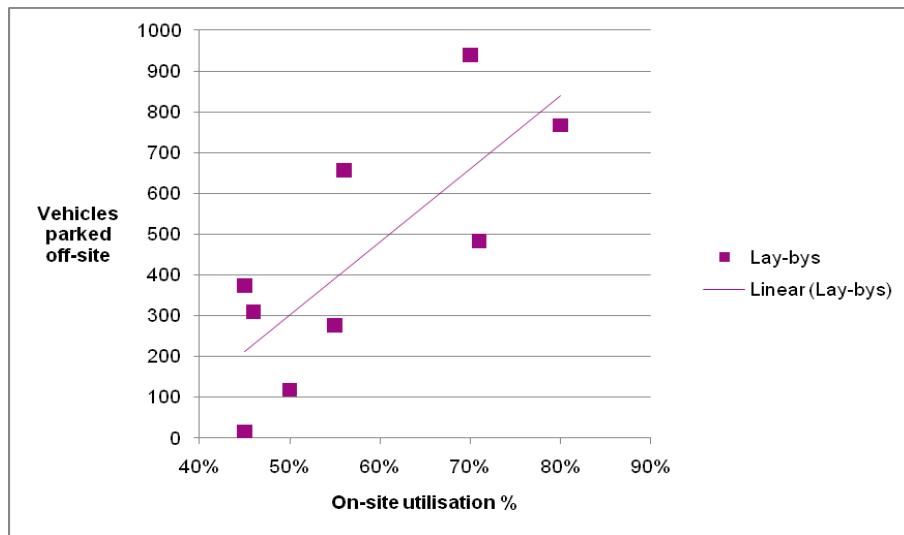


Figure 3.4 On-site utilisation and vehicles parking in industrial estates

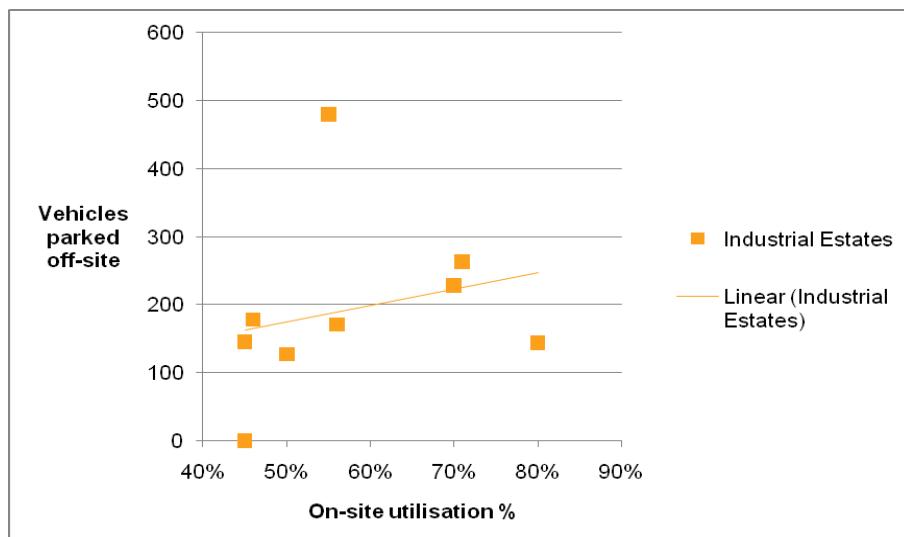


Figure 3.3 indicates that there is a correlation between how busy lorry parks are in a region and the amount of vehicles parking in lay-bys. The correlation indicates that as on-site utilisation increases so does the amount of vehicles parked in lay-bys per region, depicted by the linear trend. Conversely where there is enough available space the lay-by parking decreases. To some extent lay-by parking could therefore driven by the availability of space.

By contrast the amount of vehicles parking in industrial estates shows no correlation with the level of available space (see Figure 3.4). This may indicate that the behavioural patterns of drivers who park in lay-bys are to some extent different to those that park in industrial estates.

These trends could indicate that drivers using lay-bys are more likely to use lorry parks than those in industrial estates. As industrial estate parking was not linked to how busy lorry parks were it shows many vehicles had pre-determined plans to use

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these locations regardless of on-site availability. Conversely, as the amount of parking in lay-bys increases as on-site utilisation increases within a region, it shows drivers may at times be reacting to the conditions of a lack of availability rather than proactively planning to park off-site. This will not be a universal rule due to a range of reasons why drivers use lay-bys e.g. to save on cost. However, it does provide an indication that increasing capacity where there are currently shortages is more likely to make a difference to lay-by parking, than industrial estate parking.

Previous research⁹ has indicated that drivers who choose to park overnight in lay-bys often do so in order to save on the cost of parking in a lorry parking facility. However, these drivers are generally mid-journey and when provided with the right encouragement and information, such as affordable, high quality, well located and well signed facilities, there is potential for them to be encouraged to park on-site. Anecdotal evidence suggests that drivers parking in industrial estates are far less likely to be persuaded to park in a proper facility, since they have either parked near to their delivery destination in order to maximise their driving hours and/or their flexibility the following day. Anecdotal evidence in previous studies also suggests that drivers feel that the rest they achieve parking in these areas is much better than in a lay-by. The reason being they tend to be quieter and away from busy trunk roads.

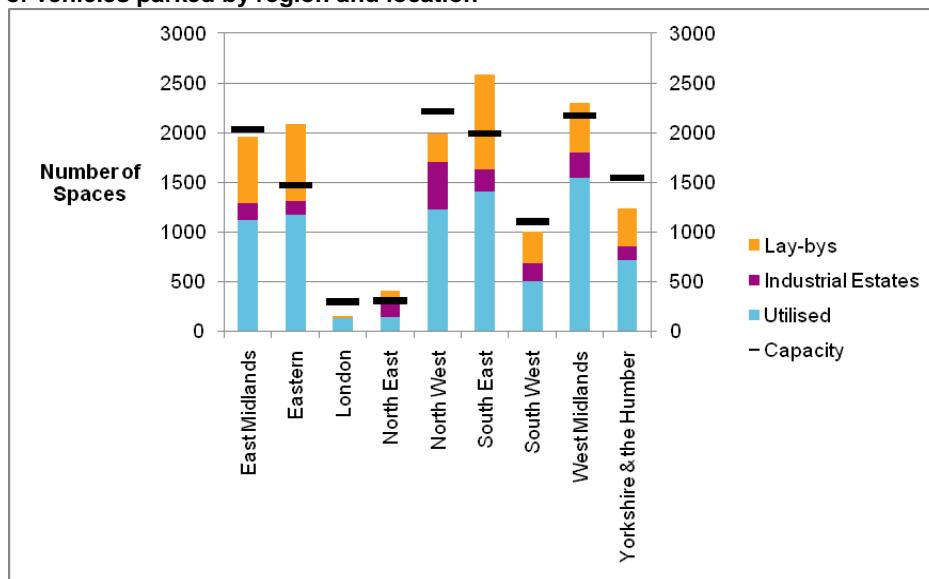
3.3.3 Excess Demand

The level of excess demand shows the relationship between the total capacity of a region and the total number of vehicles parking in that region. A large excess indicates that at a regional level there is a problem with a lack of spaces.

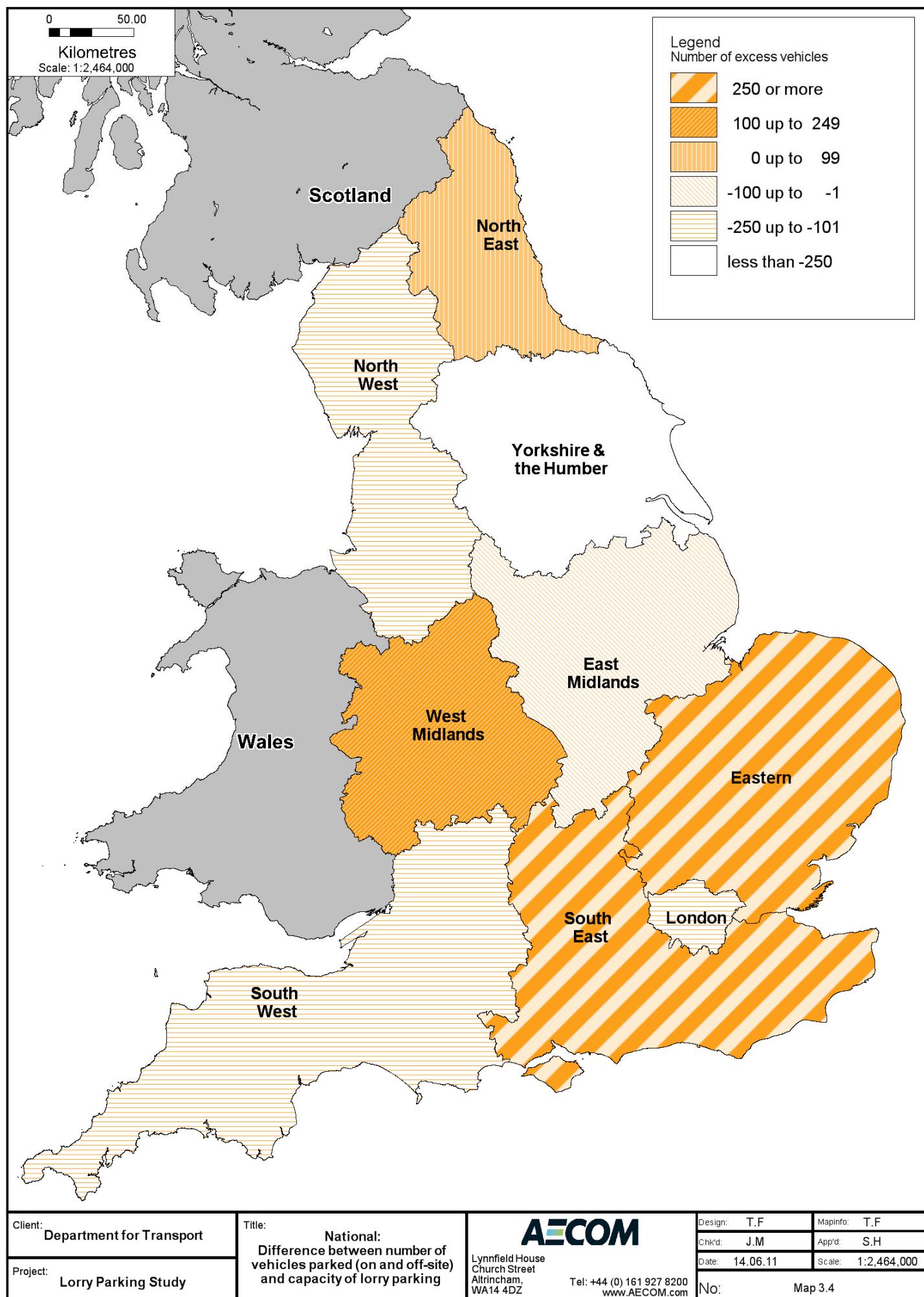
Figure 3.5 below shows a breakdown of the number of vehicles parked in lorry parking facilities, industrial estates and lay-bys. It also shows the total capacity of lorry parking facilities surveyed in that region. The size of the bar above the black line indicates the level of excess demand.

This shows that both the Eastern and South Eastern regions had significantly more vehicles parking than there is space, over 500 more vehicles than spaces on both counts. The West Midlands and North East are also over capacity by a smaller amount. The East Midlands, North West and South West are all close to exceeding the capacity, and given the nature of this survey it is possible that these regions are sometimes over capacity during peak periods of the year. London and Yorkshire and Humber were under capacity.

Figure 3.5 Number of vehicles parked by region and location



⁹ Lorry Parking Baseline Report 2009 written by AECOM commissioned by DfT–http://www.tap.iht.org/objects_store/200911/lorrybaseline.pdf



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Map 3.4 is a geographical representation of the level of excess parking and highlights that the two areas with the largest excess demand were the Eastern and South East regions, closely followed by the West Midlands. These three areas were expected to be busy as the South East and Eastern regions have the majority of major port facilities in the UK. The West Midlands also contains a number of logistics and manufacturing hubs as well as being at the centre of the national road network.

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3.3.4 Vehicles Types

This section shows the percentage breakdown of each vehicle type parked in each region for on-site, lay-bys and industrial estates respectively⁸.

Table 3.4 shows the majority of parking on-site was by UK registered articulated vehicles. This is expected given that these are the vehicles which travel long distances and are more likely to stay out overnight rather than return to their home depot. There were exceptions to this trend, notably in the South East where 37% of vehicles parked on-site are non-UK articulated vehicles. This is due to the South East containing the majority of the ports and being closest geographically to the continent. The Eastern region sees a similar trend but not as strong, with 25% of vehicles parked on-site being non-UK articulated. London also breaks the trend in that the largest group parked on-site were UK Rigid vehicles. This could be because London is a large metropolitan area and so generally the vehicles that service this area are smaller.

Table 3.4 On-site parking breakdown of vehicle types by region

Region	Articulated UK	Articulated non-UK	Rigid UK	Rigid non-UK
East Midlands	74%	12%	13%	0%
Eastern	62%	25%	13%	0%
London	36%	10%	48%	6%
North East	67%	12%	19%	2%
North West	80%	7%	13%	0%
South East	47%	37%	14%	1%
South West	66%	14%	19%	1%
West Midlands	71%	13%	15%	1%
Yorkshire & the Humber	61%	20%	17%	2%
Total	65%	19%	15%	1%

A similar trend was present when studying the lay-by parking, with the majority of vehicles being UK registered articulated vehicles. A larger percentage of non-UK articulated vehicles parked in lay-bys in the South East and the West Midlands.

Table 3.5 Lay-by parking breakdown of vehicle types by region

Region	Articulated UK	Articulated non-UK	Rigid UK	Rigid non-UK
East Midlands	79%	14%	7%	1%
Eastern	82%	10%	7%	0%
London	69%	19%	13%	0%
North East	78%	10%	12%	0%
North West	86%	9%	4%	0%
South East	63%	29%	7%	1%
South West	76%	11%	13%	1%
West Midlands	74%	23%	4%	0%
Yorkshire & the Humber	82%	11%	6%	0%
Total	74%	16%	10%	0%

⁸ It is important to note that in on-site parking locations not all vehicle types could be fully captured due to access to the parking compound. On some visits, survey teams were given total figures at the gate-house, but not a breakdown by vehicle type. This was only possible where survey teams had full access to the site. The survey team captured 84% of all on-site parked vehicles.

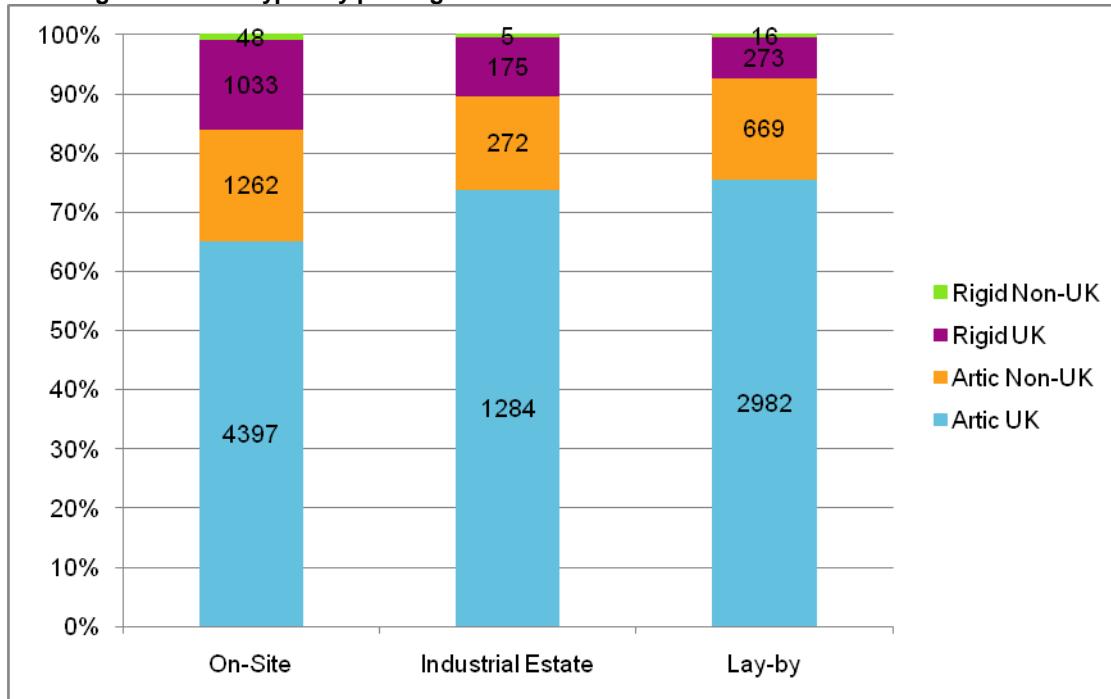
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For industrial estates, as with lay-bys and on-site parking, the majority of vehicles were UK registered articulated vehicles. However, in the South East 25% were UK registered rigid vehicles. Further investigation would be required into why there were so many rigid vehicles parking in industrial estates.

Table 3.6 Industrial Estate parking breakdown of vehicle types by region

Region	Articulated UK	Articulated non-UK	Rigid UK	Rigid non-UK
East Midlands	67%	24%	8%	1%
Eastern	79%	11%	10%	0%
London				
North East	81%	10%	9%	0%
North West	79%	16%	6%	0%
South East	58%	15%	25%	1%
South West	71%	17%	12%	0%
West Midlands	75%	18%	7%	0%
Yorkshire & the Humber	81%	10%	8%	1%
Total	76%	17%	7%	0%

Figure 3.5 Total England vehicle types by parking location



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Figure 3.6 South East vehicle type breakdown

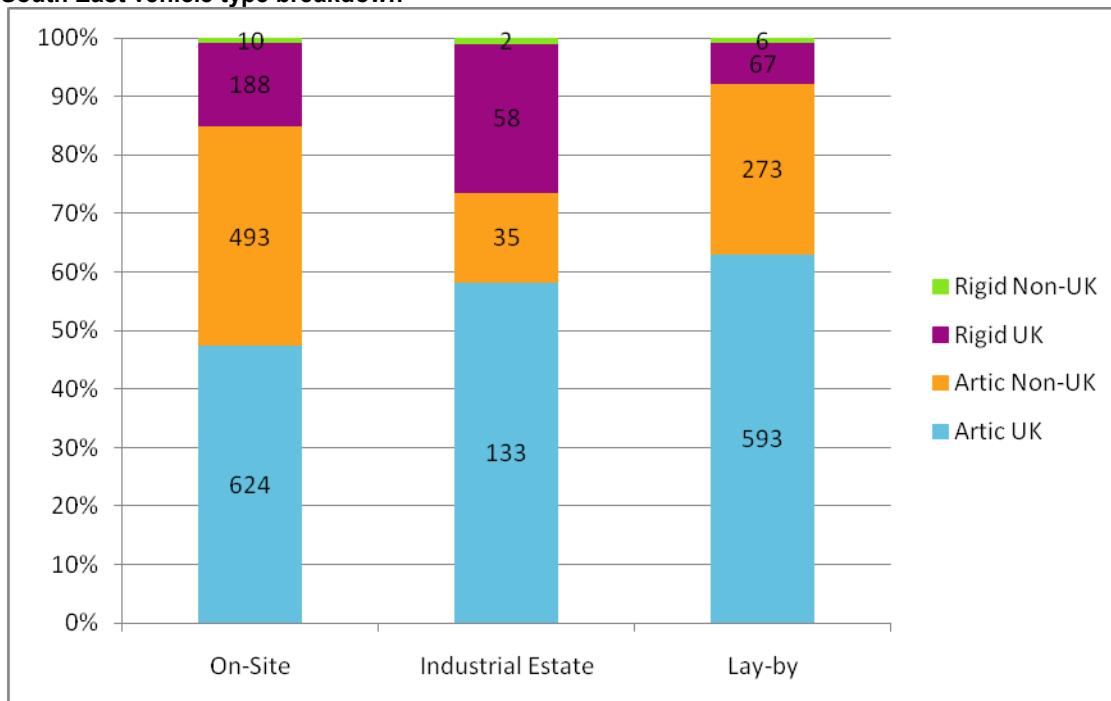


Figure 3.5 and 3.6 above show a comparison between the South East and the whole of England. This comparison highlights in the South East that a significantly higher proportion of vehicles parking on-site and in lay-bys were non-UK registered. Approximately 36% of all non-UK registered vehicles parking overnight were contained in the South East of England. The high number of vehicles and with approximately 40% of non-UK registered vehicles in the South East parking off-site indicates that the South East may require a slightly different strategy to encouraging greater use of on-site facilities and the reduction of inappropriate parking.

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3.4 Crime

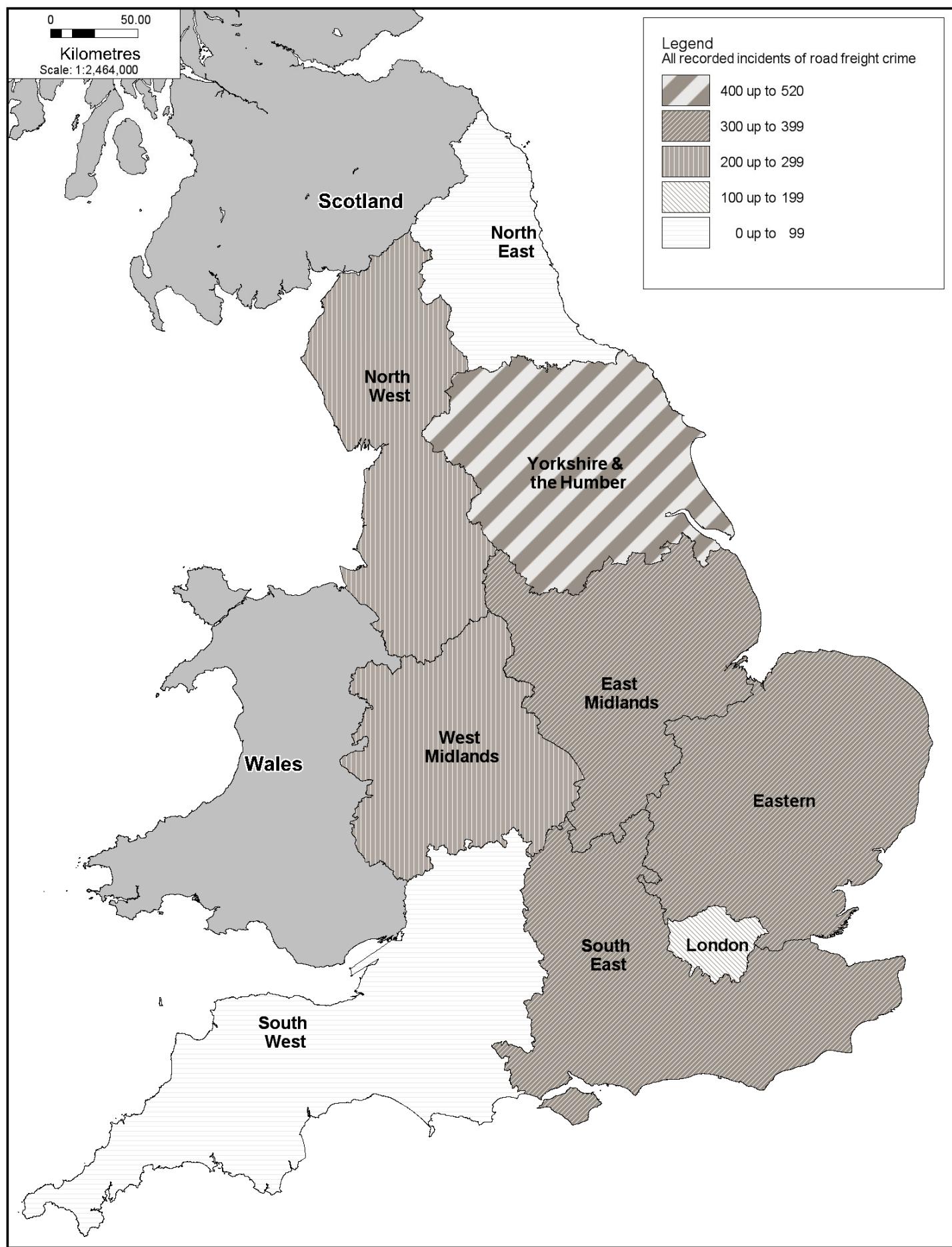
Map 3.4 and Table 3.7 show the number of crimes reported in each region. Yorkshire and Humber had the highest number of reported crimes in 2010. The North East and South West had the least number of reported crimes with 38 and 97 respectively. In London there were 146 reported crimes, and the remaining regions there was between 250 and 350 reported crimes in each. This shows that crime generally occurred in busier areas. However, the high level of crime reported around London, compared to its area, could indicate crime is more likely to occur in and around urban areas. Further detail on the location of crimes within each region is provided in the regional analysis to interrogate these figures further.

Overall the amount of reported crime does appear to be higher where areas had a high amount of off-site parking. However, the correlation between the demand in an area and the amount of crime is also offset and skewed by the issue of geography. As an example the North East is a region with relatively lower crime levels when contrasted against the fact it had excess vehicles parking off-site. This is compared against Yorkshire and Humber which had relatively average off-site parking compared to some regions but still had the highest crime. This indicates that geography in terms of the strategic position of the SRN and interconnecting roads impacts on where organised crime is more likely to take place. The more options there are to get away will provide more incentive than locations with limited road connectivity, as crime is less predictable and it allows stolen goods to be moved on quicker.

Table 3.7 Number of reported road freight crimes⁹

Region	Total number crimes
East Midlands	314
Eastern	345
London	146
North East	38
North West	278
South East	348
South West	97
West Midlands	252
Yorkshire and Humber	520
Total	2,338

⁹ Truckpol, 2010



Client: Department for Transport	Title: National: All recorded incidents of road freight crime Truckpol 2010	AECOM Lynnfield House Church Street Altrincham, WA14 4DZ Tel: +44 (0) 161 927 8200 www.AECOM.com	Design: T.F Chk'd: J.M Date: 14.06.11	Mapinfo: T.F App'd: S.H Scale: 1:2,464,000
Project: Lorry Parking Study			No:	Map 3.5

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3.5 Conclusions

It has been highlighted that all regions in England, apart from London, have significant off-site parking problems. These are investigated further in the following regional analysis chapter. Particular concern in terms of excess demand was in the South East, East England, West Midlands and the North East. This means there was more vehicles parking than there were spaces available, with large numbers parking off-site. The regions with high excess parking also had some of the highest amounts of recorded road freight crime.

Table 3.8 below provides a summary of the important information shown in this chapter.

Table 3.8 National overview

Region	Capacity	On-Site	On-site Utilisation	Industrial Estates	Lay-bys	Excess Vehicles	Total number of crimes
East Midlands	2,034	1,130	56%	171	656	-77	314
Eastern	1,471	1,175	80%	144	767	615	345
London	298	135	45%	0	16	-147	146
North East	310	156	50%	127	119	92	38
North West	2,213	1,228	55%	480	276	-229	278
South East	1,992	1,415	71%	228	939	590	348
South West	1,105	512	46%	178	310	-105	97
West Midlands	2,172	1,547	71%	263	483	121	252
Yorkshire & the Humber	1,578	734	47%	145	374	-325	520
England	13,173	8,032	61%	1,736	3,940	535	2,338