MAYOR OF LONDON

London Industrial Land Release Benchmarks

April 2007

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Prepared by URS Corporation Limited for the Greater London Authority

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Abbreviations

ABI	Annual Business Inquiry
CAZ	Central Activity Zone
DCLG	Department for Communities and Local Government
DETR	Department for the Environment, Transport and the Regions
DLR	Docklands Light Railway
DTLR	Department for Transport, Local Government and the Regions
EGI	Estates Gazette Interactive
ELILS	East London Industrial Land Study
ELR	Employment Land Review
GLA	Greater London Authority
GVA	Gross Value Added
ha	hectare
ILAS	Industrial Land Availability Study
LB	London Borough
LDA	London Development Agency
LDD	London Development Database
LDF	Local Development Framework
LHCS	London Housing Capacity Study
LLV	Lower Lea Valley
LPAC	London Planning Advisory Committee
LRT	Light Rail Transport
LUCS	Land Use Change Statistics
OAPF	Opportunity Area Planning Framework
ONS	Office for National Statistics
OP	Olympics Park
OS	Ordinance Survey
PPG	Planning Policy Guidance
PPS	Planning Policy Statement
psm	per square metre
RSA	Rating Support Application
SEL	Strategic Employment Location
SES	Strategic Employment Site
SIC	Standard Industrial Classification
SIL	Strategic Industrial Location
SPG	Supplementary Planning Guidance
Sq m	Square Metre
SRDF	Sub Regional Development Framework
TfL	Transport for London
TGDIF	Thames Gateway Development and Investment Framework
UDP	Unitary Development Plan
VOA	Valuation Office Agency

EXECUTIVE SUMMARY

Context and Brief

The nature of London's economy has radically changed over recent decades and the continued shift of employment away from industry and manufacturing into the service sector has significant implications for land use planning. London has on average lost approximately 24,000 manufacturing jobs per year over the last 30 years[1] and large amounts of industrial land have become available for alternative uses. These trends are expected to continue, albeit at a reduced absolute rates[2]. The character of land for industry in a wider sense is changing - as more goods are manufactured outside the UK there is an increasing demand for warehousing facilities to store and handle the goods from producer to consumer in supply chains.

The capacity for land to handle waste in London to meet the *London Plan* commitment for 85% self-sufficiency within London by 2020 is also becoming an increasingly important use of industrial land[3]. At the same time the service sector has expanded rapidly and demand for housing land is also strong. Strategic land use planning for London needs to encourage an efficient and appropriate redistribution of land from industry to new growth sectors.

The *London Plan* sets out the Mayor's position on how to manage the surplus capacity of industrial land. It is supported by a wide range of research and other policy statements. In particular the GLA's *draft Industrial Capacity Supplementary Planning Guidance* (SPG) issued in 2003 proposes the release of between 30 and 50 hectares per annum of surplus industrial land 2001 to 2016, with the majority from East London.

Since the draft SPG was issued demand side industrial land projections have been updated and supply side assessments have been refined. The *London Plan* is also in the process of being revised to cover the period 2006 to 2026. This study has been commissioned and establishes the most up-to-date benchmarks on appropriate release and retention of industrial land in London to 2026. The specific objectives of the study are to:

- Update the indicators and benchmarks for the demand for industrial land across London in light of new employment projections and recent GLA research projects including the provision for efficient logistics capacity, waste management, and wholesale markets,
- Update the supply side estimates based on a combination of new information on total stock, trends in provision and changes of use,
- Provide quantitative sub-regional indicators on the future release and retention of industrial land and borough level indicators in North East and South East London, and

[1] GLA Economics *Working Paper 11: Working London*, 2004
[2] GLA Economics *Current Issues Note 9: Borough employment projections to 2026*, May 2006
[3] This position was agreed by the panel of inspectors at the Examination in Public to the *draft Early Alterations to the London Plan* in June 2006 which are now adopted

- Provide advice or qualitative indicators for the management of industrial land for all London boroughs.

This study is one of six distinct but integrated research studies commissioned by the GLA in August 2006. The five other studies are:

- *North East and South East London Industrial Land Baseline*
- *London Wholesale Markets Review*
- *Demand and Supply of Land for Logistics in London*
- *London Waste Apportionment Study*
- *Feasibility Study for a London Food Hub*

There is strong inter-relationship between all six of the studies and this study is the central assignment that draws relevant strands together.

Baseline: Stock of Industrial Land

To estimate the stock of industrial land this assignment took into account a variety of data sources included the *North East and South East London Industrial Land Baseline*, Cities Revealed aerial photography, Land Use Change Statistics, the London Development Database and borough Employment Land Reviews. Using a narrow definition of industrial land[4] we estimate that there is approximately 4,837 hectares of built-on industrial land in London in 2006 and that this is composed of 2,815 hectares of land for logistics activities and 2,021 hectares of land for traditional industrial activities such as manufacturing. In addition there is estimated to be 706 hectares of vacant industrial land in London in 2006.

Using the sub-regional designations proposed in the *Draft Further Alterations to the London Plan*, North East London and West London contain the largest concentrations of industrial land, with over half of the city's industry.

A baseline for 2001 is also estimated to enable comparison with existing research and to gain and understanding of the characteristics of change to date. The results show that approximately 452 hectares of industrial land have been released from industrial use or designation between 2001 to 2006. This change of land use has been at an average rate of 90 hectares per annum.

A wider definition of industrial land is investigated to provide contextual depth to the analysis. Transport depots, utilities sites, waste facilities and wholesale markets are taken as appropriate uses to include in a wider definition. The limited data available means that it has

[4] Defined as the total 'built-on' stock of industrial land and the total vacant industrial land. 'Built-on' industrial land is occupied by a functional industrial unit(s) that is either occupied or can become occupied. Vacant industrial land is land devoid of development or land containing derelict buildings unsuitable for occupation.

not been possible to accurately quantify all land in such uses, but broad indications suggest that there could be up to 8,300 hectares of industrial-type uses[5] in the city.

Future Demand for Industrial Land

We have broken down demand for industrial land into the following categories:

- General industry
- Warehousing[6]
- Waste
- Utilities
- Public transport functions, and
- Wholesale markets

Projected changes in employment in 'general industrial' or 'manufacturing' activities are used together with employment densities to project change in demand for land required by general industry. Employment in this sector[7] is projected to decline across the London boroughs and result in the release of 934 hectares from 2006 to 2026.

The *Demand and Supply of Land for Logistics in London* study (URS et al, 2007) and the *London Waste Apportionment Study* (Jacobs Babtie et al, 2006) identify significant demand for additional industrial land for logistics and waste functions in London. Logistics activities are projected to require an additional 461 hectares of industrial land, while waste facilities will require approximately 215 hectares of land, largely in industrial areas, between 2006 and 2020. The *London Wholesale Markets Review* (URS et al, 2007) recommends the release of eight hectares of industrial land at different phases of the planning period from the redevelopment of Billingsate and Smithfields markets for other land uses. Analysis of the *Draft Land for Transport SPG* suggests a requirement for an additional 12 bus depots across London with an estimated land requirement of 12 hectares. Utilities providers are expected to renew existing sites, or co-locate with other land uses, rather than require additional sites on industrial land.

The net effect of these different trends and demands for industrial land are presented in Figure ES1 below.

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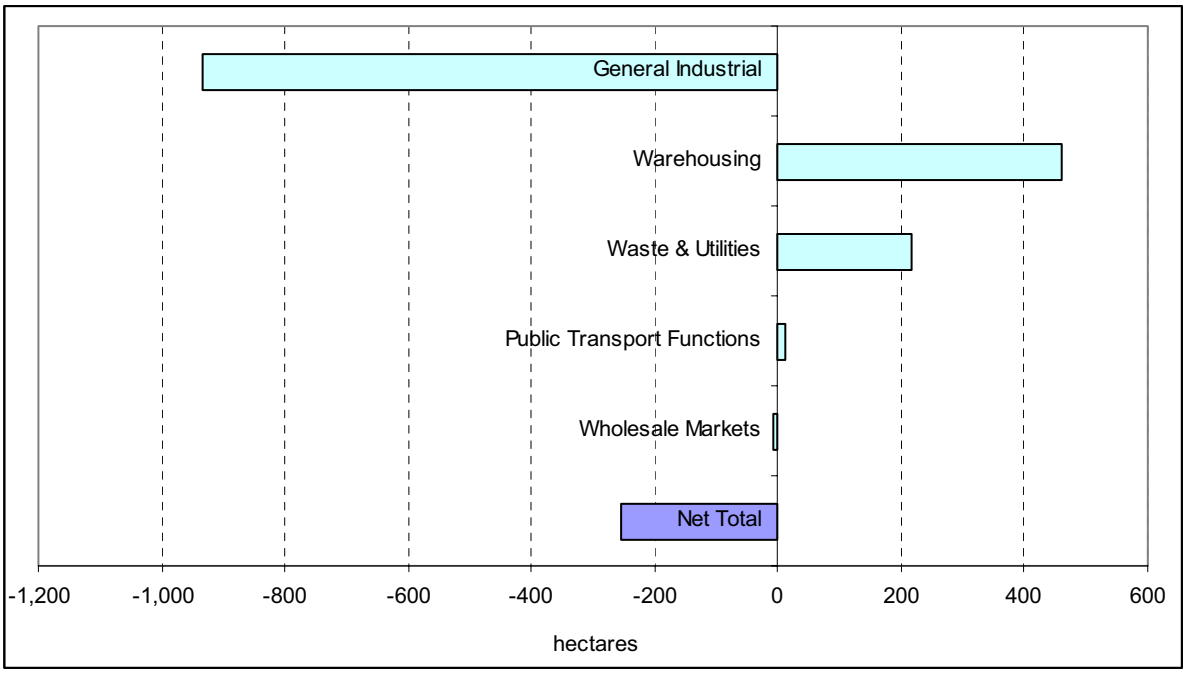
[5] In the North East and South East sub-regions approximately an additional third of the 'built-on' core industrial land stock was made up of additional industrial uses on allocated employment land (see Section 5.3). Adding an extra third of the pan-London built-on industrial stock of 4,837 hectares equals 6,449 hectares. Cities Revealed identifies an extra 1,199 hectares of utilities sites outside employment land allocations, and 706 hectares of vacant land adds up to approximately 8,300 hectares of 'wider' industrial land in the city.

[6] In this report we will commonly refer to 'logistics' when describing the overall sector and general activities undertaken, and 'warehousing' as the land use definition.

[7] As determined by detailed SIC code analysis presented in **Appendix F**

Figure ES1 Demands on Industrial Land, 2006-2026



Source: URS, GVA Grimley, GLA

The industrial land demand projections suggest that the net effect will be that 254 hectares of industrial land will become available for other uses in London between 2006 and 2026 from structural decline. This surplus is from currently occupied industrial sites and does not include the potential release of vacant land.

Property Market Areas

The projected change in the nature and scale of demand for industrial land will impact on the sub-regions of London in varying ways, with supply constraints in some areas and surplus land in others. In order to put forward options for a strategy for the release of surplus industrial land we have considered relevant characteristics of industrial land markets so that demand is transferred in an appropriate and realistic way.

GVA Grimley reviewed the characteristics of industrial property market areas in and around London and grouped the market into six principal areas (see Figure 7-3, p55 for illustration):

- Central Service Circle
- The Thames Gateway
- The Lea Valley
- Park Royal/A40/M4/A4
- Heathrow, and
- Wandle Valley

Heathrow and Park Royal are identified as the areas with strongest demand for warehousing but there has been growing demand and increases in land values and rents in other areas

including the Thames Gateway and the Lea Valley. The Central Service Circle is more fragmented than the other market areas and also is under more pressure from other land uses. With the exception of the Central Service Circle the industrial property market areas are not restricted to London's administrative boundary and extend into the wider city-region.

In general terms demand can move relatively freely within each property market area - for example from the inner to outer Thames Gateway. London's administrative boundaries are not significant factors in the locational decisions of industrial businesses and factors such as access to the strategic road network might be more important, for example for a business choosing between sites in Thurrock and the London Borough of Havering. Nevertheless, there is also some potential for demand to shift between adjacent property market areas and corridors - for example from the inner Thames Gateway to the Lea Valley or from Heathrow to Park Royal and the A40 corridor if sites become difficult to find in that market area.

Benchmarks for Release by Sub-Region

To derive benchmarks for release of industrial land by sub-region we have taken into account a number of factors including:

- Existing vacant industrial land
- Future demand for industrial land
- Property market areas and scope to transfer demand within, between market areas and to sites outside London
- Appropriate rates of 'frictional' vacancy of industrial land and buildings to allow for the efficient operation of the property market
- Intervention in the Central Service Circle to safeguard industrial land
- Regeneration programmes including the London 2012 Olympics and Paralympics and *Lower Lea Valley Opportunity Area Planning Framework*.

Table ES1 shows the results of the demand and supply analysis and proposes the scale of industrial land release by sub-region over the plan period.

Table ES1 Modelled Industrial Land Release, by Sub-Region, 2001-2026[8]

Sub Region	*2001-2006 (ha)*	*2006-2011 (ha)*	*2011-2016 (ha)*	*2016-2021 (ha)*	*2021-2026 (ha)*	*Total 2006-2026 (ha)*
North	104	54	49	44	40	**188**
North East	201	146	88	74	63	**371**
South East	82	42	36	31	25	**134**
South West	10	17	17	17	16	**67**
West	55	17	15	13	11	**55**
Total	**452**	**276**	**205**	**178**	**155**	**814**
Average p.a.	**90**	**48**		**33**		**41**

Source: URS (Note that these figures are rounded)

At a London-wide level 814 hectares of industrial land is proposed for release between 2006 and 2026[9]. This represents an average release of 41 hectares per annum. This is consistent with the estimated range of industrial land release on the *Draft Industrial Capacity SPG* of industrial land release benchmarks of between 30 and 50 hectares per annum. The average annual release is likely to be higher in the early phases of the plan period as existing vacant land is released ahead of land that becomes surplus to requirements over time with structural decline.

A sensitivity test shows that the model is sensitive to macroeconomic changes that deviate from the current working assumptions. The current working assumptions are likely to be more reliable in the short-term than in the long-term. This suggests that, consistent with the *London Plan*'s 'plan-monitor-manage' approach the industrial land release benchmarks are updated on a regular basis to ensure reliability and that projections post-2016 are used for indicative purposes only.

The benchmark for release across London 2006-2016 equates to approximately 48 hectares per annum. This is relatively high compared to current draft guidance of 39 hectares per annum, but a reduction on the 90 hectares per annum change in land use experienced between 2001 and 2006. Indicative guidelines for release post 2016 suggest that a reduced benchmark of 33 hectares per annum would be more appropriate from 2016 to 2026.

Borough Guidance

The benchmarks of industrial land release are intended to inform future policy designations and guidance in London. One aspect of this guidance applies to employment sites outside those considered to be of strategic importance to London in the *Draft Industrial Capacity SPG* (2003). This was to help boroughs develop policy criteria for locally significant sites on proposals maps. The groupings were on a scale of three categories:

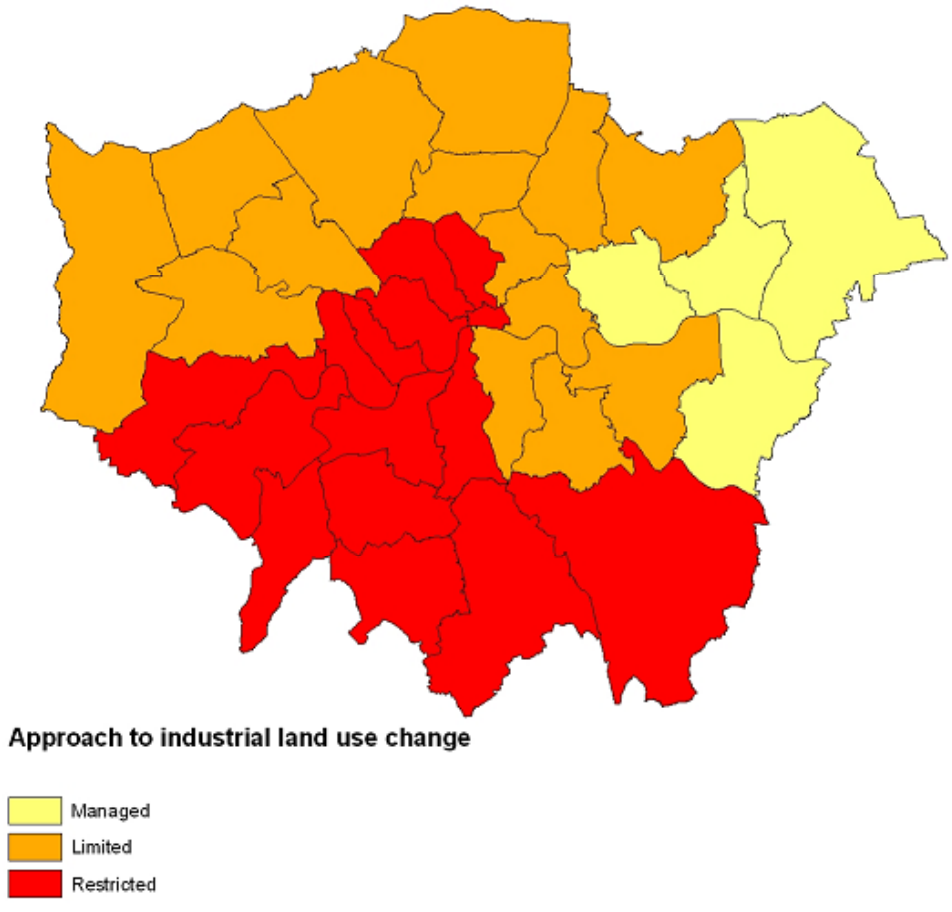
[8] These results are also presented at borough-level for the North East and South East sub-regions, see Section 9-3

[9] Note this figure is not the same as total vacant industrial land of 706 hectares plus the projected structural release of 254 hectares as it includes the retention of some vacant land for frictional vacancy.

- Restricted – boroughs within this category are encouraged to adopt a particularly restrictive approach to the transfer of industrial sites to other uses
- Managed – boroughs within this category generally have a greater supply of vacant industrial sites and should take a more permissive approach to the transfer of industrial sites to other uses (only for sites outside SELs)
- Limited – this category is intermediate between the two.

The classifications can only be broadly indicative and some boroughs will be on the cusp of different categories - it is vital that they are monitored closely and re-classified when conditions change. The classifications have been made as a joint exercise in consultation with the GLA Group.

Figure ES2 Suggested Alterations to the Draft Industrial Capacity SPG



Source: URS

This main suggested alterations to the existing *draft Industrial Capacity SPG* are for a more restrictive approach to land use change in six London boroughs[10] which is appropriate given

[10] Greenwich M-L, Islington L-R, Lambeth L-R, Hounslow L-R, Redbridge M-L

the high rates of land use change observed between 2001 and 2006 (see p81 for illustration of the original *draft SPG* and the alterations suggested here).

In recent decades land use planning designations have lagged behind economic change and consequently too much land has been allocated and protected for industrial use in London. With implementation of the recommendations of this report and subject to the 'plan monitor manage' approach we anticipate that by 2016 the industrial land market in London will be in a position much closer to equilibrium, with demand and supply broadly balancing. The changing policy framework is already allowing major new opportunities for development and regeneration to come forward.

1. INTRODUCTION

1.1 Industrial Land in London

The nature of London's economy has radically changed over recent decades and the continued shift of employment away from industry or manufacturing into the service sector has significant implications for land use planning. London has on average lost approximately 24,000 manufacturing jobs per year over the last 30 years[11] and large amounts of industrial land have become available for alternative uses. These trends are expected to continue, albeit at a reduced absolute rates[12]. The character of industrial land is changing - as more goods are manufactured outside the UK there is an increasing demand for warehousing facilities to store and handle the goods from producer to consumer in supply chains.

The capacity for land to handle waste in London to meet the *London Plan* commitment for 85% self-sufficiency within London by 2020 is also becoming an increasingly important use of industrial land[13]. At the same time the service sector has expanded rapidly and demand for housing land is also strong. Strategic land use planning for London needs to encourage an efficient and appropriate redistribution of land from industry to new growth sectors.

The *London Plan* sets out the Mayor's position on how to manage the surplus capacity of industrial land. It is supported by a wide range of research and other policy statements. In particular the GLA's draft *Industrial Capacity Supplementary Planning Guidance* (SPG) issued in 2003 proposes the release of 39 hectares per annum of surplus industrial land 2001 to 2016, with the majority concentrated in East London.

Since the draft SPG was issued demand side industrial land projections have been updated and supply side assessments have been refined. The *London Plan* is also in the process of being revised to cover the period 2006 to 2026. This study has therefore been commissioned and aims to establish the most up-to-date estimates on appropriate release and retention of industrial land in London to 2026. The specific objectives of the study are to:

- Update the indicators and benchmarks for the demand for industrial land across London in light of new employment projections and recent GLA research projects including the provision for efficient logistics capacity, waste management, and wholesale markets,
- Update the supply side estimates based on a combination of new information on total stock, trends in provision and changes of use,

---

[11] GLA Economics *Working Paper 11: Working London*, 2004
[12] GLA Economics *Current Issues Note 9: Borough employment projections to 2026*, May 2006
[13] This position was agreed by the panel of inspectors at the Examination in Public to the *draft Early Alterations to the London Plan* in June 2006 which are now adopted

- Provide quantitative sub-regional indicators on the future release and retention of industrial land and borough level indicators in North East and South East London, and
- Provide advice or qualitative indicators for the management of industrial land for all London boroughs.

URS and GVA Grimley have jointly prepared this report.

1.2 Relation to the Suite of Research Studies

This study is one of six distinct but integrated research studies commissioned by the GLA in August 2006. The five other studies are:

- *North East and South East London Industrial Land Baseline*
- *London Wholesale Markets Review*
- *Demand and Supply of Land for Logistics in London*
- *London Waste Apportionment Study*
- *Feasibility Study for a London Food Hub*

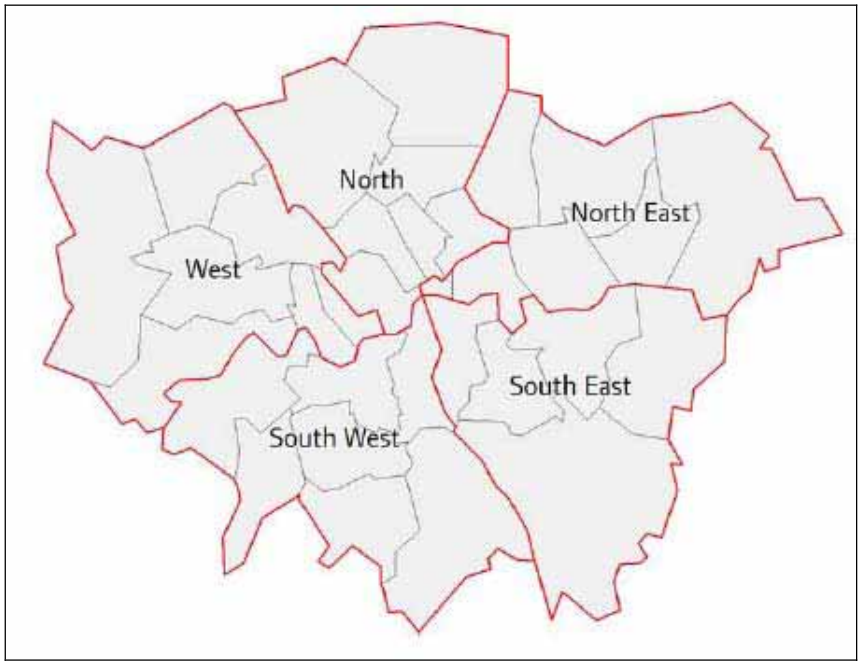
There is strong inter-relationship between all six of the reports and the *Industrial Land Release Benchmarks* study is the central assignment that draws the strands together and presents recommendations for the protection or release of industrial land across London. The findings of the *Demand & Supply of Land for Logistics in London* study is a key input into the *London Industrial Release Benchmarks* report.

In this report we will commonly refer to 'logistics' when describing the overall sector and general activities undertaken, and 'warehousing' as the land use definition.

1.3 Study Area

This study considers industrial land across the whole of London, with particular reference to the new sub regional structure proposed in the *Draft Further Alterations to the London Plan*. The five new sub-regions are shown in Figure 1-1 and Table 1-1.

Figure 1-1 The New Sub Regions of London



Source: GLA

Table 1-1 The New London Sub-Regions by Borough

North	*North East*	*South East*
Barnet	Barking & Dagenham	Bexley
Camden	City of London	Bromley
City of Westminster	Havering	Greenwich
Enfield	Newham	Lewisham
Hackney	Redbridge	Southwark
Haringey	Tower Hamlets	
Islington	Waltham Forest	
South West	*West*	
Croydon	Brent	
Kingston upon Thames	Ealing	
Lambeth	Hammersmith & Fulham	
Merton	Harrow	
Richmond upon Thames	Hillingdon	
Sutton	Hounslow	
Wandsworth	Kensington & Chelsea	

Source: GLA

The study also refers to the previous sub-regions (from the 2004 *London Plan*) in order to make comparisons with previous research on industrial land.

1.4 Report Structure

The report structure is as follows:

- Section 2 reviews the policy context.
- Section 3 establishes a baseline of industry and warehouse land supply, drawing upon a range of data sets. The section presents the results for built-on industrial land across London.
- Section 4 presents a baseline of vacant industrial land in London.
- Section 5 quantifies the total amount of industrial land in London and considers a wider definition of industrial land.
- Section 6 uses a demand projection model to project net change in future demand for industrial land.
- Section 7 looks at the industrial property market. This combines an analysis of supply factors and demand patterns and relates these to key market area geographies. This is used to help inform the proposed new distribution of industry around London.
- Section 8 balances the strands of the industrial land demand projections with supply-side considerations, such as frictional levels of vacancy, and current regeneration commitments.
- Section 9 introduces the industrial land release benchmarks by sub-region and by borough in the North East and South East sub-regions, for five-yearly periods 2006 to 2026. The results of this analysis are used to suggest amendments to the *draft Industrial Capacity SPG*.

Details of our approach are outlined in each section of the report.

2. POLICY AND RESEARCH CONTEXT

2.1 Introduction

The relevant land use planning policy context includes:

- *Planning Policy Statement 3 (PPS3) Housing*, 2006 (DCLG, 2006)
- *Planning Policy Guidance 4 (PPG4) Industrial, Commercial Development and Small Firms*, (DoE, 1992)
- The *London Plan*, 2004 and emerging *Early and Further Alterations to The London Plan* (GLA, 2004; 2006)
- The GLA's *Draft Industrial Capacity Supplementary Planning Guidance* (SPG), (GLA, 2003)
- The *Sub Regional Development Frameworks* (SRDFs) for London (GLA, 2006)

There are also a series of industrial land and housing research reports relevant to this study, which include:

- *London Housing Capacity Study* (GLA, 2004)
- *Industrial and Warehousing Land Demand in London* (Roger Tym et al, 2004)
- *Industrial Land Availability Study* (GLA, not yet published)
- *North London Employment Land Study* (Halcrow et al, 2006)
- *Managing the Release of Employment Land in West London to Non-employment Uses* (Rosecliffe Associates, 2006)

2.2 National

PPS3 Housing

PPS3: Housing (Nov, 2006) has four strategic objectives including: widening housing opportunities and choice; increasing the supply of housing; and creating sustainable residential environments. The guidance promotes the efficient use of land for housing development through the re-use of previously developed land and empty properties and the conversion of non-residential buildings for housing to meet housing demand and minimising the amount of green field land being taken for development. A national annual target is that at least 60% of new housing should be provided on previously developed land.

In developing their land strategies, local planning authorities should consider *'whether sites that are currently allocated for industrial or commercial use could be more appropriately re-allocated for housing development'*[14].

[14] Guidance on reviewing employment land is set out in *Employment Land Reviews: Guidance Note*, ODPM, 2004

Local planning authorities should identify specific sites to deliver housing in the first five years of a local development document. These sites should be available, suitable and delivery achievable. Local planning authorities should also identify a further supply of specific, developable sites for years 6-10 and, where possible, for years 11-15. Allowances for windfalls[15] should not be included in the first 10 years of land supply unless local planning authorities can provide robust evidence of genuine local circumstances that prevent specific sites being identified.

Reflecting the principles of 'plan, monitor, manage', local development documents should set out a housing implementation strategy that describes the approach to managing delivery of the housing and previously-developed land targets and trajectories.

PPG4 Industrial, Commercial Development and Small Firms

This guidance takes a positive approach to encouraging new business developments and assisting small firms through the planning system. Economic growth and a high-quality environment should be pursued together. The locational demands of industry should be a key consideration in drawing up plans. Development plans should weigh the importance of industrial and commercial development with that of maintaining and improving environmental quality.

2.3 Regional

The London Plan

The *London Plan*, adopted in February 2004, is the spatial development strategy for Greater London spanning the period 2001 to 2016. The plan sets out an integrated social, economic and environmental framework for the future development of London.

Policy 2A.1 is relevant to surplus industrial land:

> *'The Mayor will use the following criteria in developing Sub Regional Development Frameworks […] and when considering UDPs and planning applications referred to him:*
>
> *Optimising the use of previously developed land and vacant or under-used buildings…'*[16]

The Plan also recognises the importance of protecting key employment land. The relevant policies on Strategic Employment Locations (SELs) are set out in

[15] Windfall sites are those which have not been specifically identified as available in the local plan process. They comprise previously-developed sites that have unexpectedly become available.
[16] The *London Plan*, page 38

Policy 2A.7 and subsequent guidance given under paragraph 2.25. This is further covered under Policy 3B.5, which states that:

> *'With strategic partners, the Mayor will promote and manage the varied industrial offer of the Strategic Employment Locations (SELs) […], as London's strategic reservoir of industrial capacity. Boroughs should identify SELs in UDPs, and develop local policies for employment sites outside the SELs, having regard to:*
>
> - *The locational strategy […] of this plan*
> - *Accessibility to the local workforce, public transport and where appropriate, freight movement*
> - *Quality and fitness for purpose of sites*
> - *The release of surplus land for other uses in order to achieve the efficient use of land in light of strategic and local assessments of industrial demand.'*[17]

Draft Further Alterations to The London Plan

The *London Plan* is undergoing a process of review and *Draft Further Alterations* for consultation were published in September 2006. The alterations maintain the emphasis of the 2004 document to manage London's stock of industrial land and add further refinements. These include explicit recognition that in appropriate locations the term 'management' can mean protection. They also include a pan-London industrial land release benchmark of 39 hectares per annum and an indication that much of this release is expected to come from the North East and South East London sub-regions. They recognise the specific need for industrial provision servicing central areas and deal more fully with the requirements of the waste, logistics, transport and wholesale markets sectors.

This is illustrated through Policy 3B.5 on Strategic Industrial Locations (SILs) which includes:

> - *'The need for strategic and local provision of waste management, transport facilities, logistics and wholesale markets within London and the wider city region.'*[18]

The *Draft Further Alterations* emphasise the importance of logistics to the London economy by stating that an efficient logistics system and supporting infrastructure is vital to London's competitiveness. The alterations provide guidance on the provision of land and infrastructure for the logistics industry,

[17] ibid, 92
[18] ibid, page 105

drawing upon TfL's *Draft Freight Plan* and the *Land for Transport SPG*. It states that:

- *'[…] Strategic logistics provision should continue to be concentrated on Preferred Industrial Locations, related to the trunk and main road network and to maximise use of rail and water based infrastructure. Innovations, which make more effective use of land, should be encouraged, together with specialised provision, such as Logistics Parks. There is particular need to secure strategic provision to the west of London, especially near Heathrow, and north and south of the Thames to the east.'*[19]

Draft Industrial Capacity Supplementary Planning Guidance

The GLA's *Draft Industrial Capacity Supplementary Planning Guidance* (SPG) of 2003 provides guidance on the implementation of broad strategic policy on industrial capacity. It seeks to:

- *'Ensure that sufficient land is available to meet future industrial needs, including those of existing firms, and bring genuinely surplus industrial land back into more active uses to meet the wider objectives of the London Plan.*

- *Provide a geographical framework for the LDA and other partners to identify and promote the supply of sites of appropriate quality needed by different occupiers, as well as guiding the release of surplus land for other uses. In general, and subject to local refinements, this will entail retaining much of the capacity in West and parts of South West London and carefully managing the release of surplus capacity elsewhere, especially in East London.*

- *Provide strategic support through the planning system for protection of the best industrial land for industrial uses.*

- *More closely reconcile the relationship between demand and supply of industrial land. In the longer term, this will entail bringing the rate of change in industrial capacity closer to that of employment – possibly reducing the rate of industrial land loss to half to two thirds of that recorded during the 90s.*

[19] ibid, page 107

- *Promote a sub-regional approach to industrial land policy, with boroughs co-ordinating policy and economic development initiatives.*

- *Encourage more sustainable use of industrial land by fostering higher density and, where appropriate, a wider mix of uses where these are mutually compatible and can produce a good quality environment.*

- *Promote the active management of the stock of industrial land and the monitoring of industrial demand and supply to inform strategic and local policy.*

- *Contribute to an ongoing review of the overall geographical framework for strategic and local planning policy across London in the light of changing market trends.'*[20]

The *Draft SPG* seeks to develop a more strategic, sub-regional and co-ordinated approach to industrial land management, stressing the pressing need for more efficient utilisation of surplus industrial land. The document acknowledges that the long-term decline in industrial employment in London is sufficient to justify the release of between 30 and 50 hectares of land per annum.

The *Draft SPG* offers guidance to boroughs for industrial sites outside the SEL Framework, and also those not shown on proposals maps. Boroughs are recommended to take into account the wider sub-regional demand and supply of industrial land when developing this policy. The *Draft SPG* proposes groupings of boroughs to help inform their policy development. These will provide a broad indication of borough-level industrial land demand, and are set out as three distinct categories:

- Restricted – boroughs within this category are encouraged to adopt a particularly restrictive approach to the transfer of industrial sites to other uses
- Managed – boroughs within this category generally have a greater supply of vacant industrial sites and should take a more permissive approach to the transfer of industrial sites to other uses (only for sites outside SELs)
- Limited – this category is intermediate between the two.

Section 9 of this report details the original classifications by borough in 2003, and the suggested changes indicated by the research here.

[20] *Draft Industrial Capacity Supplementary Planning Guidance*, page 9

Sub-Regional Development Frameworks

The *Sub-Regional Development Frameworks* (SRDFs) provide guidance on the implementation of policies across the various sub-regions identified in the 2004 *London Plan*. These are: Central, North, South, East and West[21]. The *Draft Further Alterations to the London Plan* (Sept 2006) suggest that these sub-regions will be re-organised by North, North East, South East, South West and West London, see Figure 1-1. Nevertheless, though non-statutory, the frameworks are an important material consideration for development plans in the sub-region. They provide guidance regarding the management of the demand and supply of industrial and warehousing land, by stating that:

> *'[…] through the Industrial Land Availability Study (conducted every 4 years), boroughs, .. and the GLA group are asked to monitor the stock and release of industrial land within the sub-region.*
>
> *In their LDFs, boroughs are asked to develop a positive and proactive approach to accommodating warehouse provision in appropriate locations. This should be taken into account in assessing future industrial demand. […]'*

Key statements from each SRDF are:

Central

> *'There is little or no scope for strategically significant net industrial land release except in parts of the CAZ[22]. Rigorous management will be required to address future pressures'*[23].

North

> *'There is some scope for the release of industrial land, but this will need careful management to ensure a continued supply of land to meet London's needs as a whole. The sub-region has strong demand in relation to warehousing and distribution uses and ways of intensifying such land uses should be explored in relevant locations.'*[24]

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[21] Boroughs constituting the sub-regions – **Central**: Camden, City of London, City of Westminster, Islington, Kensington & Chelsea, Lambeth, Southwark and Wandsworth; **North**: Barnet, Enfield, Haringey, Waltham Forest; **South**: Bromley, Croydon, Kingston-upon-Thames, Merton and Sutton; **East**: Barking & Dagenham, Bexley, City of London, Greenwich, Havering, Lewisham, Newham, Redbridge & Tower Hamlets; **West**: Brent, Ealing, Hammersmith & Fulham, Harrow, Hillingdon, Hounslow and Richmond-upon-Thames.
[22] Central Activity Zone
[23] SRDF – Central London, page 14
[24] SRDF – North London, page 16

South

> *'Careful management of, and improvements to, existing stock will be essential to meet new industrial needs including those for logistics, and provide scope for some limited release to other priority uses, especially housing.'*[25]

East

> *'There is considerable scope for the release of industrial land, but this will need careful management across the sub-region as a whole to meet changing industrial and other land use priorities.'*[26]

The *East London SRDF* suggests that in broad terms there should be a stronger emphasis on retention of industrial capacity towards the east of the sub-region than in the west. However the SRDF recognises that there will be local but significant exceptions to this trend e.g. a strongly 'residential mix' of uses on Barking Riverside.

West

> *'There is limited scope for net release of industrial land and this will need careful management to ensure a continued supply of land to meet London's needs as a whole, especially for logistics and waste.'*[27]

2.4 Industrial Land and Related Research

A series of studies have researched the nature and dynamics of the industrial land market in London. The most relevant studies are summarised below.(borough-level Employment Land Reviews were also used - see Section 3 for further detail).

Industrial and Warehousing Land Demand in London, 2004

This study was commissioned by the Greater London Authority to assess the scale, nature and distribution of future demand for industrial and warehousing land in London and to draw policy implications. This document was prepared by Roger Tym et al and was published in August 2004 and many of its policy recommendations are reflected in the *Draft Further Alterations to the London Plan*.

[25] SRDF – South London, page 14
[26] SRDF – East London, page 17
[27] SRDF – West London, page 14

The document suggests that some 43 hectares[28] of industrial/warehousing land can be released for other uses annually to 2016, compatible with meeting effective demand and not allowing industry and warehousing to be priced out of London by demand for other land uses. Note that this benchmark only partly took into account the strategic requirement for new waste facilities. The study updated the qualitative borough level release guidance given in the *Draft Industrial Capacity SPG*.

Industrial Land Availability Study

The GLA surveys the London boroughs for detailed information regarding the character of vacant industrial sites over 0.25 hectares, vacant industrial buildings over 1,000m^2 and industrial land use changes. The survey has been carried out in 1998 and 2003 and is currently awaiting publication.

London Housing Capacity Study 2004

The *2004 London Housing Capacity Study* (LHCS) examines the future capacity of housing growth in London. The study presents housing provision targets for each London borough that have since been refined and adopted in the *Early Alterations to the London Plan* (Dec, 2006). Demand for residential land is a major driver of land use change from industrial to other uses. The study reconciles the capacity for housing development for large sites against the industrial and warehousing land release benchmarks available at the time. Table 8 on page 26 of the LHCS reconciles the housing benchmarks with the industrial land release benchmarks and safeguards a proportion of sites for new waste facilities.

North London Employment Land Study

The *North London Employment Land Study* was prepared in 2006 by Halcrow, PACEC & Glenny LLP for the LDA and North London Strategic Alliance. The research surveyed the employment land in the boroughs of Barnet, Enfield, Haringey and Waltham Forest and projected industrial land demand to 2016.

Managing the Release of Employment Land in West London to Non-employment Uses

The West London Alliance commissioned Rosecliffe Associates in 2006 to investigate the scale of land use change from employment to other non-employment uses since 2001.

[28] This is the consultant's preferred scenario.

3. STOCK OF INDUSTRIAL AND WAREHOUSING LAND

3.1 Introduction

Establishing a baseline of built-on industrial and warehousing land[29] in 2001 and 2006 is the first stage in the benchmarking process. Data for 2001 and 2006 is needed to enable comparison with existing research and policy frameworks using 2001 as a baseline to gain and understanding of the characteristics of change to date.

This section establishes the built-on industrial land baseline by considering general industrial uses, warehousing and vacant industrial buildings. Subsequent sections consider vacant land and additional industrial land uses before arriving at a wider assessment of industrial land.

A number of data sources provide information on industrial capacity in London. The baseline position is established by considering the strengths and weaknesses of these sources. The following sources are reviewed:

- Valuation Office Agency (VOA) data
- Land Use Change Statistics (LUCS)
- Cities Revealed
- Employment Land Reviews for boroughs and sub-regions
- *URS North East and South East London Industrial Land Baseline* (incorporating Cities Revealed data)

The characteristics of these sources are summarised in Section 3.2, our approach to combining the data is outlined in Section 3.3 and results are presented in Section 3.4. Some general information on the changes within the manufacturing and warehousing stock is presented in **Appendix A**.

3.2 Data Sources and Limitations

VOA Data

VOA data gives figures for the total floorspace of factories and warehousing buildings for the UK including London. The stock of commercial floorspace in England has been recorded since 1967. However, there have been major changes in how the data has been measured, stored and reported. In broad terms three 'sets' of floorspace stock data can be identified:

- The first set covers the period 1967 to 1986, and was produced in hard copy format by the Valuation Office (in conjunction with Hillier Parker towards the end of this time series). This data was usually produced on a biennial basis.

[29] 'Built-on' industrial land is occupied by a functional industrial unit(s) that is either occupied or can become occupied.

- A second set of data was produced for 1990 and 1994 by independent consultants[30] and the Department for the Environment. The data was based largely upon Valuation Office data.
- The third set is an annual series that has run since 1998 and is maintained by the ONS, although based on Valuation Office Agency (VOA) data and supported by the Department for Communities and Local Government (DCLG).

The most recent set was produced for the year 2000 as a pilot, and the data was backdated to 1998 by the VOA and the Office of National Statistics (ONS)[31].

Land Use Change

Land Use Change Statistics (LUCS) have been produced by the Ordnance Survey (OS) since 1985 and are now analysed by the DCLG. The data is used in formulating and monitoring a national target for the percentage of housing that should be built on reused brownfield sites and in projecting urban growth up to 2016.

Data is collated by recording the change in land use when the category of a parcel of land differs from that depicted on the existing OS map. A change is also recorded where there is physical change to the existing building on site (i.e. new features are added or demolished or an additional building is built within the existing site).

Amongst other information recorded about a site the following are included:

- Approximate area
- New and previous use of site
- Year the change in use occurred; and
- Estimated number of dwelling units demolished and built.

Although this data set is a significant source of information on trends in industrial and warehousing land availability in relation to residential growth, there are a number of limitations:

- The OS does not record a change if it does not affect the OS map (i.e. where there is no physical change). This would include conversions within existing buildings.
- For data collected between 1989 and 1992 there was a policy of 'rounding' to recognise the difficulty of estimating the year of change precisely. The surveyor had difficulty judging the year of change accurately if it had occurred several years before. In some cases the surveyor may inadvertently have rounded the year of change to the nearest five years.
- In 1999 a complete set of data could not be provided. The implications are that total figures are understated and percentages are subject to some uncertainty.
- Changes between sub-categories of the land use categories are not recorded.

[30] NRG Management Consultancy

[31] In addition the 2000 data was produced by the DTLR and has subsequently been superseded by the ONS maintained data series. The 2005 data is based upon the five-yearly re-valuation data from the VOA and the industrial floorspace data in particular cannot be compared with the previous data series with complete consistency. The 1998 and 1999 data is not necessarily in line with the 2000 to 2004 data as these are different re-valuation periods.

Cities Revealed

Cities Revealed provide a data set of land designations from 1999 and were originally used to inform land use quantification for the *London Plan*. The Cities Revealed land designations were derived from specialist interpretation of aerial photography and subsequent site visits. Although this gives a rich data set, two key limitations of Cities Revealed are:

- It is not always possible to accurately judge a land use from an aerial photograph. In particular the difference between a factory and a warehouse is often not evident from an aerial perspective.
- Cities Revealed is inconsistent in how it has defined the boundaries of buildings and sites. On occasions, particularly for larger sites, Cities Revealed classify the land use of the building plot and not the full site.

Employment Land Reviews

As preparation for the Local Development Frameworks (LDFs) planning authorities are now strongly encouraged to undertake an employment land review[32]. These documents form a key part of the evidence base for the policies within the LDFs. The Employment Land Review (ELR) is a tool for assessing the demand for and supply of land for employment within a designated area. Central government guidance states that:

> *[An employment land review] will help authorities assess the suitability of sites for employment development, safeguard the best sites in the face of competition from other higher value uses and help identify those which are no longer suitable for employment development which should be made available for other uses.*[33]

The review commonly adopts a three stage approach, covering:

- Taking stock of the existing situation, including assessing the quality and suitability of existing allocated employment sites
- Assessing the scale and nature of likely demand for employment land and the available supply in quantitative terms; and
- Identifying a new portfolio of sites that reflect the issues in the two previous sections and create a balanced employment land situation.

A number of boroughs have completed ELRs and in some cases sub-regional studies have been prepared. URS reviewed all relevant studies and made use of them if primary research in the form of a physical survey was undertaken and the methodology was sufficiently robust to ensure a good level of reliability. Table 3-1 lists the boroughs that have completed ELRs, either at a borough or sub-regional level, which were used to help establish the baseline position in 2006.

[32] ODPM (2004) Employment Land Reviews – Guidance Notice
[33] ibid, page 1

Table 3-1 Employment Land Reviews Used to Establish Baseline

ELR completed and provide reliable estimates of industrial land	*ELR completed and provide parameters of industrial land for cross-checking*
▪ Barking & Dagenham	▪ Camden
▪ Barnet	▪ Croydon
▪ Bexley	▪ Ealing
▪ Brent	▪ Hackney
▪ Enfield	▪ Hammersmith & Fulham
▪ Haringey	▪ Harrow
▪ Havering	▪ Islington
▪ Hounslow	▪ Lambeth
▪ Richmond upon Thames	▪ Merton
▪ Waltham Forest	▪ Newham
	▪ Southwark
	▪ Sutton
	▪ Wandsworth

Source: URS

Those ELRs that used floorspace from secondary sources and plot ratios to estimate employment land were not considered to be reliable sources of industrial land. The same calculations can be made from desk-based research. Of those ELRs that conducted physical site surveys the most significant limitations were twofold. Firstly, a number of ELRs included non-industrial land, uses such as offices, in the overall employment land results and did not detail the breakdown of land uses. Secondly, a number of ELRs surveyed employment land protected by planning designations only (allocated land), rather than the whole range of industrial sites in the borough.

All data was used where possible. When results included land used for office employment, the data formed a maximum parameter of industrial land to check alternative data sources against. When the surveyed sites were on allocated employment land only, the result was used as a minimum parameter of industrial land for comparison. Those ELRs that presented their results in a detailed breakdown of land uses and identified sites with cluster-analysis were most useful, and are considered to be the most reliable estimates of built-in industrial land.

URS North East and South East London Industrial Land Baseline

The *North East and South East London Industrial Land Baseline* (URS, 2007) provides an estimate of land in industrial and related uses for the years 2001 and 2006. This survey represents an important input into this research due to the quality of the data for employment land designated areas in North East and South East London.

The *North East and South East London Industrial Land Baseline* investigated the land uses of employment sites that were defined by adopted Unitary Development Plans (UDPs) and/or area frameworks supported by the GLA in 2001 and 2006. A detailed field survey took place in nine boroughs within each study area[34]. A full description of the *North East and South East London Industrial Land Baseline* methodology along with further information on the research can be found in the original report (URS, 2007).

[34] In the cases of Barking & Dagenham, Havering & Waltham Forest recent surveys already conducted were used to inform the analysis

In addition to surveying allocated industrial land, the *North East and South East London Industrial Land Baseline* incorporated data from the following information sources:

- Cities Revealed data (see below)
- The London Development Database (LDD) which records the progress of planning permissions in Greater London
- Land Use Change Statistics (LUCS), and
- Local knowledge of the area.

3.3 Method

North East and South East London

The *North East and South East London Industrial Land Baseline* provides an accurate and reliable baseline of built-on industrial land. The categories used to define built-on industrial land here are 'light industry', 'general industry', 'warehouses', 'self-storage' and 'land with vacant buildings'.

In comparison with the VOA floorspace records, the survey appeared to under-estimate levels of warehousing and over-estimate levels of general industrial land uses. The survey results are based on an assessment of the external characteristics of buildings, whereas VOA floorspace data draws upon information provided by the companies themselves. In this case, the VOA records are considered to provide a more accurate indication of industrial building use and therefore the proportion of built-on land from the *North East and South East London Industrial Land Baseline* designated to warehousing and industry was derived from the VOA data for that year[35].

The Rest of London

The baseline position for the rest of London was calculated using a combination of the Cities Revealed data and available ELRs. The following describes the methodology adopted to calculate the 2001 and 2006 position.

2001 Position

Data derived from ELRs was deemed to be the most reliable. Studies that were carried out in 2006 were backdated using the changes in VOA between 2005 and 2001 to arrive at the 2001 position.

If reliable data from an ELR was not available then Cities Revealed data was used.

For allocated employment land in relevant UDPs a comparison of the *North East and South East London Industrial Land Baseline* with Cities Revealed data for this area was used to estimate inaccuracies and a correction factor applied to the rest of London. Cities Revealed data was found to underestimate the size of industrial areas, both general

[35] This methodology assumes that general industrial and warehousing operations have similar plot ratios. The proportion of built-on industrial land designated to warehousing/industry in 2006 was derived from the 2005 VOA data. For boroughs that reported significant deviations in 2005 that could be attributed to the change in methodology (e.g. Hillingdon) the most recent reliable VOA records available were used.

industrial and warehousing by an average of 10%. This margin of error was incorporated into the Cities Revealed data for the allocated employment land in the rest of London.

For unallocated sites the Cities Revealed data was found to be more accurate as the sites were generally smaller and building and plot boundaries generally corresponded more closely. Cities Revealed designations were therefore used in their original form for non-allocated land in these boroughs.

2006 Position

ELRs that employed physical site surveys were deemed to represent the most accurate source of industrial land levels for 2006.

In the absence of an ELR, the 2006 position was derived by applying the rate of change in VOA floorspace between 2001 and 2005. The baseline for warehousing employed a slightly different approach, using linear trend analysis explained in greater detail in the *Demand and Supply of Land for Logistics in London* (URS, 2007) to project the 2006 position.

3.4 Results

Using the methodologies described above, Table 3-2 displays estimates of the total built-on industrial and warehousing land levels in 2001 and 2006 for the recently revised London sub-regions.

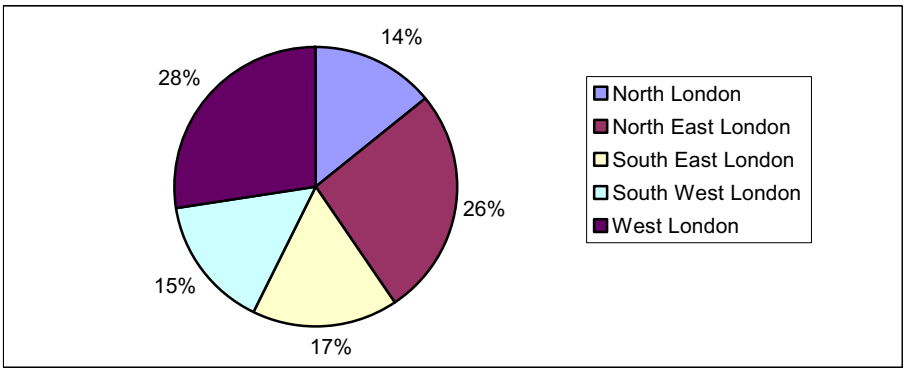
The results show that there was 5,103 hectares of built-on industrial and warehousing land in 2001 and that in 2006 there was 4,837 hectares - a decrease of 266 hectares, or approximately 5% of the built-on industrial land stock in 2001. Within this figure the amount of warehousing land has increased from 2,733 hectares to 2,815 hectares and the amount of 'general industrial' land has decreased from 2,370 hectares to 2,021 hectares - a reduction of 348 hectares, equivalent to 15% decline of the 2001 'general industrial' baseline.

Table 3-2 Sub-Regional Split for Built-on Industrial Land in 2001 and 2006

	2001			*2006*		
Sub-Region	*Industry (ha)*	*Whouse (ha)*	*Total(ha)*	*Industry (ha)*	*Whouse (ha)*	*Total (ha)*
North	329	410	738	293	374	667
North East	685	644	1,329	583	690	1,272
South East	425	457	882	334	476	809
South West	332	415	747	293	449	742
West	599	808	1,407	519	827	1,346
Total	**2,370**	**2,733**	**5,103**	**2,021**	**2,815**	**4,837**

Sources including: Various ELRs, Cities Revealed, URS (Note that the figures are rounded)

Figure 3-1 Snapshot of the Sub-Regional Split of Built-on Industrial Land in 2006



Sources including: Various ELRs, Cities Revealed, URS

Table 3-2 shows that every sub-region in London experienced a decline in built-on industrial land between 2001 and 2006. Decline in the more traditional industrial users of industrial land was most pronounced in the South East with an 22% decrease and in the North East with a 15% decrease (this includes both land that has become vacant and land reallocated to other uses). Only North London experienced a decline in warehousing land uses, which is attributable to the inner North London boroughs rather than the outer. The largest percentage growth in warehousing land uses was experienced in the South West (8%) and the North East (7%).

Table 3-3 presents the industrial land levels for 2001 and 2006 by London borough (**Appendix B** gives further details).

These results have informed the *London Waste Apportionment Study* (Jacobs Babtie, 2006) as the theoretical potential land capacity for waste facility development in each borough[36]. The results can also be differentiated into unallocated and allocated industrial land policy areas, shown in Table 3-4.

[36] See Section 6.4 for further information. Details are also contained in paragraphs 4.20 - 4.33 and Appendix 1 of the *London Waste Apportionment Study*

Table 3-3 Built-on Industrial Land, by Borough, 2001 and 2006

	2001			2006		
Borough	*Industry (ha)*	*Whouse (ha)*	*Total (ha)*	*Industry (ha)*	*Whouse (ha)*	*Total (ha)*
Barking and Dagenham	242	138	**380**	218	155	**374**
Barnet	16	29	**45**	13	33	**46**
Bexley	177	152	**329**	133	189	**322**
Brent	78	190	**268**	73	175	**248**
Bromley	66	48	**114**	47	52	**98**
Camden	31	38	**69**	26	31	**56**
City of London	-	-	**-**	0	0	**0**
Croydon	79	87	**166**	63	97	**160**
Ealing	144	243	**387**	97	273	**370**
Enfield	134	177	**312**	127	175	**302**
Greenwich	82	110	**192**	62	101	**162**
Hackney	59	47	**105**	51	35	**87**
Hammersmith and Fulham	41	44	**84**	30	41	**71**
Haringey	50	70	**120**	44	65	**109**
Harrow	35	23	**57**	34	18	**52**
Havering	141	165	**306**	107	205	**312**
Hillingdon	190	90	**280**	183	97	**280**
Hounslow	107	207	**313**	98	213	**311**
Islington	36	36	**72**	30	25	**56**
Kensington and Chelsea	6	11	**17**	4	10	**14**
Kingston-upon-Thames	24	38	**61**	19	43	**62**
Lambeth	43	49	**92**	38	48	**86**
Lewisham	44	62	**106**	37	52	**90**
Merton	77	84	**160**	72	89	**161**
Newham	110	155	**265**	97	139	**236**[37]
Redbridge	38	28	**65**	30	33	**63**
Richmond-upon-Thames	23	24	**47**	19	28	**47**
Southwark	56	85	**141**	55	83	**137**
Sutton	41	63	**104**	40	68	**108**
Tower Hamlets	73	94	**167**	59	84	**143**
Waltham Forest	81	65	**146**	70	75	**145**
Wandsworth	46	70	**116**	42	77	**119**
Westminster, City of	2	14	**16**	1	10	**11**
TOTAL	**2,370**	**2,733**	**5,103**	**2,021**	**2,815**	**4,837**

Sources including: Various ELRs, Cities Revealed, URS (Note that the figures are rounded)

[37] This figure differs slightly from the baseline used in the London Waste Apportionment Study (Jacobs Babtie et al, 2006; 2007). The *London Waste Apportionment Study* uses 207 hectares as an input into its waste apportionment model, as approximately 30 hectares of built-on industrial land has been safeguarded for the Olympics Park 2006-2012.

Table 3-4 Policy Designation of Built-on Industrial Land, 2001

	Allocated Emp Areas (ha)	*Unallocated (ha)*	*Total (ha)*	*% Employment Sites Unallocated*
North	460	278	738	37%
North East	924	405	1,329	30%
South East	624	258	882	29%
South West	416	331	747	44%
West	915	492	1,407	35%
Total	**3,339**	**1,764**	**5,103**	**35%**

Sources including: Various ELRs, Cities Revealed, URS (Note that the figures are rounded)

Table 3-4 shows that 35% of the built-on industrial and warehousing land in London is within areas not protected by employment land planning designations, with the greatest proportion of unprotected land seen in the North and South West London sub-regions. The amount of allocated employment land designated to be of strategic importance to the city is not explicitly stated in the above table, as the most recent dataset is not directly comparable[38]. As a broad indication, approximately 60% of allocated employment sites are designated as Strategic Employment Locations (SELs).

A comparative study for this baseline is the *Industrial and Warehousing Land Demand in London*, completed in August 2004 by Roger Tym et al for the GLA. This report provides data for the supply of 'built on industrial and warehousing land' in December 2003. Table 3-5 compares the data from this report with the results of this study, using the sub-regions from the 2004 *London Plan*.

Table 3-5 Comparison of Baseline with Roger Tym et al Study for 2003

	URS Baseline: Average of 2001 & 2006 (ha)	*Roger Tym Study GLA 2003 data (ha)*	*Percentage difference*
Central	502	890	+77%
North	612	782	+28%
West	1,361	1,746	+28%
South	644	711	+10%
East	1,852	1,999	+8%
Total	**4,970**	**6,128**	**+23%**

Sources including: Various ELRs, Cities Revealed, URS, Roger Tym & Partners, 2004 (Note that the figures are rounded)

Table 3-5 shows that the *Industrial and Warehousing Land Demand* report estimated there to be 6,128 hectares of built-on industrial land in 2003. This compares to the figure of 4,970 hectares calculated as an average between the 2001 and 2006 figures here. The difference of 1,158 hectares is 23% higher than our estimate. As the large discrepancy in the Central sub-region indicates, this difference is likely to be explained by the use of blanket plot ratios used to translate floorspace data to land in the previous research. Research conducted by URS for the *Demand and Supply of Land for Logistics*

[38] The digitised UDPs range from 1993 to 2003 and in some cases do not correlate with most recent SELs outlined in the 2006 SRDFs. The new SEL designations also contain utilities sites not covered by the UDP allocations.

in London (2007) showed that industrial plot ratios are higher in inner London boroughs[39] (an average of 0.65) in comparison with outer London boroughs[40] (an average of 0.38).

Comparisons with the *North London Employment Land Study* (Halcrow, 2006) are unnecessary as the results were directly used to inform the baseline here. Research commissioned by the West London Alliance into *Managing the Release of Employment Land in West London to Non-employment Uses* (Rosecliffe Associates, 2006) does not establish a baseline of industrial land.

[39] Inner London boroughs are considered to be Camden, City of London, Hackney, Hammersmith & Fulham, Haringey, Islington, Kensington & Chelsea, Lambeth, Lewisham, Southwark, Tower Hamlets, Wandsworth and the City of Westminster

[40] Outer London boroughs are considered here to be Barking & Dagenham, Barnet, Bexley, Bromley, Croydon, Ealing, Enfield, Greenwich, Harrow, Havering, Hillingdon, Hounslow, Kingston-upon-Thames, Merton, Redbridge, Richmond-upon-Thames, Sutton and Waltham Forest

4. VACANT INDUSTRIAL LAND

4.1 Introduction

This section considers the location and scale of industrial land across London that lies vacant or contains derelict premises not suitable for occupation. Vacant buildings that are suitable for occupation are categorised as 'built-on' industrial land in Section 3. The management of excess levels of land vacancy is one of the key components of the industrial land release benchmarks.

A number of sources were considered to determine the position of vacant industrial land across London in 2001 and 2006, including:

- Cities Revealed
- URS *North East and South East London Industrial Land Baseline*
- GLA *Industrial Land Availability Survey* (ILAS); and
- Employment Land Reviews by borough and sub-region.

All of the sources except the ILAS have been reviewed in the previous section. The ILAS, which deals specifically with vacant land and premises, is discussed below. Our approach is then described in Section 4.3 and results are presented in Section 4.4.

4.2 Industrial Land Availability Survey

The ILAS is a detailed source of information on vacant industrial premises and land across London. The data is collected by the GLA from the London boroughs and collates information regarding:

- Available floorspace and land
- Change of use of land and premises
- Tracking of vacant land and premises
- Constraints to development; and
- Ownership of vacant land and premises.

In the surveys the GLA asked the boroughs for their most accurate and up-to-date information of vacant industrial land for 1998 and 2003. The data set provides a schedule of sites and premises with details of their size and year of vacancy and records information of individual sites above 0.25 hectares.

Where up-to-date information was not available, the GLA and/or the relevant boroughs made an informed estimate. As this was in some cases based on partial information this is a limitation of the survey results. The ILAS has been used in preference to the information collected by Central Government for the National Land Use Database of Previously Developed Land as this covers a wider pool of sites that are not just industrial in nature (DCLG and English Partnerships)[41].

4.3 Method

The method for calculating the extent of vacant industrial land across London for both 2001 and 2006 is split into two components. Results for the North East and South East sub-regions draw directly on the *North East and South East London Industrial Land Baseline*. Results for the rest of London, covering the North, West and South West sub-regions, have been derived from various different sources of information outlined below.

Rest of London 2001 Position

The estimates of vacant industrial land in each borough have been calculated from analysis of the ILAS from 1998 and 2003. The amount of vacant land for the planning period baseline of 2001 is usually established by taking the midpoint of the two survey results.

Where there was a large variation between the 1998 and 2003 figures, as in the cases of Enfield, Harrow, Hounslow and Sutton, these Boroughs were asked for the underlying reasons for change and an amended 2001 position was established. The discussions revealed that:

- LB Enfield figures submitted to the GLA were a result of desktop exercises and not physical site surveys. The borough recommended using alternative sources of data where possible. In this case we used the *North London Employment Land Study* (Halcrow, 2006) and backdated this to an expected position for 2001, with an appropriate rate of change observed in other outer London boroughs.

- LB Harrow clarified that the 1998 figure included vacant premises along with land, whereas the 2003 figure refers only to vacant land. The Borough estimated the vacant land position in 2001 to be 5.5 hectares.

- LB Hounslow suggested that the 2003 figures are more likely to be representative of the 2001 position of vacant industrial land within the Borough.

- LB Sutton recommended that the 2001 position would be best determined using the June 2000 *Sutton Employment Land Study*, which suggests a figure of 16.2 hectares of vacant industrial land within the Borough.

Rest of London 2006 Position

[41] Published online at www.communities.gov.uk

Employment Land Reviews that were conducted close to the year 2006 were used to determine the vacant land position for boroughs outside the North East and South East sub-regions. All ELRs establish a baseline that can be used here, as the level of land vacancy is not subject to the same methodological variation as was found in estimating levels of built-on industrial land.

For those boroughs which did not conduct ELRs, the 2006 position was established by applying an expected rate of change from the 2001 position. This rate of change was derived from the *North East and South East London Industrial Land Baseline*, which reported a decrease in vacant land of 15% in inner London boroughs and a decrease of 9% in outer London boroughs from 2001 to 2006 (changes in land designations such as the Olympics Park were omitted from the rate of change calculations). These results were reality-checked against the 2003 ILAS borough returns.

4.4 Results

Table 4-1 and Figure 4-1 show the sub-regional breakdown of vacant land in 2001 and 2006.

Table 4-1 Sub-Regional Baseline of Vacant Industrial Land in London

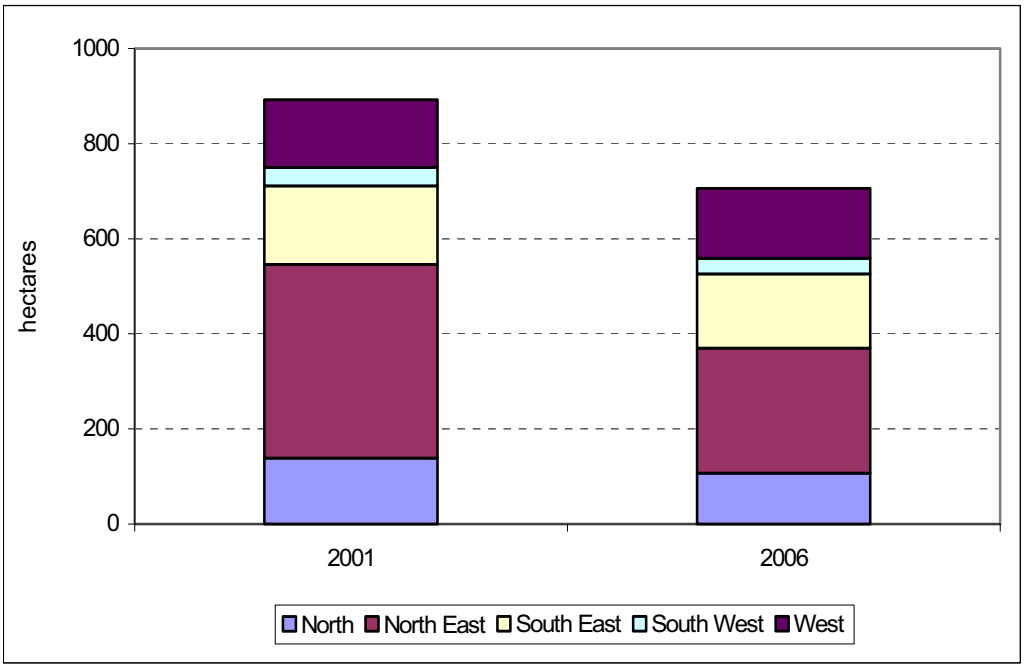
Sub-region	*2001 (ha)*	*2006 (ha)*	*Change (ha)*
North	139	107	-32
North East	407	263	-144
South East	165	156	-9
South West	39	33	-6
West	142	147	+5
TOTAL	**892**	**706**	**-185**

Sources including: ILAS, Various ELRs, URS (Note that the figures are rounded)

With the exception of West London the rest of London has experienced a decrease in vacant industrial land since 2001. The greatest decrease in vacant industrial land is in the North East London sub-region, which has seen 35% of its stock of vacant industrial land change use between 2001 and 2006. The main reason for this change is the de-designation of large vacant sites such as Stratford Rail Lands, within the Olympics Park area, to non-industrial uses by 2006.

West London was the only sub-region to experience an increase in vacant land over the same period, largely attributable to the closure of the Guinness Brewery in Park Royal (Brent).

Figure 4-1 Vacant Industrial Land by Sub-Region, 2001 and 2006



Sources including: ILAS, Various ELRs, URS

Table 4-2 and Figure 4-2 overleaf show the breakdown of vacant land recorded in the *URS North East and South East London Industrial Land Baseline*. Please note:

- Vacant land within the Olympics Park area was not considered to be 'vacant industrial land' in 2006, but vacant land 'designated for other non-industrial uses'. That is, these sites have been safeguarded for the Olympics Park and are not considered to be available for industry in 2006. This affects the baseline position for LB Newham, LB Tower Hamlets and LB Waltham Forest[42]. Parts of this land are expected to become employment land after the 2012 Olympics and Paralympics. This is dealt with later in Section 8.5.
- In LB Barking & Dagenham the South Dagenham development site was considered to be de-designated from employment use in 2006 (the site had been allocated to housing by then). Barking Riverside is considered to be non-industrial land and is not included in either the 2001 or 2006 baseline.

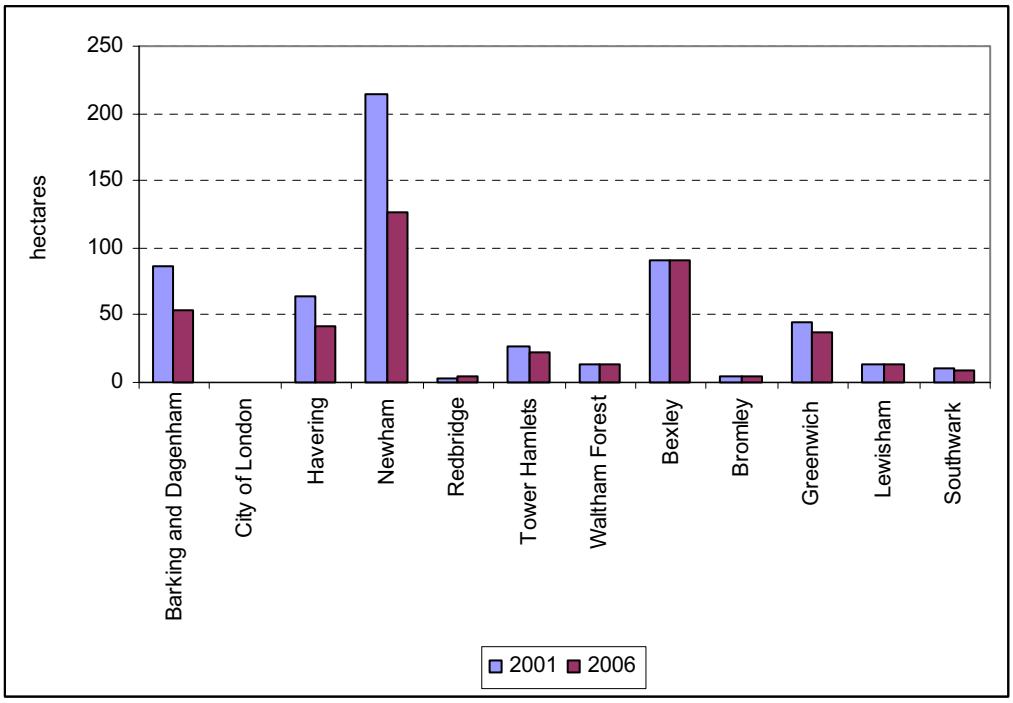
[42] It also affects figures for LB Hackney but Hackney is within the North rather than the North East Sub-Region.

Table 4-2 Vacant Industrial Land NE and SE London, 2001 and 2006

Borough	*2001 (ha)*	*2006 (ha)*	*Change (ha)*
Barking and Dagenham	86	53	-33
City of London	0	0	0
Havering	63	42	-21
Newham	215	126[43]	-88
Redbridge	3	5	+2
Tower Hamlets	26	23	-3
Waltham Forest	13	13	0
TOTAL North East	**407**	**263**	**-144**
Bexley	91	91	0
Bromley	4	4	0
Greenwich	45	37	-8
Lewisham	14	14	0
Southwark	11	9	-2
TOTAL South East	**165**	**156**	**-9**
TOTAL	**572**	**419**	**-153**

Source: URS (Note that these figures are rounded)

Figure 4-2 Vacant Industrial Land NE and SE London, 2001 and 2006



Source: URS

Table 4-3 shows the estimated breakdown of vacant land for boroughs in the North, South West and West London sub-regions in 2001 and 2006.

[43] This figure differs slightly from the baseline used in the *London Waste Apportionment Study* (Jacobs Babtie et al, 2006; 2007). The *London Waste Apportionment Study* uses 117 hectares as an input into its waste apportionment model, as approximately 10 hectares of vacant land has been safeguarded for business relocations from the Olympics Park area.

Table 4-3 Estimated Vacant Industrial Land N, SW and W London, 2001 and 2006

Borough	*2001 (ha)*	*2006 (ha)*	*Change (ha)*
Barnet	16	5	-12
Camden	11	9	-1
Enfield	72	65	-7
Hackney	20	14	-6
Haringey	12	11	0
Islington	9	3	-6
Westminster, City of	0	0	0
North Sub-region	**139**	**107**	**-32**
Croydon	5	5	0
Kingston-upon-Thames	1	1	0
Lambeth	2	5	3
Merton	4	4	0
Richmond-upon-Thames	4	3	0
Sutton	16	12	-4
Wandsworth	6	3	-3
South West sub-region	**39**	**33**	**-6**
Brent	29	49	20
Ealing	48	44	-4
Hammersmith and Ful	7	4	-3
Harrow	6	3	-3
Hillingdon	32	29	-3
Hounslow	17	15	-2
Kensington and Chelsea	3	3	0
West Sub-region	**142**	**147**	**5**

Sources including: ILAS, Various ELRs, URS

Further notes on the how the baseline was estimated for each borough are given in **Appendix C**.

5. WIDER DEFINITION OF INDUSTRIAL LAND

5.1 Introduction

Quantifying the total amount of industrial land in London is complex. The *URS North East and South East London Industrial Land Baseline* has provided a wealth of detailed information on twelve London boroughs, but the picture across the rest of London is less clear. In view of the 'tight' land market across London, and the sensitivity of land use change policy, it is necessary to get an appreciation of the real extent of industrial land occupiers, to complement that indicated by the sources outlined earlier. Conversely, a wide range of non-industrial activities occupy land designated for industrial uses and these also need to be quantified.

This section presents our research into establishing the baseline of the wider definition of industrial land across London. This is not critical to the overall benchmarks analysis but it is helpful to explain the context.

Two definitions of industrial land are used:

- Core industrial land, covering industry, warehousing and vacant industrial land
- Wider industrial land, covering core industrial land as above and also waste, wholesale markets, transport depots and utilities. All these activities are considered to be typical and appropriate users of industrial land. They share common characteristics such as a tendency to involve processing/management of bulky physical goods and/or being 'bad neighbour' activities.

'Core industrial uses' plus 'additional industrial uses' outlined above equals 'wider industrial land'.

Aerial photography from 1999 interpreted by Cities Revealed is a major source of wider industrial land use data. Much of this section therefore relates to 2001 rather than 2006 for greater reliability.

5.2 Additional Uses

The following sections evaluate the range of data sources available to help establish the baseline of total industrial land across London.

Wholesale Markets

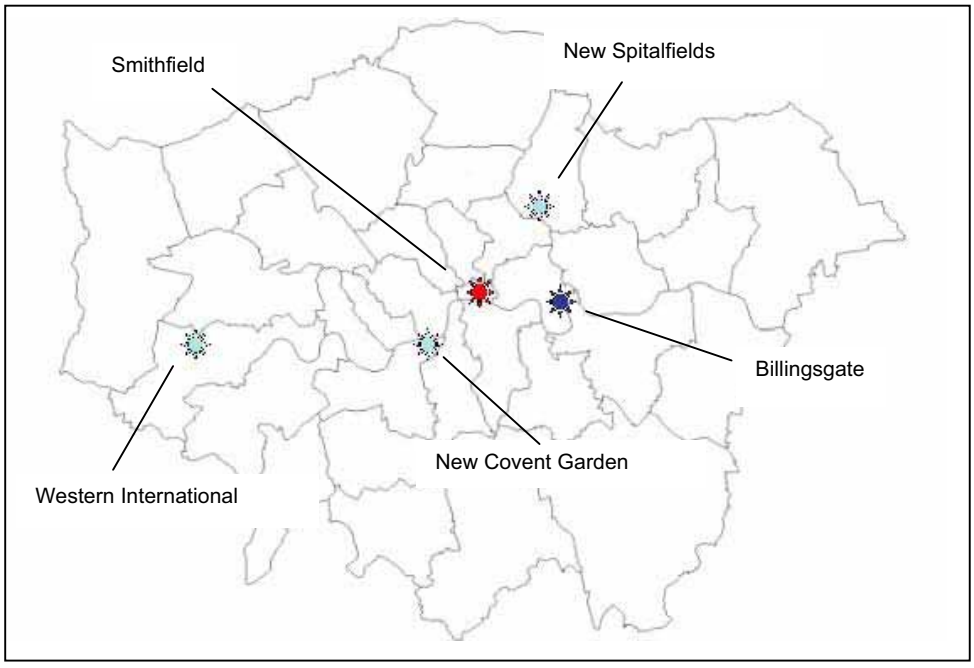
Figure 5-1 shows the location of London's five principal wholesale markets and Table 5-1 details their respective site areas.

Table 5-1 London's Principal Wholesale Markets

Wholesale Market	*London Borough*	*Site Area (hectares)*
Smithfield	City of London	2.4
Billingsgate	Tower Hamlets	5.1
New Spitalfields	Waltham Forest	13
New Covent Garden	Wandsworth	22.7
Western International	Hounslow	7.2
Total		**50.4**

Source: London Wholesale Markets Review URS

Figure 5-1 London's Principal Wholesale Markets



Source: URS

Waste Facilities

The management of waste requires significant amounts of land. The *Recycling and Recovery Facilities: Site Investigation in London* study[44] has identified 792 waste facilities within London, but only for a limited number of these sites (81) was the land area established. The sizes of the sites vary significantly and it is inappropriate to apply average sizes to all the waste facilities sites to estimate a total land take by waste facilities.

Figure 5-2 plots the locations the waste recycling and recovery facilities against the employment land allocations in London. A number of the sites could not be plotted in the absence of x-y coordinates, and a number are located outside the boundaries of London. Of the 604 sites that could be plotted, 255 were located on land allocated for employment purposes. This represents 42% of recycling and recovery facilities.

[44] GLA, 2005, prepared by Land Use Consultants and SLR Consulting Ltd.

Transport Functions

The *Draft Land for Transport SPG* identifies a range of different transport modes and functions and their land use implications, many of which are not directly related to industrial land. In our judgement only the following transport functions are currently predominantly provided on industrial land:

- Bus depots and garages
- Some coach parking facilities
- Some rail, underground and Docklands Light Railway (DLR) depots and maintenance facilities

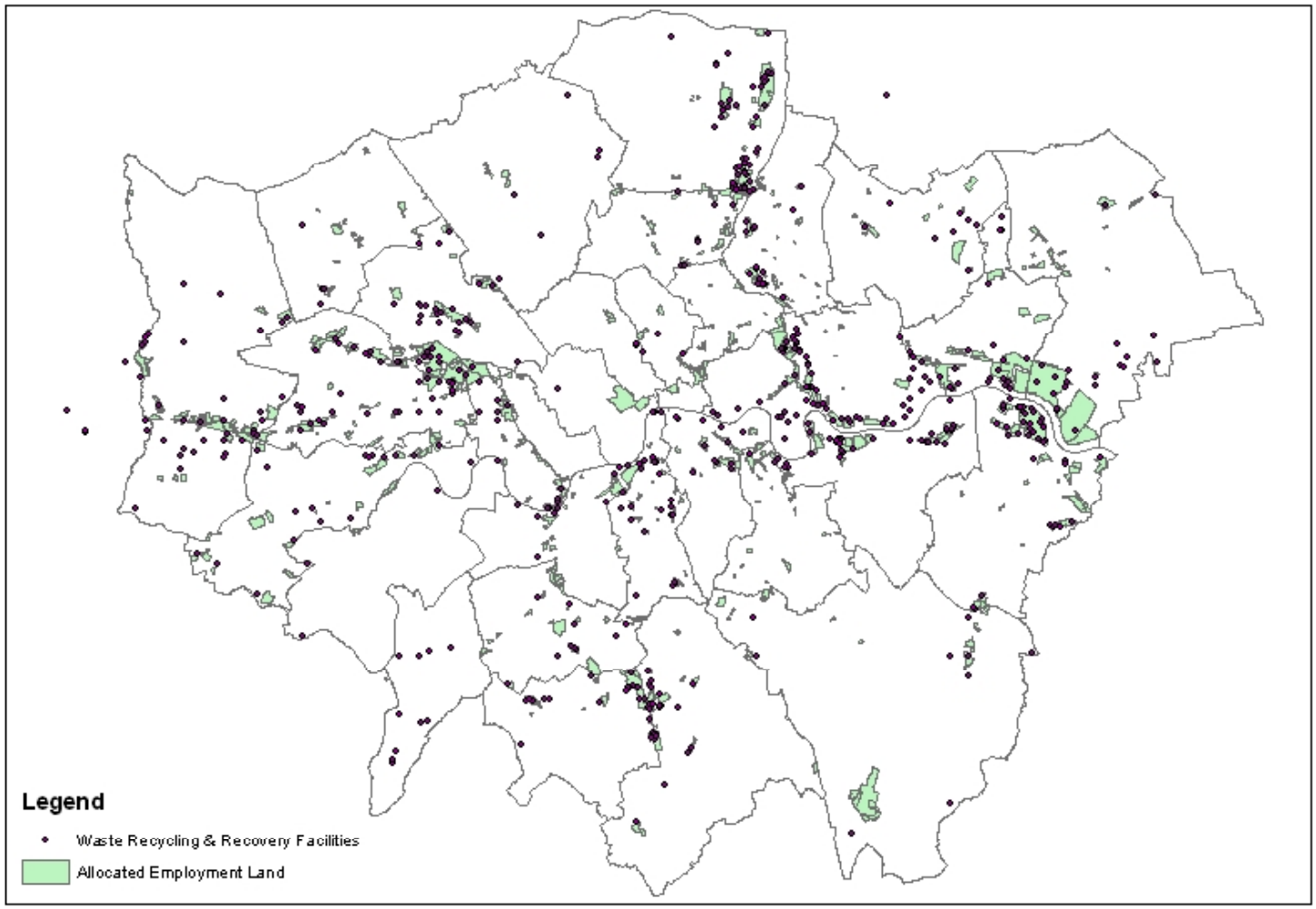
There are 77 bus garages/depots within the Greater London area and 15 garages in surrounding counties that operate buses for Transport for London (TfL) London Bus Services Ltd[45]. TfL does not hold information on the size of these sites and the total land take of bus garages/depots.

An estimated 2,000 coaches enter central London on each weekday. Currently there are only parking facilities for approximately 10% of these coaches[46]. The TfL web site lists 63 coach-parking facilities in London. Of these 22 are on-street coach meters of coach bays. Of the remaining 41 some are part of a larger public transport hub (e.g. Liverpool Street Station, Victoria Station) or are in conjunction with tourist attractions or other places of interest (e.g. London Zoo, Earl's Court Exhibition Centre) and are not provided on industrial land.

To establish an estimate of industrial land used by transport functions across London is beyond the scope of this study[47].

[45] *Land for Transport Functions: Draft Supplementary Planning Guidance*, 2006, The Mayor of London
[46] Ibid
[47] As with waste facilities we do not perceive this to be a major limitation to this study as transport facilities located on industrial land have been identified in the survey and future additional demand can be estimated without precise knowledge of the current stock.

Figure 5-2 Recycling & Recovery Facilities and Allocated Employment Land in London, 2005



Source: GLA, 2005; Borough UDPs, 1993-2003

Utilities

The *North East and South East London Industrial Land Baseline* recorded utilities sites in the two sub-regions. Cities Revealed also designates sites from aerial photography that it considers to be used for utilities. The two data sets are compared in Table 5-2 below. The *North East and South East London Industrial Land Baseline* actually uses Cities Revealed data for sites outside the employment land allocations, so only the survey results for sites within employment land policy areas within the North East and South East sub-region are detailed. The final column uses the information from the physical site survey as the more reliable dataset to form an estimated baseline of land used for utilities purposes.

Table 5-2 Estimate of Land Used for Utilities in London, 2001

Sub-region	*NE/SE Baseline Utilities in Allocated Emp Land (ha)*	*Cities Revealed Utilities in Allocated Emp Land (ha)*	*Cities Revealed Additional Utilities Sites[48] (ha)*	*Estimated Baseline of Utilities Land (ha)*
North		25	220	245
North East	165	60	157	322
South East	88	50	65	153
South West		39	452	491
West		66	305	371
TOTAL		**239**	**1,199**	**1,582**

Source: URS, Cities Revealed (Note that the figures are rounded)

Of the 1,582 hectares of sites used for utilities provision, the large majority are on sites not allocated for industrial employment uses (1,199 hectares). The table also shows that there are limitations in interpreting aerial photography as in North East and South East London the Cities Revealed data was shown to be 57% lower than the physical survey results.

Other Potential Users of Industrial Land

The Town & Country Planning (Use Classes) Order 1987 has been amended by Article 5 of SI 2006/1282. There is a new use class C2A for secure residential institutions such as prisons, secure hospitals or immigration detention centres. Circular 02/2006 Para 84 states that:

> *'…such institutions may not easily be accommodated within existing residential land allocations. The Secretary of State considers that the physical requirements and employment-generating aspects of these schemes are an important consideration and that despite their residential classification, location on land allocated for employment uses is appropriate.'*

[48] In areas not allocated for employment purposes

Such institutions might therefore become more typical users of industrial land in the future. The Prison Service has recommended the expansion of capacity by 8,000 places by 2012 across the UK. In discussions with the Prison Service, there are plans to extend Belmarsh Prison in Greenwich and develop a new facility on adjacent land at Royal Arsenal East. There are also plans for a new prison facility in East London with a likely land-take of between 6-10 hectares, but a specific site has yet to be agreed.

The Metropolitan Police is also looking to extend vehicle patrol bases in London, and these are likely to be sited on land allocated for employment uses.

These demands have not been quantified by the respective organisations and we have not considered it appropriate to quantify them here.

5.3 Summary of Available Information

As is clear from the above analysis there is only partial information available on the amount of wider industrial land in London. Other sources though help to some degree in illuminating the context.

UDP allocations of employment land include a range of employment uses irrespective of their industrial nature. Digitised UDPs used in this analysis were provided by the GLA, and comprise the latest adopted or first or second revised deposit drafts, from 1993-2003. The 'UDP Allocations' column in Table 5-3 below relates to industrial employment only, and is derived from 'Business & Industry' and 'Distribution Warehousing & Freight Handling' layers[49].

These GIS layers have been cross-referenced with other datasets in Table 5-3 below to determine how much land designated for industry is actually occupied by other uses. Within these two GIS layers, the 'core industrial uses' column details those sites that have been identified in Section 3 as built-on industrial and warehousing land. Note that these results are not directly comparable with those in Section 3 as they refer to sites within employment-allocated areas only. Vacant land is then assumed to be from sites within employment-allocated areas only, although in practice a small proportion might be vacant sites that are industrial in nature, and not be protected by planning policy.

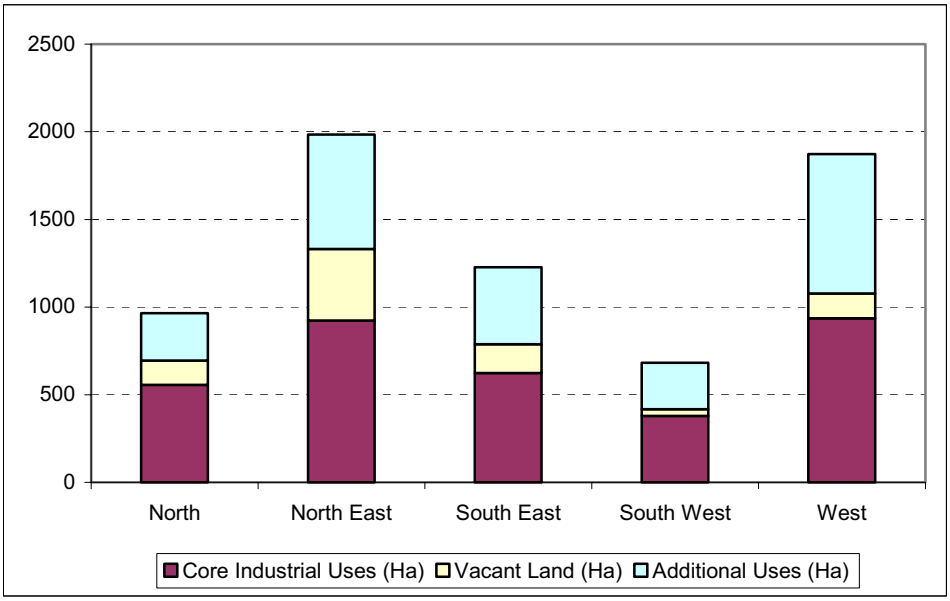
Table 5-3 Additional Land Uses within Industrial Land Allocations, 2001

Sub-region	*UDP Allocations (Ha)*	*Core Industrial Uses exc. vacant (Ha)*	*Vacant Land (Ha)*	*Additional Uses (Ha)*
North	965	460	139	366
North East	1,985	924	407	654
South East	1,227	624	165	438
South West	683	416	39	228
West	1,873	915	142	816
TOTAL	**6,734**	**3,339**	**892**	**2,503**

Sources including: Various ELRs, GLA, Cities Revealed, URS (Note that the figures are rounded)

[49] These are categories used by Landmark who digitised the UDP maps and classified each boroughs definitions of allocated land.

Figure 5-3 Additional Land Uses within Industrial Land Allocations, 2001



Sources including: Various ELRs, GLA, Cities Revealed, URS

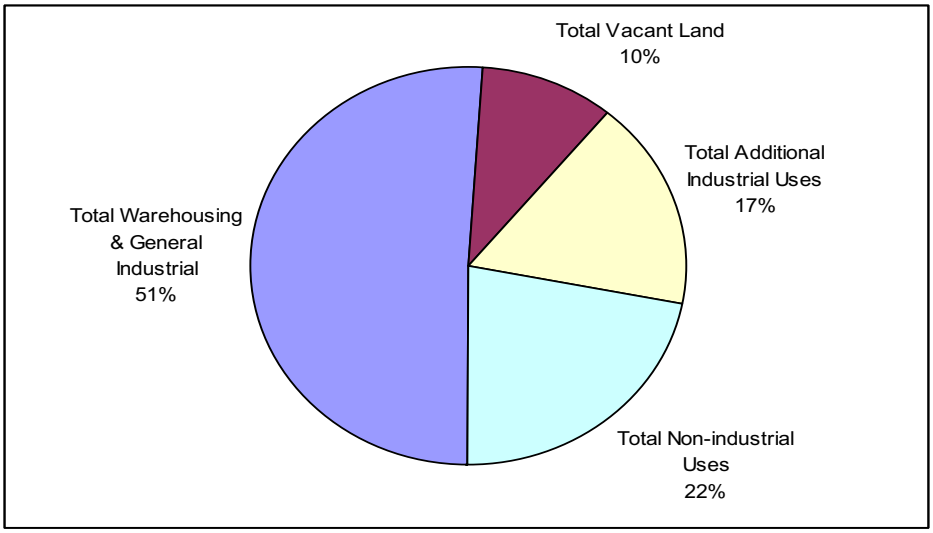
This analysis illustrates the amount of non-core industrial uses on allocated employment land but does not quantify the amount of additional industrial uses on allocated employment land. The *URS North East and South East London Industrial Land Baseline* allows quantification of these uses for NE and SE London. Table 5-4 and Figure 5-4 illustrate the percentage of total employment land that is occupied by all the additional uses identified by the *North East and South East London Industrial Land Baseline* in 2001.

Table 5-4 Industrial Land in NE and SE Sub-Regions, 2001

	North East and South East sub-regions
Total industrial land surveyed	4,435 hectares
Total warehousing and general industrial	51%
Total additional industrial uses	17%
Total vacant land	10%
Total non-industrial uses	22%

Source: URS (Note that these figures are rounded)

Figure 5-4 Composition of Industrial Land, NE and SE Sub-Regions, 2001



Source: URS

Table 5-4 shows that 39% of the industrial land surveyed is occupied by uses outside the narrow definition of industrial land, and that waste facilities, utilities, wholesale markets and transport depots account for an extra 17% (or 1,493 hectares) of industrial land.

This section shows that the baseline of core industrial land established in Sections 3 and 4 does not reflect the entire stock of industrial land in London. Wholesale markets, land for transport functions, waste and recycling facilities and utility sites are also considered to be industrial in nature and are often not situated on employment-allocated land. The research shows that more work is needed to establish a reliable baseline of wider industrial land. Broad indications suggest that there could be up to 8,300 hectares of industrial-type uses[50] in the city.

[50] In the North East and South East sub-regions approximately an additional third of the 'built-on' core industrial land stock was made up of additional industrial uses on allocated employment land. Adding an extra third of the pan-London built-on industrial stock of 4,837 hectares equals 6,449 hectares. Cities Revealed identifies an extra 1,199 hectares of utilities sites outside employment land allocations, and 706 hectares of vacant land adds up to approximately 8,300 hectares of 'wider' industrial land in the city.

6. PROJECTED DEMAND FOR INDUSTRIAL LAND

6.1 Approach

Most London industrial land demand projections in recent years have assumed a close relationship with employment and used direct links with employment projections as the basis for estimating land demand in the future. Land demand has been derived by applying employment densities and plot ratios to the employment projections. However there are a number of reasons why a more sophisticated approach is now thought to be more appropriate:

- The logistics sector is a major element of employment land demand but our research has found that land demand in this sector has a relatively weak link with employment trends[51]. Logistics refers to the range of activities from producer to consumer. When referring to logistics activities in this section, we refer to those activities based on the storage and housing of goods in warehouses, rather than in the wider distribution network.

- There are some sectors where new policies and trends are likely to have a significant impact on demand and consequently historic trends are anticipated to poorly reflect future development. This is likely to be the case for sectors including waste management, recycling and major policy interventions such as the Olympics Park.

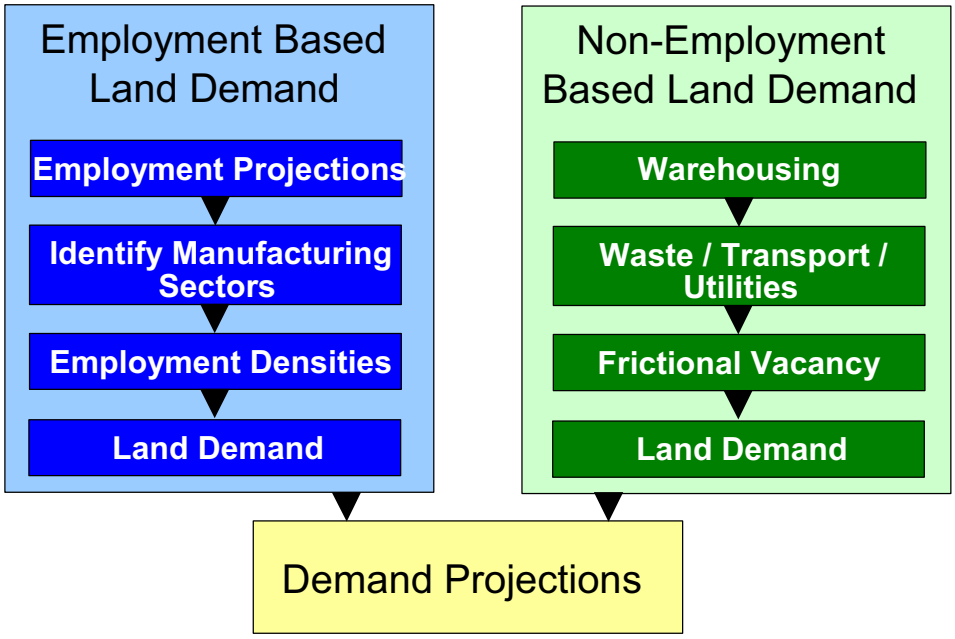
- Plot ratios and employment densities can still be used to translate employment projections into future land demand but their reliability varies significantly depending on sector, area, age of industrial stock etc. This is especially true for sectors with low employment densities such as waste management, recycling and utilities. Consequently use of uniform plot ratios may lead to misleading results.

For the manufacturing sector evidence suggests that employment and land demand is more closely related. Employment densities are higher in this sector and historic employment trends are correlated with historic floorspace data (see **Appendix D** for empirical evidence of correlation between manufacturing employment and factory floorspace).

Consequently an industrial land projection model has been developed which distinguishes between employment related land demand and non-employment related land demand as shown in **Figure 6-1**.

[51] See *Demand and Supply of Land for Logistics in London*, URS 2007

Figure 6-1 Industrial Land Demand Projection Model



Each step of the land demand projections and the data sources used are described in more detail in the remainder of this section, starting with the employment-derived projections.

6.2 Employment Projections

GLA Economics Employment Projections

The most recent GLA Economics total borough level employment projections to 2026 were published in May 2006[52]. For this study we also had access to borough employment projections broken down into 12 broad sectors.

GLA Economics use a triangulation model to derive borough level employment projections. The model is based on macroeconomic projections for all of London assuming a long-term growth rate in Gross Value Added (GVA) of 2.5% per annum. Historic trends in productivity (relationship between number of employees and GVA by sector) are also used to project employment by sector into the future[53].

The triangulation model uses three principal factors to distribute employment across the London boroughs:

- *'Historic trends – reflecting the past revealed preference of employment for locating jobs in particular boroughs […]*
- *Site capacity – reflecting the expected availability of business sites for jobs to locate in across London […]*

[52] GLA Economics *Current Issues Note 9: Borough employment projections to 2026*, May 2006
GLA Economics *Working Paper 18: Borough employment projections to 2016*: *The detailed methodology*, October 2006
[53] GLA Economics *Working Paper 14: Working Future – Employment projections for London by sector*

- *Transport accessibility – reflecting the changes in accessibility across London expected to flow from various improvements in London's transport infrastructure […]*

In order to ensure consistency with London wide projections, the sum of the 33 boroughs is constrained so that it equals the projections for London wide total employment as given in GLA Economics Working Paper 14[54]*.*

We have used the GLA Economics employment projections without any further refinements[55] in order to ensure consistency with other GLA work and because the triangulation model has a number of advantages including:

- The macroeconomic projection has been carried out on a London wide level which should help produce more reliable results than borough-level trend projections.
- The borough level employment projections take into account local information, such as local sector analysis, local site capacity and local transport accessibility to derive the distribution of employment across London.
- The employment projections take into account some aspects of sustainability and economic value of land by distributing employment growth from areas with low public transport accessibility to areas with high public transport accessibility.

Identifying Industrial Sectors

Employment projections are only provided on a broad sector level. To identify future industrial and related employment one needs to identify the proportion of industrial and related employment in each broad sector. In line with the *Industrial and Warehousing Land Demand in London* study we have analysed all employment sectors on a four-digit Standard Industrial Classification (SIC) level to identify the proportion of industrial employment in each broad employment sector. A description of the approach to identify industrial employment is given in **Appendix E**.

A detailed list of those SIC codes considered to be representative of industrial employment is presented in **Appendix F**. This analysis seeks to expand the understanding of industrial employment beyond the traditional manufacturing and wholesale sectors to include elements of primary and utilities, waste and recycling, construction, and transport and communication.

Wider Industrial Employment Projections

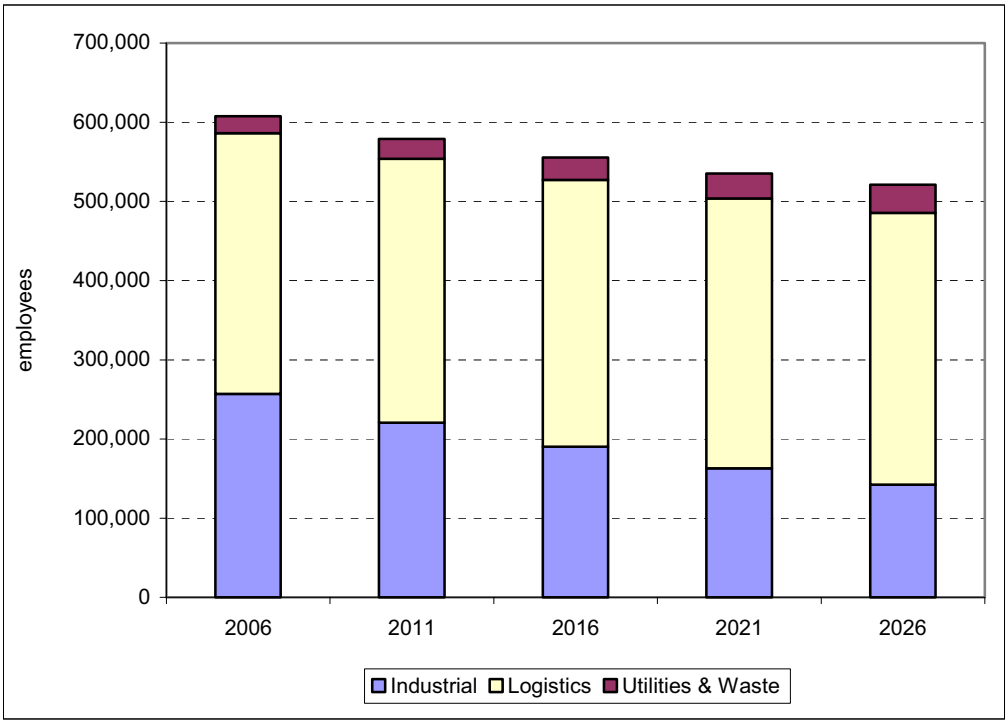
Having identified the proportion of industrial and related employment in each broad sector we then applied these to the GLA Economics' employment projections. At this stage we included sectors such as logistics, utilities and waste to enable comparison with

[54] GLA Economics *Working Paper 18: Borough employment projections to 2016: The detailed methodology*, October 2006

[55] In the next section we discuss where borough level industrial land demand projections exceed available land supply in these boroughs. Special measures have been taken to primarily relocate this demand to neighbouring boroughs within the same property market area, but where this is not possible, demand is expected to migrate to selected other market areas, or to sites outside London. This positive land demand is derived from the logistics projections, which is not based on the GLA Economics' employment projections.

the non-employment derived land projections later in this section. As much of the employment in transport is not situated on industrial land, this sector was not included. Figure 6-2 shows projections to 2026 for employment related to three industrial employment sectors for London as a whole, as defined by the detailed SIC code breakdown in **Appendix F**.

Figure 6-2 Wider Industrial Employment Projections – London, 2006 to 2026



Source: GLA Economics, URS, GVA Grimley

The projections show a 14% decline in 'wider' industrial employment in London from approximately 600,000 jobs in 2006 to approximately 520,000 jobs in 2026. In 2026, employment in the 'general industry' category, including manufacturing, is expected to be 53% of the position in 2006. Employment in utilities and waste is expected to more than double, but only from 16,500 jobs to 35,700 jobs in 2026. Employment in logistics activities is projected to remain relatively consistent with an increase of 7% 2006 to 2026.

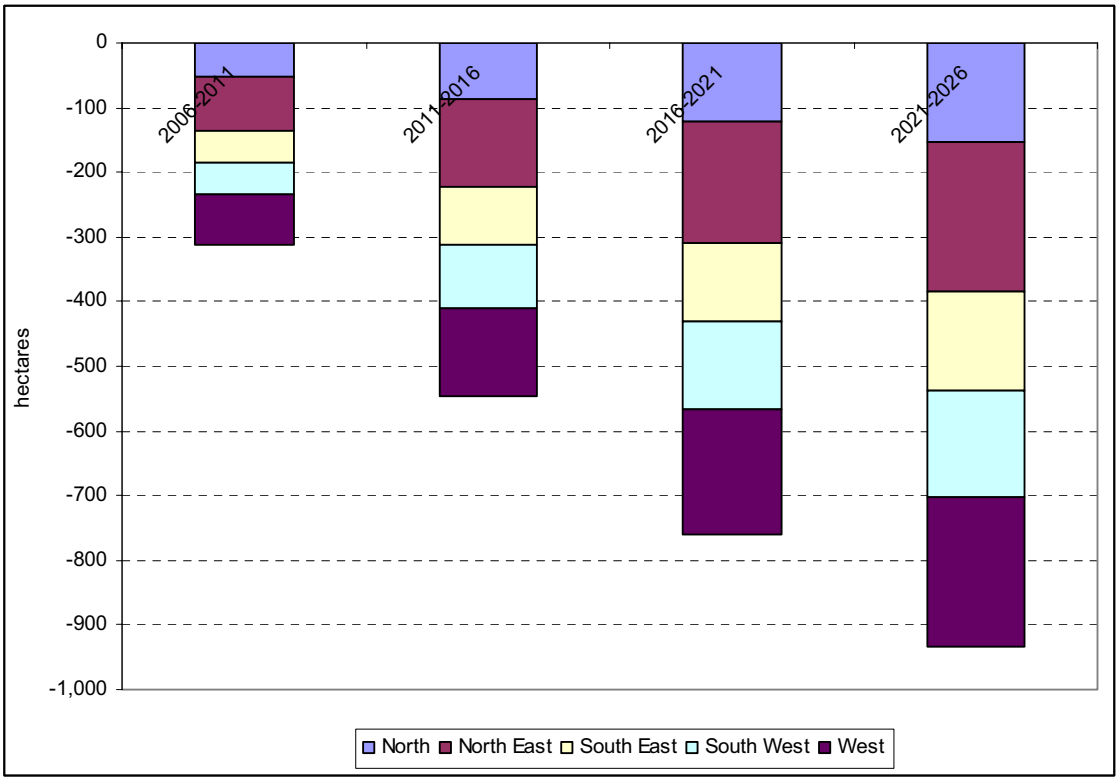
6.3 Employment Based Land Demand

In Section 6.1 it was determined that employment and land demand for the 'manufacturing' or 'general industrial' sector shows a close correlation. To derive an estimate for future industrial land demand for what we define as 'general industrial' employment we have assumed a proportional change in land demand in line with changes to manufacturing employment[56]. This approach assumes that employment densities will not change significantly over time. Justification for this assumption and an analysis of current employment densities in London is given in **Appendix G**.

[56] References to manufacturing here use our own definition of manufacturing employment. This is defined at a detailed SIC code level in Appendix F, and is not the same as the GLA Economics definition of manufacturing, as explained in Appendix E.

Figure 6-3 shows estimated changes in industrial land demand for general industry. Continuing decline in general industry is projected to release 934 hectares of land between 2006 and 2026 in London. This represents 46% of our estimated baseline of 2,021 hectares in 2006.

Figure 6-3 Cumulative Decline in General Industrial Land Requirement, by Sub-region, 2006 to 2026



Source: URS, GVA Grimley

Figure 6-3 shows the changes in land demand from the cumulative decline in general industrial employment. The decline in land demand is greatest in the first time period (2006 to 2011) and the least in the latest time period (2021 to 2026).

6.4 Logistics

The *URS Demand and Supply of Land for Logistics in London* anticipates strong demand for logistics premises on industrial land in London. The study finds that there is a poor correlation between warehousing employment and warehousing floorspace and consequently an alternative approach to land demand is preferred (see Sections 6 to 7 of that report).

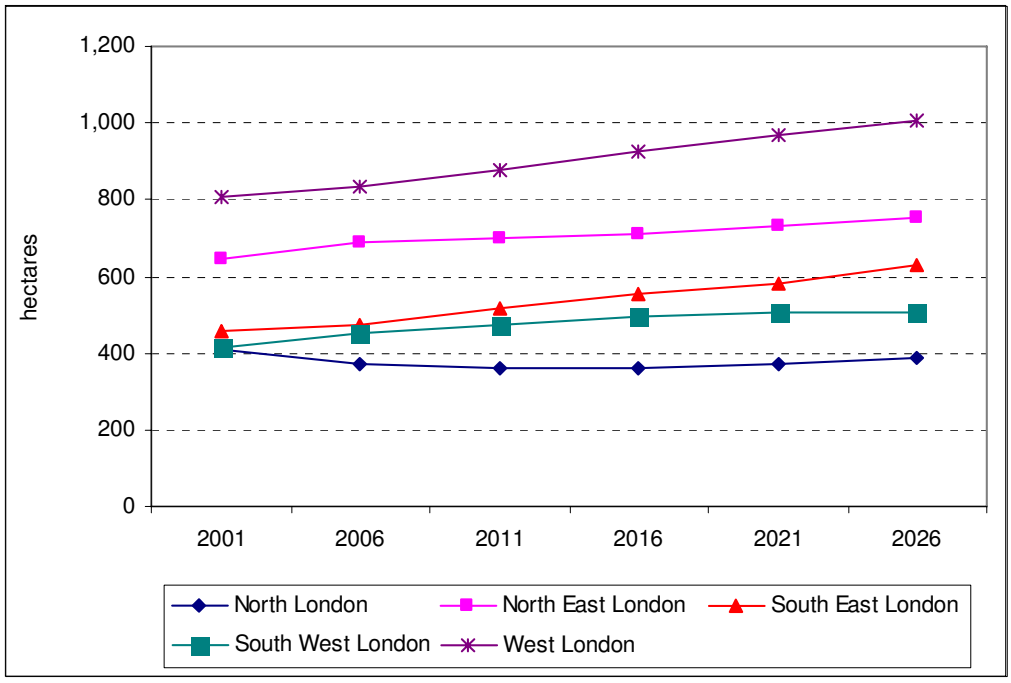
The growth in GVA for London is shown to have a positive correlation with warehouse floorspace demand (Section 6.3) and is used to adjust the trendline projections of warehousing land demand. The main limitation with projecting floorspace trends is the limited VOA data range, 1998-2005. GVA provides a longer time series and places the period within the context of two economic cycles, 1986-2008 (Sections 7.1-7.3).

This is an important change in the previous methodologies of projecting land demand for logistics operations which have been traditionally based on translating employment projections to land through employment densities and plot ratios. The analysis therefore anticipates an additional demand for 461 hectares of land for warehousing across London between 2006 and 2026.

The projections anticipate that locational substitution to sites outside London will continue at the rates captured by historical trends. As discussed later in Section 7.5, new businesses are expected to be relatively flexible in their choice of location between boroughs within the same property market areas. Once property market areas are anticipated to reach capacity there is a degree of migration anticipated between some (see Table 7-2), but a small number of others are likely to seek sites on the outskirts of London.

Figure 6-4 shows the projected demand for warehousing land by sub-region, over five-yearly periods from 2001 to 2006

Figure 6-4 Demand for Warehousing Land by Sub-Region, 2006 to 2026



Source: URS, GVA Grimley, Cranfield

Trends indicate that most inner London boroughs will have stable or declining demand for warehouse space, particularly in the more immediate future. The outer London boroughs are anticipated to continue to experience growing demand for warehouse space. In balance, this is expected to outweigh decline in the inner boroughs.

The North London sub-region illustrates this microcosm – the rate of decline in demand for warehousing land in the inner boroughs slows in the medium-term as supply reaches a baseline level and the rates of growth in the outer boroughs continue. The distinctive shape to the trendline in Figure 6-4 illustrates this dynamic.

6.5 Wholesale Markets

The emerging *URS London Wholesale Markets Review* recommends the following phased consolidation of London's wholesale markets:

- Relocation of Billingsgate Market to either New Spitalfields or New Covent Garden and redevelopment of the Billingsgate site for mixed-use office/residential led development. The relocation is assumed to take place between 2006 and 2011 and the redevelopment of the Billingsgate site between 2012 and 2015.
- Relocation of Smithfield Market to either New Spitalfields or New Covent Garden and redevelopment of the site for mixed-use office/residential led development. The relocation is assumed to take place between 2016 and 2020 and the redevelopment of the site between 2021 and 2026.

This would result in the release of a total of around eight hectares of industrial land between 2006 and 2026. This study is currently pending research on the transport implications of such change - the results of which can then be incorporated and any changes in recommendations fed into the industrial land release benchmarks. It is acknowledged that the recommendations on London's wholesale markets will need to be tested through consultation and involvement of a range of interested parties. The implications for the industrial land release benchmarks are subject to the outcome of the review of wholesale markets and the benchmarks will continue to be updated as part of a plan, monitor and manage approach.

6.6 Additional Users of Industrial Land

The demand for land for utilities, waste and transport functions also have a poor correlation with employment change in these sectors and we have therefore not based the land demand for these sectors on the employment projections.

Waste

The Mayor has stated that planning for the management of London's waste is one of the most critical tests facing the capital and he recognises the scale of this challenge.

Provision to handle waste in London to meet the *London Plan* commitment for 85% self-sufficiency within London by 2020 is becoming an increasingly important use of industrial land. This position has been adopted in the *Housing Provision Targets, Waste and Minerals Alterations to the London Plan*, published in December 2006[57].

Industrial Land Release Benchmarks Study inputs to the London Waste Apportionment Study

The GLA commissioned consultants Jacobs Babtie to undertake a study of waste apportionment in London. The *London Waste Apportionment Study* uses a number of

[57] Mayor of London, *The London Plan: Housing Provision Targets, Waste and Minerals Alterations*. GLA, Dec 2006

criteria to apportion waste, in tonnes, to each borough[58]. One of the nine criteria is the potential land capacity for waste facility development in each borough.

The *Industrial Land Release Benchmarks* study has provided key inputs to the *London Waste Apportionment Study* by providing the total area (hectares) of industrial land in each borough comprised of built-on and vacant land. This formed part of the theoretical potential land capacity (supply) for waste facility development in each borough, which is one of the nine criteria to apportion waste by borough in the study by Jacobs Babtie. Full details of the methodology are presented at paragraphs 4.20 - 4.33 and Appendix 1 (pages A1-1 to A1-4) of Part A of the *London Waste Apportionment Study*.

London Waste Apportionment Study inputs to the Industrial Land Benchmarks Study

The *London Waste Apportionment Study* has, in turn, provided a key input to the *Industrial Land Benchmarks* study and enabled estimates of the additional land demand for waste management facilities to be derived for each borough and sub-region 2006-2026.

Jacobs Babtie apportioned tonnes of waste between boroughs from a known overall London-wide quantity of waste that will require management to 2020. The London-wide waste tonnage was converted into land demand for new waste management facilities by the GLA using assumptions on average size and throughputs of a range of facilities (see paragraphs 4.10h – 4.10l and Table 4A.5 in the *London Plan Alterations* published in December 2006). From the known London-wide waste tonnage, the additional land required to accommodate new waste management facilities to 2020 totalled some 215 hectares. This position is incorporated into the Alterations published in December 2006.

The London-wide and sub-regional breakdown of the additional land demand from waste facilities is shown below in Figure 6-5. The demand estimates show a steady increase in demand for land for waste facilities, with the total requirement for 215 hectares of land for additional waste facilities by 2020.

The proportion of total waste tonnage apportioned to each borough in each of the three five-year phases up to 2020 was applied to the total land requirement (215 hectares) by 2020 to provide an estimate of land likely to be required in each borough (and aggregated to sub-regions) from industrial uses. See **Appendix J** for more information.

Given that the overall assessment of land required for waste management facilities extends only to 2020, no additional land requirement for waste facilities is identified between 2021 and 2026 in Figure 6-5. However, this position will need to be monitored closely and kept under review.

[58] see Table 4A.4 of *Revised draft minor alteration to the London Plan*

Figure 6-5 Additional Land Demand from Waste Facilities, 2006 to 2026 Cumulative

Source: GLA based on research conducted by Jacobs Babtie, Land Use Consultants and SLR Consulting Ltd

Policies 4A.1 and 4A.2 of the *London Plan* (adopted Early Alteration) state that boroughs should ensure that land resources are available for waste management and identify new sites for waste management facilities. The policies note that coordination of borough planning policies will be promoted in this respect. They also require no net loss of existing waste facilities unless compensatory provision is made.

Therefore, where boroughs are anticipated to have surplus existing capacity for waste management it is assumed that:

A) there will be no net loss of existing waste management facilities to non-waste uses; and

B) the surplus capacity for waste management which will exist in some boroughs will be utilised to reduce the required capacity (and therefore land-take) in other boroughs.

Transport Functions

As identified in the Mayor's *Draft Land for Transport SPG,* London's growing transport infrastructure requires additional land. Some of the additional demand for land for transport infrastructure will not be provided on industrial land (e.g. cycle lanes). Other land will be linked to clearly defined specific transport projects (e.g. Crossrail) and the land demand and safeguarding will be fed into the planning system on an individual project basis. We have therefore only included anticipated future demand for industrial land from transport infrastructure from bus depots and garages.

The *Draft* Land for Transport SPG states that:

> *'The Mayor's Transport Strategy aims for an increase of 40% in bus capacity by 2011. […] The increase in capacity of the bus network requires a large increase in the peak*

vehicle requirement. In addition, new vehicle types such as articulated buses often create specific requirements that may not be met by existing garage premises. This translates into a significant need for additional garage capacity. Although there will be some scope for more intensive use of existing garage premises it is estimated that up to 12 additional sites will be required by 2016'.

The *Draft SPG* identifies boroughs with a short-term need for additional garage space and we have apportioned the 12 additional garage sites to the five sub-regions in accordance with the identified need on a borough level. Discussions with TfL and research by URS transport consultants indicate that a typical bus garage site will have a land requirement of approximately one hectare. This results in an additional land demand for bus garages of 12 hectares by 2016 which is more or less evenly spread across the sub-regions as shown in Table 6-1 below.

Table 6-1 Projected Land Demand for Bus Garages and Depots, 2006 to 2016

Sub-region	*Projected Land Demand for Bus Garages and Depots (ha)*
North London	2
North East London	3
South East London	2
South West London	3
West London	2
Total	**12**

Source: URS, GVA Grimley (Note that the figures are rounded)

This identified demand does not include the relocation of bus depots from sites within the Olympic Park[59] or additional demand beyond that identified in the *Draft SPG*.

Utilities

National Grid is one of the three electricity transmission licence holders in Great Britain. They own the network in England and Wales. EDF Energy is the Distribution Network Operator in London. Their sub-stations and distribution facilities could occupy a range of land areas from 5m^2 (transformers) to 50m^2 (sub-stations) to 1,000m^2 (0.1 hectares) for large sub-stations. National Grid is currently only replacing their 30 to 40-year old sub-stations, and have no plans for expansion of facilities.

One of the key areas highlighted in the Thames Water 2005-2010 Business Plan investment programme is 'replacing water mains, sewers, treatment works and other assets', with a planned investment of £1,500 million.

Our research suggests that although there will be increased demand for utilities services, utilities providers are generally expected to renew existing sites, or co-locate with other land uses, rather than require additional sites on industrial land. The research suggests that generally there is adequate existing land capacity within the utility infrastructure

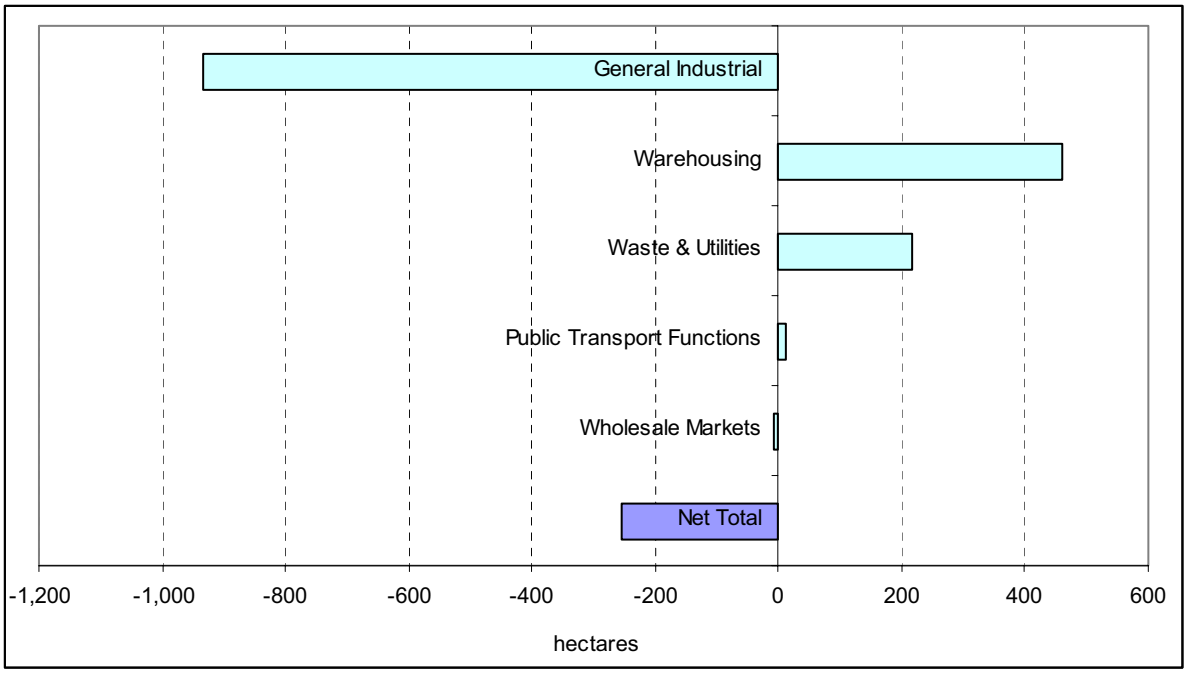
[59] Three depots at Waterdon Rd within the OP area are becoming consolidated into two depots at Wyke Rd in Tower Hamlets and part of the Parcelforce site near West Ham station in Newham. These sites were surveyed as built-on industrial land in the *URS North East & South East London Industrial Land Survey* and do not qualify as additional land demand here.

networks and assets to accommodate the demand from most of London in the near future. A possible exception is for planned investment in new utility facilities to respond to any additional demand from areas of significant new residential development, such as the Thames Gateway Growth Area[60]. The quantities of land required, however, are assumed to be relatively small in comparison with total industrial land in the area.

6.7 Summary

We project that the overall demand for industrial land will be negative between 2006 and 2026. Projected future decline of the manufacturing sector is the largest contributor to the reduced demand with a total of 934 hectares of industrial land being projected to be freed up between 2006 and 2026. Rationalising the wholesale markets contributes 8 hectares to the land release. Warehousing (461 hectares), waste and utilities (215 hectares) and public transport functions (12 hectares) have a positive demand between 2006 and 2026. The industrial land demand projections suggest that the net effect will be that 254 hectares of industrial land[61] will become available for other uses in London between 2006 and 2026 as shown in Figure 6-6.

Figure 6-6 Industrial Land Demand, 2006-2026



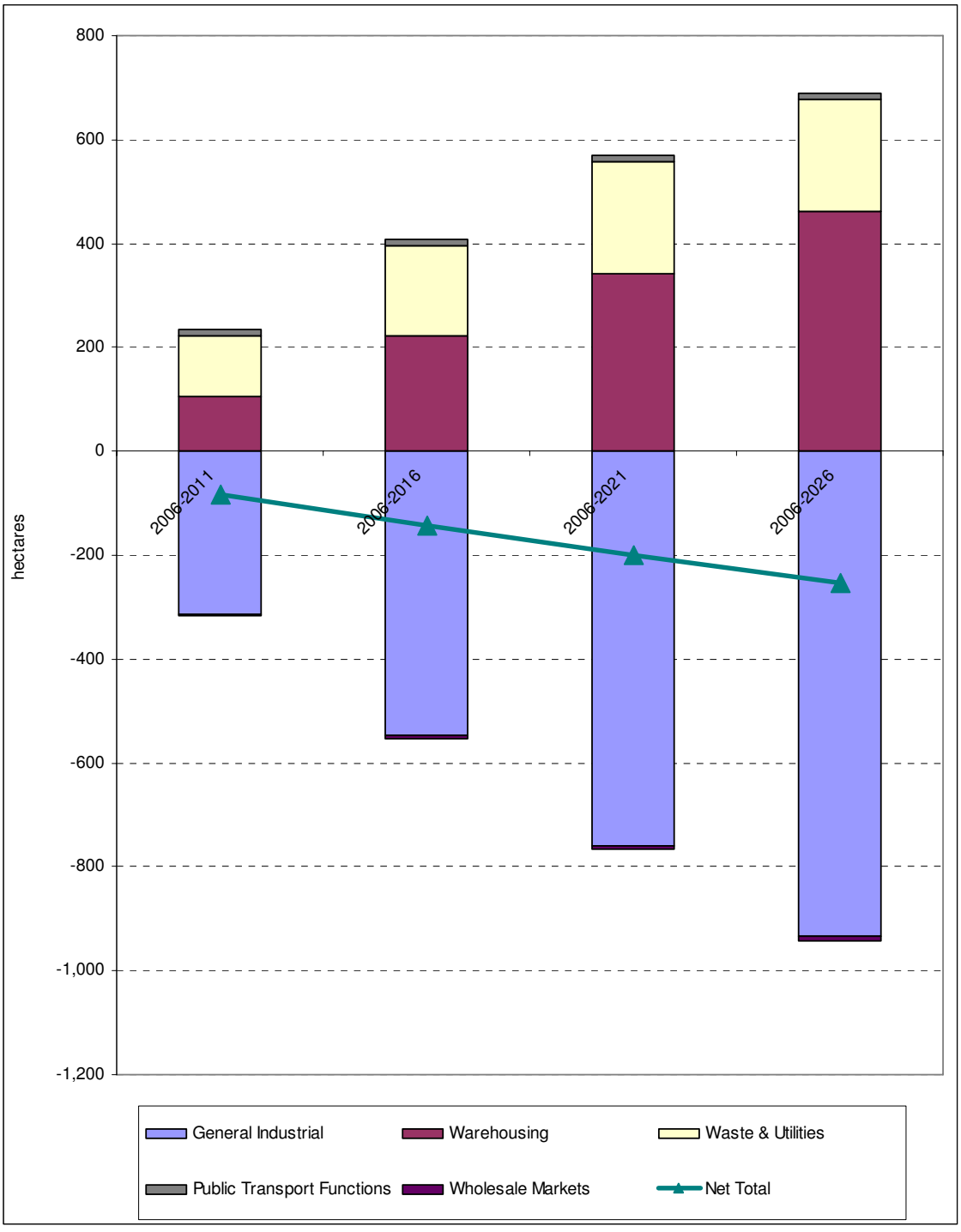
Source: URS, GVA Grimley, GLA

Figure 6-7 and Table 6-**Error! Reference source not found.**2 show the cumulative demand for industrial land for each time period by the different uses. The land released from industrial activity is projected to increase from 109 hectares in 2011 to 254 hectares in 2026.

[60] The emerging *Water Action Framework* prepared by the GLA investigates the necessary water supply to support London's future growth in population

[61] Both sites currently allocated for employment use by planning designations, and those not currently safeguarded.

Figure 6-7 Demand Projections, 2006-2026 Cumulative



Source: URS, GVA Grimley

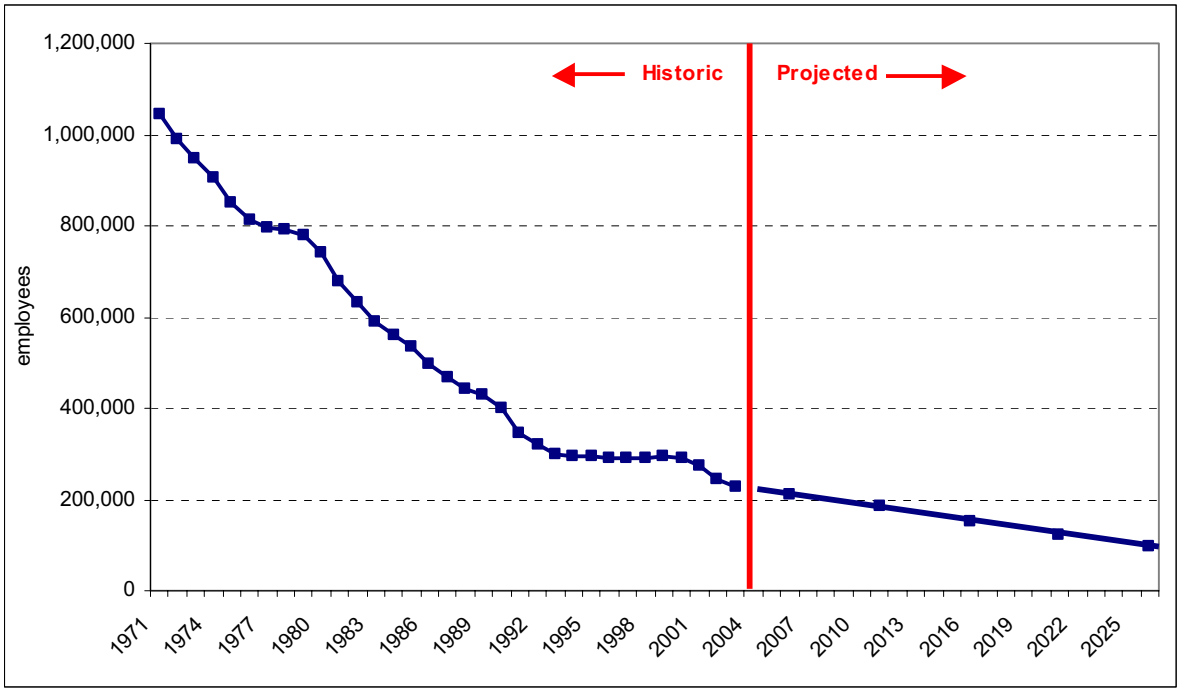
Table 6-2 Cumulative Industrial Land Demand, 2006 to 2026, hectares

	2006-2011	2006-2016	2006-2021	2006-2026
General Industrial	-313	-547	-759	-934
Warehousing	82	184	312	461
Waste & Utilities	116	174	215	215
Public Transport Functions	12	12	12	12
Wholesale Markets	-5.5	-5.5	-8	-8
Total	-109	-183	-228	-254

Source: URS, GVA Grimley (Note that these figures are rounded)

The projections of decline in demand for industrial land cannot be taken as a robust indicator of employment at a particular point in time in the future. The projections show a long-term average trend and rates of change can vary across different time periods. Figure 6-8 shows the historic rate of decline in manufacturing employment in London has varied across different time periods. The decline was higher through the 1970s, 1980s and the early 1990s, then manufacturing employment remained largely stable through the 1990s and started to decline again from around 2000.

Figure 6-8 Historic and Projected Manufacturing[62] Employment in London



Source: GLA Economics

In future there could be periods of relative stability in the manufacturing sector (as in the 1990s) and/or periods of accelerated decline in manufacturing at rates greater than the

[62] For the purpose of this illustration we have used the manufacturing employment as defined by GLA Economics and can therefore not be directly compared to the manufacturing employment figures used in the rest of the research. See **Appendix E** for further detail.

projected. This suggests that most emphasis should be placed upon release of existing surplus land, and a conservative approach taken to projected additional release.

Manufacturing is only one element of industrial land demand. As this section has illustrated there are other significant sectors, such as logistics, that are projected to grow. This will impact on the sub-regions of London to different degrees, with supply constraints in some areas and surplus land in others. In order to balance out industrial land supply and demand it is important to understand how industrial land markets operate so that demand is transferred in an appropriate and realistic way. The impact of these demand projections on the industrial land markets are considered in the next section.

7. INDUSTRIAL PROPERTY MARKETS

7.1 Introduction

This section looks at the industrial property market in London. This combines an analysis of supply factors and demand patterns and relates this to key market area geographies. The analysis relates closely with that produced in the *Demand and Supply of Land for Logistics in London* study, as industrial market demand in London is largely driven by the logistics sector.

The main purpose behind the analysis is to provide a reality check for the proposed industrial land release figures. This marries a property market perspective with the quantitative economic analysis discussed elsewhere in this report. The insights provided from this property market analysis also help inform the potential for re-allocation of industrial demand across different parts of London.

Before moving into the analysis we note some general background factors and highlight some key definitional issues.

A first and significant factor is the distinction between the manufacturing and the distribution or logistics sectors in property terms. New floorspace development is strongly influenced by institutional and developer preferences. This means a focus on property with the highest possible re-sale value is generally constructed, which tends towards larger unit space for a single occupier. This generally favours logistics occupiers. The logistics sector, in turn, can require more exacting building specifications than the manufacturing sector, such as more loading doors or a higher minimum eaves height. This in turn leads to higher asking rents in order to cover development costs, which logistics organisations are generally better able to afford than manufacturers.

The picture is different in the second-hand market, which is where the majority of activity generally occurs. The key driver here is the asking rent and other occupational costs in particular, with the building specification being an area in which compromise is necessary. This can mean manufacturers and distributors competing for the same properties, with affordability being the key difference between parties.

Price differentials between manufacturers and distributors tend to be a key distinction between these sectors in property terms. This is as much an affordability issue as it is a price issue, which can be influenced by differences in building specification requirements. Although both types of occupier require a watertight shell within which to carry out their operations, with a basic level of servicing features, the logistics sector increasingly requires more specific features such as minimum eaves heights and dock loading capabilities. Such features are not as important for manufacturing operators, who are generally less willing or able to pay for such features.

7.2 Property Market Areas

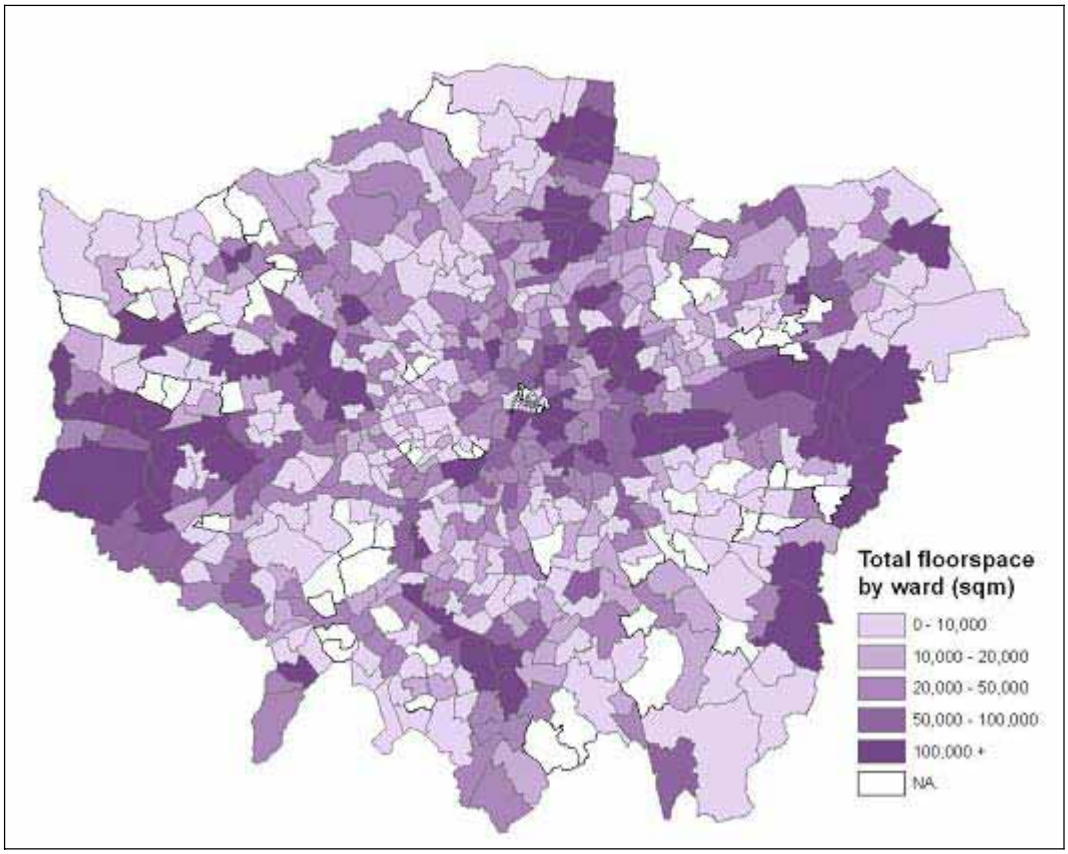
The key industrial property markets have been identified through a combination of methods. The major concentrations of existing industrial floorspace were identified at a ward level, both for the manufacturing (factories) and logistics (warehousing) sectors.

This helped in preparing the initial extent of major industrial property markets, combined with an analysis of key transport routes.

The distribution of factory and warehouse floorspace and units across London is shown in Figure 7-1 and Figure 7-2 below.

Figure 7-1 illustrates the major locations of industrial and warehousing floorspace across London. This shows concentrations in the Thames Gateway area and in west London, notably around Heathrow airport and Park Royal. There are also large amounts of floorspace in the Lea Valley area and along the A24 and A23 in south London. In addition, there are pockets of concentration in central London, especially south of the river.

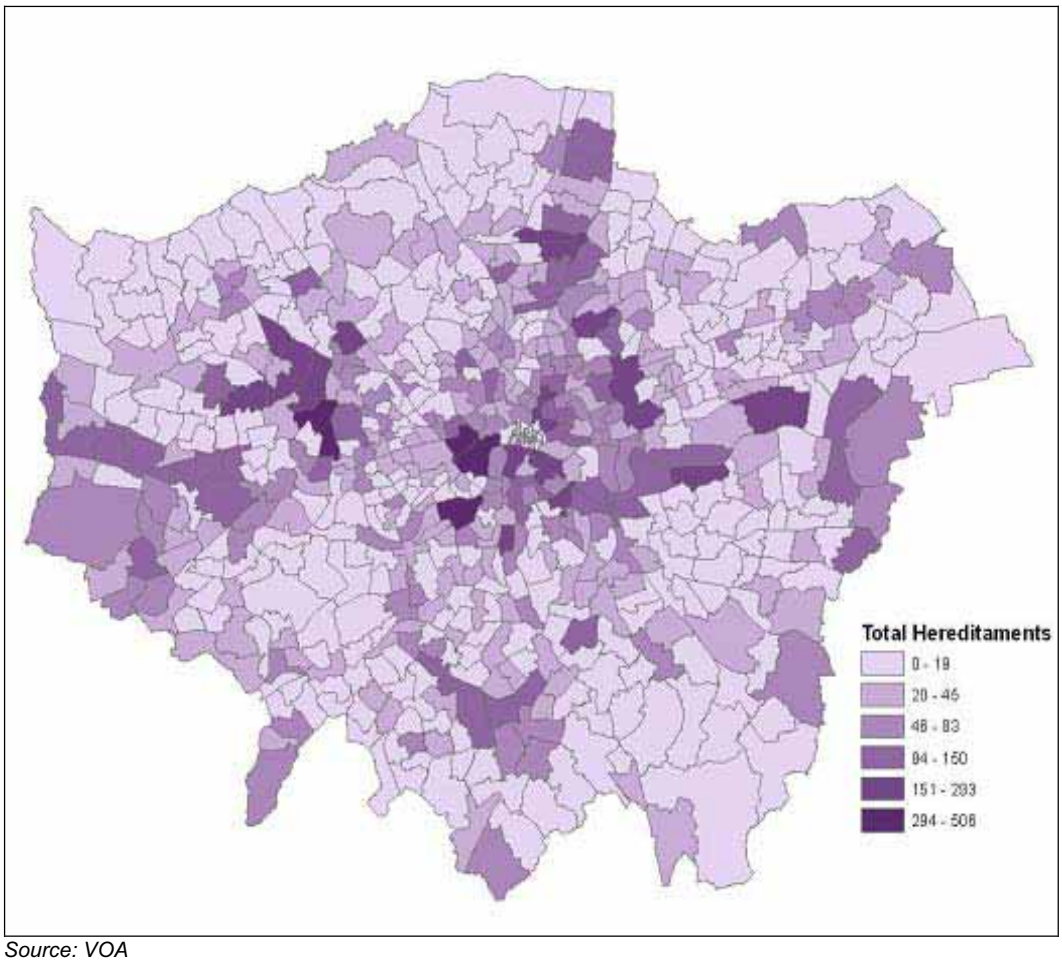
Figure 7-1 Factory and Warehouse Floorspace in Greater London, 2003



Source: VOA (Note NA means either the data is unreliable or there are too few companies to disclose the information)

Figure 7-2 illustrates the distribution of total industrial and warehousing floorspace in terms of the number of hereditaments. Hereditaments are units of assessment for rating purposes and generally speaking one heraditament equates to one property. The pattern revealed is broadly similar to the distribution of total floorspace, although there are a relatively high number of units in central London. This, when married with the total floorspace data, indicates that there are a considerable number of small units in central London.

Figure 7-2 Factory and Warehouse Hereditaments in Greater London, 2003



Source: VOA

7.3 Principal Property Market Areas

The initial industrial market areas were then discussed with the industrial agency team of GVA Grimley in order to refine boundaries. This was to reflect market factors such as new areas of demand, areas in transition and the locational requirements of occupiers. The results of this are summarised in Figure 7-3 below. Borough labels are presented in **Appendix H** for reference.

Figure 7-3 provides a broad assessment of the key industrial locations in London. The property market is a manifestation of the existing industrial structure in London and therefore represents historic/traditional locational distribution to a certain extent.

The major industrial property market areas covering London are as follows:

- Central Service Circle
- The Thames Gateway
- The Lea Valley
- Park Royal/A40/M4/A4
- Heathrow
- Wandle Valley

This provides a broad assessment of the key industrial locations in London. This is intended as a guide only, with precise boundaries not specified. Key characteristics of each market area are outlined below and in Table 7-1. **Appendix I** gives more detail.

Central Service Circle: Essentially several pockets of industrial activity within central London, both north and south of the river. Businesses in this area often provide essential service support to the employment market in the West End and City of London. Property stock is varied, with much old and multi-storied premises. There are few industrial development opportunities available.

Thames Gateway: This is an extensive market area stretching from inner London to the M25 and beyond. The area has seen major change over the last two decades, with increased emphasis as a logistics location, although light industrial and manufacturing demand are still present. There is a large and diverse spread of sites and the area has seen increased levels of demand over the last decade in particular.

Lea Valley: This area extends northwards from Tower Hamlets and Hackney along the A10 corridor. The southern area is being influenced by major regeneration initiatives, such as the London 2012 Olympics and Paralympic Games, which also affect the western part of Thames Gateway. Many occupiers have a logistics focus serving north London/M25 and the City. The total stock of industrial floorspace has reduced over the last decade, although overall demand has been improving more recently.

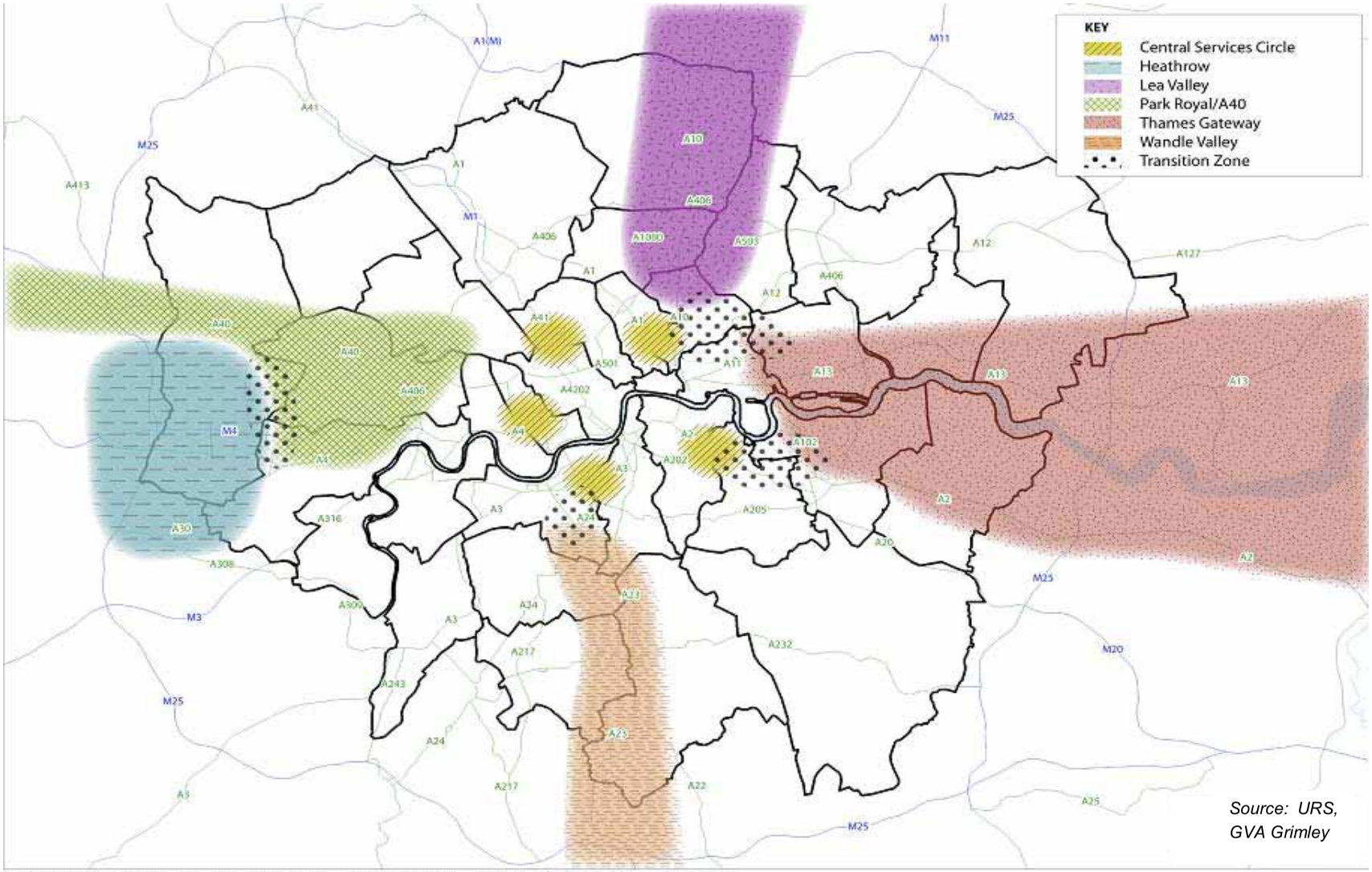
Park Royal/A40/M4/A4: This market area is attractive to retail and service related businesses, particularly for time sensitive activities. There are also producers and distributors of food products. There has been significant demand, including over-spill demand from Heathrow. However development opportunities are becoming limited.

Heathrow: The majority of businesses are airport related, with strong demand for representation here leading to very high land and property values. Much space is relatively new and is in institutional ownership, but there are few development opportunities. Demand is spreading towards the A4 and A40 market area due to shortages of supply.

Wandle Valley: This area extends from Gatwick, through Croydon and into Wandsworth. The northern area overlaps with the activities of the Central Service Circle, with the Croydon area serving southern London. The area has changed significantly over the last few decades, with a move from manufacturing to logistics. Demand has been steady over the last few years, with particular demand for larger units. New development land is starting to become in short supply.

A series of transition zones are also highlighted in Figure 7-3. These are meant to represent the areas where a number of the main industrial property markets merge or overlap. The nature of property activity in these transition areas is likely to be more complex given the potentially different drivers of demand.

Figure 7-3 The Key Industrial Property Market Areas in London



Map reproduced from GBPro 200 GB (2005 edition). © Colins Bartholomew Ltd (2005). Map for representative purposes only.

7.4 Key Findings

Table 7-1 summarises trends discussed in the more detailed market commentaries in **Appendix I**. This is intended as a guide to industrial activity in the industrial markets rather than precise measures of change. Nevertheless, it should provide practical guidance on the industrial markets from a property market perspective.

Although much of the discussion presented in this section and the figures in Table 7-1 are based upon a market perspective provided by agents, various quantitative data sources have also been used. Some comment upon these data sources is required so that an appropriate interpretation of the data can be made. In summary these are as follows:

- The gross development rate data is based upon planning permissions granted, as monitored by London Development Database (LDD). This has been converted into hectares, based upon an assumed average plot ratio of 45%. This produces data similar to that produced in the previous industrial land report for the GLA[63]. Standard plot ratios are also shown to be unrepresentative of industrial premises in central London location, which typically have higher plot ratios of approximately 70%[64]. However this data set does not pick up the smallest developments (below 1,000m^2), so does not represent the whole market. Even so, it is likely to be reasonably representative of gross development activity.
- In practice the density rate varies across London, especially between inner and outer London (also see **Appendix G**). This can alter the overall land take-up figures for the market areas and is discussed under each market area.
- The net development rate is based upon change in the total stock of floorspace in the various property market areas. This is based upon the VOA data, as produced by the ONS. However, there can be significant differences between various years due to factors such as changing measurement practices and time-lags in terms of when a heraditament is recorded or removed from the VOA land use records. These figures need to be viewed as providing a direction of change, rather than a fixed figure of change between two points in time.
- The take-up data is based upon an examination of various property databases (Focus, EGI) as well as in-house industrial recording systems. These data sources are not comprehensive. The smallest end of the market is not necessarily fully captured, as are certain design-and-build deals and other transactions not involving property agents. Whilst the coverage is likely to capture the majority of activity in the markets, the take-up figures are best seen as a guide to activity in these market areas.

The first part of Table 7-1 examines the development rate in each property market area. A gross development rate is provided, based upon data from the London Development Database, supported by market evidence from GVA Grimley.

[63] *Industrial and Warehousing Land Demand in London* (Roger Tym et al, 2004)
[64] Section 7.5 in *Demand and Supply of Land for Logistics in London* (URS, 2007)

Table 7-1 Summary of London's Industrial Property Markets

	Central Service Circle	*Thames Gateway*	*Lea Valley*	*Park Royal/A40*	*Heathrow*	*Croydon/ Wandle Valley*
Gross Development Rate (ha per annum – 1992 to 2005)[65]	6-7	14-16	5-6	13-15	11-13	7-8
Net Development Rate (ha per annum – 1998 to 2004)	-10 to –20	+15	-5	+5	+1 to +2	-5
Average Annual Take-up (m^2 per annum)	20-40,000	70-100,000	50-75,000	150,000+	50-75,000	40-60,000
Proportion of demand from logistics/warehousing	90%	80%+	85-90%	80%+	95%+	75-80%
Demand level for under 2,000 m^2 floorspace	Steady	Steady	Weak/Steady	Strong	Strong	Strong
Demand level for 2-10,000 m^2 floorspace	Strong	Strong	Strong	Steady	Strong	Steady
Demand level for 10,000+ m^2 floorspace	Weak	Strong	Steady/Strong	Weak	Strong	Weak
Typical Prime Rents (£ psm)	£108-£160	£78-£160	£80-£102	£107-£140	£160+	£92-£97
Typical Land Values (£ per hectare)	£3.75-£5m	£1.8-£2.5m	£2.5-£3.75m	£4.3-£5.5m	£3.75-£6m	£3m
Current ownership pattern (e.g. mainly institutional owned)	Mainly owner-occupied	Predominantly owner-occupied, although new stock institutional	Mix of owner-occupied and funds	Mix of owner-occupied and funds	Mainly institutional	Mix of owner-occupied and funds
Current ownership demand pattern (e.g. mainly leasehold demand)	Mainly leasehold	Mix of lease and freehold	Mainly leasehold	Mainly leasehold	Leasehold	Mix of lease and freehold

[65] The Gross Development Rates were cross-checked with the demand drivers outlined in Section 6 in each of the property market areas, and found to be broadly consistent with the results. In all cases the Gross Development Rate was a proportion greater, as it includes the redevelopment of existing properties. The two datasets are broadly, but not directly comparable, as they derive from different data sources. The Net Development Rate is less comparable as it includes more variables over a more limited date range.

A net development rate has also been summarised in Table 7-1. This is based upon changes in the total stock of data generated by the VOA, supplemented by market knowledge from GVA Grimley.

The analysis indicates that the Thames Gateway and Park Royal/A40/M4/A4 market areas have seen the largest rates of development, both in gross and net terms. Heathrow has also seen a positive picture in terms of net development, whilst the other market locations have generally experienced a net reduction in floorspace.

Although the Central Service Circle has seen a gross development rate of six to seven hectares per annum (in practice it may be lower than this with higher plot ratios), these areas have seen a major reduction in manufacturing and warehousing floorspace within the last decade. Further pressure for a reduction in such industrial occupation is likely in this area.

Similarly, the Lea Valley and Wandle Valley have seen a net reduction in development, despite positive gross development rates. However the net reduction in floorspace appears to have been slowing down.

The estimated total annual take-up of industrial floorspace in each market area is provided, along with an estimate of the proportion of such take-up by logistics-orientated occupiers. These are indicative figures rather than precise measures, as detailed and comprehensive data on industrial take-up is not available across London. Take-up is wider than the change in floorspace stock as it represents the occupation of both new and second-hand floorspace, not just the development of new space. It therefore gives a fuller impression of activity in the property market.

Take-up has, on average, been highest in the Park Royal/A40/M4/A4 market area over the last decade, although the Thames Gateway has seen growing activity. The Heathrow and Lea Valley market areas have similar levels of activity. In the case of Heathrow the take-up rates reflect a smaller geographical area as well as constrained supply.

An indication of the strength of demand by different size bands is also provided. This relates to current market demand rather than future demand, although many of these patterns are likely to continue forward for the next 12-18 months at least unless there are major changes in the national economic context or the land supply position.

Prime rents and land values for industrial property are provided. They relate to the likely best rents for newly developed property. This may relate to manufacturing or warehousing property, although in general it is likely to relate to warehousing property.

Industrial values have actually smoothed across London over the last few years, so the price differentials seen in the industrial market several years ago have

diminished to a large extent. Heathrow is still the most expensive location, both in land value and rental terms. It is often cited as the most expensive industrial location in the world[66]. However, parts of the Park Royal/A40/M4/A4 market area are seeing land values and rental levels similar to Heathrow, which is partially a reflection of demand from the Heathrow market spreading out into the Park Royal/A40/M4/A4 area.

The Thames Gateway is, in general, the least expensive location in land value terms, but even here prices have risen significantly over the last decade to narrow the differences with other market areas. In rental terms, however, Thames Gateway has a wide range of values, including some of the most expensive in London.

The broad emphasis of industrial ownership in each market area is outlined, along with an indication of what type of occupational arrangements occupiers are ideally seeking. These are illustrative and do not reflect detailed quantitative analysis. Thus, whilst freehold occupation may be sought in certain locations by businesses, this type of occupation may not in practice be available.

The six key property markets discussed above represent over 90% of the property market in terms of the stock of industrial floorspace, and over 95% of market activity. This does not mean that areas outside of these key property markets are unimportant in terms of serving the needs of local industry.

One possible exception to this is the area surrounding the M1 corridor. There is not a major supply of industrial property in this area in relative terms and demand is limited relative to the other key market locations. Even so it is becoming of increasing interest to logistics organisations, although lack of supply and access constraints onto the M1 are preventing more activity in this area.

The majority of demand in the industrial sector, at least in floorspace terms, is from the logistics sector. This generally comprises over three-quarters of demand and has been of increasing significance over the last decade. It is likely to remain the dominant source of demand in the industrial sector in London into the future.

The logistics sector itself is varied and complex. Whilst the term ‘logistics’ has generally been used in the analysis presented here, in simplistic terms, from a property perspective, three broad categories can be identified:

- Warehousing – general storage space, requiring limited specialist property requirements.
- Distribution Centre – can be variable in terms of size and storage requirements, but characterised by more movement, assembly and packaging arrangements than storage warehousing.

[66] *Global Industrial and Office Rents Survey* (King Sturge, 2006)

- Large Scale Distribution Centre – tends to be the larger 'big' and 'mega' sheds, with sophisticated loading and storage facilities and cross docking arrangements.

The above categorisation is illustrative, but does serve to highlight the variation that exists within the sector, which in turn has implications in terms of the specific property requirements of occupiers. From a planning policy perspective the key issue is land requirement, not necessarily the details of operational property requirements. This is typically classified as 'warehousing' land.

The emphasis of demand by different size bands is also summarised in Table 7-2 for each market area. This ranges from strong demand across all size bands within the Heathrow market area, to a more mixed picture in the Lea Valley for instance.

7.5 Distribution of Demand

The analysis presented above illustrates the variation across London in terms of the industrial property market. The spatial distribution of the market can be characterised as a hub and spoke arrangement. The hub is the Central Service Circle, which is an area that has seen a continued reduction in the amount of industrial activity. The spokes, which follow a broadly cardinal point arrangement north, south, east and west along the main transport routes, contain the other property market areas.

Logistics and servicing organisations (especially time sensitive food and office support) have a strong interest in being closer into the centre of London – although price/affordability may in practice push them out further than they prefer. This may mean, for instance, that an occupier who is looking to locate in the western area of Thames Gateway may accept a location in the southern part of the Lea Valley. The key point, however, is the preference of this type of demand to be within London and as close to market as possible. There is limited demand by such sectors to seek a move beyond London.

The general retail sector and other industrial business sectors are also influenced by a range of factors, with issues such as how a location fits within the wider distribution/supply chain make-up of a company being of significance. This means, for instance, that a clothes/fashion retailer may look at an M25 location rather than a location deeper within London in order to serve a regional logistics function. A series of smaller properties may be required in order to provide a closer fulfilment role to stores.

What this means is that this type of demand presents a more mixed picture in terms of the need for a location either close to the centre of London, or within specific parts of London. In general logistics/servicing organisations are going to have a strong draw for a London location, even if it is towards the M25 for some sectors, such as general retailing.

Manufacturers are more likely to be potentially footloose and hence move beyond London, either to other parts of the UK or abroad to low-cost locations such as Eastern Europe, China and India. The picture for manufacturing is though more complex. The sector can be classified into three main groups in a London context:

- High value added manufacturing, with high barriers to entry and/or has an advantage through innovation and leveraging of intellectual capital.
- Manufacture of low cost products for local distribution where import costs would be significant.
- Local customisation of global products.

Although these may be a relatively small element of the manufacturing sector that exists in London, they can represent a specific requirement for a London location. There is always likely to be a requirement for certain manufacturing activities within London.

A key question for this research is the degree to which current and future demand is transferable within and between property market areas. As Figure 7-3 shows there are transition zones across various property markets which could see some movement between the key property markets from existing occupiers.

Location decisions are complex arrangements and will reflect different drivers from different business sectors and from organisations of different sizes. Thus, a national clothing retailer looking for a relatively large property unit to service London may well have different location influences than a small independent third party operator supplying a range of retailers.

A broad indication of the potential for migration of future property demand between the key property markets is summarised in Table 7-2 below. The table indicates the degree of potential for a move from one property market area (those in the first column or y axis of the table) to one of the other property markets (columns two to seven, or the x axis of the table). The potential for migration is categorised in terms of being probable, possible, limited potential or unlikely.

The table is indicative of potential only, as many issues will determine the practicality of achieving this, such as realistic land and property supply, property values and customer and supplier location constraints. The assessments of potential migration between property markets are in descriptive and qualitative form, rather than in quantitative terms. This is necessary in order to appreciate the dynamics that exist in practice between these market areas.

Table 7-2 Potential for Demand to Migrate Between Property Market Areas

Move to → / Potential from ↓	Central Service Core (CSC)	Thames Gateway (TG)	Lea Valley (LV)	Park Royal (PR)	Heathrow (H)	Croydon/Wandle Valley (C/WV)
Central Service Core (CSC)		**Probable**. Price pressure may push existing and potential occupiers towards the western end of TG. However, there may be some movement to the CSC in the Southwark/ Lewisham area.	**Probable**. Similar drivers as for TG. However, may also be some cross-movement based around Hackney, depending upon supply issues.	**Possible**. Certain types of time sensitive potential occupiers may locate here rather than CSC.	**Unlikely**. Price profile at H means only high value/ airport related potential occupiers likely to locate here.	**Probable**. Potential CSC occupiers may look at C/WV, especially northern end. However, may be some cross movement based around Wandsworth.
Thames Gateway (TG)	**Limited potential**. May be some movement in Southwark/ Lewisham area from TG, but more likely direction is opposite way.		**Possible**. May be two-way flow between these areas depending upon supply issues.	**Limited potential**. May be some cross-transfer between western section of TG and PR for time sensitive new occupiers, but TG more orientated towards City and Docklands than West End, which may limit demand transfer.	**Unlikely**. Price profile at H means only high value/ airport related potential occupiers likely to locate here.	**Limited potential**. May be some demand transfer potential from general retailers looking at TG, but more likely to be in other direction.
Lea Valley (LV)	**Limited potential**. May be some movement in Hackney area from LV, but more likely direction is opposite way.	**Possible**. May be two-way flow between these areas depending upon supply issues.		**Possible.** Some potential occupiers looking for close link to central London may consider PR.	**Unlikely**. Price profile at H means only high value/ airport related potential occupiers likely to locate here.	**Limited potential**. Market areas served suggest limited potential for transfer of demand, but some potential from general servicing for example.
Park Royal (PR)	**Limited potential**. May be potential demand for time sensitive occupiers, but values may limit this. Movement more likely in opposite direction.	**Limited potential**. Markets being served suggested limited potential, but supply constraints in PR may encourage.	**Limited potential**. Markets being served suggested limited potential, but supply constraints in PR may encourage.		**Unlikely**. Price profile at H means only high value/ airport related potential occupiers likely to locate here.	**Limited potential**. Market areas served suggest limited potential for transfer of demand, although limited time sensitive potential occupiers may consider northern end of C/WV for example.
Heathrow (H)	**Unlikely**. Distance, values and supply shortages mean H demand here unlikely.	**Unlikely**. Distance means H demand here unlikely.	**Unlikely**. Distance means H demand here unlikely.	**Probable.** Relatively close distance to airport and lower land values may encourage 'over-spill' demand from H to locate in PR.		**Unlikely**. Distance means H demand here unlikely.
Croydon/ Wandle Valley (C/WV)	**Limited potential**. May be some movement in Wandsworth area from C/WV, but more likely direction is opposite way.	**Possible**. Improved road access in TG and lower land values may see some potential demand transfer from C/WV.	**Limited potential**. Markets being served suggested limited potential, but general servicing and storage may be transferable to limited extent.	**Unlikely**. Market served and values may prevent any significant potential demand transfer.	**Unlikely**. Price profile at H means only high value/ airport related potential occupiers likely to locate here.	

7.6 Impact of Development Outside London

Major developments in London and the immediate surrounding regions seem unlikely to significantly alter the pattern of industrial demand for a London presence. Terminal 5 is likely to accentuate industrial demand in this part of West London. Similarly, Nova MK park in Milton Keynes may attract logistics demand in the Lea Valley northwards, which may have some influence upon the northern parts of the London section of the Lea Valley property market. However, the overall impact may be relatively small given the logistics demand that exists outside of London and which may be attracted to this scheme.

In the Thames Gateway area there are a few major developments beyond London that may influence industrial demand – primarily the logistics sector – namely, the London Gateway Port and developments associated with the proposed River Thames crossing. The London Gateway Port in particular, which may provide up to 850,000m^2 of logistics and other industrial floorspace, could become a focus of activity. However, this is likely to be both for port-related activities and regional logistics functions. This may shift the focus of industrial demand eastwards in the Thames Gateway corridor for certain types of logistics occupiers, such as larger retail distributors. Even so, there is still likely to be a range of demand across the London area of Thames Gateway for London-orientated logistics/servicing activities.

In summary the larger unit size demand is generally more footloose than other logistics activities, and so may be more flexible in terms of a London or non-London location. However, other logistics activities, especially time critical and servicing businesses, are much more dependent upon a London location.

Manufacturing and general industrial activities do appear to have the potential for transfer of demand outside of London. This is not across the board or in all locations, but there is likely to be continued pressure on the manufacturing sector that may lead to closures or relocations.

8. A BALANCE OF DEMAND AND SUPPLY

8.1 Introduction

The components of the industrial land demand projections have been considered in Section 6 and their spatial relationships in Section 7. This section balances the demand projections with the supply of industrial land. The section begins by considering an important element of any effective industrial land strategy - the efficient management of vacancy, both of land and within buildings.

Some boroughs are anticipated to have strong demands placed on their industrial land – the process where this demand is anticipated to migrate to, both within market areas, between market areas, and to sites outside London is discussed. Interventions made to help achieve sustainability objections are outlined, as is the impact of the Olympics Park and regeneration plans for Lower Lea Valley on the industrial land in that area.

8.2 Vacant Land

Frictional Vacancy

Although much vacant industrial land can potentially be released for non-industrial use it is necessary to retain some vacancy to enable the industrial land market operate smoothly.

Locational and operational needs of businesses change over time. This often requires businesses to move. For this to happen smoothly there is a need for certain level of vacant land. This type of demand has been called frictional vacancy.

Estimating Frictional Vacancy on Industrial Land

Frictional vacancy occurs as companies moving within an area free up existing premises when moving to a new location and subsequently release land for new development. It is unlikely that the vacated premises will become occupied immediately. As noted in the *Industrial & Warehousing Land Demand* study (Roger Tym et al, 2004) there is no rigorous measure of what frictional vacancy should be. That report assumed 10% to be appropriate[67].

Two factors to take into account in determining the appropriate amount of vacant land required for this friction are:

- The period of time needed to either attract new occupiers or re-configure the site to make it more marketable.

[67] Para 6.28

- The level of renewal of existing stock. As overall demand for industrial land in London is still declining and is projected to decline further to 2026 we can in general terms assume that all new development of industrial premises (B2 and B8) is a result of renewing existing stock[68].

To estimate the optimal level of vacant land we have used the London Development Database (LDD) and have calculated annual average gross development between 1999 and 2004[69], which is approximately 1% per annum of the existing built-on industrial land.

Sites that become available on the market in general do not become re-occupied immediately. This is due to a combination of factors such as time it takes for contract negotiations, planning applications, remediation work, site reconfiguration, demolition and construction, improving access etc. Therefore, it is appropriate to assume an idle time that the vacated site will remain empty. Based on the market knowledge of GVA Grimley an average five years idle time is assumed i.e. the time between one occupier moving out of a site and a next moving in. This results in a frictional vacancy rate for industrial land being 5% of the total stock at any given time[70].

Based on the built-on and vacant industrial land data presented in Sections 3 and 4 in 2006 the land vacancy rate in London was 14.6%.

Limitations

There are different idle times in different areas of London. Idle time in inner London boroughs is likely to be shorter than in outer London boroughs. Due to the limited amount of available data we have aggregated results up to a London-wide level. Furthermore the industrial land model assumes a market balance by 2026 (or earlier) across London and idle times should converge once that happens.

The LDD shows that completions of B2/B8 development have been relatively low in the inner London boroughs. This might reflect locational requirements but could also be a result – at least to a certain degree – of suppressed demand (lack of available land) and high hope values for alternative, higher value land uses, which results in existing industrial sites not being brought forward for redevelopment for industrial purposes. This is compensated in the model by basing the idle time on sites in the outer London boroughs.

[68] There might be some genuinely new development of industrial land as a result of inward investment or of the growing logistics market but this is out-weighed by the closure of manufacturing sites.
[69] The LDD records (with some exceptions) only planning applications and completions of 1,000m^2 and more. This limits the dataset to significant developments and omits small changes to building use and extensions.
[70] The amount of land needed for frictional vacancy (x) can be calculated from the built-on industrial land stock by using the formula: x = y*0.05 / (1-0.05) where y = the built-on industrial land stock.

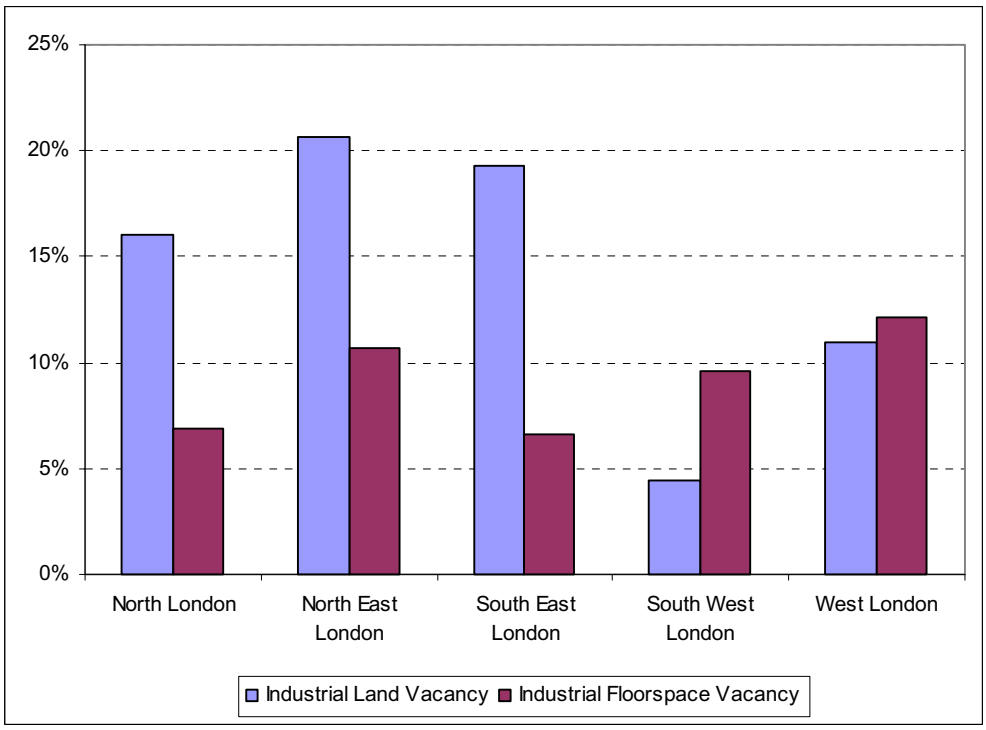
Estimating Frictional Vacancy in Industrial Buildings

The *Industrial and Warehousing Land Demand* study (Roger Tym et al, 2004) considers a frictional level of internal industrial and warehousing floorspace to be 8% for the property market to operate efficiently. This level of friction relates to internal building vacancy, rather than the amount required for frictional land vacancy.

Property market research conducted by GVA Grimley suggests that an efficient building vacancy rate is difficult to identify, but that 8% seems a reasonable assumption to make. Data derived from the *Industrial Land Availability Survey* in 2003 shows that the average rate of industrial building vacancy across London is currently 9%, but with variations of between 2.2% and 24.7% between boroughs[71].

Both building and land vacancy rates are indications of property market vibrancy, but, as Figure 8-1 shows, the relationship between the two is not a direct one.

Figure 8-1 Industrial Land & Industrial Floorspace Vacancy Rates by London Sub-region, 2006



Source: URS, GLA, 2003

[71] VOA data for floorspace vacancy is published for commercial and industrial floorspace. This includes office accommodation and cannot therefore be used to inform judgements on industrial vacancy rates. The Industrial Land Availability Survey does not differentiate between industrial and

The process here anticipates that the industrial and warehousing floorspace vacancy rates of each sub-region will normalise at this frictional level of 8% by 2026 once the market becomes more balanced. Boroughs with excess levels of building vacancy add a component of supply to meet new demand and boroughs with insufficient building vacancy add a component of demand for additional industrial land[72]. Assuming single-storey development, the quantum that feeds into the model is derived from the relationship between floorspace and the built-on industrial land stock.

Management Of Vacant Land

The quantity of industrial land that currently lies vacant and is surplus to the requirements for frictional vacancy is assumed to be released from 2006 to 2026, with greater weight given to the release at the start of the period[73]. This approach is taken because, although the sites are vacant now, releasing them all in the first planning period is not an achievable target, as some industrial estates might have to be re-configured and there could be a number of constraints to development, such as contamination, surrounding uses and accessibility, amongst others[74].

8.3 Industrial Property Market Areas

In some cases, individual boroughs are projected to have a surplus of demand for industrial land that cannot be met by their existing employment land designations. These cases are exceptions rather than the rule. When there is excess demand it is assumed to transfer to neighbouring boroughs within the same industrial land market area, as determined by the market analysis. Demand for waste facilities has not been treated as mobile because it is already based on waste tonnages that have been apportioned between boroughs (see the *London Waste Apportionment Study*, Jacobs Babtie, 2006).[75]

The large majority of remaining positive land demand is for logistics premises. As discussed in the *URS Demand & Supply of Land for Logistics in London* report (2007) implicit in this approach is an assumption that most of the projected rates of demand for warehouse space should be accommodated within London rather than elsewhere. The historic warehousing floorspace data already captures the migration of footloose companies to sites outside of London and by using this data to project future demand we assume the same rate of migration will continue in the future.

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warehousing floorspace, therefore we make the assumption here that vacancy rates are the same for both land uses.

[72] If the high levels of building vacancy indicate a poor quality of industrial stock, assuming that they will become occupied 2006-2026 also accounts for their potential redevelopment.

[73] 2006-2011 50%, 2011-2016 25%, 2016-2021 15%, 2021-2026 10%.

[74] See the ILAS (GLA) for more information on the extent of the development constraints on vacant industrial land.

[75] New Waste Policy 2 of the *London Plan* (Early Alterations) however recognises that boroughs should identify sufficient land to provide capacity to manage waste apportioned at borough level, and that this may be done collaboratively through Joint Development Documents.

Where excess demand for industrial land cannot be met by a borough's stock of employment land and either the property market area has insufficient available land to meet this demand or the borough is not part of a property market area, the demand is assumed to migrate to other property markets as identified in Table 7-2. A small proportion of new demand in the South West sub-region 2006-2026 (19 hectares) is considered more likely to migrate to sites on the outskirts of London that to migrate to other property market areas within London.

8.4 Sustainability Objectives – the Central Service Circle

The *Demand & Supply of Land for Logistics in London* study (2007) showed that the trends in the provision of warehousing floorspace in inner North London boroughs were declining. This is likely to be as a result of market forces, as the high value of alternate land uses has encouraged land use change, often in favour of residential. However the Central Service Circle often provides essential service support to the employment market in the West End and City of London.

If a permissive approach was taken to land use change in the Central Service Circle, it is likely that the goods would be delivered from warehousing sites further away from the city, with less pressure for land use change. This is would result in an increase in road miles and put further pressure on the congested road network. The projections have therefore been amended by using the same mechanism that managed the migration of demand within and between different property market areas. In the case of the Central Service Circle, the baseline of decline in certain boroughs was determined using URS and GVA Grimley property market knowledge and experience of the areas.

For example, if a borough were considered to lose too much employment land by projecting current demand trends then a baseline would be introduced to retain sufficient supply. This could be 30 hectares, whereas trendline projections would have retained only 15 hectares by 2026. A balance was sought within the market area, whereby if release was curtailed in this case, then another borough was sought to release more.

An example of the circumstances in which it is appropriate to protect Central Service Area industrial land is the wholesale markets and the food services and production sector. Our *London Wholesale Markets Review* found that there was a good case for retaining London's wholesale markets in inner London, albeit with some consolidation. The research also found that the markets played a valuable role in working with other food service and production companies in servicing central London and that there were economic and sustainability advantages in there being closer to their key markets. This principle is likely to apply to a number of other industrial sectors and in aggregate suggest that it is appropriate to plan for a modest steady state of industry in the Central Service Circle boroughs.

In total this mechanism resulted in the retention of an extra 44 hectares in the Central Service Circle above trend projections.

8.5 The Olympic Park and Lower Lea Valley OAPF

Preparations for the Olympic Park (OP) and *Lower Lea Valley Opportunity Area Planning Framework* (LLV OAPF) have already had an effect on the demand for industrial land in the LLV and will continue to shape industrial land use over the next ten years. Major components of the industrial land demand in this research include the GLA Economics' employment projections and warehousing land demand projections. Both of these are based on historic trends and mostly do not account for future policy interventions. Therefore, steps have been taken in this research to accommodate and plan for the policy intervention:

- Businesses within the OP area will vacate their current sites in the period 2006-2011. The levels of industrial land release are programmed to represent the borough's release benchmarks 2006 to 2011 only if greater than that projected by industrial decline. If those businesses in the OP account for the entirety of the borough's industrial land release over the five years, the model therefore expects demand to be higher for other industrial land sites within the borough over the same time period.

- Vacant industrial sites in Newham, Waltham Forest and Enfield that have been planned to accommodate business relocations from the OP area have been safeguarded from the release benchmarks in the planning period 2006-2011.

- Sites within the OP that are planned to become industrial in nature after the Olympics and Paralympics in 2012, are built back into the borough's industrial land stock 2011-2016. These have been taken from the current plans in the *LLV OAPF* [76].

- The change in industrial land stock in the wider LLV Regeneration Area, from the surveyed sites in 2006[77] to the proposed distribution of industrial land in 2016[76] are compared to the projected change in the model. Where projected change determined by the *LLV OAPF* is greater than the model would suggest, these changes are built into the model for the planning period 2011-2016[78].

[76] Figure 2.6, page 20, *LLV OAPF*
[77] Hackney's industrial land stock is derived from Cities Revealed aerial photography
[78] It is anticipated that wider changes to the industrial land use in the LLV outside the OP are more likely to occur in the latter stages of the *LLV OAPF* planning process, 2011-2016.

9. INDUSTRIAL LAND RELEASE BENCHMARKS

9.1 Introduction

This section draws the components of the industrial land supply and demand together into a framework for potential industrial land release, predominantly to meet demands for new residential land use. These are presented as benchmarks for five-year periods, 2006-2026. The historical picture of change 2001-2006 is included for context.

This section tests the benchmarks for sensitivity and concludes with giving suggesting amendments to the *draft Industrial Capacity SPG* in light of this research, and guidance for the boroughs in using the results.

9.2 Sub-regional

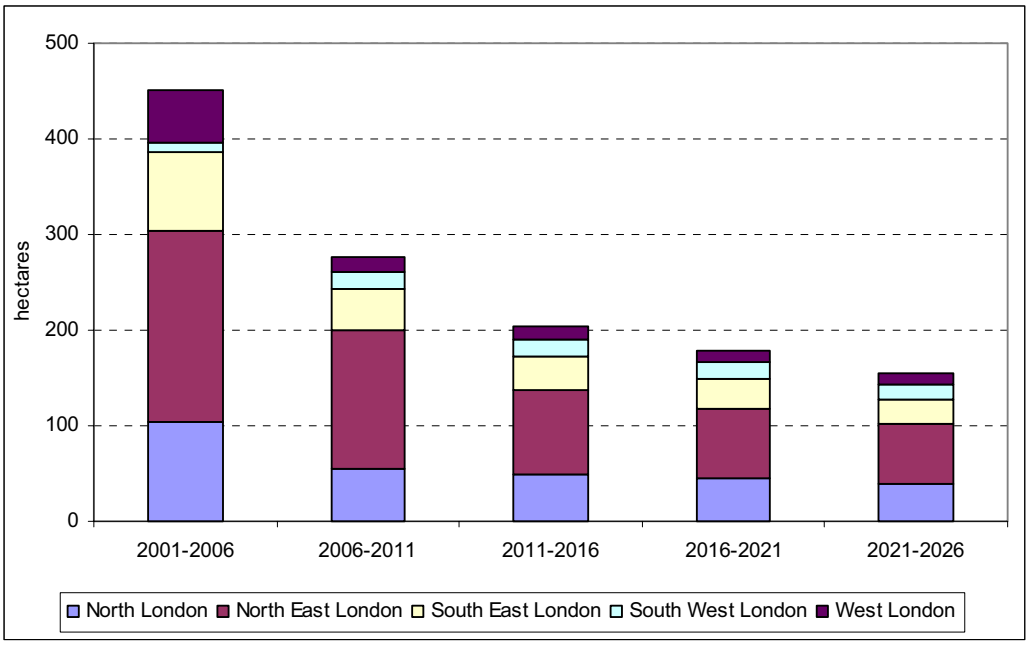
The scale of industrial land release is presented over five year periods, 2006-2026 in Table 9-1 in Figure 9-2.

Table 9-1 Industrial Land Release, by Sub-Region, 2001-2026

Sub Region	*2001-2006 (ha)*	*2006-2011 (ha)*	*2011-2016 (ha)*	*2016-2021 (ha)*	*2021-2026 (ha)*	*Total 2006-2026 (ha)*
North	104	54	49	44	40	**188**
North East	201	146	88	74	63	**371**
South East	82	42	36	31	25	**134**
South West	10	17	17	17	16	**67**
West	55	17	15	13	11	**55**
Total	**452**	**276**	**205**	**178**	**155**	**814**
Average p.a.	**90**	**48**		**33**		**41**

Source: URS (Note that the figures are rounded)

Figure 9-1 Industrial Land Release, by Sub-Region, 2001-2026



Source: URS

The components of the industrial land release benchmarks are presented in Table 9-2. The columns are presented by sub-region where the data is less reliable at borough-level.

At a regional level, the 814 hectares of industrial land projected for release between 2006 and 2026 represents an average release of 41 hectares per annum. This is consistent with the estimated range of industrial land release on the d*raft Industrial Capacity SPG* of industrial land release benchmarks of between 30 and 50 hectares per annum. The average annual release is likely to be higher in the early phases of the planning period as vacant land above the frictional vacancy threshold is released ahead of land that becomes surplus to requirements over time with structural decline.

For example, Sections 3 and 4 showed that an estimated 452 hectares of industrial land has already been released between 2001 and 2006, at an average release rate of 90 hectares per annum over those five years. If we revisit the benchmarks from 2001-2016, which was the planning period at the time of the *draft Industrial Capacity SPG*, then the average annual rate of release suggested here is higher than the parameters, at 62 hectares per annum.

Table 9-2 Components of Industrial Land Release Benchmarks, 2006-2026, hectares

	'Narrow' definition of industrial land					Change 2006-2026						
Borough	*Built-on Industrial Land 2001*	*Vacant Industrial Land 2001*	*Built-on Industrial Land 2006*	*Vacant Industrial Land 2006*	*Industrial land in SEL as a Proportion of Total Stock*	*Demand for 'General Industrial' Land*	*Demand for Warehsing Land*	*Demand for Industrial Land for Transport Functions*	*Demand for Industrial Land for Waste Facilities*	*Demand for Wholesale Markets*	*Managmnt of Vacant Land & Premises*	*Total Change (inc Market Check)*
Barnet	45	16	46	5	0%							
Camden	69	11	56	9	0%							
Enfield	312	72	302	65	60%							
Hackney	105	20	87	14	0%							
Haringey	120	12	109	11	35%							
Islington	72	9	56	3	0%							
Westminster, City of	16	0	11	0	0%							
North Sub-region	**738**	**129**	**667**	**107**	**30%**	**-152**	**15**	**2**	**24**	**0**	**-75**	**-188**
Barking and Dagenham	380	86	374	53	70%							-40
City of London	0	0	0	0	0%							0
Havering	306	63	312	42	75%							-66
Newham	265	215	236	126	45%							-135
Redbridge	65	3	63	5	30%							-11
Tower Hamlets	167	26	143	23	15%							-83
Waltham Forest	146	13	145	13	35%							-33
North East Sub-region	**1,329**	**407**	**1,272**	**263**	**45%**	**-233**	**63**	**3**	**50**	**-8**	**-243**	**-369**
Bexley	329	91	322	91	65%							-33
Bromley	114	4	98	4	25%							0
Greenwich	192	45	162	37	60%							-15
Lewisham	106	14	90	14	30%							-49
Southwark	141	11	137	9	25%							-38
South East Sub-region	**882**	**165**	**809**	**156**	**40%**	**-151**	**152**	**2**	**40**	**0**	**-176**	**-134**
Croydon	166	5	160	5	45%							
Kingston-upon-Thames	61	1	62	1	45%							
Lambeth	92	2	86	5	0%							
Merton	160	4	161	4	50%							
Richmond-upon-Thames	47	4	47	3	0%							
Sutton	104	16	108	12	70%							
Wandsworth	116	6	119	3	35%							
South West Sub-region	**747**	**39**	**742**	**33**	**40%**	**-166**	**59**	**3**	**46**	**0**	**-10**	**-68**
Brent	268	29	248	49	50%							
Ealing	387	48	370	44	50%							
Hammersmith and Fulham	84	7	71	4	40%							
Harrow	57	6	52	3	45%							
Hillingdon	280	32	280	29	50%							
Hounslow	313	17	311	15	20%							
Kensington and Chelsea	17	3	14	3	25%							
West Sub-region	**1,407**	**142**	**1,346**	**147**	**40%**	**-231**	**174**	**2**	**56**	**0**	**-55**	**-55**
Total London	**5,103**	**881**	**4,837**	**706**	**40%**	**-934**	**461**	**12**	**215**	**-8**	**-560**	**-814**

Notes

The figures are rounded

The 'Change 2006-2026' rows are subject to the migration of demand between market areas and sites outside London as a final step in the process. As the large majority of positive land demand that is expected to migrate between areas is from warehousing land demand – the market check has been applied to this column.

The Proportion of Industrial Land in SELs is based on the URS North East and South East London Industrial Land Baseline (2007) and Cities Revealed for boroughs in the other sub-regions (2001). The Proportion of industrial land is made up of core industrial land – built-on and vacant land stock.

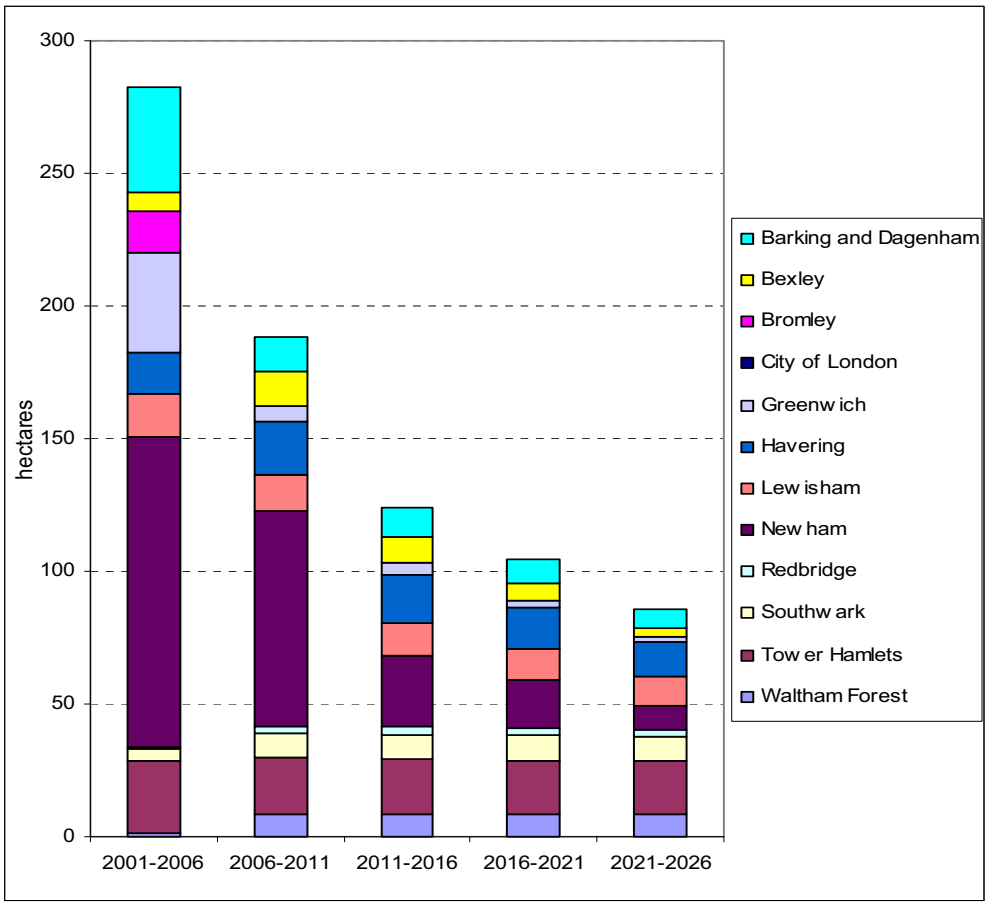
Source: URS

This trend re-iterates the importance of following the *London Plan*'s plan-monitor-manage approach to industrial land use change. Care must be taken to ensure that the vacant land released in greater proportion in the early stages is released in the most appropriate locations. Ongoing monitoring will assess whether land use change from industry is below or above these benchmarks over a period of time.

9.3 North East and South East London Benchmarks by Borough

The *North East and South East London Industrial Land Baseline* returned reliable primary information for the industrial land in the area's twelve London boroughs. This data lends a further degree of confidence to the industrial land demand projections that enables us to present the results by borough in Table 9-3 and Figure 9-3 below. Projected release is also broken down by five year time intervals though this division is less reliable as for example results could be significantly skewed by a major factory closure taking place outside the timeframe for the wider trend rate of change. The sequence of boroughs listed in the key is the same as the sequence in the columns.

Figure 9-2 NE and SE Industrial Land Release by Borough, 2001-2026



Source: URS

Table 9-3 NE and SE Industrial Land Release by Borough, 2001-2026, hectares

	2001-2006 (ha)	*2006-2011 (ha)*	*2011-2016 (ha)*	*2016-2021 (ha)*	*2021-2026 (ha)*	*Total 2006-2026*	*Average p.a. 2006-2026*
Barking and Dag[79]	40	13	11	9	7	**40**	2.0
City of London	0	0	0	0	0	**0**	0
Havering	16	20	18	15	13	**66**	3.3
Newham[80]	117	81	27	18	9	**135**	6.8
Redbridge	1	3	3	3	3	**11**	0.6
Tower Hamlets	27	21	21	21	20	**83**	4.2
Waltham Forest	1	8	8	8	8	**33**	1.7
North East	**201**	**146**	**88**	**74**	**60**	**369**	**18.4**
Bexley	7	13	10	7	3	**33**	1.7
Bromley	15	0	0	0	0	**0**	0.0
Greenwich	38	6	5	3	2	**15**	0.8
Lewisham	17	13	13	12	11	**49**	2.5
Southwark	5	9	9	9	9	**38**	1.9
South East	**82**	**42**	**36**	**31**	**25**	**134**	**6.7**

Source: URS (Note that the figures are rounded)

9.4 Sensitivity Test

Table 9-4 tests the impact of changing the demand drivers of occupied industrial land - the projected demand for general industrial and logistics premises. Projections are varied by 10% above and below the current levels[81]. Simply adjusting the trend projections by 10% would not have a significant impact on the results because the increased demand for warehousing land would be countered by the increased decline in general industrial sites. The parameters show the impact of reducing both of the aspects of land demand by 10%, and then the impact of increasing both of the land demands by 10%. For example, in the negative scenario, positive warehousing land demand is reduced and general industrial land decline is increased. This could account for a number of different scenarios:

- The intensification of sites with higher eaves' heights, mezzanines, and multi-storeys

[79] South Dagenham is considered to have been designated for housing by 2006 and is not included in the release benchmarks here. Barking Riverside is not considered to have been industrial in the baseline of industrial land.
[80] Stratford Rail lands and all vacant sites within the OP area are considered to be designated for other non-industrial uses by 2006 and are not included here
[81] 10% is used only as a parameter to gauge the sensitivity of the variables used in the industrial land projection model

- Higher employment densities on sites of traditional manufacturing operations
- Increased automation of processes and utilisation of technology at a higher rate than historical take-up
- The migration of demand to sites on the outskirts of London at a greater rate than captured by historical data
- Long-term economic growth rate is lower than or greater than an average of 2.5% per annum over the planning period

Table 9-4 Sensitivity Test of Industrial Land Release Benchmarks

	Benchmarks for release, 2006-2026 (ha)	*+/-10% warehousing and general industrial land demand (ha)*	*% Sensitivity*
North	188	+/-29	+/-15%
North East	371	+/-43	+/-12%
South East	134	+/-41	+/-31%
South West	67	+/-30	+/-45%
West	55	+/-38	+/-39%
Total London	**814**	**+/-180**	**+/-22%**

Source: URS *(Note that the figures are rounded)*

The impact of changing the warehousing and general industrial land demands cumulatively by 10% has a greater effect on the industrial land release benchmarks, because, as shown in Section 6, the two demands counteract each other. This table presents the extremes of any change in land demand.

A potential increase in demand by 22% cumulatively could not be met entirely within London, as the baseline projections already meet the capacity of certain property markets areas. A proportion of the increase in industrial land demand would result in more firms seeking sites on the outskirts of London and greater pressure on the more intensive use of existing sites.

Analysis of the London Development Database – which holds records of all completions above 1,000m^2 – suggests that approximately 1% of the industrial stock is renewed annually. Assuming, for arguments sake, an increase of density in all new developments of 10% would lead to an annual decrease of land demand of approximately 0.1%. This change is by far smaller than other uncertainties in the demand projections such as macroeconomic assumptions.

9.5 Draft Industrial Capacity SPG

The benchmarks of industrial land release are intended to inform future policy designations and guidance in London. One aspect of this guidance applies to employment sites outside those considered to be of strategic importance to London - the *Draft Industrial Capacity SPG* (2003). The guidance utilised the most reliable and up-to-date research at the time, the *Industrial Land Demand in*

London[82] research to categorise the approaches to industrial land release of sites outside SELs that are most appropriate for each London borough. This was to help boroughs develop policy criteria for these locally significant sites on proposals maps. The groupings were on a scale of three categories:

- Restricted – boroughs within this category are encouraged to adopt a particularly restrictive approach to the transfer of industrial sites to other uses
- Managed – boroughs within this category generally have a greater supply of vacant industrial sites and should take a more permissive approach to the transfer of industrial sites to other uses (only for sites outside SELs)
- Limited – this category is intermediate between the two.

Alterations to these categories were suggested by the *Industrial and Warehousing Land Demand* study of 2004 (Roger Tym et al). This study is also in a position to suggest changes in light of the most up-to-date research, see Table 9-5 below.

As Table 9-5 shows, the proportion of industrial land, both built-on and vacant, within SELs[83] is a factor in the decision-making process. For example, if a high proportion of industrial sites are already safeguarded by the SEL designation, and other indicators suggest a decline in demand, sites outside those considered to be of strategic importance should be released primarily and a more 'managed' approach to these sites could be taken (e.g. LB Havering).

The indicators that inform the decision-making process include:

- Overall stock of industrial land relative to the market area
- Current levels of vacancy, both land and buildings
- Current rental values
- Proportion of both built-on and vacant industrial sites within SELs
- Demand for warehousing land
- Demand for general industrial premises
- Apportionment of waste facilities
- Other demands on industrial land, such as transport functions and wholesale markets
- Industrial land demand projections in relation to the market area
- Sustainability objectives in the Central Service Circle
- Short-term and long-term phasing of the industrial land release benchmarks

The classifications can only be broadly indicative and some boroughs will be on the cusp of different categories - it is vital that they are monitored closely and re-

[82] Roger Tym & Partners, GVA Grimley; 1999
[83] based on the *URS North East and South East London Industrial Land Survey (2007)* and Cities Revealed for boroughs in the other sub-regions (2001)

classified when conditions change. The classifications have been made in consultation with the GLA Group.

The assessment was conducted in the context of industrial property market areas - **Appendix L** illustrates the process, and provides notes on the rationale for each London borough's classification.

Proposed Changes

The proposed changes from either the *draft Industrial Capacity SPG* or the *Industrial and Warehousing Land Demand* study are listed below. The attached commentary only summarises the main themes and does not cover the entire range of indicators that have informed the decision-making process.

- **LB Greenwich**. Modest levels of excess vacancy and low quantum of industrial land outside of SEL relative to other boroughs in market area. Positive demand for logistics and waste outweighs reduction in industrial demand. Suggest Limited category.
- **LB Islington**. Low excess vacant land combined with low total industrial land stock. No industrial land protected by SEL. Some positive demand for waste. Supply/demand indicators suggest pressure for release but on sustainability grounds there is reason to retain some land for small scale logistics and industry serving CAZ. Suggest move to Restricted category.
- **LB Lambeth**. Low overall stock relative to market area. No SELs. Low excess vacancy combined with strong demand for waste. Indicators suggest pressure for release but on sustainability grounds there is reason to retain some land for logistics and industry serving CAZ. Suggest move to Restricted.
- **LB Sutton**. Total stock 120 hectares over 70% of which in SEL. Only 35 hectares of industrial land outside SEL. Modest level of excess vacant land. Strong demand for logistics counterbalances modest reduction in industrial demand. Positive demand for waste. Overall suggests retention in Restricted category.
- **LB Croydon**. Total stock 164 hectares under half of which in SEL. No excess vacant land. Strong demand for logistics counterbalances modest reduction in industrial demand. Strong positive demand for waste. Suggest retention in Restricted category.
- **LB Hounslow**. Only 20% of industrial land stock in SEL. No excess vacant industrial land. Strong positive demand for waste and strong demand for logistics influenced by proximity of Heathrow. Suggest move to Restricted category.
- **City of London**. Very little industrial land. Contains riverside wharf (waste management use). Some additional demand for waste management. Appropriate for Restricted category.
- **LB Harrow.** Low industrial land stock (55 hectares), half outside SEL. Virtually no excess vacant land. Reduction in industrial demand

counterbalanced by some logistics and strong positive demand for waste management. Similar characteristics to neighbouring boroughs, especially Barnet. Suggest retain in Limited category and monitor closely.

- **LB Redbridge**. Small industrial land stock (68 hectares), just over two-thirds outside SEL. No excess vacancy. Overall reduction in demand for industrial counterbalanced but not outweighed by positive demand for waste and logistics. Suggests move to Limited category and monitor closely.

Note that in LB Newham's case the industrial land release benchmarks are largely driven by the requirements set out in the *LLV OAPF*, with limited release of industrial sites elsewhere in the Borough.

Table 9-5 Approach by Borough to Industrial Land Use Change

		'Narrow' definition of industrial land					*Managed - Limited - Restrictive*		
Market Area	*Borough*	*Built-on Ind Land 2001*	*Vacant Ind Land 2001*	*Built-on Ind Land 2006*	*Vacant Ind Land 2006*	*Industrial land in SEL as a proportion of total stock*	*Original Draft Industrial Capacity SPG*	*RTP Suggested Amendments (IWLD, 2004)*	*URS Suggested Categorisation 2007*
Thames Gateway	Barking and Dagenham	380	86	374	53	70%	M		
	Havering	306	63	312	42	75%	M		
	Newham	265	215	236	126	45%	M		
	Tower Hamlets	167	26	143	23	15%	L		
	Greenwich	192	45	162	37	60%	M	L	L
	Bexley	329	91	322	91	65%	M		
	Sub Total	**1639**	**527**	**1549**	**373**	**60%**			
City Service Circle	Hackney	105	20	87	14	0%	L		
	Islington	72	9	56	3	0%	L		R
	Camden	69	11	56	9	0%	R		
	Sub-Sub Total	**246**	**40**	**199**	**26**	**0%**			
	Westminster, City of	16	0	11	0	0%	R		
	Kensington and Chelsea	17	3	14	3	25%	R		
	Hammersmith and Fulham	84	7	71	4	40%	R		
	Sub-Sub Total	**117**	**10**	**97**	**7**	**30%**			
	Lambeth	92	2	86	5	0%	L	R	R
	Southwark	141	11	137	9	25%	L		
	Lewisham	106	14	90	14	30%	L		
	Sub-Sub Total	**339**	**27**	**314**	**28**	**20%**			
	Sub-Total	**702**	**77**	**609**	**61**	**15%**			
A10 LLV	Enfield	312	72	302	65	60%	L		
	Haringey	120	12	109	11	35%	L		
	Waltham Forest	146	13	145	13	35%	L		
	Sub-Total	**577**	**97**	**556**	**90**	**50%**			
A23 Wandle Valley	Wandsworth	116	6	119	3	35%	R		
	Merton	160	4	161	4	50%	R		
	Sutton	104	16	108	12	70%	R	L	R
	Croydon	166	5	160	5	45%	R	L	R
	Sub-Total	**547**	**32**	**547**	**24**	**50%**			
Park Royal	Ealing	387	48	370	44	50%	L		
	Hounslow	313	17	311	15	20%	L	R	R
	Brent	268	29	248	49	50%	L		
	Sub-Total	**968**	**94**	**929**	**108**	**40%**			
Heathrow	**Hillingdon**	**280**	**32**	**280**	**29**	**50%**	L		
Other Boroughs	Barnet	45	16	46	5	0%	L		
	Bromley	114	4	98	4	25%	R		
	City of London	0	0	0	0	0%			R
	Harrow	57	6	52	3	45%	L	R	L
	Kingston-upon-Thames	61	1	62	1	45%	R		
	Redbridge	65	3	63	5	30%	M	R	L
	Richmond-upon-Thames	47	4	47	3	0%	R		
	Total	**5,103**	**892**	**4,837**	**706**	**45%**			

Source: GLA, 2003; Roger Tym et al, 2004; URS (Note that the figures are rounded)

Figure 9-3 illustrates the spatial distribution of the original *Draft Industrial Capacity SPG* categorisations, and Figure 9-4 shows the categories based on the research here.

Appendix K analyses the industrial land release benchmarks in the context of other existing research.

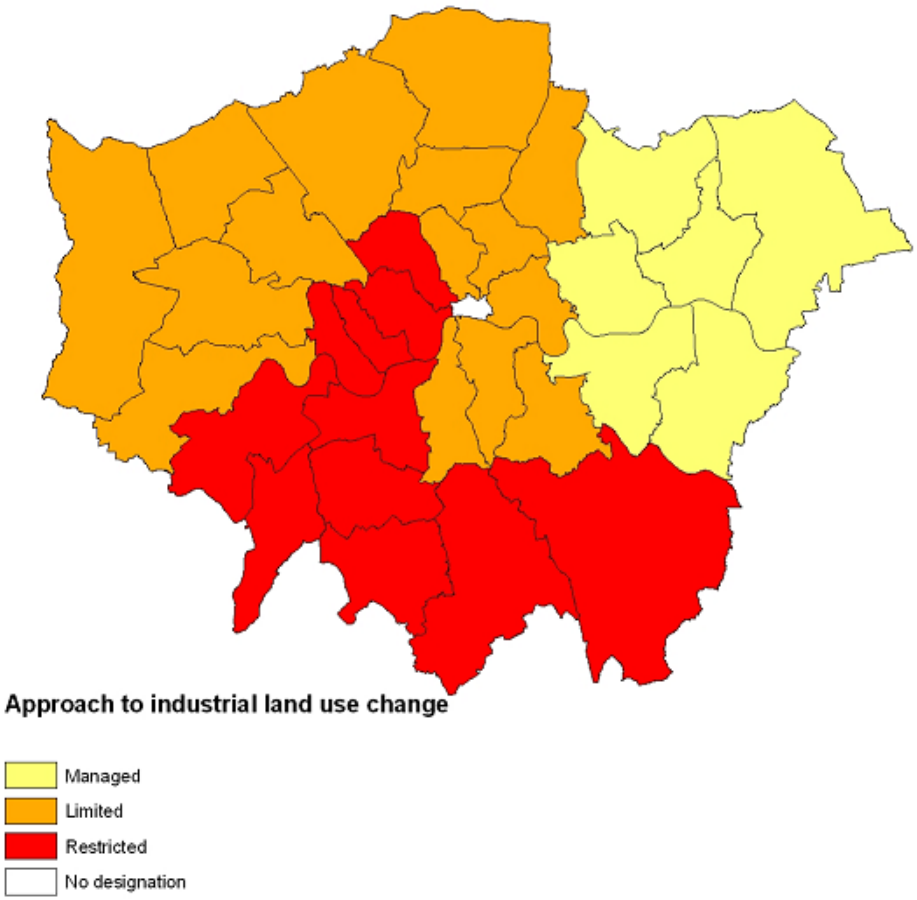
9.6 Guide for Boroughs

This is a strategic piece of work based on a number of assumptions and estimated baseline data, and should be referred to as a guide only. More accurate in-depth analysis of industrial sites in each local authority is necessary, based on the DCLG's *Employment Land Review Guidance Notes*[84] as part of the preparation for emerging LDFs. In interpreting this data we recommend that boroughs:

- Confirm the data discussed above as having been released since 2001, and confirm the sites that are expected to be released in the short and medium-term from B1(c)/B2/B8 employment land uses[85].
- Take a phased approach to meeting the industrial land release benchmarks, holding back the release of industrial land that is not identified as becoming available from structural decline to a later stage in the planning periods. It is unlikely that boroughs will be able to project the location of many site closures before they happen and the later any land-use change plans are made, the more informed and up-to-date they are likely to be. This highlights the importance that local authorities have a good understanding of their current industrial occupiers and follow the 'plan-monitor-manage' approach.
- Carefully consider whether to release existing vacant land or whether to plan for consolidation of industrial activity by keeping some vacant land available for industrial relocation and de-designating existing poor quality/high alternative potential industrial areas. It is unlikely that the current stock of vacant industrial land necessarily always corresponds with areas of the greatest development or regeneration pressures for land use change.

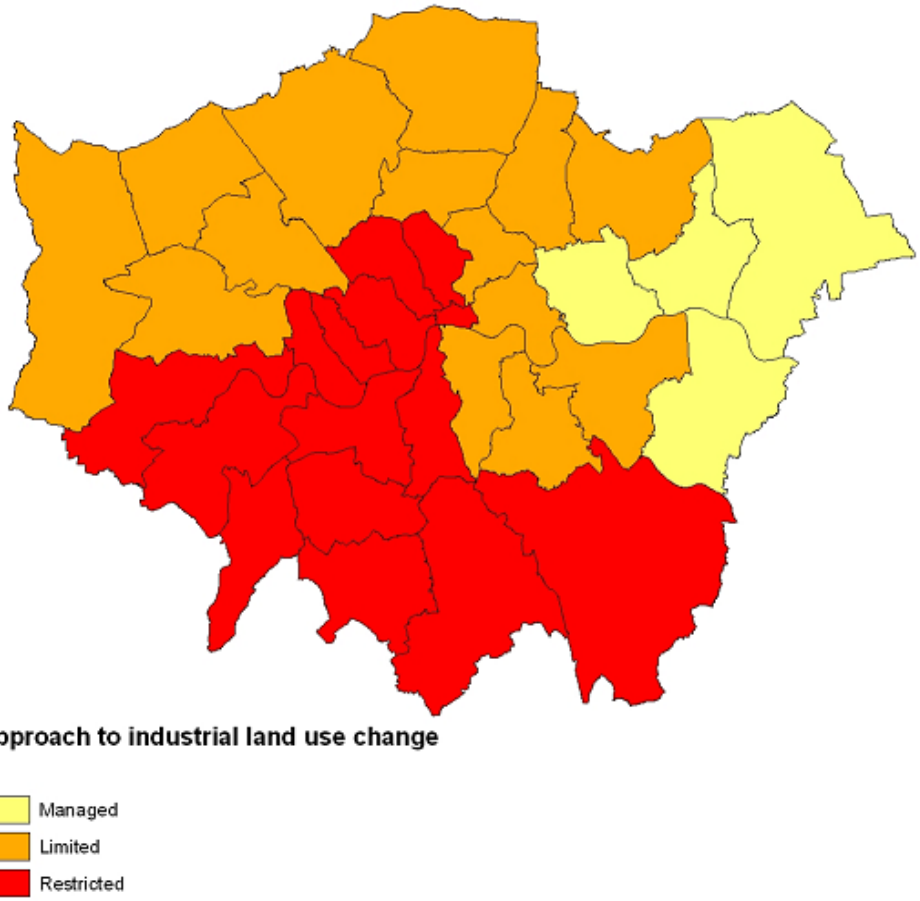
[84] Published whilst the Department was named the Office of the Deputy Prime Minister
[85] Some B1(b) land uses can also be industrial in appearance

Figure 9-3 Draft Industrial Capacity SPG



Source: GLA

Figure 9-4 Suggested Alterations to the Draft SPG



Source: URS, GLA, LDA, TfL

9.7 Conclusion

In recent decades land use planning designations have lagged behind economic change and consequently too much land has been allocated and protected for industrial use in London. To redress this we recommend the average release of 41 hectares per annum 2006 to 2026. In order to redress the current imbalance this should be phased, with a higher rate of release of 48 hectares per annum on average across London for the period 2006-2016. Post 2016 a reduced average benchmark of 33 hectares per annum would be more appropriate to 2026.

The figure for 2006 to 2016 is relatively high rate of release compared to current guidance in the *Draft Further Alteration to the London Plan* (2006) of 39 hectares per annum, but a substantial reduction on the average of 90 hectares per annum of land use change experienced between 2001 and 2006. With implementation of the recommendations of this report we anticipate that by 2016 the industrial land market in London will be in a position much closer to equilibrium, with demand and supply broadly balancing.

APPENDICES

Appendix A - Industrial and Warehouse Land Change In Stock

Table A1 below summarises the various data sources for the industrial market. This identifies source, year of relevance and breakdown by industrial sectors.

Table A1 Industrial Floorspace Stock in London ('000m^2)

Source	Date	Warehouse	Factories	All Industrial
ONS	Apr-05	15,756	10,670	26,426
ONS	Apr-04	15,922	12,519	28,441
ONS	Apr-03	15,771	12,624	28,395
ONS	Apr-02	15,592	13,123	28,715
ONS	Apr-01	15,356	13,499	28,855
ONS	Apr-00	15,156	13,781	28,937
ONS	Apr-99	14,983	13,508	28,491
ONS	Apr-98	15,062	14,681	29,743
DTLR	2000	14,874	13,002	27,876
VO	1986	18,270	20,145	38,415

A number of points can be highlighted from the above table.

Manufacturing (B2)

- Over the period 1998-2004 manufacturing floorspace has seen a net decrease of 15%. If the period 1998 to 2005 is taken then the net increase is 27% - i.e. 12 percentage points in one year.
- As noted earlier, 1998 and 1999 data was part of a different re-valuation period. Therefore, if the period 2000 to 2004 is taken, then there has been a decrease in manufacturing stock of 9%.
- Over the longer period (1986 to 2004) then the stock of manufacturing floorspace has decreased by 38%.

In terms of the DTLR 2000 data and the latest ONS-based data for 2000, the differences between these for are wider than the warehousing data at 6%.

Warehousing (B8)

- Over the period 1998-2004 warehouse floorspace has seen a net increase of 6%. The period 1998 to 2005 show a similar increase at 5%. In other words, the difference between 2004 and 2005 is not major – although the

point about the 'loss' of warehousing floorspace mentioned above needs to be acknowledged.

- However, as noted earlier, 1998 and 1999 data was part of a different re-valuation period. In addition, the 2005 data involves methodology changes that make comparison with past warehousing space particularly problematic. Even so, if the period 2000 to 2004 is taken, then the increase in warehousing stock is similar, at 5%.
- However, there can be significant variations below the London-wide level, for the reasons indicted above, such as at Hillingdon.
- Over the longer period (1986 to 2004) the stock of warehousing has decreased by 13%.

It is worth noting that the DTLR 2000 data and the latest ONS-based data for 2000 are different by approximately 2%.

Appendix B - Methodology of the Industrial and Warehousing Land Baseline

Table B1 Data Used for Assessment of 2001 Built-on Industrial Land

Borough	*Explanation method process for 2001 baseline*
Barking and Dagenham	NE & SE Industrial Land Baseline
Barnet	Backdated from borough's 2006 employment land review
Bexley	NE & SE Industrial Land Baseline
Brent	2001 Baseline deemed to be the weakest element so adjusted to balance with 2006
Bromley	NE & SE Industrial Land Baseline
Camden	Based on Cities Revealed
City of London	NE & SE Industrial Land Baseline
Croydon	Based on Cities Revealed
Ealing	Based on Cities Revealed
Enfield	Backdated from borough's 2006 employment land review
Greenwich	NE & SE Industrial Land Baseline
Hackney	Based on Cities Revealed
Hammersmith and Fulham	Based on Cities Revealed
Haringey	Backdated from 2006 employment land review
Harrow	Based on Cities Revealed but cross-checked with URS employment land study
Havering	NE & SE Industrial Land Baseline
Hillingdon	Based on Cities Revealed
Hounslow	Backdated from borough's 2006 employment land review
Islington	Based on Cities Revealed
Kensington and Chelsea	Based on Cities Revealed
Kingston-upon-Thames	Based on Cities Revealed
Lambeth	Based on Cities Revealed
Lewisham	NE & SE Industrial Land Baseline
Merton	Based on Cities Revealed
Newham	NE & SE Industrial Land Baseline
Redbridge	NE & SE Industrial Land Baseline
Richmond-upon-Thames	Based on Cities Revealed
Southwark	NE & SE Industrial Land Baseline
Sutton	Based on Cities Revealed
Tower Hamlets	NE & SE Industrial Land Baseline
Waltham Forest	NE & SE Industrial Land Baseline
Wandsworth	Based on Cities Revealed
Westminster, City of	Based on Cities Revealed

Table B2 Data Used for Assessment of 2006 Built-on Industrial Land

Borough	*Explanation method process for 2006 baseline*
Barking and Dagenham	NE & SE Industrial Land Baseline
Barnet	Employment land review
Bexley	NE & SE Industrial Land Baseline
Brent	Employment land review
Bromley	NE & SE Industrial Land Baseline
Camden	Projected based on change in VOA 2001-2005
City of London	Projected based on change in VOA 2001-2005
Croydon	Projected based on change in VOA 2001-2005
Ealing	Projected based on change in VOA 2001-2005
Enfield	Employment land review
Greenwich	NE & SE Industrial Land Baseline
Hackney	Projected based on change in VOA 2001-2005
Hammersmith and Fulham	Projected based on change in VOA 2001-2005
Haringey	Employment land review
Harrow	Employment land review
Havering	NE & SE Industrial Land Baseline
Hillingdon	Projected based on change in VOA 2001-2003
Hounslow	Employment land review
Islington	Projected based on change in VOA 2001-2005
Kensington and Chelsea	Projected based on change in VOA 2001-2005
Kingston-upon-Thames	Projected based on change in VOA 2001-2005
Lambeth	Projected based on change in VOA 2001-2005
Lewisham	NE & SE Industrial Land Baseline
Merton	Projected based on change in VOA 2001-2005
Newham	NE & SE Industrial Land Baseline[86]
Redbridge	NE & SE Industrial Land Baseline
Richmond-upon-Thames	Projected based on change in VOA 2001-2005
Southwark	NE & SE Industrial Land Baseline
Sutton	Projected based on change in VOA 2001-2005
Tower Hamlets	NE & SE Industrial Land Baseline
Waltham Forest	NE & SE Industrial Land Baseline
Wandsworth	Projected based on change in VOA 2001-2005
Westminster, City of	Projected based on change in VOA 2001-2005

[86] This figure differs slightly from the baseline used in the London Waste Apportionment Study (Jacobs Babtie et al, 2006; 2007). The *London Waste Apportionment Study* uses 207 hectares as an input into its waste apportionment model, as approximately 30 hectares of built-on industrial land has been safeguarded for the Olympics Park 2006-2012.

Appendix C - Vacant Land Baseline

Table C1 Data Used for Assessment of 2001 Vacant Industrial Land

Borough	*Explanation method process for 2001 Vacant Land baseline*
Barking and Dagenham	NE & SE Industrial Land Baseline
Barnet	Based on ILAS
Bexley	NE & SE Industrial Land Baseline
Brent	Based on ILAS
Bromley	NE & SE Industrial Land Baseline
Camden	Based on ILAS
City of London	Based on ILAS
Croydon	Based on ILAS
Ealing	Based on ILAS
Enfield	Backdated from 2006 Baseline as Borough not confident about ILAS figure
Greenwich	NE & SE Industrial Land Baseline
Hackney	Based on ILAS
Hammersmith and Fulham	Based on ILAS
Haringey	Based on ILAS
Harrow	Revised ILAS figure based on discussion with Borough
Havering	NE & SE Industrial Land Baseline
Hillingdon	Revised ILAS figure based on discussion with Borough
Hounslow	Based on 2003 ILAS figure after checking with Borough
Islington	Based on ILAS
Kensington and Chelsea	Based on ILAS
Kingston-upon-Thames	Based on ILAS
Lambeth	Based on ILAS
Lewisham	NE & SE Industrial Land Baseline
Merton	Based on ILAS
Newham	NE & SE Industrial Land Baseline
Redbridge	NE & SE Industrial Land Baseline
Richmond-upon-Thames	Based on ILAS
Southwark	NE & SE Industrial Land Baseline
Sutton	Revised ILAS figure based on discussion with Borough
Tower Hamlets	NE & SE Industrial Land Baseline
Waltham Forest	NE & SE Industrial Land Baseline
Wandsworth	Based on ILAS
Westminster, City of	Based on ILAS

Table C2 Data Used for Assessment of 2006 Vacant Industrial Land

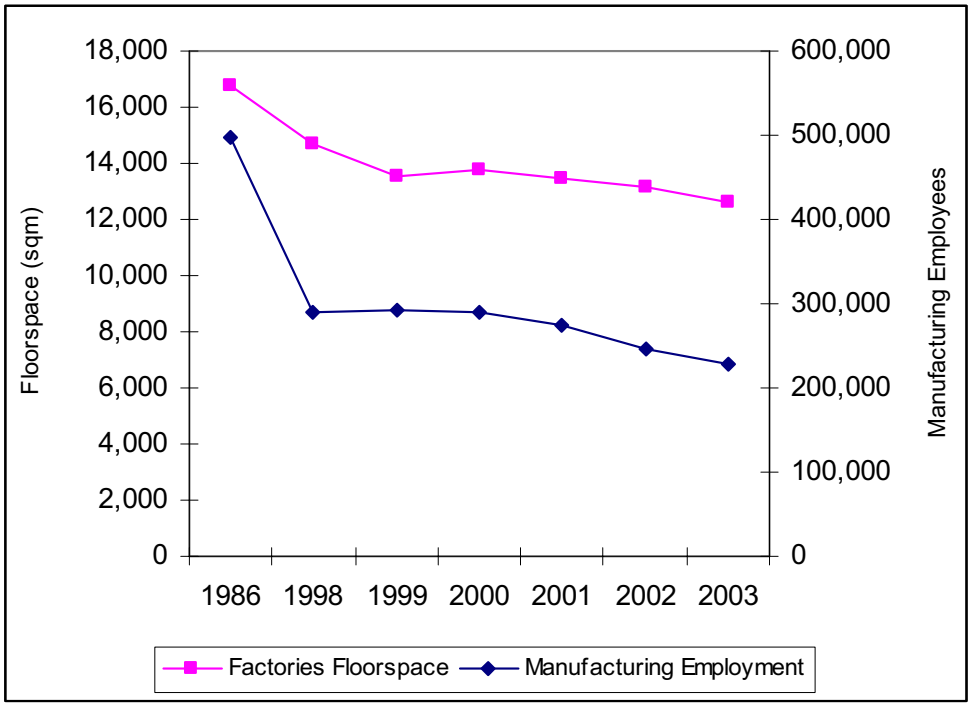
Borough	*Explanation method process for 2006 Vacant Land baseline*
Barking and Dagenham	NE & SE Industrial Land Baseline
Barnet	Employment land review
Bexley	NE & SE Industrial Land Baseline
Brent	Employment land review
Bromley	NE & SE Industrial Land Baseline
Camden	Updated 2001 data with projected rate of change
City of London	Updated 2001 data with projected rate of change
Croydon	Updated 2001 data with projected rate of change
Ealing	Updated 2001 data with projected rate of change
Enfield	Employment land review
Greenwich	NE & SE Industrial Land Baseline
Hackney	Employment land review
Hammersmith and Fulham	2003 ILAS data used in consultation with the borough[87]
Haringey	Employment land review
Harrow	Employment land review
Havering	NE & SE Industrial Land Baseline
Hillingdon	Updated 2001 data with projected rate of change
Hounslow	Updated 2001 data with projected rate of change
Islington	Employment land review
Kensington and Chelsea	Updated 2001 data with projected rate of change
Kingston-upon-Thames	Updated 2001 data with projected rate of change
Lambeth	Employment land review
Lewisham	NE & SE Industrial Land Baseline
Merton	Updated 2001 data
Newham	NE & SE Industrial Land Baseline[88]
Redbridge	NE & SE Industrial Land Baseline
Richmond-upon-Thames	Updated 2001 data with projected rate of change
Southwark	NE & SE Industrial Land Baseline
Sutton	Updated 2001 data with projected rate of change
Tower Hamlets	NE & SE Industrial Land Baseline
Waltham Forest	NE & SE Industrial Land Baseline
Wandsworth	Updated 2001 data with projected rate of change
Westminster, City of	Updated 2001 data with projected rate of change

[87] Atkins ELR (2006) reported 20 hectares of vacant industrial land in the Borough, but the large majority of these sites have been allocated to other uses.
[88] This figure differs slightly from the baseline used in the *London Waste Apportionment Study* (Jacobs Babtie et al, 2006; 2007). The *London Waste Apportionment Study* uses 117 hectares as an input into its waste apportionment model, as approximately 10 hectares of vacant land has been safeguarded for business relocations from the Olympics Park area.

Appendix D - Floorspace and Manufacturing Employment

Comparing employment in manufacturing (GLA Economics' definition), as one of the main industrial employment sectors, and factory floorspace shows that historically there has been a good correlation between the two as shown in Figure D1.

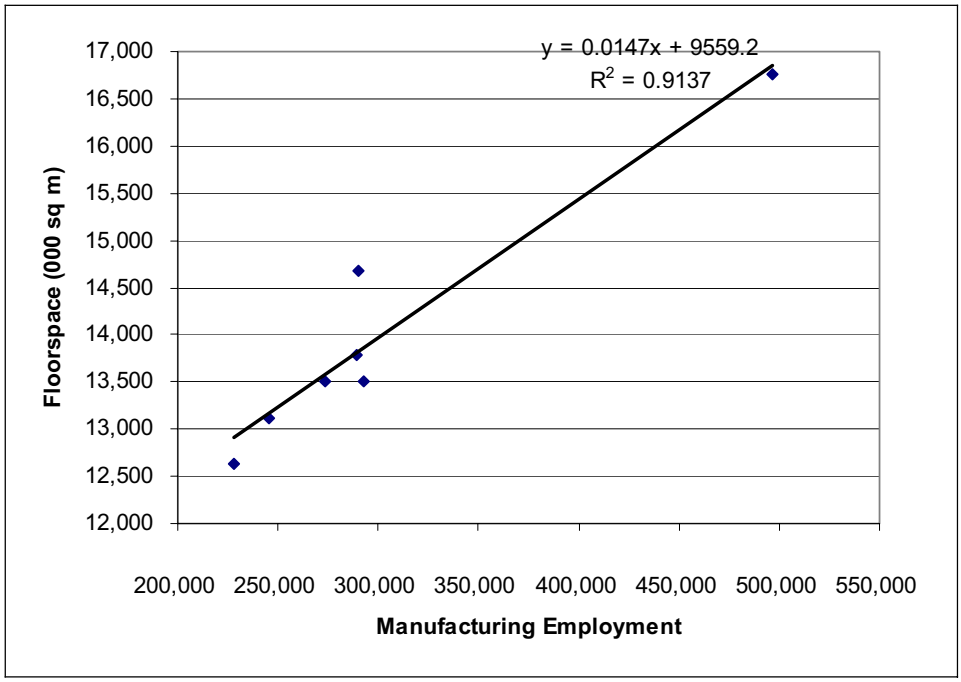
Figure D1 Manufacturing Employment and Factory Floorspace in London



Source: VOA, ABI

Bearing in mind the limitations to the analysis of the data due to the poor availability of historic floorspace data the statistical analysis shows a strong linear correlation between factory floorspace as recorded by the VOA and manufacturing employment. Expressing floorspace as a function of manufacturing employment results in a linear correlation with a very high R^2 of 0.91 as shown in Figure D2.

Figure D2 Correlation: Manufacturing Employment and Factory Floorspace



Source: VOA, ABI

Appendix E - Employment Projection Approach

We had access to the unpublished sector by borough employment projections provided by GLA Economics. The broad sectors used by GLA Economics and the corresponding SIC sectors are shown in Table E1.

Table E1 GLA Broad Sectors and Corresponding SIC Sectors

GLA Broad Sectors	*Corresponding SIC Sectors*
Primary and Utilities	A Agriculture, B Fishing, C Mining, E Energy & Water
Manufacturing	D Manufacturing
Construction	F Construction
Wholesale	G 51.11 – 51.90 of Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods
Retail	G 50.10 – 50.50 and 52.11 – 52.74 of Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods
Hotels and restaurants	H Hotels and restaurants
Transport, and communication	I Transport, storage and communication
Financial Services	J Financial intermediation
Business Services	K Real estate, renting and business activities
Public Administration	L Public administration and defence; compulsory social security
Health and Education	M Education N Health and social work
Other Services	O Other community, social and personal service activities P Private households with employed persons Q Extra-territorial organisations and bodies

Source: GLA Economics, National Statistics

Due to the way four-digit-SIC sectors are aggregated into broad sectors industrial employment is spread across a number of the broad sectors. In some broad sectors all employment is industrial employment (e.g. manufacturing) and in others only a part of the employment is on industrial land (e.g. construction). The *Industrial and Warehousing Land Demand in London* study (Roger Tym et al, 2004) identifies on a four-digit-SIC-level the sectors for which employment is predominantly on industrial land. We have run a number of checks on the data and have found that:

- In the vast majority of cases the identified industrial sectors seem to be reasonable.

- In some cases head office activities of industrial businesses are included in the industrial employment data[89].

- Few of the four-digit SIC code sectors, which we perceive as being predominately located on industrial land, are not included in the Industrial and Warehousing Land Demand in London study[90]. We have subsequently included these sectors in our analysis.

The proportion of industrial employment in the total employment in each broad sector was then calculated at a borough level. We have distinguished between employment in general industry, utilities and waste and warehousing. The current proportion has been assumed to stay constant over time and was used to estimate industrial employment projections up to 2026. An example is given in Table E2. The same calculation was carried out for each broad sector and borough.

An exception to this rule was taken when adapting the GLA Economic's 'manufacturing' employment projections. Publishing is included in the broad manufacturing projections, but excluded in our analysis of SIC codes that are typical of users of industrial land. GLA Economics provided separate publishing projections that indicated a consistent level of employment over the planning period 2006-2026. The industrial land element of the 'manufacturing' sector was therefore projected using the same scale of decline, but from a baseline of manufacturing minus publishing.

[89] For example the City of London shows has a figure for industrial employment that is far too high given the very limited industrial land in the City. For a detailed description of why this is the case see Roger Tym & Partners et al, *Industrial and Warehousing land Demand in London*, August 2004, pp 6-7.

[90] Such as for example '7132 – Renting of construction and civil engineering machinery and equipment'

Table E2 Calculating Industrial Employment Projections

	Base Year ABI Data	Projections					
	2004	2006	2011	2016	2021	2026	
Manufacturing							
Industrial Employment	315	427	385	370	317	291	Calculated Industrial Employment
All Employment	524	710	640	616	527	484	GLA Broad Sector Employment Prediction
% Industrial Employment	60%	60%	60%	60%	60%	60%	**From Base Year**
Utilities							
Industrial Employment	25	34	31	29	25	23	Calculated Industrial Employment
All Employment	524	710	640	616	527	484	GLA Broad Sector Employment Prediction
% Industrial Employment	5%	5%	5%	5%	5%	5%	**From Base Year**
Warehousing							
Industrial Employment	0	0	0	0	0	0	Calculated Industrial Employment
All Employment	524	710	640	616	527	484	GLA Broad Sector Employment Prediction
% Industrial Employment	0	0	0	0	0	0	**From Base Year**

Source: ABI, GLA Economics, URS, GVA

The approach of identifying industrial employment on a four-digit-SIC-basis has been checked against an approach which identifies industrial employment through occupational structures. Assuming that some occupational categories are predominantly related to industrial employment (see Table E3) we have calculated industrial employment by broad sectors.

Table E3 Occupation and Industrial Employment

Occupational Type	*Assumed Predominant Employment Type*
Managers and Senior Officials	Office employment
Professional Occupations	Office employment
Associate Prof & Tech Occupations	Office employment
Administrative and Secretarial Occupations	Office employment
Skilled Trades Occupations	Industrial Employment
Personal Service Occupations	Non-office/industrial employment
Sales and Customer Service Occupations	Non-office/industrial employment
Process, Plant and Machine Operatives	Industrial Employment
Elementary occupations	Industrial Employment

Source: URS

The comparison between the two approaches shows significant differences on a sector-by-borough level but good accordance on an overall borough level. Overall this is a reassuring result. For consistency reasons[91] and because we perceive the four-digit-SIC-level approach as more accurate[92] we have estimated industrial employment as identified on a four-digit-SIC-level.

[91] Industrial employment has been defined by a four-digit-SIC analysis in Roger Tym & Partners et al, *Industrial and Warehousing land Demand in London*, August 2004

[92] There are 248 four-digit-SIC industrial sectors out of a total of 515 in comparison to x industrial occupations out of a total of y occupational types.

Appendix F - SIC Codes

Where the designation M = manufacturing/general industrial employment, W = warehousing employment and U = utilities employment.

Section	*SIC*	*Description*	*Designation*
D	1511	Production and preserving of meat	M
D	1512	Production and preserving of poultry meat	M
D	1513	Production of meat and poultry meat products	M
D	1520	Processing and preserving of fish and fish products	M
D	1531	Processing and preserving of potatoes	M
D	1532	Manufacture of fruit and vegetable juice	M
D	1533	Processing and preserving of fruit and vegetables not elsewhere classified	M
D	1541	Manufacture of crude oils and fats	M
D	1542	Manufacture of refined oils and fats	M
D	1543	Manufacture of margarine and similar edible fats	M
D	1551	Operation of dairies and cheese making	M
D	1552	Manufacture of ice cream	M
D	1561	Manufacture of grain mill products	M
D	1562	Manufacture of starches and starch products	M
D	1571	Manufacture of prepared feeds for farm animals	M
D	1572	Manufacture of prepared pet foods	M
D	1581	Manufacture of bread; manufacture of fresh pastry goods and cakes	M
D	1582	Manufacture of rusks and biscuits; manufacture of preserved pastry goods and cakes	M
D	1583	Manufacture of sugar	M
D	1584	Manufacture of cocoa, chocolate and sugar confectionery	M
D	1585	Manufacture of macaroni, noodles, couscous and similar farinaceous products	M
D	1586	Processing of tea and coffee	M
D	1587	Manufacture of condiments and seasonings	M
D	1588	Manufacture of homogenised food preparations and dietetic food	M
D	1589	Manufacture of other food products not elsewhere classified	M
D	1591	Manufacture of distilled potable alcoholic beverages	M
D	1592	Production of ethyl alcohol from fermented materials	M
D	1593	Manufacture of wines	M
D	1594	Manufacture of cider and other fruit wines	M
D	1595	Manufacture of other non-distilled fermented beverages	M
D	1596	Manufacture of beer	M
D	1597	Manufacture of malt	M
D	1598	Manufacture of mineral waters and soft drinks	M
D	1600	Manufacture of tobacco products	M
D	1711	Preparation and spinning of cotton-type fibres	M
D	1712	Preparation and spinning of woollen-type fibres	M
D	1713	Preparation and spinning of worsted-type fibres	M
D	1714	Preparation and spinning of flax-type fibres	M
D	1715	Throwing and preparation of silk including from noils and throwing and texturing of synthetic or artificial filament yarns	M
D	1716	Manufacture of sewing threads	M
D	1717	Preparation and spinning of other textile fibres	M
D	1721	Cotton-type weaving	M
D	1722	Woollen-type weaving	M
D	1723	Worsted-type weaving	M
D	1724	Silk-type weaving	M
D	1725	Other textile weaving	M
D	1730	Finishing of textiles	M
D	1740	Manufacture of made-up textile articles, except apparel	M
D	1751	Manufacture of carpets and rugs	M
D	1752	Manufacture of cordage, rope, twine and netting	M
D	1753	Manufacture of non-wovens and articles made from non-wovens, except apparel	M
D	1754	Manufacture of other textiles not elsewhere classified	M
D	1760	Manufacture of knitted and crocheted fabrics	M
D	1771	Manufacture of knitted and crocheted hosiery	M
D	1772	Manufacture of knitted and crocheted pullovers, cardigans and similar articles	M
D	1810	Manufacture of leather clothes	M
D	1821	Manufacture of workwear	M

Section	SIC	Description	Designation
D	1822	Manufacture of other outerwear	M
D	1823	Manufacture of underwear	M
D	1824	Manufacture of other wearing apparel and accessories not elsewhere classified	M
D	1830	Dressing and dyeing of fur; manufacture of articles of fur	M
D	1910	Tanning and dressing of leather	M
D	1920	Manufacture of luggage, handbags and the like, saddlery and harness	M
D	1930	Manufacture of footwear	M
D	2010	Saw milling and planing of wood, impregnation of wood	M
D	2020	Manufacture of veneer sheets; manufacture of plywood, laminboard, particle board, fibre board and other panels and boards	M
D	2030	Manufacture of builders carpentry and joinery	M
D	2040	Manufacture of wooden containers	M
D	2051	Manufacture of other products of wood	M
D	2052	Manufacture of articles of cork, straw and plaiting materials	M
D	2111	Manufacture of pulp	M
D	2112	Manufacture of paper and paperboard	M
D	2121	Manufacture of corrugated paper and paperboard and of containers of paper and paperboard	M
D	2122	Manufacture of household and sanitary goods and of toilet requisites	M
D	2123	Manufacture of paper stationery	M
D	2124	Manufacture of wallpaper	M
D	2125	Manufacture of other articles of paper and paperboard not elsewhere classified	M
D	2221	Printing of newspapers	M
D	2222	Printing not elsewhere classified	M
D	2223	Bookbinding	M
D	2224	Pre-press activities	M
D	2225	Ancillary operations related to printing	M
D	2231	Reproduction of sound recording	M
D	2232	Reproduction of video recording	M
D	2233	Reproduction of computer media	M
D	2310	Manufacture of coke oven products	M
D	2320	Manufacture of refined petroleum products	M
D	2330	Processing of nuclear fuel	M
D	2411	Manufacture of industrial gases	M
D	2412	Manufacture of dyes and pigments	M
D	2413	Manufacture of other inorganic basic chemicals	M
D	2414	Manufacture of other organic chemicals	M
D	2415	Manufacture of fertilisers and nitrogen compounds	M
D	2416	Manufacture of plastics in primary forms	M
D	2417	Manufacture of synthetic rubber in primary forms	M
D	2420	Manufacture of pesticides and other agro-chemical products	M
D	2430	Manufacture of paints, varnishes and similar coatings, printing ink and mastics	M
D	2441	Manufacture of basic pharmaceuticals	M
D	2442	Manufacture of pharmaceutical preparations	M
D	2451	Manufacture of soap and detergents, cleaning and polishing preparations	M
D	2452	Manufacture of perfumes and toilet preparations	M
D	2461	Manufacture of explosives	M
D	2462	Manufacture of glues and gelatine	M
D	2463	Manufacture of essential oils	M
D	2464	Manufacture photographic chemical material	M
D	2465	Manufacture of prepared unrecorded media	M
D	2466	Manufacture of other chemical products not elsewhere classified	M
D	2470	Manufacture of man-made fibres	M
D	2511	Manufacture of rubber tyres and tubes	M
D	2512	Retreading and rebuilding of rubber tyres	M
D	2513	Manufacture of other rubber products	M
D	2521	Manufacture of plastic plates, sheets, tubes and profiles	M
D	2522	Manufacture of plastic packing goods	M
D	2523	Manufacture of builders ware of plastic	M
D	2524	Manufacture of other plastic products	M
D	2611	Manufacture of flat glass	M
D	2612	Shaping and processing of flat glass	M
D	2613	Manufacture of hollow glass	M
D	2614	Manufacture of glass fibres	M
D	2615	Manufacture and processing of other glass including technical glassware	M
D	2621	Manufacture of ceramic household and ornamental articles	M
D	2622	Manufacture of ceramic sanitary fixtures	M
D	2623	Manufacture of ceramic insulators and insulating fittings	M

Section	SIC	Description	Designation
D	2624	Manufacture of other technical ceramic products	M
D	2625	Manufacture of other ceramic products	M
D	2626	Manufacture of refractory ceramic products	M
D	2630	Manufacture of ceramic tiles and flags	M
D	2640	Manufacture of bricks, tiles and construction products, in baked clay	M
D	2651	Manufacture of cement	M
D	2652	Manufacture of lime	M
D	2653	Manufacture of plaster	M
D	2661	Manufacture of concrete products for construction purposes	M
D	2662	Manufacture of plaster products for construction purposes	M
D	2663	Manufacture of ready-mixed concrete	M
D	2664	Manufacture of mortars	M
D	2665	Manufacture of fibre cement	M
D	2666	Manufacture of other articles of concrete, plaster and cement	M
D	2670	Cutting, shaping and finishing of stone	M
D	2681	Production of abrasive products	M
D	2682	Manufacture of other non-metallic mineral products not elsewhere classified	M
D	2710	Manufacture of basic iron and steel and of ferro-alloys	M
D	2721	Manufacture of cast iron tubes	M
D	2722	Manufacture of steel tubes	M
D	2731	Cold drawing	M
D	2732	Cold rolling of narrow strip	M
D	2733	Cold forming or folding	M
D	2734	Wire drawing	M
D	2741	Precious metals production	M
D	2742	Aluminium production	M
D	2743	Lead, zinc and tin production	M
D	2744	Copper production	M
D	2745	Other non-ferrous metal production	M
D	2751	Casting of iron	M
D	2752	Casting of steel	M
D	2753	Casting of light metals	M
D	2754	Casting of other non-ferrous metals	M
D	2811	Manufacture of metal structures and parts of structures	M
D	2812	Manufacture of builders' carpentry and joinery of metal	M
D	2821	Manufacture of tanks, reservoirs and containers of metal	M
D	2822	Manufacture of central heating radiators and boilers	M
D	2830	Manufacture of steam generators, except central heating hot water boilers	M
D	2840	Forging, pressing, stamping and roll forming of metal; powder metallurgy	M
D	2851	Treatment and coating of metals	M
D	2852	General mechanical engineering	M
D	2861	Manufacture of cutlery	M
D	2862	Manufacture of tools	M
D	2863	Manufacture of locks and hinges	M
D	2871	Manufacture of steel drums and similar containers	M
D	2872	Manufacture of light metal packaging	M
D	2873	Manufacture of wire products	M
D	2874	Manufacture of fasteners, screw machine products, chains and springs	M
D	2875	Manufacture of other fabricated metal products not elsewhere classified	M
D	2911	Manufacture of engines and turbines, except aircraft, vehicle and cycle engines	M
D	2912	Manufacture of pumps and compressors	M
D	2913	Manufacture of taps and valves	M
D	2914	Manufacture of bearings, gears, gearing and driving elements	M
D	2921	Manufacture of furnaces and furnace burners	M
D	2922	Manufacture of lifting and handling equipment	M
D	2923	Manufacture of non-domestic cooling and ventilation equipment	M
D	2924	Manufacture of other general purpose machinery not elsewhere classified	M
D	2931	Manufacture of agricultural tractors	M
D	2932	Manufacture of other agricultural and forestry machinery	M
D	2941	Manufacture of portable hand held power tools	M
D	2942	Manufacture of metalworking machine tools	M
D	2943	Manufacture of other machine tools not elsewhere classified	M
D	2951	Manufacture of machinery for metallurgy	M
D	2952	Manufacture of machinery for mining, quarrying and construction	M
D	2953	Manufacture of machinery for food, beverage and tobacco processing	M
D	2954	Manufacture of machinery for textile, apparel and leather production	M
D	2955	Manufacture of machinery for paper and paperboard production	M
D	2956	Manufacture of other special purpose machinery not elsewhere classified	M

Section	SIC	Description	Designation
D	2960	Manufacture of weapons and ammunition	M
D	2971	Manufacture of electric domestic appliances	M
D	2972	Manufacture of non-electric domestic appliances	M
D	3001	Manufacture of office machinery	M
D	3002	Manufacture of computers and other information processing equipment	M
D	3110	Manufacture of electric motors, generators and transformers	M
D	3120	Manufacture of electricity distribution and control apparatus	M
D	3130	Manufacture of insulated wire and cable	M
D	3140	Manufacture of accumulators, primary cells and primary batteries	M
D	3150	Manufacture of lighting equipment and electric lamps	M
D	3161	Manufacture of electrical equipment for engines and vehicles not elsewhere classified	M
D	3162	Manufacture of other electrical equipment not elsewhere classified	M
D	3210	Manufacture of electronic valves and tubes and other electronic components	M
D	3220	Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy	M
D	3230	Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods	M
D	3310	Manufacture of medical and surgical equipment and orthopaedic appliances	M
D	3320	Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment	M
D	3330	Manufacture of industrial process control equipment	M
D	3340	Manufacture of optical instruments and photographic equipment	M
D	3350	Manufacture of watches and clocks	M
D	3410	Manufacture of motor vehicles	M
D	3420	Manufacture of bodies (coachwork) for motor vehicles: manufacture of trailers and semi-trailers	M
D	3430	Manufacture of parts and accessories for motor vehicles and their engines	M
D	3511	Building and repairing of ships	M
D	3512	Building and repairing of pleasure and sporting boats	M
D	3520	Manufacture of railway and tramway locomotives and rolling stock	M
D	3530	Manufacture of aircraft and spacecraft	M
D	3541	Manufacture of motorcycles	M
D	3542	Manufacture of bicycles	M
D	3543	Manufacture of invalid carriages	M
D	3550	Manufacture of other transport equipment not elsewhere classified	M
D	3611	Manufacture of chairs and seats	M
D	3612	Manufacture of other office and shop furniture	M
D	3613	Manufacture of other kitchen furniture	M
D	3614	Manufacture of other furniture	M
D	3615	Manufacture of mattresses	M
D	3621	Striking of coins and medals	M
D	3622	Manufacture of jewellery and related articles not elsewhere classified	M
D	3630	Manufacture of musical instruments	M
D	3640	Manufacture of sports goods	M
D	3650	Manufacture of games and toys	M
D	3661	Manufacture of imitation jewellery	M
D	3662	Manufacture of brooms and brushes	M
D	3663	Other manufacturing not elsewhere classified	M
D	3710	Recycling of metal waste and scrap	M
D	3720	Recycling of non-metal waste and scrap	M
F	4533	Plumbing	M
F	4534	Other building installation	M
F	4541	Plastering	M
F	4542	Joinery installation	M
F	4543	Floor or wall covering	M
F	4544	Painting and glazing	M
G	5020	Maintenance and repair of motor vehicles	M
G	5040	Sale, maintenance and repair of motorcycles and related parts and accessories	M
K	7132	Renting of construction and civil engineering machinery and equipment	M*
K	7250	Maintenance and repair of office, accounting and computing machinery	M*
K	7482	Packaging activities	M*
C	1421	Operation of gravel and sand pits	U*
E	4012	Transmission of electricity	U*
O	9001	Collection and treatment of sewage	U
O	9002	Collection and treatment of other waste	U
O	9003	Sanitation, remediation and similar activities	U
F	4550	Renting of construction or demolition equipment with operator	W*

Section	SIC	Description	Designation
G	5111	Agents involved in the sale of agricultural raw materials, live animals, textile raw materials and semi-finished goods	W
G	5112	Agents involved in the sale of fuels, ores, metals and industrial chemicals	W
G	5113	Agents involved in the sale of timber and building materials	W
G	5114	Agents involved in the sale of machinery, industrial equipment, ships and aircraft	W
G	5115	Agents involved in the sale of furniture, household goods, hardware and ironmongery	W
G	5116	Agents involved in the sale of textiles, clothing, footwear and leather goods	W
G	5117	Agents involved in the sale of food, beverages and tobacco	W
G	5118	Agents specialising in the sale of particular products or ranges of products not elsewhere classified	W
G	5119	Agents involved in the sale of a variety of goods	W
G	5121	Wholesale of grain, seeds and animal foods	W
G	5122	Wholesale of flowers and plants	W
G	5123	Wholesale of live animals	W
G	5124	Wholesale of hides, skins and leather	W
G	5125	Wholesale of unmanufactured tobacco	W
G	5131	Wholesale of fruit and vegetables	W
G	5132	Wholesale of meat and meat products	W
G	5133	Wholesale of dairy produce, eggs and edible oils and fats	W
G	5134	Wholesale of alcoholic and other beverages	W
G	5135	Wholesale of tobacco products	W
G	5136	Wholesale of sugar and chocolate and sugar confectionery	W
G	5137	Wholesale of coffee, tea, cocoa and spices	W
G	5138	Wholesale of other food including fish, crustaceans and molluscs	W
G	5139	Non-specialised wholesale of food, beverages and tobacco	W
G	5141	Wholesale of textiles	W
G	5142	Wholesale of clothing and footwear	W
G	5143	Wholesale of electrical household appliances and radio and television goods	W
G	5144	Wholesale of china and glassware, wallpaper and cleaning materials	W
G	5145	Wholesale of perfume and cosmetics	W
G	5146	Wholesale of pharmaceutical goods	W
G	5147	Wholesale of other household goods	W
G	5151	Wholesale of solid, liquid and gaseous fuels and related products	W
G	5152	Wholesale of metals and ores	W
G	5153	Wholesale of wood, construction materials and sanitary equipment	W
G	5154	Wholesale of hardware, plumbing and heating equipment and supplies	W
G	5155	Wholesale of chemical products	W
G	5156	Wholesale of other intermediate products	W
G	5157	Wholesale of waste and scrap	W
G	5181	Wholesale of machine tools	W
G	5182	Wholesale of mining, construction and civil egineering machinery	W
G	5183	Wholesale of machinery for the textile industry, and of sewing and knitting machines	W
G	5184	Wholesale of computers, computer peripheral equipment and software	W
G	5185	Wholesale of other office machinery and equipment	W
G	5186	Wholesale of other electronic parts and equipment	W
G	5187	Wholesale of other machinery for use in industry, trade and navigation	W
G	5188	Wholesale of agricultural machinery and accessories and implements, including tractors	W
G	5190	Other wholesale	W
I	6311	Cargo handling	W
I	6312	Storage and warehousing	W
I	6321	Other supporting land transport activities	W
I	6411	National post activities	W
I	6412	Courier activities other than national post activities	W

We broadly agree with the range of SICs defined in the *Industrial & Warehousing Land Demand* report. However, we would also add the following:

*URS defined SIC Codes:

- SIC 7132 (Renting of construction and civil engineering machinery and equipment) This is typically done from sites on industrial land
- SIC 7250 (Maintenance and repair of office, accounting and computing machinery) This is typically done on industrial estates, which is supported by the relative small number of employees in the City
- SIC 7482 (Packaging activities) Would be expected to be on industrial land. Not very relevant as only small numbers of employment across London
- SIC 1421 (Operation of gravel and sand pits) The presence of employees in Bexley, B&D, Greenwich indicates that this relates to wharf activities
- SIC 4012 (Transmission of electricity) The relative high number of employees in this SIC in Bexley, Havering and Lambeth and low number in the City and Westminster indicates that this SIC is more related to industrial use. The total figures are very low though and it remains a poor indicator for land demand
- SIC 4550 (Renting of construction or demolition equipment with operator) This is typically done from sites on industrial land

Appendix G - Employment Densities

Employment Densities

For the purpose of this study we have defined employment density as number of employees per hectare[93]. From previous work we know that employment densities vary significantly depending on sector, location and age of industrial stock and are therefore notoriously difficult to establish. Table G1 shows employment densities form different sources.

Table G1 Comparing Employment Densities

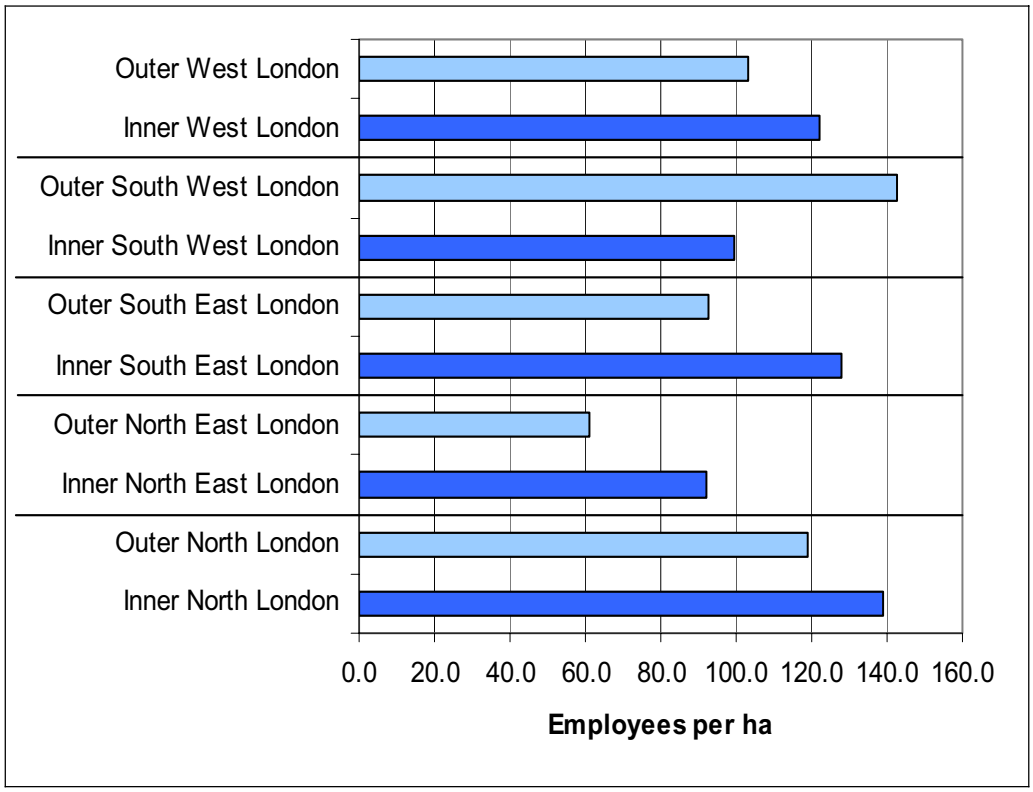
		Inner London	Outer London
		# employees per ha	# employees per ha
General Industry	2004 Study*	150	
	Triangulation Model**	128	91
	URS/GVA Calculation***	92 to 139	61 to 130
Warehousing	2004 Study*	113	
	Triangulation Model**	128	91
	URS/GVA Calculation***	78 to 155	37 to 110

** Employment densities used in Roger Tym and Partners et al, Industrial and Warehousing Land Demand in London*
*** Employment densities used in the GLA Economics Borough Employment Projections in the site availability section*
**** Density estimates based on employment figures calculated as described in Section 6 and manufacturing land estimates from Section 3 (adjusted for outlier).*

We have further analysed our employment density estimates, which we have calculated from ABI data (as described in **Appendix E)** and our manufacturing land estimates (see Section 3). We have aggregated the densities for inner and outer London Boroughs on a sub-regional level and these are shown in Figure G1.

[93] Employment density can also be defined as number of employees per m^2 of floorspace. The link between employment density in employees per hectare and employees per m^2 of floorspace is provided by the plot ratio (ratio between floorspace and site size).

Figure G1 Manufacturing Employment Densities



Source: URS, GVA Grimley

Employment densities vary significantly across London ranging from around 60 employees per hectare in outer North East London to over 140 employees per hectare in outer South West London.

It is important to note that the variation in employment densities is due, at least to a certain degree, to the definition of industrial employment by the ABI. Although we went to great length in filtering out industrial employment from other employment (as described in **Appendix E**) there is still a certain amount of head office employment included in industrial employment. This becomes eminent when analysing industrial employment and employment densities for central boroughs such as the City and Westminster which have much higher industrial employment and employment densities as would be expected. Bearing these limitations in mind the data presented in Figure G1 reveals some interesting findings.

The variations in employment densities across London reflect to a certain degree the industrial geography of London with relatively low employment density industrial activities in outer East London such as large scale manufacturing (e.g. Ford in Barking and Dagenham) and relatively small scale, labour intensive activities in inner North London.

With the exception of West London industrial employment densities are lower in the outer boroughs where land values are lower and higher in the inner boroughs where land values are higher.

Future Trends in Employment Densities

There are different forces influencing possible future trends in employment densities. Factors tending to favour a decrease in employment densities include:

- Changes in technology, the need to improve efficiency and the resulting capital deepening might lead to a reduction in employment densities.

Factors tending to favour an increase in employment densities include:

- The trend to bespoke, high quality and fast turnaround production which is relatively labour intensive could be expected to lead to increased employment densities in some sectors (e.g. the 'Beneton effect' in the clothing industry with increased production on demand).

- Increasing land values will further be an incentive for higher plot ratios and as a result increased employment densities.

The main question at hand though is what would any change in employment densities have on the demand of industrial land. Analysis of the London Development Database – which holds records of all completions above 1,000m^2 – suggests that approximately 1% of the industrial stock is renewed annually. Assuming, for arguments sake, an increase of employment densities in all new developments of 10% would lead to an annual decrease of land demand of approximately 0.1%. This change is by far smaller than other uncertainties in the demand projection resulting for example from macroeconomic assumptions.

We have therefore decided to use current employment densities for the calculation of future land requirements.

Appendix H - London Boroughs

Appendix I - Industrial & Logistics Property Market Areas

Central Service Circle

Geography and Business Focus

This market area surrounds the City of London and Westminster, both north and south of the River Thames. The market area falls within a two-mile band, although in reality it is characterised by pockets of industrial activity, rather than a complete coverage within this band.

Businesses in this area have quick and easy access to central London businesses, although accessibility to the rest of Greater London and beyond is slightly more difficult. The boroughs that fall within this market area include Camden, Hammersmith and Fulham, Islington, Kensington and Chelsea, Lambeth, Southwark and Westminster. The area also includes parts of Hackney and Wandsworth, as well as the north-western area of Lewisham. However, each of these three boroughs also overlap with other market areas, and are therefore best seen as zones of transition rather than being definitively associated with a specific market area.

This is essentially a service market to the employment market in the West End and the City of London as well as parts of the Docklands. It is a combination of food and refreshment servicing, office supplies, support services, etc. The West End tends to be slightly different from the City of London and Docklands as there is a greater need for servicing of the retail market, whilst the City of London and Docklands are primarily serviced by the logistics market on the basis of the large office employment base.

Industrial activities tend be located on the edge of the office/retail areas - although there are limited concentrations within central areas of Westminster in particular - primarily on good access road links. Units tend to be small, with some clustering of similar or connected activities but also quite independent locations. Notable sites include New Covent Garden, Hatton Gardens and Saville Row.

Significant employment land has been lost, particularly to residential and also office development over the past 20 years. Much of the larger releases have been on former railway or other statutory body land, such as gas works. The change in the Planning Use Classes Order in 1987 also attracted a significant shift of use within multi storey buildings, many of which accommodated industrial, storage and service businesses due to their high value locations. There was a marked conversion to office users in the late 1980s. This has now been replaced by a marked shift to residential conversion over the last 5+ years.

Property Composition

The age and quality of building stock in the Central Service Circle is varied. There is a particularly high proportion of pre-War industrial stock – much higher than the other property market areas. Many occupiers make use of multi-storey accommodation because cost constraints.

Relatively few new development opportunities have come forward over the past 20 years. However, those that have come forward have been successful, such as at Bricklayers Arms, Battersea, Kentish Town and around Kings Cross. A number of older established industries not directly related to the City and West End have closed or relocated over the last decade.

Demand Patterns

Gross development rates for total industrial space over the last 10-15 years have been approximately 6-7 hectares per annum based on standard density plot ratios of 45%. Given the nature of property composition in this part of London density rates are likely to be considerably higher than this. Assuming a plot ratio of 75% would result in a gross development rate of between 4-5 hectares per annum. The likelihood is that the actual gross development rate lies between these ranges. In net terms, meanwhile, there has been a significant reduction in the overall industrial floorspace base, both in the logistics and manufacturing sectors.

The types of occupier looking for space tend to be service orientated, with over 90% of demand coming from these types of occupier. Single storey property is in demand, particularly new, although multi-storey space is sometimes considered. There is demand for all property sizes ranging from the very small (railway arches) to two hectares/5,000m^2 units, principally for document storage, stationery and retail support activity, from both existing operations in the area and new business set-ups. Overall take-up is approximately 20-40,000m^2 per annum.

There are very few manufacturers in the area other than historic or specialist i.e. Hatton Garden, jewellery, catering, print etc. The East End garment trade is a possible exception. Value pressures has tended to push occupiers further out from this market area over the last 5-10 years, especially manufacturers.

Few, if any, opportunities exist for major new development over two hectares. Additionally there is a very limited supply of good or reasonable quality second hand space across the size and tenure range in demand. Demand is higher than supply at present, although this also reflects the expression of 'ideal' location requirements rather than realistic expectations on property supply.

Table H1 summarises the focus of industrial demand by size band in this market area. The main logistic sectors driving demand are also highlighted.

Table H1 Summary of Demand Characteristics by Size Band

Size Category	*Current demand level relative to supply*
<2,000m^2	Steady
2-10,000m^2	Strong
10,000+m^2	Weak
Main demand sectors	Mainly 'Other Logistics', especially storage and servicing, although food related activities significant.

The focus of future demand for industrial property in the Central Service Circle is likely to remain with the business sectors concerned with the servicing of the West End, City and Dockland businesses, storage and perishable food related activities. These functions may be better placed to afford the premium values that are attached to locating in this area, although there is likely to be increased pressure from alternative higher-value land uses.

Many of the existing manufacturing businesses in this area have strong associations with particular business functions (e.g. jewellery, fashion). Whilst this has helped develop distinctive industrial characteristics for the area, there is still likely to be pressure for re-location of some of these businesses out of this market area. The extent to which this occurs will be driven by various factors, but from a property perspective the change in rental levels and alternative-use land values will be important considerations.

In practice, re-location pressures driven by land values are likely to push a variety of industrial occupiers to move further out of the central core. However, such re-location decisions are going to have to be balanced against higher transportation costs, which would particularly affect the perishable food servicing functions and 'rapid response' business servicing occupiers (e.g. computer, photocopier etc repairs).

Values and Ownership

Land values are between £3.75-£5 million per hectare, with rents of £108-£161 psm for good quality industrial space. There is a mix of owner occupied premises and landlord properties.

The Thames Gateway

Geography and Business Focus

This market area stretches from the bottom of the Lea Valley adjoining the Isle of Dogs, eastwards straddling the River Thames for approximately 10 miles. It is generally no more than one or two miles inland from the Thames north or south. The boroughs which fall within this market area include Barking and Dagenham, Bexley, Greenwich, Havering, Newham, and Tower Hamlets. There is also overlap with the Central Service Circle and the Lea Valley in the borough of Hackney, and Lewisham also falls across the market area and the Central Service Circle. In addition, it is worth stressing that the market area extends beyond the boundary of Greater London into Essex and Kent.

Transport and access infrastructure has improved significantly in recent years, and the completion of the A13 from the M25 westwards to Dagenham has opened up large areas. There are also transport improvements underway on both sides of the river, including the possibility of a new road bridge between Thamesmead in Greenwich and Beckton Gateway in Newham, and a tunnel/bridge between Greenwich Peninsula and Silvertown to the west of the Royal Docks.

Historically, occupiers in this area required river access (e.g. timber, paper, aggregates, oil/chemicals, etc), and could acquire large areas of land. This included 'magnet' employers (e.g. Ford at Dagenham) which support a variety of service industries. These larger manufacturing activities tended to be specialised, requiring customised property.

The above requirements are now not generally applicable in the area. Demand over the last 5-10 years has been driven more by the growth in logistics activities, especially for larger units in the M25 area, but also towards the western boundary of the market area for smaller units, especially to service Docklands and the City of London. Smaller manufacturing occupiers require more standard industrial properties.

Significant employment land has been lost over the last two decades, mainly to retail and residential schemes, and closures are still occurring. There are a considerable number of brownfield and greenfield development sites within the corridor available for both end users and land owners.

Property Composition

There is a considerable amount of old stock, much of it developed for manufacturing purposes. Almost three-quarters of stock was built pre-1970, with a substantial proportion built before the War. Many properties are large, although a number of estates of mixed size exist. In terms of composition, given the more

recent logistics developments, the current split between manufacturing and warehousing space is closer to 40/60.

Overall, there is large and diverse spread of sites on both sides of the Thames - some available for immediate development, others requiring improvement works. Many sites face constraints to their successful development, such as road infrastructure improvements, planning issues and significant environmental works, all of which can make development unviable. Nevertheless, this area has the potential to cater for a wide spread of B1, B2 and B8 uses. The area comprises approximately 25% of the total manufacturing and logistics stock in London.

Demand Patterns

Demand has been more buoyant over the last 5+ years across the area as a whole, although with variations within the market area. The heavy industrial base has experienced major re-location pressures, with correspondingly low demand levels. The light industrial and logistics base has dominated demand. The attractions and site availability of Dartford and Thurrock outside the eastern edge of Greater London have proved a focus of activity in particular.

The focus of demand is primarily from the logistics sector. Over 90% of current demand for larger units (above 10,000m^2) is from the logistics sector, and probably 80% plus in other size bands. Size range required is from 2,000m^2 to 10,000m^2 in general, although around the M25 area larger units are in demand. Manufacturers generally require smaller sized units (under 5,000 m^2), but a range of sizes is required.

The London 2012 Olympics and Paralympics raises a number of opportunities and challenges for the area. One consequence is the displacement of approximately 200 businesses, which will take up a considerable amount of industrial floorspace from the current industrial property supply. The long-term impact of this is difficult to assess, but it is leading to value pressures in the Thames Gateway area as well as an outward push to industrial demand. The gross development rate for all industrial space between 1992 and 2005 was between 14-16 hectares per annum based upon a standard plot density ratio of 45%, the majority of which was for logistics-type space. Given the changing demand profile in this area, the plot density ratios may differ in practice across this market area, either higher or lower than the 'standard' ratio. This means that the gross development rate could vary between 10 and 20 hectares per annum overall. However, the 14-16 hectares per annum figure may be a reasonable indicator of overall activity reflecting the variation that exists across the market area.

Whilst there has been an overall reduction in industrial stock over the last 20 years in this area, more recent trends suggest a reversal of this pattern, led in particular by demand from the logistics sector. Industrial take-up is estimated to be between 70,000 to 100,000m^2 per annum on average. Whilst a significant

amount of this demand is likely to have been in second-hand space, there are a number of major logistics deals on new space that are strongly influencing demand.

Speculative unit development did not take place in the region from the late 1980s until 1998 when a scheme was started by Priority Sites (with English Partnerships) at Charlton SE7. Further schemes have been developed since. There are few modern buildings of over 5,000m^2, although logistic orientated supply over this size has arisen over the last five years around the M25.

There is plenty of potential land, especially above 2-5 hectares, although there is contamination and other constraint issues on many sites, as mentioned earlier. Overall, there is a considerable amount of potential development sites within the market area, although there is wide variation in the level of availability of these sites.

Table H2 summarises the focus of industrial demand by size band in this market area. The main logistic sectors driving demand are also highlighted.

Table H2 Summary of Demand Characteristics by Size Band

Size Category	*Current demand level relative to supply*
<2,000m^2	Steady
2-10,000m^2	Strong
10,000+m^2	Strong
Main demand sectors	Mainly general retail, with some servicing such as pharmaceuticals and automotive. Closer to western boundary focus is on servicing, with some just-in-time retail.

Future demand in the Thames Gateway area may, in simplistic terms, diverge along two geographical lines. The eastern area, particularly towards the M25 is likely to represent one geographical market, whilst the more western parts of Thames Gateway – both north and south of the river - is likely to develop different market characteristics.

The eastern market area is likely to retain a focus as a location for relatively major/large logistics operations. This is likely to be driven by functional factors, rather than from a particular business market sector – i.e. the ability to provide/deliver suitable space for major operations, rather than an ideal location for fashion retailing, clothing, healthcare sectors etc. It is the general location and potential property supply that is the attraction of the area, rather than any inherent benefit to a particular industrial sector.

That said, this part of the Thames Gateway might be attractive to growing or emerging industrial sectors, both ‘new tech’ and ‘old tech’. This includes environmental industries, recycling and biotechnology activities, for instance.

However, the scope for growth in these industries in this market area is based mainly upon the potential property supply characteristics of the area, not necessarily any inherent demand to locate here by such businesses. Factors such as labour wage rates, skill levels and university link-ups are more significant in securing effective take-up or development of such space, rather than simply the potential availability of such space. Currently, there are relatively limited realistic demands for such space in this area.

The western area within the Thames Gateway market is likely to continue to see an increasing concentration of demand for servicing/logistics of the City and Docklands. This is probably going to be focused more on the smaller (under 2,000m^2) and medium (2-10,000m^2) sized part of the property market. The emphasis of demand in expected to be – but not limited to – just in time retail, servicing (particularly hospital/healthcare, banking and office products, servicing parts), and possibly more general retailing.

Both the eastern and western parts of the Thames Gateway market are going to experience increased industrial demand and activity due to various major developments proposed in the region, as well as through major re-development/regeneration schemes proposed for the area. Some of the major schemes that are planned or underway include:

- London 2012 Olympics and Paralympic Games
- Stratford City redevelopment
- London Gateway Port
- The Bridge scheme at Dartford
- White Hart Triangle industrial development

Most of these developments are likely to accentuate the logistics market rather than the manufacturing sector.

Values and Ownership

Land values are quite varied across the market area. Towards the western boundaries (Isle of Dogs/Bow etc) land values are around £3.75 million per hectare. South of the river (Belverdere, Thamesmead) land values are generally lower, at between £1.8 and £2.1 million per hectare. Barking and Dagenham are between £2.1 and £2.4 million per hectare. Thurrock can see values in excess of £2.5 million per hectare.

Rental values are also varied across the market area. Prime rents can range between £75-£160 psm for new stock. Second-hand stock can range from £54-£108 psm. The majority of land and buildings are owned freehold by end users.

Lea Valley Market

Geography and Business Focus

The core of this market area stretches from Tower Hamlets north through Hackney, Tottenham, Edmonton and Enfield in a corridor. It is approximately 15 miles north and south and no more than one to two miles at its widest west/east. The boroughs that fall within this market area include Enfield, Hackney, Haringey, Tower Hamlets and Waltham Forest. Hackney, but also Tower Hamlets, overlaps with the Lea Valley and Central Service Circle to varying degrees. They are also witnessing major regeneration and redevelopment associated with projects such as the London 2012 Olympics and Paralympics, which is likely to change the nature of the industrial property offer in these boroughs in the future.

The area is crossed by, and connected to, a number of major trunk routes, although until recently without particularly good north south inter-connection within the corridor. A number of rail, Light Rail Transport (LRT) and Docklands Light Railway (DLR) stations serve most of the areas, though not particularly well.

A large proportion of the land area supported, until relatively recently, former nationalised industries i.e. railway marshalling yards and works, power stations, sewage works etc. A number of these have been released, such as Stratford Rail Lands and several British Gas sites, and the developments related to the Olympics and Paralympics is creating a new set of opportunities and challenges in the area.

This area is made up of logistics businesses that are mainly concerned with serving the north M25/London and the north and central part of the area. Businesses serving the city fringe and the east are located in the southern part of the area. Manufacturers, particularly expanding small and medium sized businesses, are concentrated in the central and northern areas. Large existing manufacturers are spread generally throughout, although under pressure from alternative land uses.

Property Composition

There is still a substantial proportion of old stock in the area, with over a third of the total manufacturing and logistics property stock built before the War. However, there have been a number of relatively recent developments occupied by the service sector which is altering the mix of property, especially around arterial routes. These include 2-10,000m^2 units in particular.

Demand Patterns

Demand across the board has improved significantly over the last decade. Gross development rate for industrial space has run at approximately 5-6 hectares per annum based on standard plot density ratios, although there is still pent-up development pressure. It is possible, however, that the gross development rate may range between three and eight hectares depending upon actual plot density rates achieved in the area. Even so, the 5-6 hectare per annum range may well represent the overall level achieved when higher and lower density developments in the area are balanced out.

In net terms, however, the area has seen a reduction in the total industrial stock (mainly through manufacturing related relocations or closures). The reduction in the total stock of industrial floorspace in this area appears to have been slowing down more recently. Take-up is running at approximately 50,000 to 75,000m^2 per annum, predominately from the logistics sector, particularly retail.

Logistics is the main source of demand in the north, although increasingly so in the south as road infrastructure improves and to serve the City, Docklands and parts of the West End. The range of buildings in demand is between 100m^2 and 30,000m^2 for logistics, with a particular focus in the 2-10,000m^2 range. Overall, demand is probably 85-90% for logistics activities. New development activity has also taken place in the northern part of the corridor, for example, Enfield, especially for smaller (under 2,000m^2) and larger units (above 10,000m^2).

The south of the area has become more attractive with new road infrastructure and improvements, and businesses have been relocating from poor accommodation in surrounding residential areas. Considerable developer interest exists in the few sites which remain undeveloped, particularly for B8 warehousing land uses. However, the impact of the Olympic development and other major development schemes in the area is strongly influencing the availability of land and property leading to an increase in demand for sites in the area.

There is a shortage of sites above two hectares, especially for logistics use in the north, as well as a shortage of buildings over 5,000m^2 (new or modern) throughout the area.

Table H3 summarises the focus of industrial demand by size band in this market area. The main logistic sectors driving demand are also highlighted.

Table H3 Summary of Demand Characteristics by Size Band

Size Category	*Current demand level relative to supply*
<2,000m^2	Weak/Steady
2-10,000m^2	Strong
10,000+m^2	Steady/Strong
Main demand sectors	Mainly general retail and servicing such as office support.

This property market area is experiencing major regeneration, particularly towards the southern areas, which may have important consequences for future property demand. The redevelopment of Stratford and the build-up and legacy impacts of the London 2012 Olympic and Paralympic Games, for example, may reinforce the demand for 'servicing' property in this area. This will also see some of the existing industrial stock in this area being effectively replaced by new industrial stock post-2012, although not in exactly the same location. The consequence of this is likely to be the attraction of industrial activities that can pay the higher rents associated with newly developed space in this area, again reinforcing the focus of demand onto higher-value servicing/logistics industrial activities.

The northern part of this market area is likely to remain a focus of general retailing demand, although industrial property supply issues may limit the amount of overall new development. There may be some over-spill demand feeding through to industrial property arising from Stansted airport, but this is likely to be a much more long-term possibility and will, in any event, be likely to feed through into the northern parts of the Lea Valley property market beyond London.

Values and Ownership

Land values are approximately £2.5 million per hectare in the Enfield area, although they can range as high as £3-£3.2 million per hectare. In the southern part of the market area, closer to Bow/Stratford, land values can range from sub-£2.5 million to £3.75 million per hectare. Rents for second-hand space are generally between £80-£86 psm, although new developments can be in the range of £97-£102 psm. A wide variety of freehold and leasehold tenures exist throughout the area.

Park Royal/A40/M4/A4 Market

Geography and Business Focus

This could be seen as two property market areas, with Park Royal/A40 in the north and the M4/A4 area in the south. However, there has been increasing overlap between them over the last decade so they have been treated as one market area for the purposes of this assessment. It also needs to be recognised that the boundaries between this market area and the Heathrow market area has become increasingly blurred over the last few years.

The Park Royal/A40 focus extends into south Wembley and along the A40 corridor for approximately five miles into Perivale and Greenford. The concentration at Park Royal itself is one of the largest in Greater London. The M4/A4 area, meanwhile, extends from Brentford in the east, westwards through Isleworth and into Southall, Hayes and West Drayton, although in a number of major clusters.

The boroughs which fall within this market area include Brent and Ealing primarily, although is also extends into Hounslow in part, and northern parts of Hillingdon.

The concentration and growth owes a lot to the A40/M4/A4 accessibility into central London attracting retail and service related businesses. In fact, the area extends into the Thames Valley corridor beyond London, serving both national and regional logistics functions. The North Circular Road also provides north-south links within London. LRT and Mainline Stations are reasonably placed, though not ideally, given the levels of employment.

Major employers include producers and distributors of food products, including specialist food, as well as other time-critical logistics functions.

Property Composition

The area has changed substantially over the past 20 years with major office development on historically industrial sites, particularly in the Brentford/Isleworth area. Land for new development is otherwise limited.

There is a generally higher proportion of warehousing floorspace stock in this area than in other property market areas (except Heathrow). Probably three-quarters of industrial floorspace in the market area is warehousing, and an above average proportion of stock is new.

Demand Patterns

Overall, this part of Greater London has seen significant activity over the last few years, resulting in substantial value rises and speculative development commitment. Primary take-up has been for B8 warehousing uses, as opposed to

manufacturing, particularly in size terms for buildings of over 5,000m^2. In addition, there is also an active second hand market. Demand has a particular focus around the 'just in time' retail market, such as food and beverages.

Recent trends indicate strong logistics demand, with at least 80% of demand coming from the logistics sector. The size ranges required are between 100m^2 and 30,000m^2 for warehousing and 100m^2 and 10,000m^2 for manufacturing-orientated activities, although there is particular focus in the 2,000-10,000m^2 category. Overall take-up is in excess of 150,000m^2 per annum.

The gross development rate for all industrial space has been between 13 to 15 hectares per annum between 1992 to 2005, which is based upon a plot density ratio of 45% which is likely to be representative of activity in this area overall. However, land value pressures in the area appear to have resulted in a net development rate closer to five hectares per annum more recently. Development has been led by the logistics sector primarily.

Much employment land has been lost to office, retail, and residential schemes, even so, there has been a significant amount of bespoke development in this market area, especially in Greenford, Park Royal, Southall and Hayes. There are also a few sites offering development potential. Speculative unit development has taken place in a number of locations over the past few years following a gap of several years after 1990, although less so in the M4/A4 area due to lack of availability of sites.

Relatively few opportunities exist for major new development in the M4/A4 area in particular. However, the influence of Heathrow is causing businesses to relocate to this area, which is slightly cheaper than areas immediately adjacent to Heathrow, and will continue to keep pressure on space forcing non-essential companies to move away.

Table H4 summarises the focus of industrial demand by size band in this market area. The main logistic sectors driving demand are also highlighted.

Table H4 Summary of Demand Characteristics by Size Band

Size Category	*Current demand level relative to supply*
<2,000m^2	Strong
2-10,000m^2	Steady
10,000+m^2	Weak
Main demand sectors	Mainly time sensitive retailing and servicing, including food and beverages sectors.

This area is likely to remain a strong focus of industrial demand. This reflects its geographical location – able to serve the West End and City, Heathrow and the

wider Thames Valley corridor, as well as other parts of west London – and the critical mass of industrial activities in this area, such as around Park Royal itself.

There is increasing overlap with the Heathrow market, with occupiers not able to afford the high rents in the Heathrow area moving further out into the Park Royal/A40/M4/A4 market. There is also the possibility of the corridor along the M1 becoming a more significant logistics location, although this is dependent upon property supply and motorway access improving.

The main sectoral focus of demand seems likely to remain broadly as it is currently, with just in time retail, West End and west London servicing and smaller manufacturing-orientated enterprises.

Whilst there may be some pressure for businesses to move westwards to benefit from slightly less expensive property costs, overall there will be strong counter-pressures to resist this due to the associated increased transport costs. However, some occupiers may be displaced due to businesses associated with Heathrow airport moving into this area and able to pay higher rents.

Values and Ownership

Land values between £4.3 to £5.5 million per hectare, with rents between £107-£140 psm for new industrial space. A high proportion of modern and new development exists, with strong interest from owner-occupiers.

Heathrow Market

Geography and Business Focus

This area of influence overlaps partly into Hayes/West Drayton to the north, although the main focus is limited to an area approximately two miles around the perimeter of the airport itself. However, the lack of good quality stock and high rental levels has extended this market boundary, and there is increasing overlap with the Park Royal/A40/M4/A4 market. Road and rail links have improved dramatically over the last decade. The London Boroughs of Hounslow and Hillingdon are the main locations impacted by the airport, with Spelthorne and South Bucks District Council adjoining the southern and western boundaries.

The vast majority of employers are airport related, with logistics, administration, and service sectors often combined. However, a number of non-airport related businesses remain. The growth of the airport has created the highest industrial values in Greater London. Whilst the differentials between this area and other industrial property markets in London have reduced, it is still the most expensive location.

Property Composition

The majority of standing stock in the core Heathrow market area is less than 20 years old with few new development opportunities despite strong and growing demand. Pension funds and institutions as opposed to occupiers own the majority of floorspace. Development within Hillingdon and Hounslow has had to occur in a market that has major supply constraints.

Demand Patterns

The growth of the airport, despite competition from Gatwick and elsewhere, continues to attract demand for new and improved facilities. Demand looks likely to remain strong, although the supply and range of new development options appears fairly limited.

Demand is probably 95% airport-related, with a further split of approximately 80% logistics and 20% airport related servicing. Overall take-up is approximately 50-75,000m^2 per annum on average, and there has been an average gross development rate for all industrial space in the area of between 11-13 hectares per annum assuming a standard plot density ratio of 45%.

The net development rate is more difficult to identify precisely. The more recent valuation office data indicates a net increase in industrial development of approximately eight hectares per annum. Market evidence suggests that in practice there has probably been a small net increase in development in this area over the last five years, possibly of the order of 1-2 hectares per annum, mainly due to shortages of property supply.

Demand ranges across all size ranges, from 100m^2 to 30,000m^2 for warehousing, and 100m^{2}to 10,000m^2 for servicing. The demand profile between the various size bands appears fairly even, although demand for the largest units (above 10,000m^2) is marginally less strong than the other size bands.

Heathrow airport itself is an important economic hub in its own right. Almost 70,000 people are employed at the airport, with approximately 300 companies represented at the airport. These organisations require logistics support, from delivering office supplies to stocking retail outlets. In addition, there are the airport operational specific requirements that need satisfying, ranging from supply of spare parts, aircraft maintenance, on-board meal preparation and delivery, and cleaning supplies and support.

An airport location is critical for some of these functions, whilst a location close to the airport (but not necessarily on-airport) is important for many of them. The increasing rent charges for space within the airport perimeter has also increased demand from companies seeking cheaper alternatives outside the airport. Non-airport related businesses have found property and labour costs prohibitive forcing them to consider cheaper areas.

One result of the above is that there is estimated to be 110,000 people employed close to the airport who are in jobs related to airport activities. This includes third party distributors, for example, who serve retailers at the airport such as HMV, Next, WH Smith, Starbucks etc.

Speculative industrial/warehouse unit development has occurred in the area since the late 1990s, and has continued since, as opportunities arise. However, few large opportunities exist for major new development. Sites up to two hectares are generally in high demand with high prices. There are few manufacturing businesses remaining, and they are likely to move out due to high prices.

Table H5 summarises of the focus of industrial demand by size band in this market area. The main logistic sectors driving demand are also highlighted.

Table H5 Summary of Demand Characteristics by Size Band

Size Category	*Current demand level relative to supply*
<2,000m^2	Strong
2-10,000m^2	Strong
10,000+m^2	Strong
Main demand sectors	Primarily airport related activities, as well as just-in-time retail activities.

The demand for property in this market area is expected to increase in the future with the growth in airport activities and the development of Terminal 5. Some of

this demand may be accommodated on-airport, but there is still going to be increased pressure on off-airport property. Property supply shortages in the area are likely to exacerbate matters, and no major change in this situation is expected. This is likely to result in the demand catchment for airport related activities spreading out wider, including the Park Royal/A40/M4/A4 market area.

Projections for cargo growth at Heathrow – a good proxy for industrial demand, although growth in passenger numbers also influences industrial activity – indicate growth of between 50% to 100% over the next decade. This helps demonstrate the strength of demand for industrial property that is likely to be associated with the airport. It is unlikely that this growth in demand can be accommodated on-airport, and even the immediate (within two miles) market of the airport will be seriously challenged to meet this growth in demand given property supply constraints in this area. This helps explain why Heathrow is the most expensive industrial location in the World.

However, occupiers locate in the Heathrow area not just because of the airport, but because of its location – close to central London, close to the Thames Valley corridor, and with access to a skilled labour force. Industrial occupiers therefore include administration, back-up, sales, processing and specific logistics.

Values and Ownership

Land values are between £3.75 and £4.5 million per hectare if close to the airport. Prime rents can be upwards of £150 psm close to the airport – and considerably higher on-airport – and good second-hand space can be £118 to £130 psm.

Wandle Valley

Geography and Business Focus

This corridor extends from Gatwick in the south, then from Croydon, northwards in clusters through Mitcham, Merton and Wimbledon ending in Wandsworth against the River Thames. The boroughs that fall within this market area include Croydon, Merton, Sutton and parts of Wandsworth. Wandsworth also serves the West End and City markets, and so can be classified under the Central Service Circle property market, and the southern parts of Lambeth also overlap with the Wandle Valley property market.

The largest concentration is to the west of Croydon off Purley Way, which provides the primary north-south road link. The other concentrations at Mitcham, Wimbledon and Wandsworth are not as highly accessible, relying upon local distributor roads. Road links are generally poor within south London and outwards to the M25/M23 motorways. Similarly, mainline rail and LRT station provision is poor, although the Croydon Tramlink has helped improve matters.

The profile of the major land users has changed significantly in recent years, particularly in Croydon. Traditionally, a large proportion of operations has been in manufacturing as opposed to logistics because of the relatively poor road links in this area. However, logistics demand has increased over the last decade in particular, which has altered the balance of activity in the area.

Significant employment zoned land has been lost particularly to retail and leisure development in Croydon, Sutton and Wimbledon/ Merton. Residential development has taken place on more isolated industrial sites, such as in Mitcham, Wimbledon and Wandsworth with recent pressure on River Thames frontage land.

Property Composition

Approximately 60% of the industrial stock in the Wandle Valley market area is classed as warehousing, reflecting the changing demand profile. There is also an above average proportion of relatively new industrial property in this area, much of which will be logistics orientated, although manufacturing space has been developed.

Demand Patterns

The last decade has seen increased demand for larger industrial units than traditionally the case in this area, predominately by the logistics sector. This is demand particularly for units between 2-10,000m^2, with a more limited demand for larger units above 10,000m^2. Even so, there is still an active market for space between 500-2,000m^2.

Take-up is between 40,000 and 60,000m^2, with a significant amount of second hand take-up. Gross development activity for all industrial space has been 7-8 hectares per annum on average over the last 10-15 years, particularly for the small/medium end of the market, especially logistics-orientated. However, there has also been a steady loss of industrial floorspace over the last decade, running at between 5-10 hectares per annum, although the rate of loss appears to be slowing down.

Whilst a reasonable amount of new development has traditionally occurred in the Croydon area, providing small to medium size units, land shortages have constrained activity over the last five years. There is a relative shortage of sites in excess of two hectares, and even small sites are becoming in short supply. There is a reasonable range of available property (particularly Merton and Croydon), and reasonable supply pipeline of small to medium sized buildings.

Table H6 summarises the focus of industrial demand by size band in this market area. The main logistic sectors driving demand are also highlighted.

Table H6 Summary of Demand Characteristics by Size Band

Size Category	*Current demand level relative to supply*
<2,000m^2	Strong
2-10,000m^2	Steady
10,000+m^2	Weak
Main demand sectors	Primarily airport related activities, as well as just-in-time retail activities.

Future demand would appear to be reasonable, particularly as companies continue to relocate from surrounding isolated locations. Demand in the north of the corridor is more closely related to retail and service sectors in the West End of London.

Demand is likely to arise from small local expanding manufacturers and service providers (particularly in Croydon). However, there are a number of long established large industrial employers in older accommodation who may well feel the pressures to move to remain competitive as have others elsewhere in Greater London.

Values and Ownership

Land values are approaching £3 million per hectare, with continued upward pressure. Rents range between £92-£97 psm for new industrial space. Good second-hand space in the Croydon area lies between £70-£75 psm, whilst in the Gatwick/Crawley area they drop to £65-£70 psm. A wide mixture of tenure exists, and more recent developments have been for both the freehold and leasehold markets in the Croydon area.

Appendix J - Waste Apportionment by London Borough

The proportion of total waste tonnage apportioned to each borough in each of the three five-year phases up to 2020 was applied to the total land requirement (215 hectares) by 2020 to provide an estimate of land likely to be required in each borough (and aggregated to sub-regions) from industrial uses. Table J1 presents the results of this analysis.

Given that the overall assessment of land required for waste management facilities extends only to 2020, no additional land requirement for waste facilities is identified between 2021 and 2026. However, this position will need to be monitored closely and kept under review.

Table J1 Estimated Land-take of Additional Waste Facilities, by London Borough, 2006-2021, hectares

Borough	*2006-2011*	*2011-2016*	*2016-2021*
Barking and Dagenham	8	4	2
Barnet	2	2	1
Bexley	8	4	2
Brent	4	2	1
Bromley	4	2	1
Camden	1	2	1
City of London	2	1	0
Croydon	5	2	1
Ealing	8	3	2
Enfield	0	0	0
Greenwich	5	3	2
Hackney	0	0	1
Hammersmith and Fulham	5	2	1
Haringey	1	2	1
Harrow	4	1	1
Havering	0	0	2
Hillingdon	4	2	1
Hounslow	5	2	1
Islington	2	2	1
Kensington and Chelsea	4	1	1

Borough	*2006-2011*	*2011-2016*	*2016-2021*
Kingston-upon-Thames	3	1	1
Lambeth	5	2	1
Lewisham	0	0	0
Merton	4	2	1
Newham	9	4	2
Redbridge	3	2	1
Richmond-upon-Thames	4	1	1
Southwark	4	2	1
Sutton	0	1	1
Tower Hamlets	6	3	2
Waltham Forest	0	1	1
Wandsworth	6	2	2
Westminster, City of	0	2	1
Total	**116**	**58**	**41**

Source: GLA based on research conducted by Jacobs Babtie, Land Use Consultants and SLR Consulting Ltd. Note that the figures may not sum due to rounding.

Appendix K - Relation to Other Research

Introduction

In this section we consider the following matters:

- Comparison of the Industrial Land Release Benchmarks with the previous industrial land demand guidance for London, *Industrial & Warehousing Land Demand*
- Comparison of the Industrial Land Release Benchmarks with the previous sub-regional industrial land guidance for North London, the *North London Employment Land Study*
- Consistency of the Industrial Land Release Benchmarks with the Draft Industrial SPG
- Relation to the *2004 London Housing Capacity Study*

Relation to Industrial Land Research for London

The *Industrial and Warehousing Land Demand* report (Roger Tym et al, 2004) conducted the previous industrial land demand projections for London as a whole, and Table K1 compares the results (by the previous sub-regional groupings).

Table K1 Land Demand by Sub-Region, 2001-2016

Pre-2006 LP Sub-regions	*IWLD Scenario C1 Industrial Land Demand[94](ha)*	*Industrial Land Release Benchmarks (ha)*	*Difference (ha)*
Central	0	-123	-123
East	-420	-450	-30
West	-38	-70	-32
North	-100	-72	+28
South	-89	-34	+55
Total London	**-647**	**-749**	**-102**
London average per annum	-43	-50	-7

Source: RTP, 2004; URS (Note that the figures are rounded)

The two studies follow different methodological approaches. In particular, despite having lower projections for the release of industrial land across London, the *Industrial and Warehousing Land Demand* report did not take into account the

[94] *Industrial & Warehousing Land Demand in London*. Scenario C1 is the consultant's preferred scenario, with Tower Hamlet's vacant land position closest to what is shown to be the case in the *North East and South East Industrial Land Survey*

demand for waste facilities as extensively as recent research has indicated (Jacobs Babtie, 2006).

The *Industrial and Warehousing Land Demand* report was published in August 2004, but by 2006 approximately 72% of the industrial land projected for release between 2001 and 2016 had already been released. Relevant points to note include:

- Some of the release is covered by changes to policy designations on vacant industrial land rather than industrial closures. There is a notional backlog of surplus vacant industrial land appropriate for release so this release could be at least partly consistent with the overall framework.
- Our analysis has found that approximately 35% of built-on industrial land (in 2001) is not protected by appropriate planning designations. The data on release between 2001 and 2006 suggests that this land is more vulnerable to pressure for change than those on sites allocated for employment uses.

Relation to Research for North London Sub Region

Comparison with the research published by Halcrow's 2006 *North London Employment Land Study (NLELS)*, over the 2001-2016 planning period shows similar results on a sub-regional level but more variation at the less reliable borough level. The NLELS projects a release of 95 hectares of industrial land, whereas the research here suggests that 90 hectares will be an appropriate benchmark. Note that this is the *London Plan* (2004) designation of the North London sub-region.

The remaining sub-regional study published at the time of writing, *Managing the Release of Employment Land in West London to Non-employment Uses* (Rosecliffe Associates, 2006) does not present long-term projections of industrial land demand.

Relation to the 2004 London Housing Capacity Study

The *2004 London Housing Capacity Study* reconciled the potential new housing capacities of each London borough with the benchmarks of industrial land release available at the time, the *Industrial and Warehousing Land Demand* study. Table K2 compares the housing capacities with the results of this research[95]. Note, however, that a direct comparison remains problematic. This is partly because some sites that have been released from industrial use 2001 to 2006 will be contributing towards the delivery of housing capacity in the period 2007 to 2017 (for example, 30 hectares at South Dagenham). Note also that large new housing developments will also require complementary sites for

[95] The housing capacity figures have been projected to 2020. The calculations here extend the same rate of growth 2006-2020, to 2026.

education, health and community uses. Land will also be needed to meet the growing requirements of B1 (office) employment land uses, especially in the Isle of Dogs, City Fringe and Stratford.

Table K2 Comparison with the Housing Capacity Benchmarks, 2006-2026

Sub-region	*Industrial Land Release Benchmarks (ha)*	*Housing Capacity Benchmarks (ha)*	*Difference (ha)*
North	**188**	110	+78
North East	**371**	255	+116
South East	**134**	69	+65
South West	**67**	56	+11
West	**55**	41	+14
Total London	**814**	**531**	**+283**

Source: GLA, URS (Note that the figures are rounded)

Table K2 shows that the updated industrial land release benchmarks still leave sufficient capacity for complementary infrastructure and demand from other land uses. The comparison also shows that, at a sub-regional level, the datasets do not balance so well. Note however, the limitations highlighted above mean that it is possible that this demand could be met from sites released from employment use 2001-2006.

Appendix L - Notes on the Industrial Capacity SPG Classifications

Table L1 illustrates the process taken to classify each London borough in accordance with the *draft Industrial Capacity SPG* (GLA, 2003). The attached commentary only summarises the main themes and does not cover the entire range of indicators that have informed the decision-making process.

Table L1 Notes on the Industrial Capacity SPG Classifications by Borough

Market Area	Borough	Original Draft Industrial Capacity SPG (2003)	RTP Suggested Amendments (IWLD, 2004)	2007 Commentary	2007 Assessment
Thames Gateway	Barking and Dagenham	M		Largest total stock in the market area but excess vacant land is relatively low compared to other Thames Gateway boroughs (but well above London average). Overall industrial demand anticipated to fall but counterbalanced by strong demand for waste. Suggest retain in Managed release category and monitor closely.	M*
	Havering	M		High overall stock and high quantum of industrial land in SEL (70%). Significant excess vacant land. Demand for logistics but lower need for additional waste sites relative to other boroughs in market area. Suggest retain in Managed category.	M
	Newham	M		Significant stock with large excess vacant land. Overall industrial land demand anticipated to fall but counterbalanced by strong demand for waste. Known release arising from Olympics and parts of the LLV, but NB retention in Beckton and parts of the Royals. Overall a Managed approach to release recommended.	M
	Tower Hamlets	L		Indicators of industrial demand suggest pressure for release alongside low levels of vacancy and strong demand for waste. Low proportion of industrial land in SELs. On sustainability grounds there is reason to retain some land for logistics and servicing for Canary Wharf and the City. Suggest retain in Limited category, monitor closely.	L*
	Greenwich	M	L	Modest levels of excess vacancy and low quantum of industrial land outside of SEL relative to other boroughs in market area. Positive demand for logistics outweighs reduction in industrial demand. Strong positive demand for waste. Agree with RTP suggesting Limited category.	L
	Bexley	M		Second highest stock in market area. Excess vacant land significant although very strong market demand for logistics and waste. If logistics demand satisfied on land currently not in industrial use then Managed approach to release. Need to monitor very closely	M*
City Service Circle	Hackney	L		Some excess vacant land (10ha). Lower demand for waste relative to other boroughs in market area. Absolute release high for market area.	L
	Islington	L		Low excess vacant land combined with low total industrial land stock. No industrial land protected by SEL. Some positive demand for waste. Supply/demand indicators suggest pressure for release but on sustainability grounds there is reason to retain some land for small scale logistics serving CAZ. Suggests move to Restricted category.	R
	Camden	R		Similar characteristics to Islington. Low excess vacant land combined with low total industrial land stock. No industrial land protected by SEL. Some positive demand for waste. Supply/demand indicators suggest pressure for release but on sustainability grounds there is reason to retain some land for small scale logistics serving CAZ. Suggests retention in Restricted category.	R
	Westminster, City of	R		Very low total stock of industrial land with none in SEL. Virtually no excess vacant land. Very modest reduction in demand for industry with small positive demand for waste. Suggests retention in Restricted category	R
	Kensington and Chelsea	R		Very low total stock of industrial land with about one quarter lying in SEL. Virtually no excess vacant land. Very modest reduction in demand for industry with positive demand for waste. Suggests retention in Restricted category	R
	Hammersmith and Fulham	R		Modest total quantum of stock of industrial land with about two fifths in SEL. Limited excess vacancy and relatively strong demand for waste. Suggests retention in Restricted category	R
	Lambeth	L	R	Low overall stock relative to market area. No SELs. Low excess vacancy combined with strong demand for waste. URS indicators suggest pressure for release but on sustainability grounds there is reason to retain some land for logistics serving CAZ. Agree with RTP categorisation move to Restricted.	R
	Southwark	L		Highest industrial land stock in City Services Circle with low levels of vacancy and strong demand for waste relative to the total stock. Modest reduction in overall demand for industry and logistics. Suggests retain in Limited category but monitor very closely.	L*
	Lewisham	L		Second highest industrial land stock in City Services Circle but with highest levels of vacancy, though these are modest relative to Thames Gateway boroughs. About one third of industrial land lies within SEL. Excess vacancy counterbalanced by demand for logistics suggests retain in Limited category, but monitor closely.	L*

Market Area	Borough	Original Draft Industrial Capacity SPG (2003)	RTP Suggested Amendments (IWLD, 2004)	2007 Commentary	2007 Assessment
A10 LLV	Enfield	L		High overall industrial stock almost 60% of the market area total. Higher excess vacant relative to other boroughs in market area but strong positive demand for logistics. Suggests retention in Limited category.	L
	Haringey	L		Contains about one-fifth of the industrial land stock in the market area and about one-third of industrial land in the borough lies in SEL. Low level of excess vacancy, reduction in overall industrial demand but some positive demand for waste. Suggest retain in Limited category.	L
	Waltham Forest	L		Similar characteristics to Haringey. Contains about one-quarter of the industrial land stock in the market area and about one-third of industrial land in the borough lies in SEL. Low level of excess vacancy, reduction in overall industrial demand but some positive demand for waste. Suggest retain in Limited category.	L
A23 Wandle Valley	Wandsworth	R		Just over 120 ha total stock. Limited excess vacant and modest reduction in overall industrial land demand but strong positive demand for waste. De-designation of Nine Elms SEL in London Plan Further Alterations. Balance of indicators suggests retention in Restricted category.	R
	Merton	R		Total stock 165 ha about half in SEL. Modest reduction in overall industrial demand but no excess vacant land and positive demand for waste. Suggest retention in Restricted category.	R
	Sutton	R	L	Total stock 120 ha over 70% of which in SEL. Only 35 ha industrial land outside SEL. Modest level of excess vacant land. Strong demand for logistics counterbalances modest reduction in industrial demand. Positive demand for waste. Overall suggests retention in Restricted category.	R
	Croydon	R	L	Total stock 164 ha under half of which in SEL. No excess vacant land. Strong demand for logistics counterbalances modest reduction in industrial demand. Strong positive demand for waste. Suggest retention in Restricted category.	R
Park Royal	Ealing	L		Second highest industrial land stock in London. Modest excess vacant land. Marginal increase in overall demand when logistics and waste are taken into account but less than excess vacancy. Balance suggests retention in Limited category but monitor very closely.	L*
	Hounslow	L	R	Only 20% of industrial land stock in SEL. No excess vacant industrial land. Strong positive demand for waste and strong demand for logistics influenced by proximity of Heathrow. Agree with RTP recommendation to move to Restricted category.	R
	Brent	L		Around 300 hectares industrial land stock. Some excess vacancy but positive demand for logistics over industrial. Fairly strong demand for waste. Overall suggests retention in the Limited release category but monitor very closely.	L*
Heathrow	Hillingdon	L		Significant industrial land stock over 300 hectares, about half in SEL. Modest level of excess vacancy, strong positive demand for logistics owing to proximity to Heathrow. Strong positive demand for waste. Overall balance suggests retention in Limited category (although a more restrictive approach might be appropriate in the southern part of the borough close to Heathrow). Needs to be monitored very closely.	L*
Other Boroughs	Barnet	L		Low industrial land stock (50ha), virtually all outside of SEL. Small quantum of excess vacant. Modest reduction in industrial demand but positive demand for waste. Suggest retain in Limited category but monitor closely.	L*
	Bromley	R		Industrial land stock 100ha, 75% outside SEL. No excess vacant industrial land. Modest reduction in industrial demand but strong demand for waste. Overall suggests retention in Restricted category.	R
	City of London			Very little industrial land. Contains riverside wharf (waste management use). Some additional demand for waste management. Appropriate for Restricted category.	R
	Harrow	L	R	Low industrial land stock (55ha), half outside SEL. Virtually no excess vacant land. Reduction in industrial demand counterbalanced by some logistics and strong positive demand for waste management. Similar characteristics to neighbouring boroughs, especially Barnet. Suggest retain in Limited category and monitor closely.	L*
	Kingston-upon-Thames	R		Small industrial land stock (63 ha), just over half outside SEL. Very low excess vacancy. Reduction in demand for industrial outweighed by positive demand for waste and some logistics. Retain in Restricted category.	R
	Redbridge	M	R	Small industrial land stock (68 ha), just over two-thirds outside SEL. No excess vacancy. Overall reduction in demand for industrial counterbalanced but not outweighed by positive demand for waste and logistics. Suggests move to Limited category and monitor closely.	L*

Draft SPG categories:

M	Managed release
L	Limited release
R	Restricted release

* Indicates that borough category should be monitored particularly closely

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Hindi

यदि आप इस दस्तावेज की प्रति अपनी
भाषा में चाहते हैं, तो कृपया निम्नलिखित
नंबर पर फोन करें अथवा नीचे दिये गये
पते पर संपर्क करें

Vietnamese

Nếu bạn muốn có văn bản tài liệu
này bằng ngôn ngữ của mình, hãy
liên hệ theo số điện thoại hoặc địa
chỉ dưới đây.

Bengali

আপনি যদি আপনার ভাষায় এই দলিলের প্রতিলিপি
(কপি) চান, তা হলে নীচের ফোন নম্বরে
বা ঠিকানায় অনুগ্রহ করে যোগাযোগ করুন।

Greek

Αν θέλετε να αποκτήσετε αντίγραφο του παρόντος
εγγράφου στη δική σας γλώσσα, παρακαλείστε να
επικοινωνήσετε τηλεφωνικά στον αριθμό αυτό ή ταχυ-
δρομικά στην παρακάτω διεύθυνση.

Urdu

اگر آپ اِس دستاویز کی نقل اپنی زبان میں
چاھتے ھیں، تو براہ کرم نیچے دئے گئے نمبر
پر فون کریں یا دیئے گئے پتے پر رابطہ کریں

Turkish

Bu belgenin kendi dilinizde
hazırlanmış bir nüshasını
edinmek için, lütfen aşağıdaki
telefon numarasını arayınız
veya adrese başvurunuz.

Arabic

إذا أردت نسخة من هذه الوثيقة بلغتك، يرجى
الاتصال برقم الهاتف أو مراسلة العنوان
ادناه

Punjabi

ਜੇ ਤੁਹਾਨੂੰ ਇਸ ਦਸਤਾਵੇਜ਼ ਦੀ ਕਾਪੀ ਤੁਹਾਡੀ ਆਪਣੀ ਭਾਸ਼ਾ
ਵਿਚ ਚਾਹੀਦੀ ਹੈ, ਤਾਂ ਹੇਠ ਲਿਖੇ ਨੰਬਰ 'ਤੇ ਫ਼ੋਨ ਕਰੋ ਜਾਂ ਹੇਠ
ਲਿਖੇ ਪਤੇ 'ਤੇ ਰਾਬਤਾ ਕਰੋ:

Gujarati

જો તમને આ દસ્તાવેજની નકલ તમારી ભાષામાં
જોઇતી હોય તો, કૃપા કરી આપેલ નંબર ઉપર
ફોન કરો અથવા નીચેના સરનામે સંપર્ક સાધો.

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London SE1 2AA

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