Halcrow Group Limited

Thames Gateway Integrated Land-use and Transport Study (GILTS)

Stage 2 Early Draft Report

November 2004

Transport for London/London Development Agency

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1 Introduction

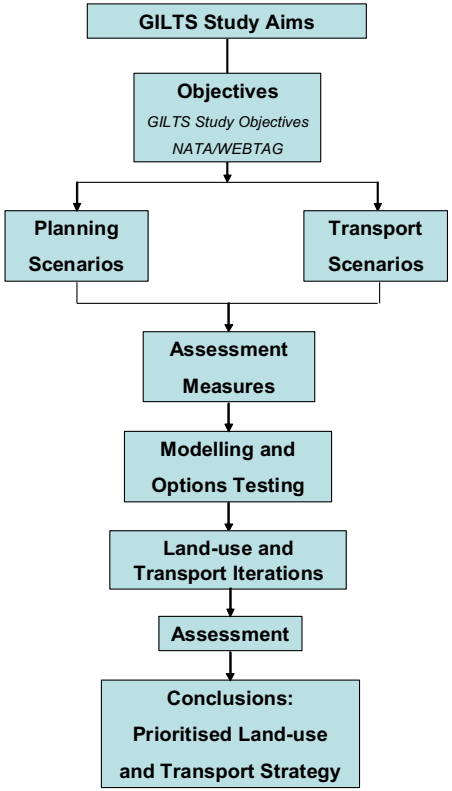
1.1 Background

Halcrow was commissioned, by Transport for London and the London Development Agency, to provide inputs to the Thames Gateway Integrated Land-use and Transport Study (GILTS). This report provides a summary of the work carried out in up to Stage 2 of the study.

1.2 Study Framework, Aims and Method

Figure 1.1 provides a mind map of the study's conceptual framework. GILTS is an objectives-led study, with local objectives derived for the London Thames Gateway (LTG) consistent with national transport and land-use planning objectives. The study considers a series of transport and development scenarios and assesses the merits of these using various modelling techniques and key performance indicators. GILTS provides a prioritised, costed programme of transport investment for LTG, in conjunction with agreed levels of housing and employment growth and phased programmes of development.

Figure 1.1: *Conceptual Framework for GILTS*



The overall aims for the study, as identified by the client group, are to:

- Contribute to a better understanding of the relationship between transport and economic activity in London
- Understand the different views of development scenarios and their implications for transport provision, including issues of phasing, capacity and accessibility
- Determine what step changes in transport provision are required to support housing and employment aspirations
- Reconcile/coordinate the top down analysis of the London Thames Gateway area with the bottom up master planning/zones of change analysis
- Produce costed and prioritised transport programmes that will provide capacity and accessibility to support the optimum mixture and density of population growth and employment development

Supporting the study aims, more detailed study objectives are to:

- Understand the cumulative impact of employment and housing growth in the London Thames Gateway area and East London Sub-region on the transport network
- Understand the sensitivity of transport demand to policy, pricing, control and other variables
- Determine how planned and potential transport provision in terms of the capacity and accessibility provided will affect:
  - Total employment that can be supported by Opportunity Areas and other areas for development growth
  - Total employment potential that could reasonably be expected from market demand
  - Total housing that can be supported by Opportunity Areas and other areas for development growth
  - Total housing potential that could reasonably be expected from market demand
- Understand the implications of growth being achieved in Thames Gateway that is higher than in the London Plan, either within the overall growth of London or additional to it
- Identify packages of schemes that from both a strategic and local perspective are necessary to resolve capacity and accessibility issues, and to identify appropriate phasing of these schemes
- Provide a common assessment of packages of schemes using consistent assumptions, methodologies and forecasts
- Identify where changes in land-use assumptions (phasing, land-use mix, density, spatial distribution) are required to fit with transport accessibility and capacity
- Identify where opportunities for development arise to focus attention on sites with most potential and decide which transport investment gives best value in terms of the potential growth it supports
- Ensure that the work links with the more detailed masterplanning assessment undertaken for ADFs, Opportunity Areas, Areas for Intensification and specific other sites

- Establish priorities and assist in the preparation of the business cases for schemes in future TfL Business Plans
- Provide initial output to the TGDIF to help determine what initial development strategy should be followed

The study working stages are shown in Figure 1.2. GILTS also provides a suite of appraisal tools which can be used to evaluate development and transport scenarios throughout London.

1.3 The Study Area

The London Thames Gateway is the part of the Thames Gateway area falling within the Greater London boundary. Although the precise boundaries have changed over time, for the purpose of GILTS it is assumed that the boundaries are as shown in the 'London Thames Gateway Development and Investment Framework' document produced by the key partner authorities in April 2004. The area (which extends slightly beyond the Greater London boundary at the eastern end) is shown in Figures 1.3 and 1.4.

The LTG area falls wholly within the East London Sub Region identified in the London Plan (GLA, 2004) with the exception of the small areas beyond the Greater London boundary. Large areas of the sub region lie to the north and the south of the LTG. This in effect creates three swathes of land that comprise the East Sub Region, which may be described as:

- London Thames Gateway (comprising 6 "Zones of Change", 3 on each side of the river Thames)
- East London Sub Region north and west of the LTG (including the City of London)
- East London Sub Region south of the LTG

The LTG comprises parts of several boroughs, namely Tower Hamlets, Hackney, Newham, Barking and Dagenham (north of the Thames); and Lewisham, Greenwich and Bexley (south of the Thames).

The Zones of Change do not coincide with ward boundaries, but the wards are associated with the Zones of Change (i.e. they have a substantial part of the ward area and/or development within the part that lies within the Zone of Change). These boundaries are shown in the background mapping found in the Annex to this report.

Figure 1.2: *Outline Study Working Method*

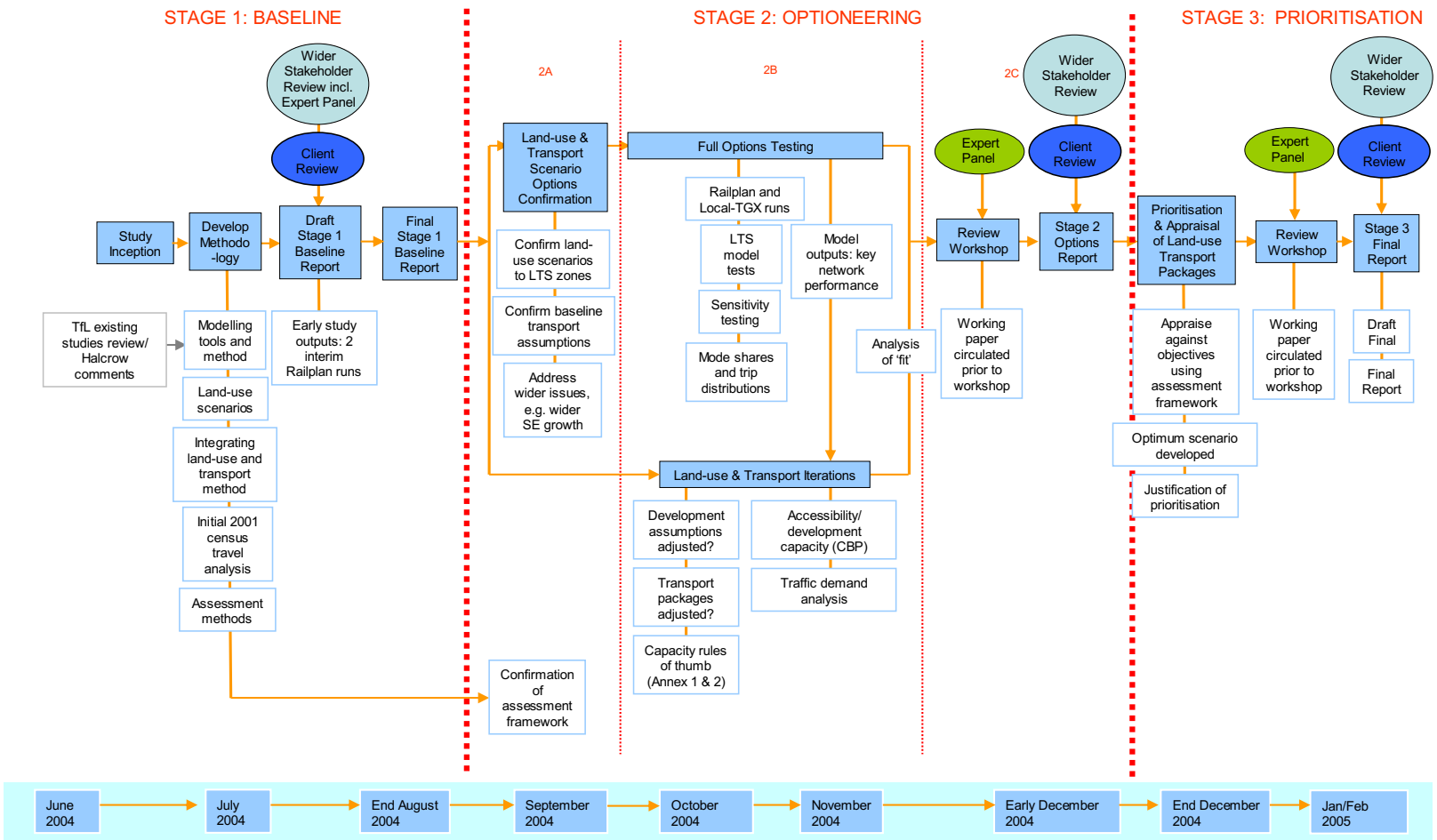


Figure 1.3: *The GILTS Area*

INSERT MAP/old Fig 2.1

Figure 1.4: *The GILTS Area and Zones of Change*

INSERT MAP/old 2.2

Baseline population

The current (2001) population distribution in LTG is shown in Figure 1.5. The London Plan includes provision for major housing growth in the East Sub Region, and a proportion of this growth has been allocated to the "Opportunity Areas" defined in the Plan. These Opportunity Areas comprise the main areas for development within the LTG Zones of Change, but are by no means the only areas for development. The housing growth allocated in the London Plan to the Opportunity Areas within the LTG area is 45,400 new homes to 2016. Depending on the average household size, these homes could accommodate a population in the region of 90,000-105,000.

The relative change is large: given the existing (2001) population of approximately 430,000, the population of LTG could increase on London Plan assumptions by more than a fifth by 2016. On the highest growth assumptions (say, an additional 300,000 people) the growth would be 70% on the 2001 base.

In addition to Opportunity Areas, the London Plan identifies "Areas for Intensification". There are two of these in the LTG, namely Beckton and Woolwich town centre/Royal Arsenal. The plan allocates a further 2,500 jobs and 1,500 homes to these areas by 2016.

(NB. It is assumed that the term "new homes" means a net increase in homes. This does not necessarily imply a proportionate net increase in population, however, since the population may change in the existing stock of homes).

Baseline employment

The current (2001) employment distribution in LTG is shown in Figure 1.6. The London Plan includes provision for major employment growth in the East Sub Region, and a proportion of this growth has been allocated to the "Opportunity Areas" defined in the Plan. These Opportunity Areas comprise the main areas for employment growth within the LTG Zones of Change, but by no means the only areas for development. The employment growth allocated in the London Plan to the Opportunity Areas within the LTG area is 180,700 new jobs to 2016, of which 100,000 are allocated to the Isle of Dogs. As noted above, there are a further 2,500 jobs allocated in the London Plan to the two "Areas of Intensification" at Beckton and Woolwich.

Jobs-housing balance

The excess of new jobs over the likely new population suggests that by 2016 there will be a net inward commuting pattern to the LTG. However, if the Isle of Dogs are excluded from the totals (on the basis that it may be regarded as a third employment centre after the City of London and City of Westminster, relying heavily on radial commuting from the entire London labour market area) then there is a relatively average numerical balance between population and jobs in the LTG. This is 80,700 jobs and a population in the region of 85,000-95,000 (only around half the population works). The actual balance would depend on the economic activity rates within the LTG.

Equally important for GILTS is the likelihood that whatever the overall balance of people and jobs in the LTG, there will be marked variations

between one part of the LTG and another. For example Barking Reach is expected to be mainly residential, whereas Belvedere/Erith is expected to be mainly employment-led development. This means that patterns of commuting will require intra-LTG analysis as well as strategic analysis. Jobs-housing balance for the LTG in 2001 is shown in Figure 1.7.

Figure 1.5: *LTG Population Distribution 2001*

INSERT MAP/old 2.6

Figure 1.6: *LTG Employment Distribution 2001*

INSERT MAP/old 2.12

Figure 1.7: *LTG Employment-Population Balance 2001*

INSERT MAP/old 2.18

Check definition: resident workforce/resident employed

1.4 Previous Studies and Key Issues

Not surprisingly for an area of such importance in development terms, the LTG has been well studied. Much work has been carried out on transport and planning issues. GILTS draws on, and develops, this considerable volume of work.

TfL has produced a 'Review of transport studies work for Thames Gateway' (TfL Working Paper, June 2004). The most relevant studies are described below:

- The Draft London Plan (GLA, 2003): this provides the crucial relationship between population and job growth in London, and houses and job growth in the Thames Gateway by 2016. It is understood that the 45,000 housing increase to 2016 in the London Plan relates only to the "Opportunity Areas" in the Thames Gateway area. Some extra capacity could be expected from other parts of the Thames Gateway.
- London Orbital Multi-Modal Study or "ORBIT" (Kellogg, Brown and Root, 2002): ORBIT concluded that even with high capacity public transport provision, high levels of development growth would require measures to limit demand for road travel.
- Relationship between Transport and Development in the Thames Gateway (Llewelyn Davies and Steer Davies Gleave, 2003): the study addresses the outer Thames Gateway, and excludes areas west of Woolwich/Barking. The conclusions address the importance of local, as well as strategic transport provision like Crossrail and CTRL, and emphasise the importance of local transport quality and quantity. The study gives thumbnail sketches of development and transport in the main growth areas. Of relevance to GILTS are (a) Barking and Havering riverside (north of Thames) and (b) Greenwich and Bexley riverside including Erith and Slade Green (south of the Thames). Modelling assumptions have been queried, for example in underestimating the peak hour demand due to inadequate handling of through trips (as opposed to trips within the study area) and averaging of the 3-hour peak period.
- Transport in the Thames Gateway for DfT/ODPM (Mott MacDonald, 2003): concludes that the Government's "mid growth strategy" of 60,000 housing units could be accommodated in the Thames Gateway without the need for the Thames Gateway Bridge or Crossrail.
- Thames Gateway Bridge Accessibility Study (ARW/Symonds using Volterra, 2003): the study gives a set of estimated employment and population growth that could be supported by transport infrastructure. This was based on transport capacity and took no account of site availability, suitability or market demand. The relationship between population and employment density and accessibility was based on observed relationships in 390 London wards.
- Strategic Public Transport Capacity Assessment for Thames Gateway (SKM, 2003): the study addresses issues of capacity and phasing of the transport infrastructure programme by identifying over-capacity corridors. The study does not consider cumulative demand or diversion due to congestion or other factors.

1.5 Structure of this Report

The remainder of this Stage 2 report is structured as follows:

- Section 2: Transport planning context – developing local objectives
- Section 3: Scenario development
- Section 4: Strategic transport analysis
- Section 5: Traffic demand management – "locking in" the benefits
- Section 6: Land use and transport iterations by zones of change
- Section 7: Synthesis – key discussion issues
- Section 10: Next steps – stage 3 GILTS

A number of background papers/annexes provide additional information as outlined below:

- Annex 1: Land use and transport interactions "rules of thumb"
- Annex 2: Calculation of residential density capacities
- Annex 3: Previous TDM research
- Annex 4: Mapping base and additional baseline data
- Annex 5: Modelling assumptions
- Annex 6: Additional modelling outputs
- Annex 7: References

2 Transport and Planning Context: Developing Local Objectives

2.1 Introduction

This section of the report provides the transport and planning context for the following scenario development and assessment work. It includes discussion of strategic sustainability, transport and urban planning guidance, transport appraisal guidance, zones of change and local policy guidance, transport patterns and local GILTS objectives.

2.2 Strategic Guidance: Sustainability, Transport and Urban Planning

Sustainable development is the underlying theme behind GILTS. The concept is most frequently defined in terms of the Brundtland definition (the World Commission on Environment and Development, 1987):

"development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

This is further clarified with reference to the Government's four aims for sustainable development as set out in 'A Better Quality of Life, A Strategy for Sustainable Development in the UK' (1999). These four aims are:

- Maintenance of high and stable levels of economic growth and employment
- Social progress which recognises the needs of everyone
- Effective protection of the environment
- The prudent use of natural resources

Policies developed through, for example, the London Plan (GLA, 2003) and the Mayor's Transport Strategy (TfL/GLA, 2002) seek to enable the provision of good quality homes in suitable locations, ensuring that everyone has the opportunity of a decent home, avoiding constraining economic growth, whilst delivering quality public services. Accessibility for all to jobs, health, housing, education, shops, leisure and community facilities should be improved: transport investment is thus a critical part of the picture. The integration of the four aims of sustainable development is important. Outcomes should be sought which enable economic, social and environmental objectives to be achieved over time.

Specific national planning and transport objectives can be drawn from a number of documents, including:

- National planning guidance, especially PPS1, PPS6, and PPG13. Of particular relevance are the objectives of reducing the need to travel, especially by car, the limitation of parking supply in new developments, and the sequential test for retail, employment and other non-residential developments.
- Transport White Paper 'The Future of Transport (DfT, 2004). This is really too general a document to inform specific local objectives, but it contains some broad objectives, the most relevant of which are:
  - Freer flowing local roads delivered through measures such as congestion charging

  - More reliable buses enjoying more road space (there is a national target to increase bus use by 12% by 2010)
  - [Looking at ways to] make services more accessible so that people have a real choice about when and how they travel
  - Encouraging people to consider alternatives to using their cars, through the promotion of school travel plans, workplace travel plans and personalised journey planning
  - Creating an improved quality of local environment so that cycling and walking are seen as an attractive alternative to car travel for short journeys, particularly for children

- Regional planning guidance, including RPG9a (1995). Now recognised as needing revision, for example in terms of jobs/homes balance and transport infrastructure, the guidance develops a framework for "a sustained and sustainable programme of economic, social and environmental regeneration."
- Interim Planning Statement INSERT
- The London Plan (GLA, 2004). This sets out the strategic objectives for spatial development in London, with particular focus on the Opportunity areas, Areas for Intensification and Regeneration, and for enhancing the role of London's town centres. Objectives are to:
  - Accommodate London's growth within its boundaries without encroaching on open spaces
  - To make London a better city for people to live in
  - To make London a more prosperous city with strong and diverse economic growth
  - To promote social inclusion and tackle deprivation and discrimination
  - To improve London's accessibility
  - To make London a more attractive, well-designed and green city
- The London Transport Strategy (TfL/GLA, 2004). This contains the main transport objectives for London, although it is acknowledged as being in need of updating. The Mayor's vision is to develop London as an exemplary sustainable world city, meaning:
  - A Prosperous City
  - A City for People
  - An Accessible City
  - A Fair City
  - A Green City
- The Economic Development Strategy (LDA, Draft 2004) provides a plan of action for all those involved in London's economy. It seeks to:
  - Support the objectives of the London Plan
  - Deliver an improved and effective infrastructure for London's future growth and development
  - Support the delivery of an adequate supply of commercial property and homes
  - Promote the development of a healthy, sustainable, safe and high quality urban environment

Policy objectives drawn from the wider sustainable communities' agenda are also important to GILTS. In the Government's 'Sustainable Communities Plan' (ODPM, 2003), in the Thames Gateway section, one of six general objectives is to "Deliver improved local and regional transport infrastructure to realise development opportunities in a sustainable way".

The land use and transport requirements of a sustainable community, as defined in 'Sustainable Communities: Building for the Future' (ODPM, 2003), are outlined below:

- A flourishing local economy to provide jobs and wealth
- A safe and healthy local environment with well-designed public and green space.
- Sufficient size, scale and density, and the right layout to support basic amenities in the neighbourhood and minimise use of resources (including land)
- Good public transport and other transport infrastructure both within the community and linking it to urban, rural and regional centres
- A well-integrated mix of decent homes of different types and tenures to support a range of household sizes, ages and incomes
- The right links with the wider regional, national and international community

GILTS draws on, and is consistent with, these strategic level publications. Local sub-objectives for the study area (the LTG) are developed in Section 2.6.

2.3 Strategic Transport Appraisal Guidance

In terms of transport appraisal guidance, two publications are of particular importance to GILTS.

GOMMMs INSERT summary

WEBTAG (DfT, 2003) outlines the Government's objectives for transport as below:

- To protect the built and natural environment
- To improve safety
- To support sustainable economic activity and get good value for money
- To improve access to facilities for those without a car and to reduce severance, and
- To ensure that all decisions are taken in the context of the Government's integrated transport policy

2.4 Zones of Change and Local Policy Guidance

A series of more local strategies and policies are also relevant to the GILTS study, drawn for example from the London Thames Gateway Partnership; emerging policies of the Thames Gateway Urban Development Corporation; Borough Plans (UDPs and LDFs) for Tower Hamlets, Newham, Barking, Havering, Lewisham, Greenwich, Bexley; Supplementary Planning Documents for specific areas; and area masterplans.

The London Thames Gateway has been divided into a series of smaller geographical units known as Zones of Change. Below we provide a commentary on each of these, referring to the main characteristics in terms of population, employment and commuting. The six Zones of Change identified and mapped in the "London Thames Gateway, Development and Investment Framework" (LDA, 2004) are:

- Isle of Dogs: this zone provides the largest concentration of employment in the LTG, and this dominance will continue as the LTG develops.
- Deptford and Lewisham: includes a substantial employment base, especially in Lewisham, and the majority of commuting is from other parts of the East sub region, including from south of the Thames.
- Greenwich Peninsula: this is one of the most clearly distinguished zones. It has been the subject of some low intensity development (retail and employment) but a planning framework has been produced that envisages much greater intensity mixed use development. The population is currently low, although the Millennium Village is included. Employment is not intensive, but is planned to become more so as low intensity river-based activity gives way to more intensive forms of employment.
- Stratford, Lower Lea Valley, Royals: this large zone represents an "arc of opportunity" as described in the Newham Borough Plan. The three sub zones each have distinctive characteristics and both the pace and type of development varies considerably between them. Stratford is an important centre and public transport interchange, and the focus for the Olympic bid. Plans for its regeneration are relatively advanced. The Lower Lea Valley is potentially well served by public transport, but there are local access and other issues to be resolved before major development sites can be implemented. The Royals have already been the subject of major regeneration for both homes, employment and other uses, but there remains further considerable development potential. Population in the zone currently is concentrated in the areas away from the rivers (Thames, Lea, Roding), whose banks have until now been occupied by industry which now provides much of the development opportunity. The areas of low population intensity shown in the population projections for the area illustrate the point. Large parts of the Zone have low employment. At present, much commuting into the zone is from the rest of the East London sub region (outside the LTG, representing the largest single commuting flow observed in the LTG in 2001).
- Barking and Havering Riverside: this large zone along the north bank of the Thames is characterised by heavy utility installations, despoiled landscape, declining or derelict industry, and poor accessibility. In terms of regeneration and attracting new homes and employment, this zone probably represents the biggest challenge in the LTG. The zone also stretches inland, however, to include the more robustly developed area of Barking. It currently has low population intensity. Most of the commuting into this zone is from other parts of the east sub region (including from north of the Thames), and most of the resident employees work within the zone or commute to the remainder of the East Sub Region north of the Thames.

- Woolwich and Thamesmead, Belvedere and Erith: this large zone stretches along the south bank of the Thames. Population intensity is highest in the western and central parts of the zone, where there is higher density development, including at Thamesmead. Employment is most intense at the west and east ends of the zone. Most of the commuting into this zone is from other parts of the East Sub Region (south of the Thames). Employed residents work mostly within the zone or commute to the Central London Sub Region. Much of this out-commuting is undertaken by rail.

Within the Zones of Change described above, the main areas for future development (at least in terms of large contiguous sites) are in the Opportunity Areas and Areas of Intensification identified in the London Plan. Those within the LTG are listed below together with their Zone of Change identification number:

Opportunity Areas

- Isle of Dogs (1)
- Stratford (4)
- Lower Lea Valley (4)
- Royal Docks (4)
- Barking Reach (5)
- London Riverside (5)
- Deptford Creek/Greenwich Riverside (2)
- Greenwich Peninsula (3)
- Belvedere/Erith (6)
- Thamesmead (6)

Intensification Areas

- Beckton (4)
- Woolwich Town Centre and Royal Arsenal (6)

INSERT MORE? UDP policy stance

Additional strategies e.g. TGLP

Local masterplans

2.5 Transport Patterns

Travel patterns in the LTG are described below using Census 2001 data[1]. Table 2.1 shows the matrix of residences and workplaces. Figures 2.1 and 2.2 provide a summary of the ten largest residence to workplace movements from and to Zones of Change respectively. Workplaces and

[1] The 2001 Census contained questions relating to regular workplaces of residents of the UK. People were asked to state the location of their regular workplace, and the method by which they normally travel to work. Unlike the 1991 Census when a 10% sample of the populace was selected to answer workplace questions, the 2001 questions had 100% coverage.

residences of workers for individual Zones of Change are found in the Annex to this report.

A broadly similar amount of residents (around 30%) of the Zones of Change work within the zone they live in (including those who work mainly at home). The largest proportion of residents of a Zone of Change that work within it are in Zone 6 (Woolwich, Belvedere and Erith) at nearly 40%, which also has the largest number of residents who work. This reflects the amount of residents and employment in the zone. The smallest proportion of people who work in the same zone as they live is Zone 3 (Greenwich Peninsula) at just over 20%, which also has the smallest number of residents who work.

A comparatively small number of residents of Zones of Change work in neighbouring zones; around 8%. The remainder work in other areas of London and beyond.

A significant number of the remaining residents of Zones of Change work in Central London, around 30%, with almost 50% of residents of the Isle of Dogs doing so. Indeed, the most significant destinations for people who live in the Zones of Change are Central London and East London. East London has been identified separately for areas north and south of the Thames. The majority who work in East London north of the River are from Zones of Change 4 and 5; also north of the River. Correspondingly, the largest concentration of people working who work in East London south of the River are from Zones 2 and 6; also south of the River.

The numbers of people with workplaces in the Zones of Change is spread evenly between zones, albeit with a limited number in the smallest zone (number 3). Zone 6 (Woolwich, Belvedere and Erith) has the largest number of workplaces. However, comparison of the residences of people who work in the Zone of Change indicates some differences.

The Isle of Dogs (Zone 1) draws workers from all over London and beyond in greater numbers than the other zones, reflecting the sorts of employment opportunities available in the area, particularly the financial and other office developments centred on Canary Wharf. The largest source of workers in Zone 1 is Central London.

Other zones draw significantly more workers locally, both from within their own areas and surrounding districts. For instance, around 80% of workplaces in Zone 6 are drawn from East London (south of the River), Kent (including Dartford) and Zone 6 itself. Similarly for Zone 4, around 70% of workplaces are filled by people from Zone 4, East London (north of the River) and Essex (including Thurrock).

However, this again indicates the somewhat separate nature of residence and workplace relationships north and south of the River, with very few residents of Zones of Change north of the River working to the South, and vice versa. Indeed, only some 4% of residents of Zones of Change south of the River work in areas to the north of the river (with 1% making the reverse north to south movement). This compares to around 30% of residents of zones to the south who also work to the south (also 30% for north). The remainder work in Central London, West London and other areas not specifically north or south of the River.

Table 2.1: *Journey to Work Trips in the GILTS Zones of Change*

Residence	Workplace																	Totals
	GILTS London Zones of Change						London						Dartford	Thurrock	Essex	Kent	Other	
	1	2	3	4	5	6	Central	North	East-N	East-S	South	West						
(1) Isle of Dogs	3,667	93	6	443	41	23	6,026	143	1,482	30	104	263	9	12	113	31	363	12,849
(2) Greenwich, Deptford & Lewisham	1,422	17,209	578	469	106	1,428	28,103	493	2,130	3,362	3,697	1,496	143	62	158	332	1,523	62,711
(3) Greenwich Peninsula	218	357	1,011	61	15	409	1,972	42	173	204	134	122	18	7	16	51	131	4,941
(4) Stratford, Leaside & Royals	2,414	330	93	18,693	1,251	324	19,938	2,571	11,977	172	589	1,654	46	127	592	110	1,526	62,407
(5) Barking & Havering riverside	842	84	37	2,340	13,940	120	8,010	1,128	11,273	98	228	546	85	2,046	1,341	110	905	43,133
(6) Woolwich, Belvedere & Erith	1,057	3,331	1,885	787	409	30,885	19,755	499	1,974	8,095	2,912	1,034	2,978	173	326	1,506	1,924	79,530
Central London	12,394	4,537	422	2,369	331	1,375												21,428
North London	4,114	651	176	4,863	1,052	436												11,292
East London - north of river (excl ZoC)	9,297	1,005	368	18,365	14,780	999												44,814
East London - south of river (excl ZoC)	2,663	10,748	1,891	1,162	377	12,295												29,136
South London	5,155	5,064	574	1,054	251	2,551												14,649
West London	3,720	505	98	895	171	289												5,678
Dartford (excl ZoC)	349	549	174	185	156	6,660												8,073
Thurrock (excl ZoC)	724	99	35	888	3,077	243												5,066
Essex	4,524	250	118	3,547	4,494	693												13,626
Kent (excl Dartford)	2,056	1,539	532	747	534	6,673												12,081
Other	8,185	1,770	534	2,752	1,721	3,552												18,514
Totals	62,801	48,121	8,532	59,620	42,706	68,955	83,804	4,876	29,009	11,961	7,664	5,115	3,279	2,427	2,546	2,140	6,372	449,928

Figure 2.1: *Largest 10 Workplace Destinations for Zone of Change Resident Origins*

INSERT old fig. 2.21 (amended with direction of travel arrows)

Figure 2.2: *Largest 10 Resident Origins for Zone of Change Workplace Destinations*

INSERT old fig. 2.22 (amended with direction of travel arrows)

2.6 GILTS Sub-Objectives

GILTS is thus set within the context of the national transport and planning policy, and reflects the current situation within the LTG in terms of transport and planning problems and opportunities.

Local sub-objectives have been developed for the LTG, in accordance with guidance such as WEBTAG (DfT, 2004). The sub-objectives are particularly focused on areas where integrated transport and land-use interventions can make a contribution to sustainability and where indicators allow the scale and nature of the contribution to be assessed. The overarching aim is to achieve sustainable development in the LTG. The proposed GILTS sub-objectives are listed below.

1. Provide a choice of opportunities for travel, especially by non-car means, for those living in or moving to the LTG

2. Minimise travel within the London Thames Gateway, especially private motorised travel, within the overall transport provision (and consistent with effective regeneration)

3. Maximise accessibility to jobs and facilities in the LTG and wider London area

4. Minimise adverse impacts on crowding and congestion levels through integrated transport provision and land use form

5. Improve the reliability of travel for existing and new populations

6. Improve safety of travel in LTG

7. Minimise the environmental impacts of transport infrastructure and activity

8. Provide value for money and minimise the scale of new infrastructure and likely cost for a given level of housing and employment growth

9. Assist the wider regeneration potential of LTG through a balanced increase of jobs and population

3 Scenario Development

3.1 Overview

GILTS employs a series of urban planning and transport planning scenarios and models the combined impacts of these to a forecast year of 2016. These are described in more detail below and in the Annex to this report. The base year for assessment purposes is 2001.

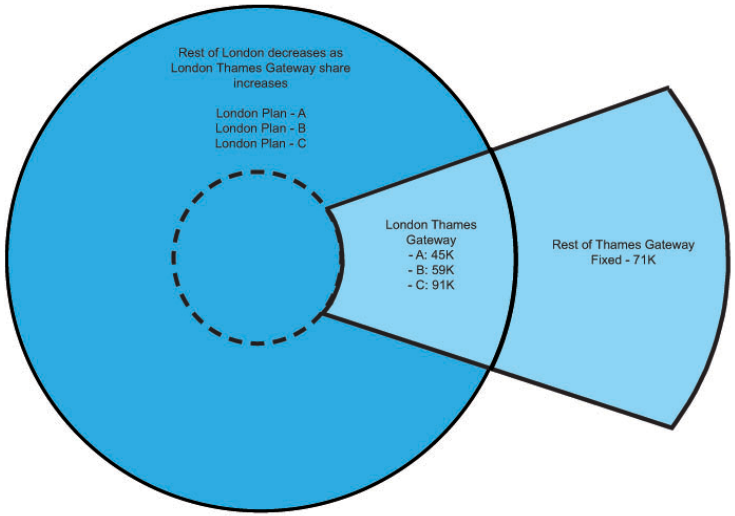
3.2 Urban Planning Scenarios

Roger Tym and Partners (RTP) have developed the urban planning scenarios used in GILTS[2]. The approach used is one of apportioning forecasts made for or by the GLA at a pan-London level to smaller levels of spatial disaggregation. LTS zone boundaries (2002) have been used.

In terms of population, 2001 base data is derived from the 2001 Census and projected forward using borough growth levels derived from GLA projections. The controlling factor for the population projections at LTS zone level is the forecast prepared by the GLA (Variant 8.1). Forecasts are broken down by age and sex cohort. Population projections take into account proposed housing development as incorporated in the London Housing Capacity Study.

The assumption for Greater London as a whole is that population forecasts remain as established in the London Plan: hence an increase of x dwellings to 2016. The rest of the Thames Gateway share remains fixed under all LTG scenarios at 71,000 dwellings (sourced from ODPM, date? CHECK figure)

Figure 3.1: *Population Forecast Assumptions for Greater London and the Rest of the Thames Gateway*



[2] A technical note on their working method in developing different planning projections is available (RTP LTS Projections, July 2004)

The LTG population scenarios are outlined below:

- Business as usual/trend-based
- 45,000 new dwellings (sourced from the London Plan)
- 59,000 new dwellings (ODPM projection)
- 91,000 dwellings (Thames Gateway Development Investment Framework)

Table 1 and Figures 3.2- 3.5 show these projections for LTG. An additional scenario of 150,000 dwellings may be considered at a later date depending on earlier findings. Detailed scenarios, with breakdowns by LTS zone, are shown in the Annex to this report.

One central employment forecast has also been provided by RTP. The controlling factor for the employment projections at LTS zone level is the forecast prepared by Volterra in May 2004. This provides projections of employment for 2002-2016 for London as a whole and for each of the boroughs (and for London as a whole at an industrial sector level). 541,000 new jobs are projected for London from 2002-2016. Note that previous Volterra forecasts (dated 2002) projected an increase of 636,000 jobs for London from 2001-2016. An important caveat: in reviewing the GILTS model outputs it is important to recognise that in practice we would expect employment levels to differ along with population projections. We have however decided on a central employment forecast in order to keep a semblance of simplicity in the modelling and critically in the interpretation of the modelling outputs.

Table 3.1: Population Forecasts to 2016 (RTP)

INSERT Summary table of different population forecasts to 2016

Figure 3.2: Population Forecasts to 2016 (RTP)

INSERT version of old Fig 2.35 but with all forecasts plus trend and 2001 base

Figure 3.3: *Absolute Employment 2016 (RTP 541k Volterra 2004)*

INSERT

Figure 3.4: *Employment Change 2001-2016 (RTP 541k Volterra 2004)*

INSERT

Table 3.2: *Employment-Population Balance 2016*

INSERT SUMMARY TABLE

Figure 3.5: *Employment-Population Balance Change 2001-2016*

INSERT version of old Fig 2.35 but with all forecasts plus trend and 2001 base

3.3 Transport Scenarios

TfL has provided GILTS with a number of transport planning scenarios to be tested in combination with the urban planning scenarios. These are shown below using three levels of investment: funded, revised business plan (Spending Review 2004) and fully planned.

The funded schemes are:

- LU PPP & PFI
- A13 Junction Improvement
- East London Line Extension*
- National Rail upgrade*
- Thameslink 2000*
- CTRL
- Crossrail 1*
- DLR Extension to London City Airport
- Bus Network Improvements

Figure 3.6 provides a map of these schemes (NB. *subject to funding)

In addition to the funded schemes, the revised business plan (SR2004)[3] schemes are:

- A206 Thames Road
- East London Transit (ELT)
- Greenwich Waterfront Transit (GWT)
- TGB Transit
- Thames Gateway Bridge
- DLR extensions to Woolwich Arsenal, Dagenham Dock, Stratford International, and 3-Car Upgrade for Bank-Lewisham
- Bus network intensification

Figure 3.7 provides a map of these schemes.

In addition to the funded and revised business plan schemes, the fully planned schemes are:

- ELT Extensions
- GWT Extensions
- National Rail enhancements

[3] Spending Review 2004 details to be confirmed

- Silvertown link
- Tramlink extensions
- West London Transit
- Cross River Transit
- Metropolitan Line Croxley to Watford Junction link

Figure 3.8 provides a map of these schemes.

The GILTS assessment and analysis leads us to the conclusion that a number of additional options might be required on the transport side, e.g. new transport projects or routings. As part of the interpretation of the modelling results, GILTS discusses these potential further schemes (see Section 4 of this report). Such additional schemes arise in the following circumstances:

- Areas for development not envisaged when current proposals were conceived
- Higher density or intensity of development requiring higher capacity and/or higher quality transport facilities than currently proposed
- Alternative transport configurations required as a result of more detailed examination of the urban masterplanning exercises at the local level (i.e. responding to issues revealed in the "bottom up" planning process)

3.4 Bringing Urban Planning and Transport Together

The scenarios that have been tested during GILTS are outlined in Table 3.3.

In trying to match transport supply with transport demand we should be conscious of the limitations of modelling tools. Rolling forward existing land use and transport relationships may not always be desirable in policy terms.

There are many factors that influence demand (trip distance, mode split and distribution) and not all of these are well represented in standard models. Moreover, the policy thrust is to create new communities for which there is no ideal precedent, at least in the UK. We therefore do not have observable baseline data that is relevant to the forecasts we are trying to make. This does not invalidate the modelling work in GILTS, but it does reinforce the importance of the modelling serving the analysis (rather than the reverse). The analysis has therefore been carried out in line with the policy aims for the LTG, and is not framed in terms of past urban development and transport patterns that are by definition seen as unsatisfactory.

The transport and land-use planning scenarios have also been developed to take account of non-infrastructure influences that might arise. Important amongst these is road user charging (which could replace the current method of paying for road use by 2016), and the supply, pricing and control of parking. There are other factors that could have a major influence on demand and hence system performance, including the application of "soft measures", lower speed limits, and changes in social attitudes and habits, perhaps fuelled by price or other incentives. Within GILTS these considerations are important, and are discussed in more detail in Section 5.

Figure 3.6: *Funded Transport Schemes*

INSERT

Figure 3.7: *Revised Business Plan (SR 2004) Transport Schemes*

INSERT

Figure 3.8: *Fully Planned Transport Schemes*

INSERT

Table 3.3: *GILTS Modelling Scenarios*

2016 Housing Development Scenario	2016 Transport Scenario			
	Funded	Revised Business Case (SR2004)	Fully Planned	Additional Schemes (as devised by consultant)
Business as Usual Case (trend forecast)	3 LTS to be run. Interpret results and run sub-regional models			
London Plan 45k		1 LTS to be run. Interpret results and run sub-regional models		
ODPM 59k	*4C* *Sensitivity of 1 required*	*4B* *Sensitivity of 1 required*	*4A* *Sensitivity of 1 required*	
TGDIF 91k		*6* *LTS to be run. Interpret results and run sub-regional models*	2 LTS to be run. Interpret results and run sub-regional models	*5* *Sensitivity of 2 required*

NB. The models runs highlighted in italics are dependent on the outputs from runs 1, 2 and 3.
Only the sensitivity runs closest to the optimum land-use/transport fit will be carried out.
Additional interim modelling outputs were provided as part of the scoping exercise for GILTS to show example outputs.

4 Strategic Transport Analysis

4.1 Overview

4.2 Modelling Approach

4.3 Assessment Framework

The GILTS assessment framework is shown below in Table 4.1. The framework outlines the criteria which is used to assess the impacts of alternative land use and transport scenarios.

A number of GILTS performance indicators are given, sourced back to GILTS sub-objectives and national over-arching objectives. This structure of framework demonstrates the objectives-led nature of assessment.

Table 4.1: *GILTS Assessment Framework*

National Over-arching Objectives (drawn from NATA, WEBTAG)	Linkage to GILTS Sub-Objectives	GILTS Performance Indicators
To support sustainable **economic** activity and achieve good value for money	Provide value for money and minimise the scale of new infrastructure and likely cost for a given level of housing and employment growth (8)	• **E1: Preliminary transport costs and user benefits of increments for each package**
	Assist the wider regeneration potential of LTG through a balanced increase of jobs and population (9)	• E2: Development potential associated with improvements in accessibility (CBP analysis)
	Minimise adverse impacts on crowding and congestion levels through integrated transport provision and land use form (4)	• **E3: Crowding by public transport (sub-mode by link/ node, ratio and absolute demand)** • **E4: Rail capacity usage (proportion by crowding category and % crowded hours on LTG system)** • **E5: V/C ratios on main roads (Mways and A roads, ratio and absolute demand, plots and numbers)** • **E6: Highway congestion delay rate (absolute number, mins/km and delay plot)** • **E7: Change in average vehicle speeds (km/h) peak period and vehicle travel time (hours) (split by free flow and delay and average and total vehicle time on LTG network**) • E8: Change in total boardings by public transport sub mode (compared to the reference case) • E9: % change in passenger flows at critical LU, rail and DLR stations
	Improve the reliability of travel for existing and new populations (5)	• E10: Qualitative assessment of reliability, based on comparison of free flow and congested highway journey times and uncrowded and crowded public transport journey times (between packages)

To improve **access** to facilities for those without a car and to reduce severance	Provide a choice of opportunities for travel, especially by non-car means, for those living in or moving to the LTG (1)	• **A1: Accessibility by zone to segregated modes (using Railplan or PTALs); and mode share: total trips by public transport (bus, rail, LUL, DLR) and by private motor car (compared to the reference case)**
	Maximise accessibility to jobs and facilities in the LTG and wider London area (3)	• **A2: Accessibility indices analysis by mode and ZofC (number of jobs/homes within 45-minute catchment, plots and numbers)** • A3: Changes in journey times to/from key locations (e.g Canary Wharf, City, Westminster, local centres) by road and PT network
To improve **safety**	Improve safety of travel in LTG (6)	• S1: Preliminary assessment of change in road traffic accidents/casualties (proxy based on traffic volumes and mode split by package)
To protect the built and natural **environment**	Minimise travel within London Thames Gateway, especially private motorised travel, within the overall transport provision (and consistent with effective regeneration) (2)	• **EN1: Total passenger-km by public transport sub mode within LTG (trips and journey lengths)** • **EN2: Change in total vehicle kms and hours within LTG (car, light goods, trips and journey lengths, compared to the reference case)** • **EN3: Road vehicle trip rate/1000 population** • EN4: Trip length and journey time distribution by public transport sub mode • EN5: Trip length and journey time distributions by road
	Minimise the environmental impacts of transport infrastructure and activity (7)	• **EN6: Qualitative assessment of environmental indicators (between packages, using scoring system where appropriate)**
To ensure that all decisions are taken within the context of the Government's **integrated** transport policy	Assist the wider regeneration potential of LTG through a balanced increase of jobs and population (9)	• **I1: Number and % of key sites (jobs / housing) not constrained by transport capacity (by mode and identified by site)**

NB. In the second column of the table, the numbers in brackets cross-refer to the GILTS sub-objectives (as found in Section2.6 of this report). In the third column, the most important (primary) performance indicators are highlighted in bold. These will be used as the key indicators in assessing the alternative land use and transport scenarios, and will be supported by the secondary performance indicators (shown in normal font).

4.4 Summary Performance Indicator Outputs

4.4.1 Crowding by Public Transport (E3)

Scenario 1 (London Plan 45k and Revised Business Case SR 2004 Transport)

Commentary (MO)

Figure 4.1: *Crowding by Public Transport (London-Wide)*

INSERT LONDON PLOT

Figure 4.1: *Crowding by Public Transport (London-Wide)*

INSERT LTG PLOT

4.4.2 Vehicle/Capacity Ratios on Main Roads (E5)

4.4.3 Highway Congestion Delay Rate (E6)

4.4.4 Catchment Area/Accessibility Indices Analysis by Mode and Zone of Change (A2)

4.4.5 Preliminary Transport Costs and User Benefits (E1)

4.5 Detailed Performance Indicator Outputs

5 Traffic Demand Management: "Locking In" The Benefits

- Method
- GW: develop chapter
- Internal workshop: RH/TP/JB/GW/DB/TG
- External workshop: TfL/LDA??

5.1 Introduction

- Soft/hard factors
- How incorporated into the modelling/justification/why not a re-run of the models? (or just one re-run?)
- Structure of section

5.2 Previous Research

- One page summary. 3/4 page annex details

5.3 TDM Analysis

- Suggested spreadsheet
- Which key indicators used?

5.4 Results

- List/spec of key maps/figs/tables

5.5 Conclusions

6 Land Use and Transport Iterations by Zones of Change

6.1 Introduction

This section of the report provides an assessment of the land-use and transport interactions within the London Thames Gateway (by Zone of Change). It sits alongside the more formal model outputs and traffic demand analysis and helps us develop our thoughts on the likely optimum development/transport fit. The analysis includes an assessment of:

- Packages of transport provision (supply and demand) required by different fixed development scenarios (the land-use mix influence on demand will be important)
- Maximum level of development that can be supported by different fixed packages of transport provision (it is crucial that the transport scenarios deal with demand factors such as fares and parking, not just supply of capacity)
- Some iteration in terms of the land-use/transport fit, including gap analysis, and
- Consideration of alternative travel patterns that could arise from altered demand factors.

This part of GILTS is designed to ensure that in addition to assessing land-use and transport options through the formal modelling and assessment process, we end up with a robust understanding of the land-use and transport interaction potential in the London Thames Gateway (i.e. the opportunities available to amend the land-use and transport scenarios in order to develop an optimum land-use and transport package).

6.2 Previous Research

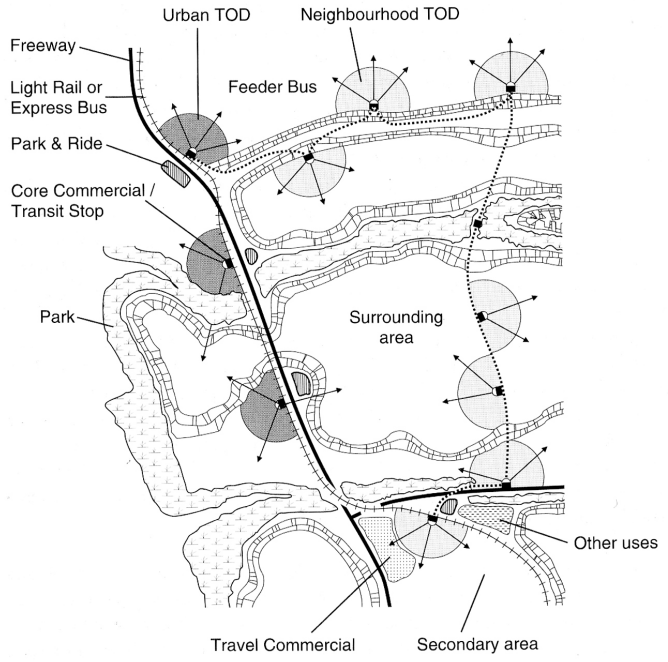
The framework for our thinking here is evolving academic research and good practice from abroad in terms of integrated land use and transport planning. We also draw on transport capacity "rules of thumb" as explained in more detail in the annex.

A large amount of research has concentrated on the potential interactions between land-use and travel behaviour. Much of this has been stimulated by the work of Newman and Kenworthy (1989) - on density and travel behaviour - and later by the publication of the European Commission's Green Paper on the urban environment, which advocated compact cities with higher population densities (Commission of the European Communities, 1990). Newman and Kenworthy's analysis of fuel consumption in different international cities gave a direct comparison of carbon dioxide emissions around the world. Whilst land-use intensity was only one of the factors influencing the degree of automobile dependency, the basic - and attractive - hypothesis was that there was a relationship between density and the distance that people need to travel. The research argued that European cities were denser than either Australian or American ones, with activities concentrated in their centres, and that this was associated with a higher usage of public transport and lower energy

consumption per capita. The analysis has subsequently been updated, see Newman and Kenworthy (1999)[4].

Breheny and Rookwood (1993) and Calthorpe (1993, see Figure 6.1) in particular have produced illuminating concepts for integrating land-use and transport planning at the strategic scale[5].

Figure 6.1: *Calthorpe's Public Transport Orientated Development*



Hall (2000) concludes that the land-use and transport interaction literature field is beginning to tell a consistent story. He draws out a number of key strategic policy elements – very relevant to the London Thames Gateway experience – and including:

1. Development of urban nodes: systematic efforts should be made to create new accessibility nodes by selective investment in new transport links. A polycentric model can balance flows along public transport

[4] Other researchers, such as Gordon and Richardson (1989), have (somewhat controversially) critiqued the Newman and Kenworthy's original thesis, and show how they perceived the situation to be different in California, where both homes and jobs have suburbanised, 'co-locating' in such a way that commuting distances and times have actually decreased.

[5] For more details on integrating land-use and transport planning see, for example, Hickman and Banister (2004) Reducing Travel By Design: Urban Form and the Commute to Work, AESOP Conference, Grenoble; or Hickman and Banister (forthcoming) Reducing Travel by Design: What About the Change Over Time? in Williams (2004) Spatial Planning, Urban Form and Sustainable Transport.

corridors. Major efforts should be made to improve orbital links, since radial links are, as a general rule, much better developed. The Swedish principle of pyramids of increased development density around public transport nodes, used in the Stockholm satellite towns, should be developed.

2. Selective urban densification: urban compaction or intensification is desirable in order to help regeneration and renaissance, induce less use of the car and protect the open countryside.

3. No 'town cramming': densification must be compatible with good urban quality. Urban open spaces must be rigorously protected.

4. Strategic provision for greenfield development: this is perhaps the most controversial proposal. Because selective densification can never hope to provide more than half of the national housing demand, the residue will need to be accommodated elsewhere. A regional strategy will be critical, crossing county borders.

5. Clustered new development: an updated, linear version of Howard's Social City, with relatively small-scale residential communities (20,000-30,000 population) clustered along public transport routes, especially rail, light rail and guideway. Breheny, Rookwood and Calthorpe provide the way forward here.

6. Town/urban area expansions: clustered development can contain a mixture of different types of development. Medium sized and smaller towns with good public transport accessibility can be expanded. New towns may be an appropriate solution; at times better than an ad-hoc "pepperpotting" of development, which makes little strategic sense.

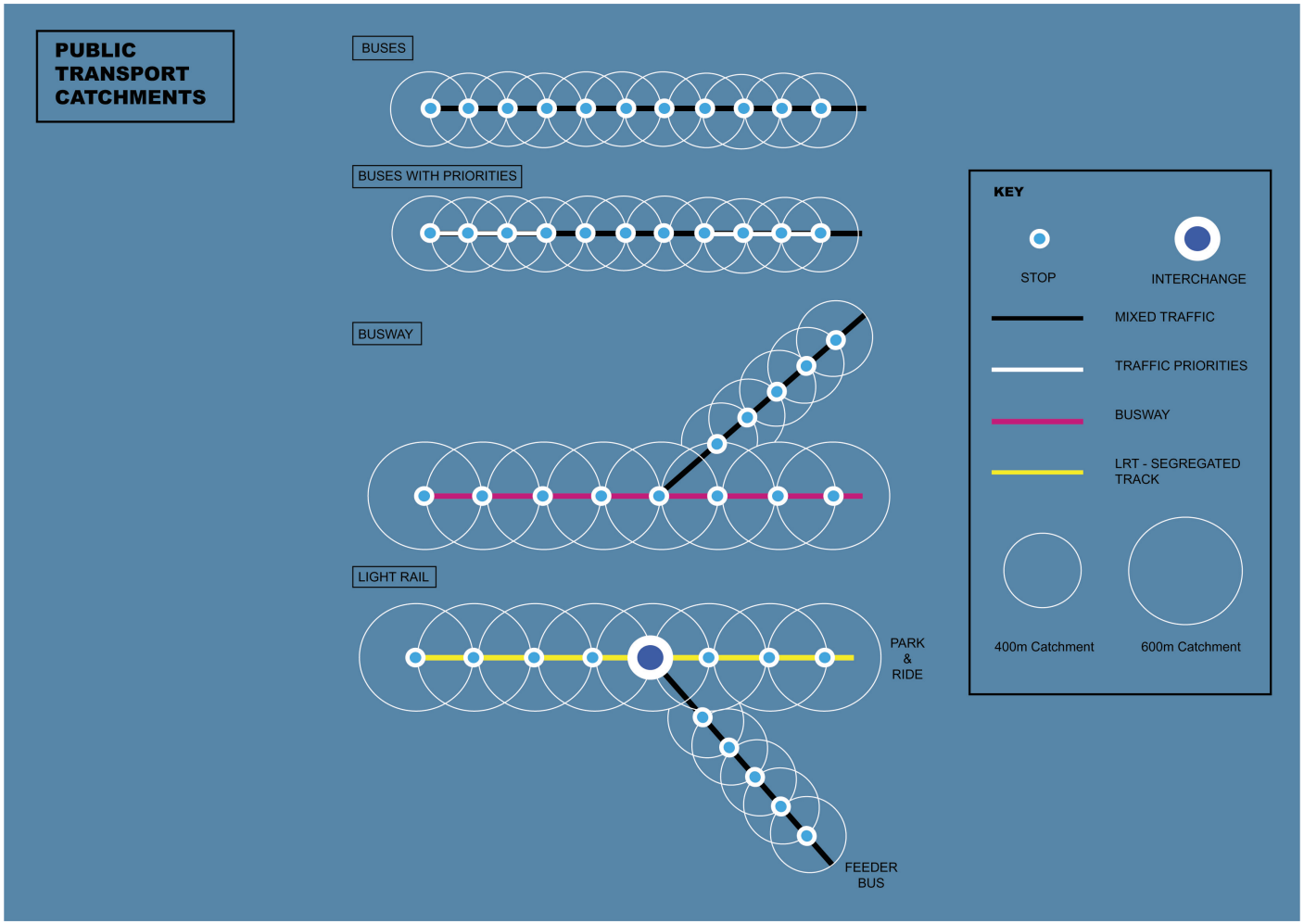
7. Areas of tranquillity: large areas of countryside should be protected to conserve tranquillity, with development restricted to only that which meets local needs.

The Annex to this report also provides a number of indicative 'rule of thumb' assessments of levels of development required to support transport schemes (and the reverse: transport schemes required by different levels of development). Table 6.1 and Figure 6.2 provide a summary of this thinking.

Table 8.1: *Summary Table of Public Transport Characteristics – London Context*

Mode	Capacity Range (pph)	Direct Catchment (hectares)	Total Catchment	System Costs (per route km)	Best Practice Comment
Standard buses	160 – 1,300	50	Local	£0.1m - £1m	
Large buses	320 – 2,800	50	Local	£0.1m - £1m	e.g. Uxbridge Road, West London
Priority Buses	500 – 4,000	50	Local	£1m - £2m	
Busway	1,000 – 10,000	50	Local, plus extensive off-busway	£2m - £15m	e.g. Curitiba, Porto Allegre, Essen, Adelaide
Light Rail	3,000 – 12,000	115	Local, plus park & ride and feeder bus	£10m - £20m	e.g. Strasbourg, Freiburg

Figure 8.2: *Indicative Public Transport Catchments*



6.3 Matching Bottom-Up and Top-Down Aspirations

Commentary

Figure 6.3: *London Thames Gateway Aerial Photo Base*

Transport and development

Figure 6.4: *London Thames Gateway OS Base*

Transport and development

6.3.1 Zone of Change 1 (Isle of Dogs) Commentary

- X,y,z

Table 6.5: *Zone of Change 1 Match of Aspirations*

Zone of Change 1 (Isle of Dogs)		
Area	Dwellings	Jobs
Bottom-up aspirations		
Canary Wharf		
Millenium Quarter	2000	
Wood Wharf	1500	
Other?		
(Small sites contribution @ 50%)		
Total		
Top-down aspirations		
Trend		
45k		
59k		
91k		

Figure 6.6: *Zone of Change 1 (Isle of Dogs) OS Base*

Figure 6.7: *Zone of Change 1 (Isle of Dogs) Aerial Photography Base*

6.3.2 Zone of Change 2 (Deptford and Lewisham) Commentary

- X,y,z

Table 6.1: *Zone of Change 2 Match of Aspirations*

Zone of Change 2 (Deptford and Lewisham)		
Area	Dwellings	Jobs
Bottom-up aspirations		
(Small sites contribution @ 50%)		
Total		
Top-down aspirations		
Trend		
45k		
59k		
91k		

Figure 6.1: *Zone of Change 2 (Deptford and Lewisham) OS Base*

Figure 6.1: *Zone of Change 2 (Deptford and Lewisham) Aerial Photography Base*

6.3.3 Zone of Change 3 (Greenwich Peninsula) Commentary

- X,y,z

Table 6.1: *Zone of Change 3 Match of Aspirations*

Zone of Change 3 (Greenwich Peninsula)		
Area	Dwellings	Jobs
Bottom-up aspirations		
(Small sites contribution @ 50%)		
Total		
Top-down aspirations		
Trend		
45k		
59k		
91k		

Figure 6.1: *Zone of Change 3 (Greenwich Peninsula) OS Base*

Figure 6.1: *Zone of Change 3 (Greenwich Peninsula) Aerial Photography Base*

6.3.4 Zone of Change 4 (Stratford, Lower Lea, Royal Docks)

Commentary

- Current plans would realise (reasonable) development potential
- Transport schemes don't always fit well with development, e.g. Gallions Reach interchange between ELT/DLR extension
- DLR extension can handle demand arising within the Royals, but downstream capacity issue. Also issue of train routing (Direct trains to Bank, or Canary Wharf, or Stratford?)
-

Table 6.1: *Zone of Change 4 Match of Aspirations*

Zone of Change 4 (Stratford, Lower Lea, Royal Docks)		
Area	Dwellings	Jobs
Bottom-up aspirations		
ROYALS		
Royal Albert Basin	3665	2700
Peruvian Wharf	1479	1700
Royal Quay	443	?
Minoco Wharf	?	?
Silvertown Quays	5000	?
Land south of DLR extension?	?	?
Gallions Reach Retail Park?	0	?
(Small sites contribution ?)		
Total		
Top-down aspirations		
Trend		
45k		
59k		
91k		

Figure 6.1: *Zone of Change 4 (Stratford, Lower Lea, Royal Docks) OS Base*

Figure 6.1: *Zone of Change 4 (Stratford, Lower Lea, Royal Docks) Aerial Photography Base*

6.3.5 Zone of Change 5 (London Riverside and Barking Town) Commentary

- NOTE: BARKING TOWN NOT INCLUDED IN DRAFT TABLE BOTTOM UP FIGURES
- **Barking Reach** – capacity of DLR extension would allow development at 3 times the proposed total
- ELT route as proposed serves mainly existing development, except north-east part of site. A second route would open up inaccessible areas, plus provide choice of route to Barking for areas served only by DLR extension. (Such a second route would also be more easily justified with higher density development)
- Phasing and timing is crucial. High density development cannot be attracted unless DLR extension (or similar) is provided up front.
- Consideration should be given to combining DLR and EL schemes into tram system, which could provide better integration, and higher intensity development overall.
- DLR elevated configuration reduces the effective catchment of stops (500m assumed rather than 600m with tram)
- Downstream capacity issue of DLR (trains not running beyond Gallions Reach, or Poplar?
- Crossrail at Royals would significantly improve DLR extension case, allowing interchange to fast CL access.
- **Dagenham Dock** – low intensity employment related to A13 would fit poor inbound accessibility.
- **South Dagenham** – no estimates yet for homes/jobs
- **Ford Sites** – uncertainty about future and extent, makes huge difference to potential of south Dagenham area. Without Ford (or with less Ford) could reconfigure entire area to build intensive mixed use "city". Ford decisions could be influenced by such a development aspiration (value of land)
- **Beam Reach** – low density business park would suit "C" location uses such as distribution. But general B1 designation brings danger of higher intensity office. Poor inbound access, especially if no new c2c station.
- **Ferry Lane** – poor inbound access, therefore good fit for "C" type uses.

Table 6.1: *Zone of Change 5 Match of Aspirations*

Zone of Change 5 (London Riverside and Barking Town)		
Area	Dwellings	Jobs
Bottom-up aspirations		
Creekmouth	1000	?
Barking Reach	8825	?
Dagenham Doc	0	?
South Dagenham	?	?
Beam Reach Business Park	0	?
CEME learning facility	0	?
Ferry Lane North Industrial area	0	?
Ferry Lane South Industrial area	0	?
North Shore Industrial area	0	?
Ford facility	?	?
Other? eg South Hornchurch?	No information	No information
Total		
(LB Newham stated aspiration, beyond 2016?)	(21000)	-
(Small sites contribution @ (50%?)	check	check
Total		
Top-down aspirations		
Trend		
45k		
59k		
91k		

Figure 6.1: *Zone of Change 5 (London Riverside and Barking Town) OS Base*

Figure 6.1: *Zone of Change 5 (London Riverside and Barking Town) Aerial Photography Base*

6.3.6 Zone of Change 6 (Woolwich, Thamesmead, Belvedere, Erith) Commentary

- X,y,z

Table 6.1: *Zone of Change 6 Match of Aspirations*

Zone of Change 6 (Woolwich, Thamesmead, Belvedere, Erith)		
Area	Dwellings	Jobs
Bottom-up aspirations		
(Small sites contribution @ 50%)		
Total		
Top-down aspirations		
Trend		
45k		
59k		
91k		

Figure 6.1: *Zone of Change 6 (Woolwich, Thamesmead, Belvedere, Erith)*
OS Base

Figure 6.1: *Zone of Change 6 (Woolwich, Thamesmead, Belvedere, Erith)*
Aerial Photography Base

6.3.7 Zone of Change 7

6.3.8 Zone of Change 8

- Gap between two previous think pieces?
- Key phasing issues
- Other?
- Internal workshop: RH/TP/JB/GW/DB/MO
- External workshop: TfL/LDA

6.4 Accessibility Improvements and Development Potential

Here we draw on some analysis carried out by Colin Buchanan and Partners for Transport for London and the London Development Agency. The research considers the relationship between improved transport accessibility (public transport and highway) and development potential. It can be used as a "sense check" on our previous thinking.

INSERT CBP

6.5 Conclusions: Bringing Land use and Transport Together

This is part of GILTS has looked in bottom-up terms at the particular interactions between development and transport potential in the Zones of Change.

The purpose of the work is to provide a check on the results emerging from the modelling work, to help interpret the modelling results, and also to establish where exactly higher levels of growth potential may be found. The work helps to identify (in conjunction with the strategic modelling) where the important thresholds lie in terms of area development and transport infrastructure construction. This in turn informs the later process of identifying development and transport scheme phasing and priorities (to be considered in Stage 3 of GILTS).

7 Synthesis - Key Discussion Issues

7.1 Key Study Issues

The key issues behind the conclusions will be:

- Homes and jobs potential in LTG
- Type and mix of development by area
- Transport schemes to support LTG growth
- Thresholds of transport provision
- Phasing of development (location and timing)
- Critical timing of transport infrastructure
- Other interventions required (especially demand management)

7.2 Sub-Head 2

7.3 Sub-Head 3

8 Next Steps – Stage 3 GILTS

8.1 Sub-head 1

8.2 Sub-head 1

Transport for London/London Development Agency

Thames Gateway Integrated Land-use and Transport Study (GILTS)

Stage 2 Draft Report

Contents Amendment Record

This report has been issued and amended as follows:

Issue	Revision	Description	Date	Signed
1	A	Draft Stage 2 Report	November 2004	RH/JB

Annexes

Annex 1: Land use and transport interactions “rules of thumb”
Annex 2: Calculation of residential density capacities
Annex 3: Previous TDM research
Annex 4: Mapping base
Annex 5: Modelling assumptions
Annex 6: Additional modelling outputs
Annex 6: References

Annex 1: Land use and transport interactions “rules of thumb”

Annex 2: Calculation of residential density capacities

Annex 3: Previous TDM research

Annex 4: Mapping base and additional baseline data

Figure x: London-wide mapping

Figure x: Absolute Population 2016 (RTP Trend-based ODPM), London-wide and LTG

Figure x: Population Change 2001-2016 (RTP trend-based ODPM)

Figure x: Absolute Population 2016 (RTP 45k ODPM)

Figure x: Population Change 2001-2016 (RTP 45k ODPM)

Figure x: Absolute Population 2016 (RTP 59k ODPM)

Figure x: Population Change 2001-2016 (RTP 59k ODPM)

Figure x: Absolute Population 2016 (RTP 91k ODPM)

Figure x: Population Change 2001-2016 (RTP 91k ODPM)

Annex 5: Modelling assumptions

Annex 6: Additional modelling outputs

Annex 6: References