

LB Redbridge Local Plan Transport Evidence

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Quality information

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1. Executive Summary

AECOM has been commissioned by the London Borough of Redbridge (LBR) to prepare transport evidence in connection with their emerging Local Plan. The purpose of this study has been to consider the impact on the highway network from planned housing growth in the Borough up until 2030.

Throughout the preparation of this report, AECOM has worked closely with officers of LBR in their roles as the local planning authority and local highway authority to ensure that the scope of the work has been suitably developed in regard to the emerging Local Plan. AECOM and LBR have also liaised with Transport for London (TfL) as part of this process and Highways England (HE) has also provided feedback to LBR.

The remit of the report has been to present a high level cumulative assessment of the development proposed within the Local Plan for the Borough; it does not assess specific impacts in detail. The report seeks to consider the proposed growth and extent of potential transport impacts, in terms of location and level of impact. This information should help inform LBR of areas where mitigation may be required and further work concerning the form and level of funding associated with this should be undertaken, prior to site delivery.

The assessment utilises a first principles approach, which provides a flexible method of appraising the development options being considered, allowing for different options and scenarios to be tested. A spreadsheet model was developed to assist the authority in their consideration of the impacts arising on the highway network from planned housing growth within LBR up until 2030.

In terms of vehicular trips, the quantitative assessment has found that the pattern of growth is predicted to vary across the Borough. Intrinsically, the most significant increases in traffic demand are reported in the main growth areas and are also concentrated upon key strategic routes such as the A12 and A118 High Road, with lower levels of growth predicted on non-principal roads in the Borough.

It is acknowledged that the predicted levels of additional traffic represent potential unconstrained demand; however the findings do provide useful indications of the key locations where traffic demand arising from the proposed site allocations is likely to be at its most concentrated. Further analysis can be conducted to attribute the levels of impact to particular development clusters as well as sites specifically.

A review of multi-modal trips has also been undertaken and the quantitative assessment has sought to identify those locations where further analysis, in terms of the cumulative impact of development sites on public transport provision, in collaboration with public transport operators and bodies including TfL, may be required.

To supplement the quantitative assessment of traffic impacts, a qualitative evaluation of the potential site allocations has been undertaken. The aim of the assessment has been to evaluate the relative opportunities and constraints of each site, from a transport planning perspective. This includes considering access arrangements and potential connections with the sustainable transport network for pedestrians, cyclists, and bus and rail users, against a set of pre-defined criteria.

The qualitative assessment has identified that of the five core growth areas which have been identified by LBR, a significant number of the proposed site allocations and associated new homes are focused within the main urban areas of the Borough. These most notably include Ilford and the Crossrail corridor, where public transport accessibility and access to other services and amenities is at its highest.

The remainder of the proposed development is proposed on other sites, outside of these main growth areas, in other parts of the Borough. Where possible, it is clear that sites have been chosen which have reasonable access to public transport and local amenities. Some sites however, are inherently less accessible with these tending to be focused around Woodford as well as some locations within East Redbridge. There is the potential of course, that development in these areas will help improve permeability and deliver accessibility enhancements which will be of benefit to the proposed sites, as well as the existing communities.

At the appropriate stage in the process, Transport Assessments will need to be produced to accompany planning applications and these should provide additional detail concerning the specific proposals, including the site access arrangements, land use(s), location and predicted travel characteristics and impacts. Where appropriate, scheme mitigation will need to be proposed and LBR will look to secure contributions in addition to CIL, where scheme specific improvements are required.

2. Introduction

2.1 Background

AECOM has been commissioned by the London Borough of Redbridge (LBR) to prepare a transport evidence base for the emerging Local Plan, to assist the authority in considering the impacts arising on the highway network from planned housing growth within the Borough up until 2030.

Throughout the preparation of this report, AECOM has worked closely with officers of LBR in their roles as the local planning authority and local highway authority to ensure that the scope of this work has been suitably developed in regard to the emerging Local Plan. AECOM and LBR have also liaised with Transport for London (TfL) as part of this process and Highways England (HE) has also provided feedback to LBR.

The purpose of the study has been to prepare an evidence base to inform the development of the Local Plan working toward its Examination in Public (EiP) which will form part of the process of testing and then implementing the Plan.

The remit of this report is to present a high level cumulative assessment of the development proposed within the Local Plan for the Borough; it does not assess specific impacts in detail. The report seeks to consider the proposed growth and extent of potential transport impacts, in terms of location and level of impact. This information should help inform LBR of areas where mitigation may be required and further work concerning the form and level of funding associated with this should be undertaken, prior to site delivery.

Transport Assessments (TAs) for individual sites will be required at a later stage and any proposed developments will be subject to the planning application process. In this regard, further work will be required to assess detailed schemes at the appropriate time.

Upon commencement of this project, it was agreed with LBR that a transport spreadsheet model would be prepared to support the assessment, to assist the authority in understanding which areas may require further consideration, for example, in terms of potential mitigation.

The study includes both quantitative and qualitative assessments, considering the existing transport environment in LBR and how this is expected to change in future years, taking account of developments which have been committed to come forward in the future as well as those proposed through the Local Plan.

2.2 Quantitative Assessment

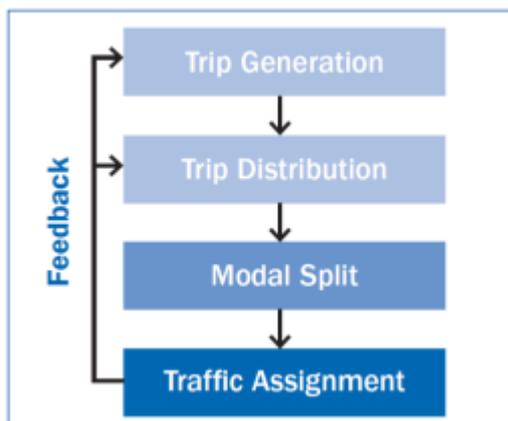
Following liaison with LBR, it was identified that a spreadsheet model should be developed to inform the quantitative assessment. The purpose of the spreadsheet model was for it to assist the authority in their consideration of the impacts arising on the highway network from planned housing growth within LBR up until 2030.

The purpose of the model is to enable the extent of the potential transport impacts to be identified and assist LBR in understanding which areas may require further consideration, in terms of potential improvements and mitigation. This could then lead on to potential capacity analysis and sensitivity testing, as appropriate.

The assessment utilises a first principles approach, which provides a flexible method of appraising the development options being considered, allowing for different options and scenarios to be tested. For example, the model includes all of the proposed site allocations but can be adjusted to include any mix or combination of sites, should this be required. The development quantum at each site can also be altered.

The approach builds on a four stage modelling process consistent with that traditionally employed in the preparation of transport assessments, to determine impacts and assess potential mitigation measures. The four stage modelling process is summarised at **Figure 2-1** below. Further detail is provided within this report.

Figure 2-1: Four Stage Model



To develop the spreadsheet model, a review of the highway network was initially undertaken, followed by a sequential process of model building. The methodology for developing the spreadsheet model and undertaking the quantitative assessment is outlined in detail in **Chapters 4** and **5** of this report.

Two 'future year' scenarios have been considered as part of the quantitative assessment which provide comparative platforms against which the development options for the Local Plan have been analysed. These scenarios are both for 2030, representing the end of the Plan period and comprise a 'Do Minimum' case which allows for background growth and committed development to be included, whereas the 'Do Something' scenario includes the proposed site allocations, in place of general growth assumptions.

The predicted change in traffic flows for each of the scenarios is presented by listing the percentage net change in traffic flow at each of the junctions and links included in the spreadsheet model. A summary of the multi-modal travel demands predicted to be generated by the new sites is also included as part of this process.

2.3 Qualitative Assessment

A qualitative assessment of the proposed site allocations has also been undertaken, which reviews each site by location and accessibility to sustainable modes including walking, cycling, bus and rail services. Public Transport Accessibility Level (PTAL) thresholds have been employed to assist with this review and a Red / Amber / Green analysis of the site allocations has been produced.

The review also considers whether sites are located within the vicinity of local centres, which includes services and amenities and whether the sites have existing access connections.

2.4 Structure

The remainder of this report is structured as follows:

- Chapter 3 provides further context to the Local Plan and background to Redbridge;
- Chapter 4 summarises the methodology for the transport report;
- Chapter 5 reviews the quantitative assessment that has been undertaken and provides a summary of the information that has been derived from the spreadsheet model and the associated findings;
- Chapter 6 provides a summary of the qualitative assessment that has been undertaken, in relation to the site allocations that are being considered; and,
- Chapter 7 provides a summary to the report

3. Local Plan

3.1 LB Redbridge – Transport & Travel

Redbridge is an outer London Borough in north east London, home to a population of more than 279,000 people. Redbridge shares boundaries with four other London Boroughs; Waltham Forest (to the west), Newham (to the south), Barking and Dagenham (to the southeast) and Havering (to the east). To the north is the County of Essex.

The main areas in the Borough of Redbridge include Ilford, Barkingside, Woodford and Hainault. Ilford is located in the southern part of the Borough, and is designated as a Metropolitan Town Centre. It has a wide variety of retail opportunities, including the Exchange Mall, employment and housing. Ilford has its own rail station on the Great Eastern Main line which also includes stations at smaller centres in the south of the Borough including Seven Kings, Goodmayes and Chadwell Heath. Barkingside and Gants Hill are District Centres, located in the centre of the Borough, and have connections to Central London by the Central Line.

Woodford is a sub-urban area to the north-western part of the Borough which includes town centres and connections to the London Underground from Woodford and South Woodford Stations. Hainault occupies the north-eastern area of Redbridge, and is a large predominately residential area which is served by the Central Line.

Ilford lies on the Great Eastern Main line connecting East Anglia to London Liverpool Street and will benefit from the new Crossrail line which is due to open in 2019. All four existing stations on this line; Ilford, Seven Kings, Goodmayes and Chadwell Heath, will also be served by Crossrail. Sections of the London Underground Central Line are also located within Redbridge on the Hainault loop of the Central Line (Zone 4) passing through the following stations: Wanstead, Redbridge, Gants Hill, Newbury Park, Barkingside, Fairlop, Hainault. Woodford, South Woodford and Snaresbrook stations are on the main line of the Central line.

The Borough is also well served by buses, with 35 existing routes. In January 2016 the diversion of bus route 462 provided a new link to Fairlop Station. The East London Transit (ELT) provides a fast and direct link between Ilford, Barking and Dagenham Dock, and operates as a 24 hour bus route. The EL1 service runs north-south between Ilford Hill and Rivergate Centre passing through Barking Station.

In regards to cycle opportunities in the Borough, Quietways Route 6 will eventually provide a cycle route between Aldgate and Hainault with Phase 1 currently running between Mile End and Barkingside, and passing through Ilford, Gants Hill and Newbury Park. The Quietways cycle routes aim to follow backstreet routes, through parks, along waterways or tree-lined streets.

In terms of the road network, the A12 runs east-west through the central area of the Borough, linking Central London and East Anglia. The M11 connects with the North Circular Road (A406) to the east of South Woodford and provides a connection between London, Stansted Airport and Cambridge. Both the A12 and A406 North Circular are part of the Transport for London Road Network (TLRN).

The A118 High Road runs east-west between the main centre of Ilford and Chadwell Heath, and passes through the centres of Seven Kings and Goodmayes providing a connection between some of the main retail and business areas in the south of the Borough. The A1400 Woodford Avenue provides a corridor between the A12 in Gants Hill to the south, and the North Circular Road (A406) to the north. The A118 and A1400 are part of TfL's Strategic Road Network (SRN).

Using TfL's WebCAT system allows the Public Transport Accessibility Level (PTAL) scores to be determined for sites within the Borough. The highest PTAL scores (5-6b), equivalent to very good – excellent accessibility, are found in Ilford town centre and Gants Hill, with the centres of Seven Kings, Goodmayes, Chadwell Heath, Barkingside and South Woodford typically having PTAL scores of 3-4, defined as moderate – good. The residential areas in between the local centres and further from their respective rail stations generally have a PTAL of 2 (poor); reducing in some cases to 1a-1b (very poor).

The Borough is well served by a range of transport facilities, including rail, underground and bus services, strategic roads such as the A12 and A118 (running east-west) and the A406 and A1400 (running north-south), carrying both local and through traffic. Crossrail is expected to add significant opportunities across the Borough in the future due to improved connectivity and journey times to Central London and surrounding areas, as well as relieving congestion on the Central Line.

Notwithstanding this, growth within Redbridge as with many parts of London has already placed increasing pressure upon the local transport system which includes congestion on key roads and considerable demand upon some public transport services.

The introduction of Crossrail has the potential to provide some relief to both the existing highway and public transport services, but will also be likely to attract further activity into the Borough. A key focus for transport and for new development is for it to therefore promote sustainable travel practices including:

- Reviewing the need to travel and where travel is necessary, at what time;
- Travelling by walking or cycling;
- Travelling by bus, underground or rail;
- Travelling by more sustainable vehicle choices, such as taxi, electric vehicle or car clubs; and lastly,
- Travelling by private vehicle, when other options are less viable

All new development shall be encouraged to be designed to promote sustainable travel and link in to or improve walking, cycling and public transport connectivity. Developments will be expected to introduce and monitor travel plans which set ambitious targets to reduce the dependency of new residents upon private car travel. LBR will also seek to manage car parking provision at new development in combination with these objectives.

3.2 Redbridge Local Plan 2015-2030

The Redbridge Local Plan 2015-2030 sets out the Council's vision and plan for how the Borough will grow and develop over the plan period. The plan sets out a range of planning policies and provides a positive strategy for delivering sustainable development and LBR's priorities of growth, in terms of housing, the economy and new jobs.

LBR has been developing its Local Plan since 2011 and most recently undertook the Regulation 19 consultation on the emerging Plan, during the summer of 2016. Based on its own assessment of need, LBR is proposing 18,936 homes (including 2,700 from windfall sites) over the Plan period which exceeds the minimum target set by the Mayor of London, which stands at 16,845 new homes.

From a transport perspective, AECOM has worked closely with officers of LBR throughout the preparation of this report. Liaison has also been held with officers of TfL and to date; two formal responses have been provided, as follows:

- TfL provided detailed comments on the proposed wording contained within the Local Plan concerning travel and transport (included in Chapter 4 of the Plan); and,
- TfL provided comments regarding potential sites which could be considered for allocation (included in Appendix 1 of the Plan)

Highways England has also provided feedback to LBR concerning the preparation of the Local Plan and supports the preparation of a cumulative assessment of the proposed development. HE has also welcomed the Council's active approach to sustainable public transport to better manage demand on the highway network in the Borough. HE states that this approach is preferred to the initial building of new infrastructure, which should be seen as a last resort.

Appendix 1 of the Local Plan provides a list of the development opportunity sites that have the potential to deliver mixed use development during the plan period, up to 2030. All of the proposed allocation sites listed in Appendix 1 of the Local Plan have been expressed by LBR as a calculated value of residential units, for comparative purposes.

In particular, LBR is promoting growth in the Borough's Investment and Growth Areas, including:

- Ilford;
- Crossrail Corridor;
- Gants Hill;
- South Woodford; and
- Barkingside.

It is proposed that these areas will accommodate much of the Borough’s growth over the life of the Local Plan as they represent highly accessible locations, with sites identified to have substantial capacity to accommodate new homes, jobs and infrastructure.

Growth will also be promoted in the Borough’s main town centres and other identified Opportunity Sites (as set out in Appendix 1 of the Local Plan) outside of Investment and Growth Areas and town centres.

Policy LP22 ‘Promoting Sustainable Transport’ of the Local Plan states that the Council will work to deliver a ‘more sustainable and efficient transport network that supports growth and a prosperous economy, reduces car dependency, encourages sustainable forms of transport, improves air quality and reduces greenhouse gases’. In order to achieve this aim the Council will, amongst others:

- Direct new development with high transport demands to highly accessible locations such as the Investment and Growth Areas, town centres and transport corridors;
- Support the delivery of Crossrail by delivering station and public realm improvements at Ilford, Seven Kings, Goodmayes and Chadwell Heath;
- Support improvements to Central Line stations e.g. Newbury Park;
- Actively encourage walking and cycling by providing an attractive public realm, safe, convenient and accessible cycle and footpath networks, through Investment and Growth Areas;
- Increase the number of bus routes in the Borough, improving efficiency and frequency; and,
- Support transport projects that improve the usage, reliability and integration with other transport modes of the public transport network, particularly where it improves the accessibility and connectivity to Investment and Growth Areas.

Encouraging a modal shift away from private cars towards the use of sustainable forms of transport is key to delivering sustainable growth in the Borough and it is recognised that the provision of clean, safe, affordable and reliable transport options that interchange conveniently is necessary to compete with the private car. The Council aims to promote walking as a mode of active sustainable travel and will target investments to key corridors.

The Council seeks to implement a range of Station Urban Integration Schemes (UIS) in order to encourage greater walking through improvements to the streetscape around stations to improve integration and links to town centres.

In terms of cycling, the Council aims to make cycling the preferred mode of transport for more residents and visitors in the Borough. The Council will seek to provide safe and attractive cycling infrastructure linking across the Borough and wider area.

All major new developments will be required to prepare a Transport Assessment and to further encourage more sustainable forms of travel, Travel Plans will also be required for all major new development.

Policy LP23 ‘Parking Standards’ sets out the Council’s guidelines to ensure that new development provides sufficient cycle and car parking. For residential development, London Plan Parking Standards will be used unless the site falls within an area of PTAL 0-1 and PTAL 6; where the local standards set out in Appendix 7 of the Local Plan (and replicated below at **Table 3-1**) will apply.

Table 3-1: Proposed Local Plan Car and Cycle Parking Standards

Residential (C3)	Public Transport Accessibility Level (PTAL)	
	6	0-1
	Car Parking	
	Maximum	Minimum
1-2 Bedroom Units	1 space per 5 units (0 under 5 units)	1 space per unit
3+ Bedroom Unit	1 space per 5 units (0 under 5 units)	2 spaces per unit

3.3 Crossrail

Crossrail is a new high frequency, high capacity rail line which will connect Reading and Heathrow in the west, to Shenfield and Abbey Wood in the east, passing through Central London. It will introduce the single largest increase in rail capacity in London for many decades.

The full service is due to complete in 2019 and passing through Redbridge, Crossrail will serve Ilford, Seven Kings, Goodmayes and Chadwell Heath, providing fast direct links to Central London and Heathrow. In addition to relieving the existing rail network in this area, it is expected that Crossrail will increase the attractiveness of these areas and help facilitate growth and regeneration.

Ilford station will be rebuilt, including a new step free station entrance, improvements to the ticket hall and platform extensions. Journey times to Canary Wharf will be reduced from 26 to 17 minutes and journey times to Central London (Bond Street) will be reduced from 33 to 24 minutes.

The other stations in Redbridge will also benefit from station improvements as well as improvements to the public realm around the stations. TfL state in their 'Travel in London'¹ report that "...delivery of housing in areas where public transport accessibility will be improved by Crossrail can be expected to continue for years".

3.4 Existing Studies – Greenbelt Sites

LBR has identified in excess of 200 sites as part of the proposed allocations, to deliver the proposed level of growth. The identification of sites has followed a comprehensive review of the available land and in some cases, has led to the proposed release of greenbelt land.

The sites associated with this are Billet Road, Oakfield and Goodmayes (including King George Hospital and the Ford Sports Ground). High level transport studies of the greenbelt sites have already been prepared by others and whilst the role of this Transport Report is to consider all of the site allocations, not just those located on greenbelt land, further details of the existing studies are provided below:

3.4.1 Billet Road - High Level Transport Study (January 2016)

Atkins was appointed by LBR to support a review and feasibility study of the opportunity site at Billet Road. They prepared a High Level Transport Study (TS) with a view to establishing what levels of development on the site may be deliverable and can be accommodated on the highway network over the Local Plan period of 15 years.

The TS reviewed the existing traffic and then assessed the predicted impact of development at the site across two development yield scenarios, Low and High, for the year 2030. Both scenarios indicated that development would push one road (Billet Road) over practical, and approaching theoretical capacity in the PM peak. Roads within the vicinity of the site were processed through a significance matrix to categorise the impacts and the overall development impact by road was identified as follows:

- Hainault Road: 'Moderate' impact;
- Billet Road: 'Moderate' to 'Major' impact; and
- Barley Lane: 'Minor' to 'Moderate' impact.

Whilst Hainault Road and Barley Lane were predicted to remain within both practical and theoretical capacity, these roads are primarily residential, and therefore without some form of mitigation it was suggested that there may be some potential loss of amenity and increased severance for residents as a result of the predicted traffic flow increases.

The majority of development traffic is predicted to travel west on Billet Road to reach the A12, and whilst some residences front Billet Road to the west of the site, it is predominantly a carrier of through traffic and was therefore reported to be less sensitive as a receptor.

3.4.2 Oakfield and Goodmayes - High Level Transport Study (October 2015)

Atkins was appointed by LBR to support a review and feasibility study of the opportunity sites at Oakfield Playing Fields (referred to therein as Site 1) and land in and around King George and Goodmayes Hospitals, including the Ford Sports Ground (referred to therein as Site 2).

¹ TfL 'Travel in London' Report 9, 2016

They prepared a High Level Transport Study (TS) with a view to establishing what levels of development on the site may be deliverable and can be accommodated on the highway network over the Local Plan period of 15 years. The TS reviewed the existing traffic and then assessed the predicted impact of development at the sites across three development yield scenarios in this case; Low, Medium and High Yield for the year 2030.

For Site 1, all development yield options were found to push one road (Forest Road) over theoretical capacity during the PM peak, and would see the A123 north of Fullwell Cross move closer to practical capacity, therefore mitigation measures were expected to be required as part of any new development. The roads in the vicinity of Site 1 were processed through a significance matrix and the overall development impact by road was identified as follows:

- Forest Road: 'Major' impact;
- New North Road: 'Minor' impact;
- A123 (N) Fencepiece Road: 'Minor' impact; and
- A123 (S): 'Minor' impact.

For Site 2, all development yield options were found to push one road (the A118 High Road) over capacity during the AM peak and approaching capacity during the PM peak in the high yield scenario. Mitigation measures would therefore be expected to be required as part of any new development. Roads within the vicinity of Site 2 were processed through a significance matrix to categorise the impacts and the overall development impact by road was identified as follows:

- A118 High Road: 'Major' impact;
- B177 North: 'Moderate' impact;
- B177 South: 'Moderate' impact; and
- Aldborough Road South: 'Moderate' impact.

The majority of the roads in the immediate vicinity of the sites were predicted to remain within both practical and theoretical capacity, however these roads are primarily residential and therefore without mitigation there was expected to be some potential loss of amenity and increased severance for residents as a result of the increased volume of traffic. Additionally, some of these roads are bus and cycle routes and therefore were predicted to potentially also be impacted by the volume of increase in traffic flows.

4. Methodology

4.1 Background

Upon commencement of this project, it was agreed with LBR that a transport spreadsheet model would be prepared to support the assessment, as this would provide a flexible means of appraising the development options being considered. Following the submission of the Local Plan, the model can continue to be used as a tool to consider different development options and assessment scenarios.

The model will enable the authority to consider the impacts on the highway network from planned housing growth within the Borough up until 2030 and allows certain developments to be 'switched on and off', to determine the impacts of different levels of development.

Following the initial project inception meeting held with LBR on 3rd November 2016, a Method Note was produced to set out the proposed approach to developing the model and undertaking the quantitative and qualitative assessments.

The Method Note was reviewed and subsequently approved by officers of LBR and a follow-up meeting was held on 16th January 2017 to discuss the initial findings from the model and the progression of the transport evidence base. A meeting was also held with officers of TfL and LBR on 8th February 2017 to discuss the work being undertaken and review the Method Note and programme for completing the work.

The Method Note has therefore acted as a 'live' document throughout this project. As such, the content of the Method Note document has been updated as the project has progressed and this is therefore presented within this and subsequent chapters of the report, including feedback from LBR and TfL, where appropriate. The items covered include:

- Within this chapter; the highway network, data collection and annualisation, and assessments scenarios;
- In Chapter 5; traffic growth and committed development, trip generation, mode share and trip distribution; and,
- In Chapter 6; the qualitative assessment

4.2 Network

An initial data gathering exercise was carried out in liaison with LBR and TfL, following which a 'network' upon which the spreadsheet model has been based was developed. Key links and junctions were identified in the context of the core growth areas and associated liaison with officers of LBR. Key criterion considered as part of this process included junctions and links in proximity to:

- Growth Areas identified in the emerging Local Plan;
- District / Metropolitan Centres;
- Crossrail Corridor;
- Central Line; and
- Committed Development / Local Plan 'opportunity' sites.

A gap analysis was carried out to establish the availability of existing data from LBR and TfL, along with data available from committed development TAs within the public domain. It was identified that additional traffic surveys would be required to provide data at a number of locations, as indicated in **Tables 4-1** and **4-2**. With permission from LBR, data included in committed development TAs from 2013 onwards has been utilised.

A plan showing the locations of each junction and link in the model network is provided at **Appendix A**.

Table 4-1: Junctions Included in the Spreadsheet Model Network

Ref	Junctions	Data
1	Ilford Hill / Romford Rd / A406 Slip Roads	New Survey
2	Ilford Ln / Winston Way	New Survey
3	A123 Cranbrook Rd / High St / Chapel Road / Winston Way / Roden St / A118 Ilford Hill	New Survey
4	Ley St / Griggs Approach	New Survey
5	Winston Way / Griggs Approach	New Survey
6	High Rd / A1083 Green Ln / Winston Way	New Survey
7	High Rd / Cameron Rd	New Survey
8	A118 High Rd / Barley Ln	New Survey
9	High Rd / Wangey Rd / Station Rd (including Chadwell Heath Lane)	New Survey
10	Gants Hill Roundabout (A12 Eastern Ave / A1400 Woodford Ave / A123 Cranbrook Rd)	TfL Data (2014)
11	A12 Eastern Ave / Horns Rd / Ley St	TA 1210/14 (2013)
12	A12 Eastern Ave / Aldborough Rd	New Survey
13	A12 Eastern Ave / Barley Ln / Hainault Rd	New Survey
14	A123 Cranbrook Rd / Tanners Ln	TA 2715/13 (2013)
15	Fullwell Cross Rbt (Forest Rd / Craven Gdns / A123 High St / Fullwell Ave / Fencepiece Rd)	New Survey
16	A1199 High Rd / B168 George Ln	New Survey
17	A12 / A406 (Redbridge Roundabout)	TfL Data (2014)
18	Fairlop Rd / Clayhall Ave / Freemantle Rd / Looe Gdns	New Survey
19	Freemantle Rd / High St / Baron Gdns	New Survey
20	A1400 Woodford Ave / Longwood Gdns / Beehive Ln / Redbridge Lane East	New Survey
21	A1400 Woodford Ave / Clayhall Ave	New Survey
22	Charlie Browns Roundabout (Chigwell Rd / A1400 Woodford Ave / Southend Rd)	TfL Data (2015)

Table 4-2: Links Included in the Spreadsheet Model Network

Ref	Links	Data
1	A118 High Rd, Ilford	LB Redbridge ATC (2015)
2	Aldborough Rd South	LB Redbridge ATC (2015)
3	A12 near Barley Ln	TfL Data (2014)
4	Billet Rd	LB Redbridge ATC (2014)
5	Fencepiece Rd	LB Redbridge ATC (2015/16)
6	A1400 Woodford Ave	TfL Data (2014)
7	Barley Ln south of Grensham Dr (south of ex-hospital access)	New Survey

4.3 Data Collection

For those junctions and links identified as requiring new surveys, Manual Classified Counts (MCC), queue lengths and Automatic Traffic Counts (ATC) were undertaken during the week commencing 28th November 2016. MCCs were undertaken between 0700-1000 and 1600-1900 and the ATC was carried out over a seven day period. A plan showing the traffic survey locations is provided at **Appendix B**.

4.3.1 Annualisation

As discussed above, the spreadsheet model has been developed using data recorded on a range of days, months and years. In order to ensure that a consistent 'base' position is established, all of the traffic data has been 'annualised' to take account of potential seasonal variations.

From the network classifications described in the COBA Manual, the seasonality index for 'built up principal roads' (with speed limits of 40mph or less) is considered to be the most representative of the local road network in Redbridge.

The COBA Manual states that roads of this type have a seasonality index range of between 0.95 and 1.15 with a default value of 1.0. The seasonality indices listed below at **Table 4-3** have been extracted from the COBA Manual Table 9/2 (DMRB Vol. 13, Section 1, Part 4). The variation factors have been calculated from the average seasonality index values for neutral months, as defined within the COBA Manual (i.e. the average of April, May, June, September and October). These factors have been applied to the traffic data from various months to achieve an annualised baseline data set.

Table 4-3: Seasonality Indices and Variation Factors for Annualisation

Road Type: Built up Principal Road	Seasonality Index (1.0)	Variation Factor
Month		
January	402	0.88
February	366	0.96
March	394	0.89
April	360	0.98
May	349	1.01
June	351	1.00
July	350	1.01
August	353	1.00
September	343	1.03
October	358	0.98
November	389	0.91
December	415	0.85
Average*	352	

*Based on average of neutral months, as defined within the COBA Manual (April, May, June, September and October)

The annualised baseline data has subsequently been factored up to a common year, which in this case is 2016, representing the current situation. Growth factors derived from DfT's Trip End Model TEMPRO (dataset 7) have been applied to 2013, 2014 and 2015 traffic data as presented in **Table 4-4**.

Table 4-4: TEMPRO growth factors applied to 2013, 2014 and 2015 traffic data

Redbridge AF15 Dataset (All area and road types)		AM Peak	PM Peak
From	To		
2013	2016	1.0355	1.0326
2014	2016	1.0247	1.0227
2015	2016	1.0141	1.0132

Further details concerning traffic growth is provided in **Chapter 5**.

4.4 Assessment Scenarios

The model includes three scenarios, the first of which as discussed above is the **2016 Baseline** scenario. Subsequently, two future year scenarios are considered:

4.4.1 2030 Do Minimum Scenario

A 'future year, base' scenario has been prepared which is referred to as the **2030 Do Minimum** scenario. This provides a comparative platform against which the proposed site allocations in 2030 (representing the Local Plan period) will be analysed.

As part of the development of this scenario, committed developments as identified by LBR (of over 25 units) have been included in the model and background traffic growth forecasts have been adjusted to account for this. Further details of this are provided in **Chapter 5**.

4.4.2 2030 Do Something Scenario

The **2030 Do Something** scenario allows all of the proposed site allocation developments to be considered. This scenario is based upon the final housing numbers contained within Appendix 1 of the Local Plan, as provided by LBR.

5. Quantitative Assessment

5.1 Introduction

This section of the report presents the quantitative assessment and details of how the assessment has been carried out. The first part of the chapter presents information based upon the Method Note and has been updated, where appropriate, to reflect the processes and techniques employed and liaison that has taken place during the completion of the project.

The second part of the chapter presents the key findings from the quantitative assessment, by junction and link for traffic, as well as multi-modal trip analysis.

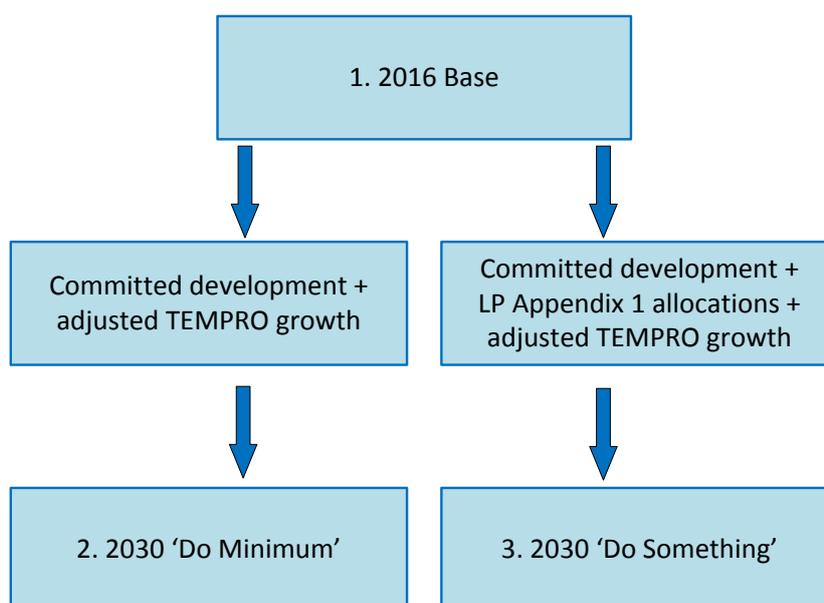
5.2 Traffic Growth

5.2.1 Committed Development & Traffic Growth

Within both future year scenarios (2030 Do Minimum and 2030 Do Something) traffic associated with committed developments has been included.

In the Do Minimum scenario, adjusted traffic growth respective of the committed developments has been derived directly from TEMPRO and applied to the baseline traffic flows. In the Do Something scenario, adjusted traffic growth has again been applied from TEMPRO but in this case, has been adjusted respective of both committed development traffic as well as that associated with the proposed Appendix 1 Local Plan site allocations. This process is illustrated in **Figure 5-1**.

Figure 5-1: Committed Development growth and assessment scenarios



A list of all committed development sites for the Borough was provided by LBR to inform the development of the spreadsheet model, including all major land uses such as residential (over 25 dwellings), employment and education. The list includes 36 committed sites comprising a total of 1,799 residential dwellings and approximately 18,000m² Gross Internal Area of employment space, which equates to approximately 526 jobs (based on the Employment Densities Guide² method). A copy of the committed development list is included at **Appendix C**.

All of the committed development sites have been included in the assessment and the equivalent number of residential dwellings and / or jobs have been deducted from TEMPRO, through the application of the alternative assumptions tool, to derive adjusted growth factors for the 2030 Do Minimum scenario.

² Employment Densities Guide, 2010, Office of Project & Programme Advice & Training (OffPAT), Homes & Communities Agency

Some of the Appendix 1 Local Plan sites already have committed development status and these sites, totalling 14, have therefore been removed from the Appendix 1 site list and included as committed developments for the purposes of the assessment. The 14 sites comprise a total of 138 residential dwellings and approximately 16,326m² Gross Internal Area of employment space, which equates to approximately 485 jobs.

The remaining housing and job growth associated with the committed developments and total Appendix 1 Local Plan proposed development has been deducted from TEMPRO to derive growth factors for the 2030 Do Something scenario. The committed sites that feature in Appendix 1 of the Local Plan were removed from the committed development totals in the 2030 Do Something scenario to avoid double counting.

5.2.2 TEMPRO Growth Forecasts

TfL identify within their 'Travel in London' report³ that traffic volumes have fallen overall throughout Greater London, since 2000. Road traffic volumes in outer London fell by 0.4% between 2014 and 2015, which suggests that DfT's TEMPRO figures may be overestimating growth. The method for including background traffic growth forecasts within the spreadsheet model was therefore discussed with LBR, as part of the preparation of the Method Note.

Whilst it is recognised that TEMPRO can over-estimate traffic growth levels, particularly in London, it was agreed with LBR that in order to ensure a robust assessment when considering the 2030 future year scenario, traffic growth forecasts derived from DfT's Trip End Model TEMPRO (dataset 7) would be utilised in the first instance.

TfL confirmed that this approach should ensure a worst-case assessment, although indicated that lower growth factors may be appropriate. The configuration of the spreadsheet model is such that the growth factors can easily be amended, if needed, and this could therefore be considered in the future.

The 'alternative assumptions' tool within TEMPRO has been applied to determine the adjusted growth factors, taking into account growth from the committed developments and the Appendix 1 development opportunity sites, as referred to previously. The results are provided in **Table 5-1**.

Table 5-1: TEMPRO adjusted growth factors for Redbridge 2016-2030

Redbridge AF15 Dataset (All area and road types)	AM Peak	PM Peak
2016-2030 (not adjusted – presented for reference)	1.1550	1.1632
2016-2030 TEMPRO adjusted to remove Committed Development growth – to be applied in the Do Minimum scenario	1.1451	1.1530
2016-2030 TEMPRO adjusted to remove Committed Development and Appendix 1 Development Opportunity Site growth – to be applied in the Do Something scenario	1.0773	1.0783

The rates presented above have been applied within the respective 2030 scenarios, for the Do Minimum and Do Something situations.

5.2.3 Committed Development – Traffic Flows

Where possible, the trip generation and distribution associated with the committed development sites has been derived from the TAs / Transport Statements (TS) submitted with the respective planning applications so that these trips can be accounted for in the spreadsheet model. The planning application references are provided in the list of committed developments in **Appendix C**.

For committed sites where no TA/TS is available (for example for some of the smaller scale developments) or where the committed sites are featured in the Appendix 1 Local Plan list of development sites, the residential trip rates adopted in the spreadsheet model (refer to **Section 5.3: Trip Generation**) and trip distribution assumptions (refer to **Section 5.5: Trip Distribution**) have been applied to derive an estimated total number of committed development vehicle trips for inclusion within the model.

³ TfL 'Travel in London' Report 9, 2016

5.3 Trip Generation

5.3.1 Context

This section of the report describes the methodology used to forecast the number of trips generated by the development being proposed through LBR's Local Plan (Appendix 1).

All of the development opportunity sites listed in Appendix 1 of the Pre-Submission Draft Local Plan have been expressed by LBR as a calculated value of residential units. In the spreadsheet model, this means that an agreed set of trip rates has been applied to each development opportunity site, regardless of the development type, thereby providing a consistent and comparable platform for the assessment. This approach also ensures that trips will not be double counted (i.e. residential departure trips and employment arrival trips would only be counted once).

5.3.2 Residential Trip Rate Derivation, by Accessibility

PTAL (Public Transport Accessibility Level) is a measure of accessibility, which has been considered in the derivation of residential vehicular trip rates. A high PTAL in a specific location indicates good connectivity to the public transport network. PTAL values are influenced by the walking distance to nearby railway / underground stations and bus stops, and by the frequency of services at these stations and stops. **Appendix D** provides a summary of the PTAL and travel times for Redbridge Borough.

A set of vehicular trip rates have therefore been derived which can be applied to development opportunity sites across the Borough. For simplicity, one set of trip rates has been derived to represent sites with mid-range PTAL rating (of 2-4), i.e. the typical scenario in terms of car driver trips. For sites with a low-range PTAL rating (0-1b) or high PTAL rating (5-6b) the trip rates have been increased or reduced by 30% respectively. The assumptions relating to this 30% increase / reduction are explained further, later within this chapter. Based on the PTAL rating at the proposed development opportunity site, the relevant trip rate will be applied.

The following paragraphs explain how the final set of vehicular trip rates were derived.

5.3.3 TRICS Database

Initially, the TRICS database was interrogated to derive vehicular trip rates. Privately owned residential sites in outer London were selected. However, there are a limited number of Greater London sites within TRICS which are less than 5 years old (to be in accordance with TfL guidance) and therefore the date range of sites selected was from 2008-2015.

Privately owned residential dwellings were selected on the basis that 75% of dwellings provided over the plan period are expected to be privately owned and this also acts as a worst-case as trip generation associated with privately owned dwellings tends to be higher than for other types of tenure. LBR's emerging Local Plan policy LP3 sets an affordable housing target of a minimum of 30%. However the pre-submission draft of the Local Plan states that the current levels of privately owned or privately rented housing in the Borough is 75%. Therefore the privately owned residential trip rate has been applied in order to provide a robust assessment.

Of the privately owned residential sites for outer London in the TRICS database, only two of the surveys were found to be within 5 years old. Four sites were found to be within 9 years old and these were selected to provide a larger sample size. Sites in Westminster and Southwark were discounted due to their central London location and high PTAL ratings.

The selected sites and associated PTAL ratings are listed in **Table 5-2**.

Table 5-2: TRICS sites considered and their associated PTAL ratings

TRICS Ref	Borough	PTAL
Houses Privately Owned (with 5 years old)		
HO-03-A-01	Hounslow	2
HO-03-A-02	Hounslow	3
Houses Privately Owned (with 9 years old)		
KI-03-A-01	Kingston	3
KI-03-A-02	Kingston	3

From the above sites, the person trip rates presented in **Table 5-3** were derived.

Table 5-3: Privately owned residential multi-modal trip rates, per household

Mode	AM			PM		
	Arr	Dep	Two-way	Arr	Dep	Two-way
Car Drivers (incl. Taxis)	0.128	0.274	0.402	0.189	0.140	0.329
Car Passengers	0.049	0.263	0.312	0.055	0.128	0.183
Cyclists	0.000	0.006	0.006	0.006	0.000	0.006
Pedestrians	0.037	0.256	0.293	0.165	0.061	0.226
Bus	0.018	0.040	0.055	0.055	0.024	0.079
Rail	0.000	0.073	0.073	0.073	0.006	0.079
Total People	0.232	0.909	1.141	0.543	0.360	0.903

Following discussions with LBR and based upon current experience of development planning work in London, it was considered that the rates derived from TRICS were quite high, particularly for vehicular trip generation for new residential development. Additionally, as only a limited number of outer London sample sites was available in TRICS (two sites both in Hounslow in the last 5 years and two sites both in Kingston in the last 9 years), it was agreed that an alternative method for deriving trip rates should be employed.

5.3.4 Site Specific Data

A sensitivity test was therefore undertaken to compare the above car driver trip rates with those contained within recent Transport Assessments (within the last 3 years) for the committed development residential sites within Redbridge, with extant permission.

This process was completed for 6 sites as summarised in **Table 5-4**. Only planning applications for privately owned residential developments that included a Transport Assessment or Statement with vehicular trip rates and sites with a mid-range PTAL rating of between 2 and 4 were included in the comparison. The full list of committed development sites and justification for those selected for inclusion in the trip rate comparison is provided in **Appendix C**.

Table 5-4: Residential Vehicle Trip Rates (per dwelling) – derived from LB Redbridge Committed Development TAs

Planning application source	Site Location	Units	PTAL Rating	Vehicular Trip Rates per dwelling					
				AM (08:00-09:00)			PM (17:00-18:00)		
				Arr	Dep	Two-way	Arr	Dep	Two-way
0951/13	Cameron Rd, Seven Kings	32	4	0.058	0.185	0.243	0.147	0.081	0.228
2364/15	High Rd, Seven Kings	35	2	0.151	0.329	0.48	0.315	0.055	0.37
2792/15	High Rd, Ilford	96	3	0.05	0.297	0.347	0.199	0.11	0.309
3517/16	Perth Rd, Gants Hill	57	4	0.059	0.169	0.228	0.09	0.016	0.106
3279/15	Ley St, Ilford	104	2	0.041	0.106	0.147	0.136	0.079	0.215
0215/16	Ley St, Ilford	71	3	0.094	0.21	0.304	0.164	0.119	0.283
Average				0.076	0.216	0.292	0.175	0.077	0.252

Source: List of Committed Development List with more than 25 dwellings provided by LBR (Appendix C)

From the information set out above, an average trip rate has been derived for the AM (0.292) and PM (0.252) peaks. The benefit of this approach is that the rate derived encompasses a mix of locations across the Borough, whilst the trip rates shown in the table above have all been previously agreed with LBR. The standardised trip rate exercise demonstrates that the car driver trip rates derived from TRICS in **Table 5-3** therefore appear to be over-estimating potential trip generation in the Borough.

To further verify that the committed development site trip rates are robust, subsequent discussions with LBR identified four recent development sites within the Borough which could be surveyed, to derive actual observed trip rates, for comparison against those presented in **Tables 5-3 and 5-4**. Details of the four sites identified are presented in **Table 5-5**.

Table 5-5: Four sites identified by LBR from which to derive observed trip rates

Name of Site	Units	PTAL
Grove Farm, Chadwell Heath	116	1b
Ley Street, Ilford	104	2
Bramley Crescent, Gants Hill	122	5
Ilford Wharf, Ilford	73	6a

A site visit carried out on Thursday 12th January 2017 identified that the Ilford Wharf site is currently at the early stage of construction and that the Ley Street site is also still under construction. It was not possible to determine the number of units currently occupied at Ley Street, although this was estimated to be only a small number. Construction activities were observed at the site and only a very limited number of private vehicles appeared to be entering and exiting the site. As such, surveys were undertaken at the Grove Farm and Bramley Crescent sites, which therefore include one low PTAL and one high PTAL site respectively.

The observed trip rates at Grove Farm and Bramley Crescent are presented in **Table 5-6** based on surveys undertaken on Thursday 12th January 2017.

Table 5-6: Observed Vehicular Trip Rates at Grove Farm and Bramley Crescent

Surveyed Sites	AM			PM		
	Arrival	Departure	Total	Arrival	Departure	Total
Grove Farm	0.112	0.241	0.353	0.172	0.095	0.267
Bramley Crescent	0.008	0.025	0.033	0.016	0.008	0.025

The observed rates at the low PTAL site (Grove Farm) were higher than those calculated from the committed development trip rate data (as presented in **Table 5-4**) for the mid-PTAL locations, by 21% (AM) and 6% (PM). The proposed application of a 30% uplift factor to represent trip generation in less accessible areas is therefore indicated to be robust.

The observed rates at the high PTAL site (Bramley Crescent) were lower than those calculated from the committed development trip rate data (as presented in **Table 5-4**) for the mid-PTAL locations, comprising approximately only 10% of the mid-PTAL rates. The proposed application of a 30% reduction factor to represent trip generation in more accessible areas is therefore indicated to be robust.

Based on the above analysis, the additional information is considered to demonstrate that the estimated trip rates in **Table 5-4** are robust in representing trip generation within Redbridge and have therefore been employed in the assessment, allowing for the accessibility adjustments for high and low PTAL locations. This method was agreed with LBR and whilst noting that the use of TRICS follows best practice, TfL were supportive of the use of observed site data to verify the proposed rates.

Table 5-7 presents the vehicular trips rates for each PTAL rating adopted in the spreadsheet model.

Table 5-7: Vehicular Trip Rates per PTAL rating

PTAL Rating	AM			PM		
	Arrival	Departure	Total	Arrival	Departure	Total
0-1b	0.098	0.281	0.379	0.228	0.100	0.327
2-4	0.076	0.216	0.292	0.175	0.077	0.252
5-6b	0.053	0.151	0.204	0.123	0.054	0.176

The proposed development opportunity sites have been categorised by PTAL rating into 3 types. For opportunity sites in locations with a PTAL rating of 2-4, the locally agreed trip rates presented in **Table 5-4** (repeated above at **Table 5-7**) have been applied. For any sites with a PTAL rating of 5 or above, the trip rates have been reduced by 30% and for any sites with a PTAL rating less than 2, the trip rates have been increased by 30%.

This methodology has been adopted as it is a comparable and efficient way of applying one set of trip rates to the development opportunity sites throughout the Borough for the purposes of developing the evidence base. At the time when individual sites come forward through the planning application process, Transport Assessments and associated site specific detailed analysis will need to be produced which would be likely to include bespoke trip rates which can take account of matters such as the proposed mix of dwellings, sizes and tenures and potential trip internalisation relating to the provision of any complimentary land uses and travel planning measures in further detail.

5.4 Mode Share

Census (2011) data has been examined to derive modal share information based upon mid-layer super output areas (MSOAs) within 3 categories of PTAL rating, to be consistent with the trip generation analysis presented above. MSOAs containing predominantly representative PTAL ratings of the three classifications being used have been chosen. A review of TfL's WebCAT baseline mapping suggests that MSOAs from the areas listed in **Table 5-8** provide a good representation of the three PTAL categories.

Table 5-8: Selected Redbridge MSOAs to represent PTAL Categories

Broad Geographic Area	MSOA	PTAL Rating/Categories
Central Ilford	Redbridge 029	5-6b
Goodmayes	Redbridge 034	2-4
South of Claybury Park	Redbridge 008	0-1b

Mode share proportions for each PTAL category are compared in **Table 5-9** to understand the mode share characteristics within each category.

Table 5-9: Illustrative Mode Share Proportions

Mode of Travel	Whole Borough Mode Share	PTAL Category		
		Category 1 (0-1b)	Category 2 (2-4)	Category 3 (5-6b)
Car Driver (incl. Taxis)	40%	55%	37%	29%
Rail	44%	29%	43%	48%
Bus	8%	11%	11%	13%
Cycle	1%	1%	1%	1%
Walk	7%	5%	8%	9%

The bus and rail mode share proportions derived from Census data and presented in **Table 5-9** have been used to forecast potential public transport demand for bus and rail / underground stations and stops nearest to the development opportunity sites. Further details of the multi-modal assessment are provided in **Section 5.8**.

5.5 Trip Distribution

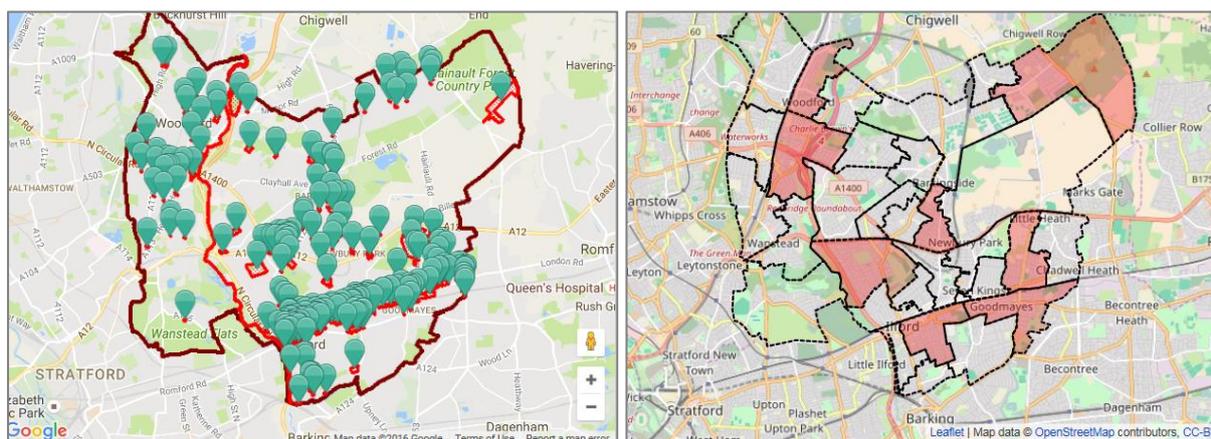
The distribution of vehicular trips across the strategic and local road networks has been based upon 2011 Census Journey to Work data. The trip distribution takes the form of journeys that are external to Greater London, within Greater London but external to Redbridge and those that are internal to the Borough.

The emerging Local Plan Policies Map showing ‘Opportunity Sites’ has been reviewed to identify key development areas and the origin of journeys from home to work. MSOAs have been selected to represent key growth areas and the proportional split of trips to work place destinations has been used as a basis for the trip distribution for the new development sites.

It is noted that this is a high level approach to distributing trips across the network based on first principles and makes the assumption that new trips generated by the development sites will have similar trip distribution and mode share characteristics as those recorded in the 2011 census data. Other means of assessment may be able to be employed and further detailed assessments should be conducted as further detail emerges, including within Transport Assessments at the planning application stage.

The proposed MSOAs for assessment can be seen in **Figure 5-2**.

Figure 5-2: LBR Emerging Local Plan Policy Map showing ‘Opportunity sites’ (left), 2011 Census MSOA’s (right) to be used for individual vehicle trip distributions

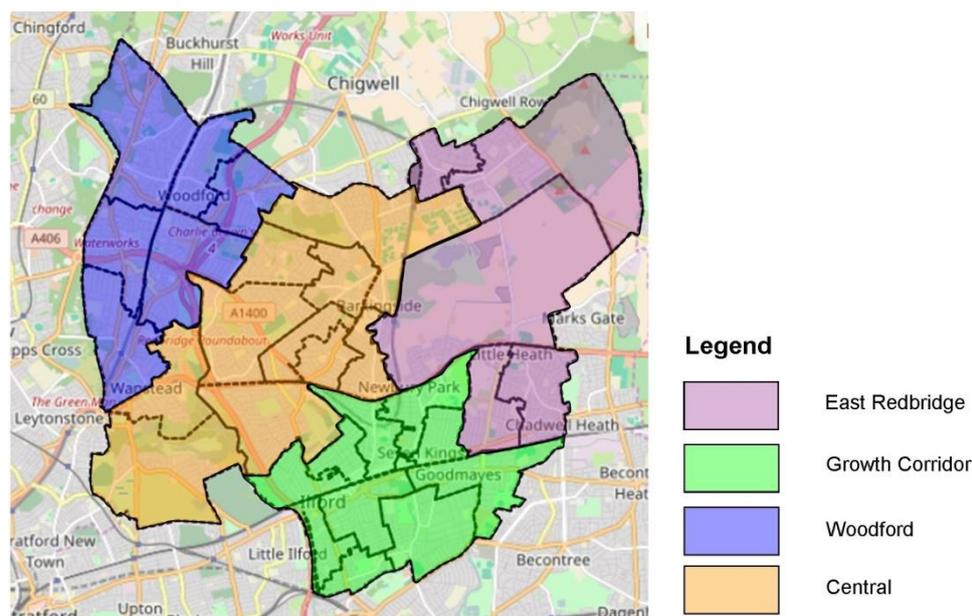


Source: Pre-submission draft of LB Redbridge Local Plan (2015-2030) Policy Map
 ONS Nomis Official Labour Market Statistics

A review of the journey to work characteristics of the MSOAs identified in **Figure 5-2** identified that some of the MSOAs had similar distribution proportions and have therefore been grouped together into four ‘origins’ within the Borough. These origins are: ‘East Redbridge’, ‘Central’, ‘Woodford’ and ‘Growth Corridor’.

Figure 5-3 illustrates and lists the Redbridge MSOAs within each ‘origin’ area.

Figure 5-3: Origin Categories and Redbridge MSOAs



Origin Category	MSOAs contained within each Origin
East Redbridge	002 , 003, 013, 019, 022
Growth Corridor	020, 023, 024, 030 , 031, 032, 033, 034
Woodford	001, 004 , 005, 007, 009 , 014
Central	006, 008, 010, 012, 015, 017 , 018, 027, 035 , 036

*MSOAs in bold and blue text have been analysed for trip distributions

Based on these four origins, **Table 5-10** shows the internal and external trip distribution for Redbridge. The five destination boroughs (external to Redbridge) with the highest number of car driver trips from origins within Redbridge are also listed.

Table 5-10: LB Redbridge Internal and External Trip Distribution

Destination	Origin Category							
	East Redbridge		Central		Woodford		Growth Corridor	
	002	022	017	035	004	009	030	034
Newham	5%	12%	9%	18%	5%	8%	14%	11%
Barking & Dagenham	6%	11%	7%	8%	4%	4%	11%	15%
Waltham Forest	9%	5%	7%	8%	13%	14%	6%	4%
Havering	9%	10%	8%	4%	4%	4%	6%	9%
Tower Hamlets	5%	7%	6%	7%	4%	6%	7%	6%
Other External LB	16%	14%	16%	16%	21%	21%	17%	14%
External LB Total	49%	58%	53%	61%	51%	57%	62%	59%
Non-LB External	21%	10%	18%	13%	26%	18%	14%	15%
External Total	70%	69%	71%	74%	76%	75%	76%	74%
Internal	30%	31%	29%	26%	24%	25%	24%	26%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Note: Some rounding errors

Data from the two MSOAs within these categories are considered to be broadly representative of the wider category. The two MSOA car driver trips for each origin have been averaged and the proportional split of trips to each internal and external destination has been calculated.

After initial feedback from LBR, the chosen MSOAs for the Woodford category were re-examined; however the selected MSOAs were confirmed to be representative of distributions across the wider Woodford category. **Appendix E** provides further explanation of the additional analysis undertaken.

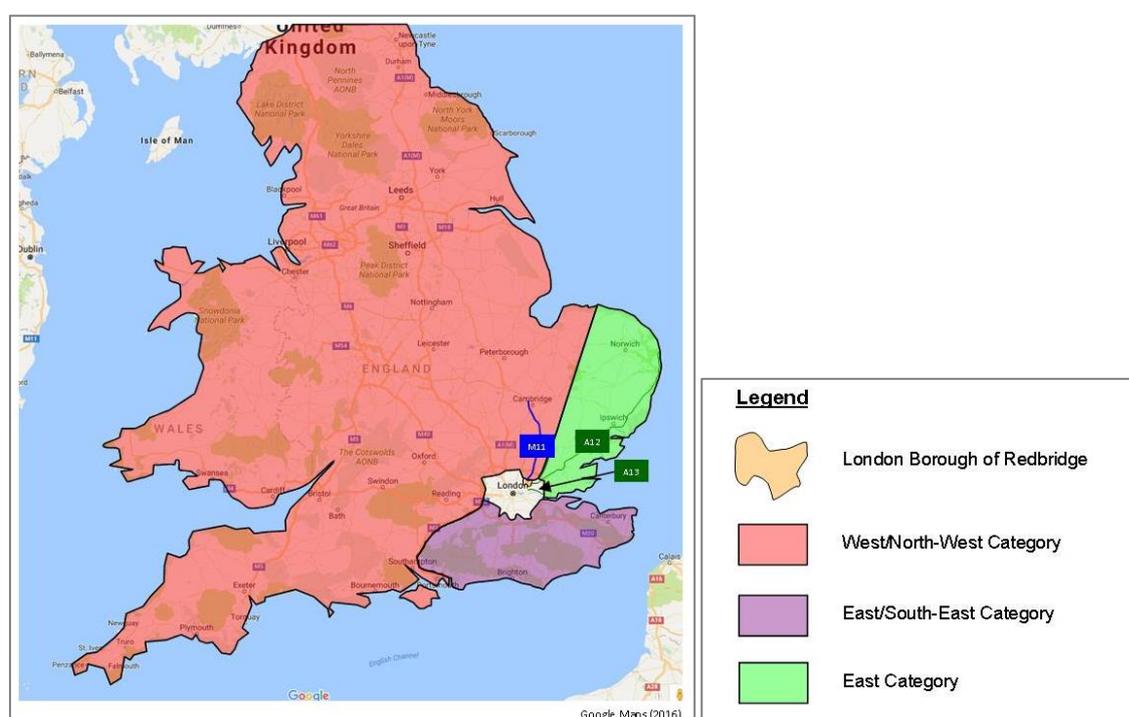
After amalgamation of the origin category's chosen MSOA, the proportional split of trips to each destination area has been calculated for each origin category. In order to reduce the over 400 external and 36 internal destination areas into a more manageable number of destinations, work place destination categories based upon dominant route corridors have been created.

For journeys external to Greater London, three destination categories have been created. These include:

- East (for destinations predominantly utilising the A12);
- West/North-west (for destinations predominantly utilising the M25 anti-clockwise, M4, M11, M1); and
- East/South-east (for destinations predominantly utilising the M25 clockwise, M3, M20).

Figure 5-4 shows the three destination categories for journeys external to Greater London.

Figure 5-4: Map Illustrating the External to Greater London Destination Categories

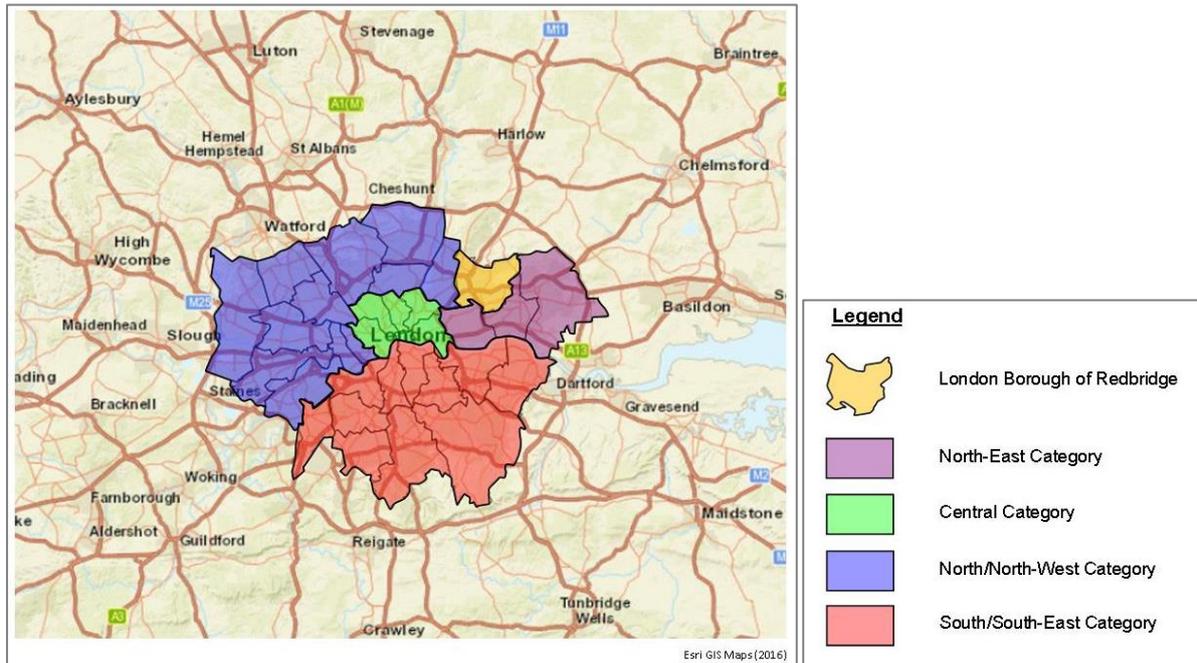


For journeys within Greater London (excluding Redbridge) four destination categories have been created including:

- Central (for destinations predominantly utilising the North Circular and A12 westbound);
- North/North-west (for destinations predominantly utilising the North Circular);
- North-east (for destinations predominantly utilising the North Circular and A12 eastbound); and
- South/South-east (for destinations predominantly utilising the North Circular and A12/High Road eastbound).

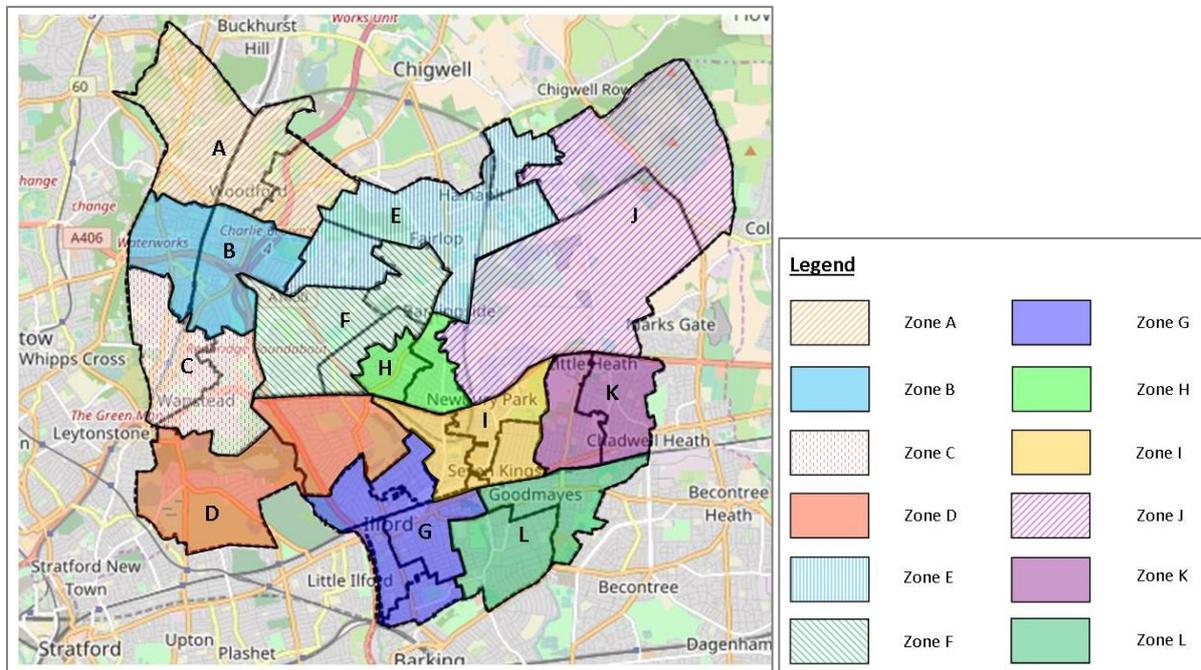
Figure 5-5 shows the four destination categories for journeys within Greater London, excluding Redbridge.

Figure 5-5: Map Illustrating the Greater London Destination Categories



Journeys to destinations within Redbridge Borough have been reduced from 36 MSOA destinations to 12 internal categories, broadly based upon primary employment destinations (such as Ilford, Goodmayes and Barkingside). The internal destination category 'zones' are presented in Figure 5-6.

Figure 5-6: Map Illustrating the Internal LB Redbridge Destination Categories



5.5.1 Trip Assignment

For each origin category, trips have been assigned to the local road network based on the most direct and quickest route. This is a first principles method and does not account for fluctuations in traffic flow or congestion which may affect route choice. Similarly the potential for 'rat running' has not been accounted for.

The assignment of home to work trips to destinations external to Redbridge has been based upon the route that vehicles will use to leave the Borough. Conversely, for home to work trips within Redbridge, trips have been

assigned from each of the origin areas to a central point within each zone (such as Ilford High Street for Zone G for example).

For each origin category, specific route assignment proportions have been allocated. For example, for journeys originating in the Growth Corridor towards the 'Central' Greater London category, journeys have been evenly split between the A12 westbound, North Circular northbound and North Circular southbound.

For the purpose of the trip assignment, it has been assumed that no new junctions providing direct access onto TfL roads, such as the A12, will be provided, as TfL has advised that the authority would wish to consider such arrangements on a case-by-case basis. Should a site promoter wish to access their site via the SRN / TLRN, detailed analysis and approval from TfL would therefore be required. All trips to/from development sites are therefore assumed to route via the local road network.

For the development opportunity site at Billet Road (development cluster ER6), which was subject to a high level transport study by Atkins (as previously discussed at **Chapter 3**), the majority of trips to/from the east (approximately 75%) have been assigned via the A12 / Hainault Road junction. This follows comments provided in a representation received by LBR regarding the local road network in the vicinity of the proposed development site.

It is recognised that some trips to/from the proposed site would route via the Billet Road / Whalebone Lane North junction and A12 'Moby Dick' junction, within the London Borough of Barking and Dagenham, however, a 75% distribution via Hainault Road is considered to provide a robust assessment and will take into account the cumulative impact of this and other development clusters in this area, including the King George and Goodmayes Hospital sites.

The trip assignment for each 'origin' category are listed in **Appendix F**.

5.5.2 Development Locations

For the purposes of the assignment within the spreadsheet model, all of the individual development sites listed in Appendix 1 of the Local Plan, of which there are more than 200, have been grouped into approximately 40 'development clusters', based upon their origin category (Central, Growth Corridor, East Redbridge and Woodford) and their assumed access onto the local road network.

It is important to note that access points for individual developments or clusters is likely to be different to those assumed in this assessment when developments reach the planning application stage. At that time, when individual sites come forward through the planning application process and more information is available, Transport Assessments and associated site specific trip generation and distribution will need to be produced based on the proposed arrangements.

Trip distribution proportions for each cluster have been based upon the cluster's origin and journeys have been assigned to destinations based upon the method described in above.

A plan showing the approximate location of each development cluster in terms of its access point to the local road network is provided in **Appendix G**.

5.6 2030 Do Something

The 2030 Do Something scenario includes all development sites as featured in Appendix 1 of the Pre-Submission Draft Local Plan, prepared by LBR. The full list of sites included in the spreadsheet model, along with the development cluster assigned to each site, is provided in **Appendix H**.

Table 5-11 summarises the number of trips generated by developments within each cluster (Central, Growth Corridor, East Redbridge and Woodford).

Table 5-11: Trip Generation per Development Cluster

Development Cluster	AM Peak			PM Peak		
	Arr	Dep	Total	Arr	Dep	Total
C1	19	55	74	44	19	64
C2	13	38	52	31	14	45
C3	8	22	29	18	8	25
C4	7	20	27	16	7	23
C5	10	28	38	23	10	32
C6	65	187	252	151	66	218
C7	1	2	2	1	1	2
C8	9	27	36	22	9	31
C10	17	50	68	41	18	58
ER1	56	160	216	130	57	186
ER3	105	301	406	244	107	351
ER4	42	119	161	97	42	139
ER5	60	173	233	140	61	201
ER6	2	4	6	4	2	5
GC1	50	143	193	116	51	166
GC2	63	181	245	147	64	211
GC3	28	81	109	66	29	94
GC4	8	23	31	19	8	27
GC5	70	200	269	162	71	233
GC6	44	127	171	103	45	148
GC7	16	46	62	37	16	53
GC8	38	108	146	88	38	126
GC9	0	0	0	0	0	0
GC10	25	71	96	58	25	83
GC11	96	274	369	222	97	319
GC12	14	41	56	34	15	48
GC13	57	164	221	133	58	191
GC14	7	21	28	17	7	24
GC15	79	227	306	184	80	264
GC16	4	11	15	9	4	13
GC18	14	41	55	33	15	48
GC19	29	84	113	68	30	98
GC20	23	67	91	55	24	78
GC22	6	16	22	13	6	19
GC23	1	3	3	2	1	3
W1	13	36	49	29	13	42
W2	6	18	24	14	6	21
W3	11	32	43	26	11	37
W4	1	4	5	3	1	5
W5	29	82	111	66	29	96
Total	1148	3284	4432	2663	1166	3829

Table 5-11 shows that the AM is expected to experience the highest demand in vehicle trips generated by the proposed development sites.

5.7 Spreadsheet Model Findings, by Junction and Link

This section of the report provides a summary of the spreadsheet model output which includes the net predicted increase in vehicle movements at key junctions and links in the study area. **Table 5-12** presents the net increase in traffic flow (in vehicles) as a percentage by junction and link in the 2030 Do Something scenario, compared against the 2030 Do Minimum scenario.

It should be noted that some locations are predicted to experience reductions in traffic in the 2030 Do Something scenario (which includes all of the proposed site allocations from Appendix 1 of the Local Plan) when compared against the 2030 Do Minimum. This is because in the Do Minimum case, the background growth forecasts presented in **Table 5-1** (1.1451 AM and 1.1530 PM) have been applied generically across the whole of the Borough whereas in the Do Something case, the growth forecasts have been adjusted down (1.0773 AM and

1.0783 PM: **Table 5-1**) to reflect the proposed development which has then been added at the specific locations identified by LBR.

This means that in the Do Minimum scenario, a flat level of growth is assumed to occur at all locations, across the Borough. However, in the Do Something scenario a reduced level of background growth is applied (hence there are some reductions between the Do Something and Do Minimum cases) to reflect the proposed site allocations which are concentrated in specific areas of the Borough. This therefore provides a better understanding of where the traffic associated with the proposed development is likely to be most concentrated on the highway network.

Table 5-12: Net Increase in Traffic Flow (Vehicle) by Junction and Link

Junction / Link Ref	Junction / Link Location	% Net Increase between the 2030 Do Minimum and 2030 Do Something scenarios	
		AM	PM
J1	Ilford Hill / Romford Rd / A406 Slip Roads	17.9%	15.1%
J2	Ilford Ln / Winston Way	23.7%	16.4%
J3	A123 Cranbrook Rd / High St / Chapel Rd / Winston Way / Roden St / A118 Ilford Hill	20.8%	14.1%
J4	Ley St / Griggs Approach	17.2%	10.8%
J5	Winston Way / Griggs Approach / Riches Road	24.4%	16.3%
J6	High Rd / A1083 Green Ln / Winston Way	23.5%	16.9%
J7	High Rd / Cameron Rd	29.9%	25.8%
J8	A118 High Rd / Barley Ln	28.3%	22.8%
J9	High Rd / Wangey Rd / Chadwell Heath Ln	13.6%	8.9%
J10	Gants Hill Rbt (A12 Eastern Ave / A1400 Woodford Ave / A123 Cranbrook Rd)	18.2%	11.3%
J11	A12 Eastern Ave / Horns Rd / Ley St	15.1%	9.7%
J12	A12 Eastern Ave / Aldborough Rd	19.9%	9.6%
J13	A12 Eastern Ave / Barley Ln / Hainault Rd	22.2%	14.3%
J14	A123 Cranbrook Rd / Tanners Ln	2.1%	-2.9%
J15	Fullwell Cross Rbt (Forest Rd / Craven Gdns / A123 High St / Fullwell Ave / Fencepiece Rd)	1.2%	-3.8%
J16	A1199 High Rd / B168 George Ln	-5.4%	-6.0%
J17	Redbridge Rbt (A12 / A406)	3.6%	0.5%
J18	Fairlop Rd / Clayhall Ave / Fremantle Rd / Looe Gdns	-4.3%	-4.7%
J19	Fremantle Rd / High St / Baron Gdns	5.3%	0.5%
J20	A1400 Woodford Ave / Longwood Gdns / Beehive Ln / Redbridge Ln East	-0.7%	-1.9%
J21	A1400 Woodford Ave / Clayhall Ave	-0.6%	-2.3%
J22	Charlie Browns Rbt (Chigwell Rd / A1400 Woodford Ave / Southend Rd)	-1.0%	-2.7%
L1	A118 High Rd, Ilford	34.1%	18.4%
L2	Aldborough Rd South	-0.3%	-3.5%
L3	A12 nr Barley Ln	0.2%	0.7%
L4	Billet Rd	24.5%	18.6%
L5	Fencepiece Rd	-5.6%	-6.4%
L6	A1400 Woodford Ave	-0.3%	-2.0%
L7	Barley Ln south of Grensham Dr	29.2%	43.4%

Within the table, the percentage impacts are shaded by their level of impact (ie. dark red indicates the highest level of impact with lighter shades of red and orange indicating less impact, green indicating neutral impact and dark green indicating reductions).

The spreadsheet model results indicate that the following junctions will experience a net increase of between 20-30% with the traffic forecast to be generated by all development sites considered in the 2030 Do Something scenario. The list is in order of percentage impact, with the highest impact first:

- Junction 7: High Road / Cameron Road (29.9% AM);
- Junction 8: A118 High Road / Barley Lane (28.3% AM);
- Junction 5: Winston Way / Griggs Approach / Riches Road; (24.4% AM)
- Junction 2: Ilford Lane / Winston Way (23.7% AM);
- Junction 6: High Road / A1083 Green Lane / Winston Way (23.5% AM);
- Junction 13: A12 Eastern Avenue / Barley Lane / Hainault Road (22.2% AM); and,
- Junction 3: A123 Cranbrook Road / High Street / Chapel Road / Winston Way / Roden Street / A118 Ilford Hill (20.8% AM).

The spreadsheet model results indicate that the following links will experience a net increase of over 20% with the traffic forecast to be generated by all development sites considered in the 2030 Do Something scenario. The list is in order of percentage impact, with the highest impact first:

- Link 7: Barley Lane south of Grensham Drive (43.4% PM);
- Link 1: A118 High Road, Ilford (34.1% AM); and,
- Link 4: Billet Road (24.5% AM).

As expected, the junctions and links within the growth corridors, particularly within Ilford are indicated to experience high levels of traffic growth with all development sites considered. From this, LBR may wish to consider further assessment of the various junctions and links to assess how much spare capacity they currently have and whether mitigation measures and improvements to infrastructure are required.

In the first instance, an assessment of the impact could be undertaken to understand the likely significance of the effect. This will determine whether the existing infrastructure (for example, a junction design) can accommodate the additional forecast demand. Where this is the case, no further analysis may be needed.

Should a significant effect be identified, for example in the form of additional delay or queuing, it may be appropriate for mitigation measures to be considered. These could include both 'soft' and 'hard' interventions and indeed, may include a mix of measures, rather than any one in isolation. Some examples of potential mitigation measures are provided below:

'Soft' Measures

- Accessibility improvements (to facilitate increased movement by sustainable transport modes such as walking, cycling and public transport)
- Provision of complimentary land uses to reduce the need for off-site travel, particularly at peak times
- Travel planning (including for example, promotion of sustainable travel, provision of lockers and changing facilities, high quality cycle parking, cycle hire / pool bikes, car clubs, electric charging points etc)
- Restriction of car parking provision (on site) and / or better management of off-site provision (CPZ / exemption for new residents to apply for permits)

'Hard' Measures

- Site access strategy and parking layout
- Bus priority measures
- Provision of new / additional sustainable transport infrastructure (wayfinding, cycle routes, bus stops, real time information, additional services and capacity etc)
- Review of existing highway configuration to provide additional capacity (road widening, junction design and operation for example, signalisation)

The full summary of results is provided in **Appendix I**.

5.8 Multi-Modal Trips

The bus and rail mode share proportions derived from Census data for the whole Borough have been used to forecast potential public transport demand for bus and rail / underground stations and stops nearest to the development clusters. For the purposes of this high level review, the same development clusters as used for the vehicular trip generation have been used for the multi-modal trip generation.

The agreed car driver trip rates for sites within PTAL rating 2-4 are shown in **Table 5-4**. For the multi-modal assessment, the other mode trip rates have been constrained to the total person trip rate from TRICS (**Table 5-3**) and have been distributed across the modes based on census mode share data. The person trip rates per dwelling for each mode are presented in **Table 5-13**.

Table 5-13: Person trip rates per dwelling (all modes)

Mode	AM			PM		
	Arr	Dep	Two-way	Arr	Dep	Two-way
Car Drivers (incl. Taxis)	0.076	0.216	0.292	0.175	0.077	0.252
Rail	0.115	0.509	0.624	0.270	0.209	0.478
Bus	0.021	0.092	0.112	0.049	0.037	0.086
Cycle	0.003	0.011	0.014	0.006	0.005	0.012
Walk	0.018	0.081	0.099	0.043	0.032	0.076
Total Person Trip Rate	0.232	0.909	1.141	0.543	0.36	0.903

5.8.1 Multi-Modal Results Summary (Bus & Rail / Underground)

Table 5-14 presents the bus stops forecast to experience the highest additional demand in the 2030 Do Something scenario and the development clusters nearest to these stops. The AM peak is expected to have the highest impact on bus trips and therefore the results represent the AM peak only.

Table 5-14: Bus Stops with highest demand (2030 Do Something, AM Peak)

Bus Stop Location	Nearest Development Cluster	Number of Development Trips
Roden Street Stop C	GC2	135
Iford Hill Stop F	GC1	106
Iford Broadway Stop L	GC5	74
Iford Sainsbury's Stop G	GC3	74
The Lowe Stop H	ER3	74
Turnstall Avenue Stop P	ER3	74

As expected, the locations experiencing the most demand are those with origins in the growth corridor, Iford as this is the area with the highest concentration of development sites. The demand nearest to development cluster ER3 near to Hainault and Fairlop could be explained by the limited number of bus stops in this area, meaning that demand for public transport is focused on a smaller number of stops and therefore the impact is more concentrated.

Table 5-15 presents the rail / underground stations in order of those forecast to experience the highest demand in the 2030 Do Something scenario. The AM peak is expected to have the highest impact on rail / underground trips and therefore the results represent the AM peak only. The full table of bus, rail / underground station demand results and associated plans are provided in **Appendix J**.

Table 5-15: Rail / Underground Station Demand (2030 Do Something, AM Peak)

Rail Station	Nearest Development Cluster(s)	Number of Development Trips
Iford	GC1, GC2, GC3, GC4, GC5, GC6, GC7, GC8, GC9, GC20	3855
Newbury Park	C6, ER5, GC19, GC22	1317
Seven Kings	GC10, GC11, GC12, GC18	1075
Goodmayes	ER1, GC13, GC14, GC23	905
Hainault	ER3	820
Chadwell Heath	GC15, GC16	697

The rail stations along the Crossrail growth corridor (Ilford, Seven Kings, Goodmayes and Chadwell Heath) and Central Line Underground stations of Newbury Park and Hainault are expected to experience the highest levels of increased demand in the 2030 Do Something scenario.

This high level review aims to give an indication of where demand from new development sites will be concentrated at the bus stops and rail / underground stations within Redbridge.

It is recognised that this first principles approach is not dynamic in that it assumes that mode share recorded in 2011 will remain the same in 2030 and does not account for potential modal shift. The impact at the aforementioned stops and stations will depend on available capacity on public transport services in 2030 as well as behavioural changes in method of travel.

However, this review serves to highlight locations where further analysis in terms of the cumulative impact of development sites on public transport provision, in collaboration with public transport operators and bodies including TfL may be required.

As with the additional traffic demand discussed earlier in this chapter, in the first instance, an assessment of the impact of additional public transport demand in this case could be undertaken to understand the likely significance of the effect. This will determine whether the existing services and infrastructure (for example, a bus service) can accommodate the additional forecast demand. Where this is the case, no further analysis may be needed.

Should a significant effect be identified, for example in the form of excess demand for a service, it may be appropriate for mitigation measures to be considered. These could include the need for additional capacity to be introduced or for new routes / services to be implemented.

6. Qualitative Assessment

6.1 Introduction

This section focuses on the proposed Local Plan Appendix 1 site allocations and the relative opportunities and constraints to travel to and from each of the sites, in a sustainable manner. It should be noted that the review has been based upon existing conditions, for example, current accessibility levels and access to local services and amenities. In this regard, the review does not take account of potential improvements which may be delivered in the future either by the proposed development(s) itself or by other improvements in the area.

Each of the site allocations has been grouped into 'development clusters', this is based on the group of sites being within the same 'origin' category (i.e. Central, Growth Corridor, East Redbridge and Woodford) employed in **Chapter 5**. This has resulted in 39 development clusters which have been reviewed in the following section with regard to:

- Location in the Borough;
- Number of sites in the cluster;
- Units per site and total for cluster;
- Site access arrangements;
- Average PTAL; and
- Accessibility to walking, cycling, public transport and local services / facilities.

The sites within each development cluster have subsequently been reviewed and evaluated against the pre-defined criteria which was agreed with LBR, as set out in **Table 6-1** below. The assessment matrix enables a red, amber or green rating to be assigned to each criterion for the site, giving consideration to site access arrangements, location in relation to services and facilities, PTAL rating and access to sustainable transport networks.

Table 6-1: Assessment Matrix for Potential Development Clusters, for Transport and Accessibility

Criteria Ref	Criteria	Red	Amber	Green
A	Access to Existing Highway	No direct access to the existing highway	Site adjacent to the existing highway	Site has an existing access to the highway
B	PTAL	PTAL 0-1b	PTAL 2-4	PTAL 5-6b
C	Proximity to Local Centre	≥ 800m of walking to local centre	Between 200m and 800m of walking to local centre	≤ 200m of walking to local centre
D	Proximity to Existing Pedestrian Networks	No immediate access to existing pedestrian networks	Some access to existing unpaved pedestrian networks	Full access to existing paved pedestrian networks
E	Proximity to Existing Cycle Networks	No immediate access to existing cycle networks	Some access to existing cycle networks	Full access to existing cycle networks
F	Proximity to Existing Bus Network	≥ 640m from existing bus network	Between 400m and 640m walk from existing bus network	≤ 400m walk from existing bus network
G	Proximity to Existing Train Services	≥ 960m from existing train services	Between 480m and 960m walk from existing train services	≤ 480m walk from existing train services

6.2 Origin Category: Woodford

The Woodford origin category includes five development clusters and a total of 31 sites in the northwest of the Borough, around the local centres of South Woodford, Woodford and Woodford Green. There are two London Underground stations within this area; Woodford and South Woodford. A plan showing the location of the development clusters and their sites is provided at **Appendix K**.

6.2.1 Development Cluster W1: South Woodford (West)

This development cluster which is located to the south and west of South Woodford centre consists of seven sites, comprising a total of 166 units. The sites within this development cluster have PTALs ranging from 1b to 4 and are within walking distance of the local centre of South Woodford. A cycle route runs along the length of the A199 Woodford Road, providing a connection between Woodford Green to the north and Snaresbrook to the south. Bus services also run along the A199 Woodford Road and all of the sites within this cluster are within 400m of an existing bus stop.

Table 6-2: Development Cluster W1: South Woodford (West)

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
109	29 Glebelands Avenue, South Woodford	G	A	G	G	G	G	G
110	27 Glebelands Avenue, South Woodford	G	A	G	G	G	G	G
112	5 Bedford Road, Church End	G	A	G	G	G	G	G
113	Eaton Court, High Road, South Woodford	G	A	G	G	G	G	A
115	31 Marlborough Road and South Woodford Station Car Park	G	A	G	G	A	G	G
185	38 Grove Hill, South Woodford	G	A	A	G	G	G	A
186	52 Tavistock Road, South Woodford	G	R	A	G	G	G	A

6.2.2 Development Cluster W2: Chigwell Road, South Woodford

This development cluster consists of one site, 120 Chigwell Road, which has an indicative development capacity of 82 units, and is located to the south of the North Circular / A1400 roundabout to the east of South Woodford. The site has a PTAL of 2 and has access to the existing highway from Chigwell Road. The site is located approximately 800m from South Woodford centre, where there are a range of shops and services.

Bus stops are located outside of the site along Chigwell Road. South Woodford Underground station is approximately 800m from the site. The Roding Valley Way cycle route runs through Roding Valley Park to the east of the site, providing a connection between Wanstead to the south and Roding Valley to the north.

Table 6-3: Development Cluster W2: Chigwell Road, South Woodford

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
116	120 Chigwell Road, South Woodford	G	A	A	G	G	G	A

6.2.3 Development Cluster W3: South Woodford

There are a total of four sites within this development cluster comprising a total of 146 indicative units, located around South Woodford and the B168. The sites within this development cluster have PTALs ranging from 3-4, with all of the sites having access to the existing highway. The sites are located within walking distance of the services and facilities in South Woodford, including a range of shops, supermarkets, restaurants and a cinema.

Station Estate, KGM House and 43-45 George Lane are all within 200m of South Woodford station, where there is access to the Central Line. The Holy Trinity Church is approximately 400m from the station. The area is well served by buses, with services along the B168 and all sites being within walking distance of a bus stop. The centre of South Woodford is located around the B168 and this provides a northwest-southeast link serving the surrounding supermarkets, shops, South Woodford station and residential properties.

The sites have limited access to cycle networks in this area of the Borough however, with 43-45 George Lane and the Holy Trinity Church sites in particular having no immediate access to the cycle network.

Table 6-4: Development Cluster W3: South Woodford

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
108	KGM House, 14 Eastwood Close, South Woodford	G	A	G	G	A	G	G
114	43-45 George Lane, South Woodford	G	A	G	G	R	G	G
117	Station Estate, off George Lane, South Woodford	G	A	G	G	A	G	G
148	Holy Trinity Church, Hermon Hill, South Woodford	G	A	A	G	R	G	G

6.2.4 Development Cluster W4: Grove Road, South Woodford

There are two sites within this development cluster. 73-77 Grove Road & 15-25 Carnarvon Road both have a PTAL of 1a and an indicative development capacity of nine units. 127 High Road has a PTAL of 4 and comprises a total of seven units.

Both sites are located north of the North Circular Road with access from Grove Road. The sites are in close proximity to bus stops which are located along the North Circular Road. The 127 High Road site is within 960m of South Woodford Underground station; however the site on Grove Road and Carnarvon Road is beyond the 960m threshold. The High Road site is also directly adjacent to a strategic cycle route which runs along the A199.

Table 6-5: Development Cluster W4: Grove Road, South Woodford

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
111	Rear of 127 High Road, South Woodford	G	A	G	G	G	G	A
184	73-77 Grove Road & 15-25 Carnarvon Road, South Woodford	G	R	A	G	R	G	R

6.2.5 Development Cluster W5: Woodford, Woodford Green and Woodford Bridge

There are a total of 17 sites within this development cluster, with a total indicative development capacity of 324 units. The PTAL levels for these sites range between 0-3 and therefore are generally located within low PTAL areas, in the vicinity of the local centres of South Woodford, Woodford, Woodford Bridge and Woodford Green.

Underground services in the area are available from Woodford and South Woodford Underground stations; however eight of the sites are over the recommended 960m walking distance from a rail station. The sites generally have good access to bus services. Sites around the A104 High Road at Woodford Green benefit from a strategic cycle route which runs along the High Road and those near the M11 are close to the Roding Valley Way cycle route.

Table 6-6: Development Cluster W5: Woodford, Woodford Green and Woodford Bridge

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
150	Woodford Green Post Office, Johnston Road	G	A	G	G	G	G	A
151	76-76A Gordon Road, South Woodford	G	R	R	G	R	G	A
160	Garage at top of Hillside Avenue	G	A	G	G	R	G	G
162	The Horse and Well Public House, 566-568 High Road	G	A	R	G	G	G	R
167	663 Chigwell Road, Woodford Bridge	A	A	G	G	A	G	R
168	191 Whitehall Road, Woodford Green	G	A	R	G	G	G	R
169	R/o The White Hart Public House, Chigwell Road, Woodford Bridge	G	R	G	G	A	G	R
202	Rayleigh Road Garage Site, Woodford Green	G	A	A	G	R	A	A

190	Works at Maybank Road & Chigwell Road, Woodford	G	R	R	G	R	G	A
194	Charteris Road Car Park & Woodford Station Car Park, Woodford	G	A	G	G	R	G	G
196	Hills of Woodford, 536-564 High Road, Woodford Green	G	A	R	G	G	G	R
200	Woodford Library, Snakes Lane, Woodford Green	G	A	G	G	R	G	G
201	Land Rear of 19 Aldersbrook Road, Wanstead	G	R	R	G	G	G	R
205	56 Grenville Gardens, Woodford Green	G	R	R	G	R	G	R
206	Site at Roding Lane North, Woodford Green	G	R	R	G	G	R	R
120	Southend Road and Maybank Road	G	A	A	G	R	G	A
207	Madeira Grove Clinic	G	A	G	G	R	G	G

6.3 Origin Category: Growth Corridor

The Growth Corridor origin category includes 20 development clusters and a total of 109 sites, located around the local centres of Ilford, Seven Kings, Goodmayes and Chadwell Heath and their respective rail stations, with this corridor set to benefit from the introduction of Crossrail. A plan showing the location of the development clusters and their sites is provided at **Appendix L**.

6.3.1 Development Cluster GC1: Ilford Hill

There are a total of seven sites within this development cluster, with a total indicative development capacity of 944 units. The sites are located to the north and south of Ilford Hill, to the west of Ilford town centre and all have a high PTAL score of 6a, indicating they are highly accessible to public transport, including bus and rail services, as well as being close to the local centre of Ilford. Cycle routes are available along Ilford Hill and Mill Road, which form part of a strategic north-south route in the Borough.

Table 6-7: Development Cluster GC1: Ilford Hill

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
4	Depot Mill Road/Mill House, Ilford Hill	G	G	A	G	G	G	G
6	If Bar 71 Ilford Hill	A	G	G	G	G	G	G
9	Peachy House, 39 Ilford Hill, Ilford	A	G	G	G	G	G	G
10	51-69 Ilford Hill (Valentines House)	A	G	G	G	G	G	G

12	Land between Mill Road & the Railway Line, Ilford	G	G	A	G	G	G	G
36	73-85 Ilford Hill and 1-7 Cranbrook Road	A	G	G	G	G	G	G
37	Central Library Service Yard	G	G	G	G	G	G	A

6.3.2 Development Cluster GC2: Southwest Ilford

There are a total of five sites within this development cluster, located to the southwest of Ilford town centre, with an indicative development capacity of 1199 units. All of the sites have a PTAL of 6A, indicating they are located in a highly accessible area. The sites are within walking distance of the local services and facilities located in Ilford town centre, Ilford rail station and bus stops located along Chapel Road, Winston Way and Cranbrook Road. Cycle routes are also available along Riverdene Road, Roden Street and Ilford Street.

Table 6-8: Development Cluster GC2: Southwest Ilford

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
1	Sainsbury's, Roden Street, Ilford	G	G	G	G	G	G	G
3	Britannia Music - 60-70 Roden Street and land between Chapel Road and Roden Street, Ilford	G	G	A	G	G	G	G
13	40 Ilford Hill, Ilford	G	G	G	G	G	G	G
18	22-32 Chapel Road, Ilford	G	G	G	G	G	G	G
19	Rear of 2-34 Riverdene Road	G	G	A	G	G	G	G

6.3.3 Development Cluster GC3: Central Ilford (West)

Three sites are located within this cluster within Ilford town centre, with an indicative development capacity of 535 units. The sites are highly accessible to public transport and also to the range of local services and facilities in Ilford town centre.

Table 6-9: Development Cluster GC3: Central Ilford (West)

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
8	Site bounded by Chapel Road, High Road and Clements Lane	G	G	G	G	G	G	G
14	Land adjacent to Clements Lane and Clements Road	G	G	G	G	G	G	G

20	20 Clements Lane, Ilford, IG1 2QY	G	G	G	G	G	G	G
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6.3.4 Development Cluster GC4: Ilford Lane

This development cluster comprises a total of 10 sites, predominantly located along Ilford Lane, to the south of Ilford town centre. Together the sites have an indicative development capacity of 104 units and have PTALs ranging between 1b and 2.

Many of the sites are existing retail land uses located adjacent to the existing carriageway. Ilford Lane has a number of supermarkets and local services along its length and is also a bus corridor, with services running north-south between Barking and Ilford.

With the exception of the site on Uphall Road, which is closer to Barking rail station, all of the sites are over 960m walking distance from Ilford or Barking rail station, although access to the station is available by bus.

Table 6-10: Development Cluster GC4: Ilford Lane

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
22	288 Ilford Lane, Ilford	A	A	G	G	G	G	R
25	210 Ilford Lane, Ilford	A	A	G	G	G	G	R
29	239 Ilford Lane, Ilford	A	A	G	G	G	G	R
134	Car park at Medway Close, Ilford	G	A	A	G	G	G	R
135	300-302 Ilford Lane, Ilford	G	A	G	G	G	G	R
136	407 Ilford Lane	A	A	A	G	G	G	R
139	Car Park, Daffodil Gardens, Ilford	G	R	A	G	G	A	R
191	410-418 Ilford Lane, Ilford	G	A	A	G	G	G	R
195	330-348 Uphall Road, Ilford	G	A	R	G	G	G	A
204	408 Ilford Lane, Ilford	G	A	A	G	G	G	R

6.3.5 Development Cluster GC5: Central Ilford

There are a total of eight sites in this development cluster, with an indicative development capacity of approximately 1320 units. This cluster consists of sites located around the High Road in Ilford town centre, with the majority within 480m of Ilford station and all being within 400m walking distance of a bus stop. The sites have very high PTAL scores, all scoring either 6a or 6b, as is expected for sites located in Ilford's retail centre.

Table 6-11: Development Cluster GC5: Central Ilford

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
32	Town Hall Car Park	G	G	G	G	G	G	G
33	Land bounded by Clements Road, Chadwick Road and Postway Mews	G	G	G	G	G	G	G
7	193-207 High Road, Ilford (Harrison and Gibson)	A	G	G	G	G	G	G
26	Rear of 2-4 Clements Road	G	G	G	G	G	G	G
31	Land adjacent to Cranbrook Road, High Road and the railway, incorporating Station Road (Includes Bodgers)	A	G	G	G	G	G	G
39	Kenneth More Theatre and 10-11 Janice Mews	A	G	G	G	G	G	G
47	Britannia Car Park, Clements Road/Albert Road	G	G	G	G	G	G	A
42	112-114 High Road, 18-20 Postway Mews, Ilford	A	G	G	G	G	G	G

6.3.6 Development Cluster GC6: The Exchange, Ley Street & Hainault Street

There are a total of four sites within this development cluster, which is located to the north of High Road within Ilford town centre. The sites comprise a total of approximately 838 indicative units. All of the sites have a PTAL score of 6a, indicating they are located in a highly accessible area within Ilford town centre. Two of the sites are within 480m of Ilford rail station and all of the sites are within 400m of an existing bus stop.

Table 6-12: Development Cluster GC6: The Exchange, Ley Street & Hainault Street

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
2	The Exchange Shopping Centre, High Road, Ilford	G	G	G	G	G	G	G
5	Ley Street car park and bus depot, Ilford	G	G	G	G	G	G	A
28	1-7 Hainault Street, Ilford	A	G	G	G	G	G	A

40	68-126 Ley Street & Opal Mews, Ilford (Phases 1 & 2)	A	G	A	G	G	G	G
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6.3.7 Development Cluster GC7: High Road, Ilford (between Griggs Approach and Clements Road)

There are a total of seven sites within this development cluster which include 303 proposed units. The sites are originally retail in nature and are located along the High Road in Ilford town centre. The sites all have a PTAL of 6a, indicating they are located in a highly accessible area. Bus stops are located along High Road and all of the sites are within 960m of Ilford rail station.

Table 6-13: Development Cluster GC7: High Road, Ilford (between Griggs Approach and Clements Road)

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
11	226-244 High Road, Ilford	G	G	G	G	G	G	A
17	1 Riches Road, Ilford	G	G	G	G	G	G	A
21	202-224 High Road Ilford	G	G	G	G	G	G	A
23	180 High Road, Ilford	A	G	G	G	G	G	A
24	213-215 High Road, Ilford	A	G	G	G	G	G	A
30	187 - 191 High Road (Argos), Ilford	A	G	G	G	G	G	G
46	177 - 185 High Road (JJB/Boots), Ilford	A	G	G	G	G	G	G

6.3.8 Development Cluster GC8: High Road & Retail Park

There are three sites within this development cluster which are located along the A118 High Road in Ilford, and have a total indicative development capacity of 528 units. The sites have a PTAL ranging from 4-5 and are in close proximity to a range of local services and facilities located along High Road.

A strategic cycle route runs along the A118 High Road, providing a link between Ilford and Seven Kings, Goodmayes and Chadwell Heath. The A118 High Road is also a bus corridor and provides a direct link to the centre of Ilford and Ilford rail station.

Table 6-14: Development Cluster GC8: High Road & Retail Park

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
15	260 – 268 High Road, Ilford	A	A	G	G	G	G	A
45	300 - 318 High Road, Ilford	G	G	G	G	G	G	A

38	Redbridge Enterprise and Ilford Retail Park (Phases 1 & 2)	G	A	G	G	G	G	A
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6.3.9 Development Cluster GC10: High Road (between Cricklefield Place and Green Lane)

This development cluster consists of a total of seven sites located around the A118 High Road between Cricklefield Place and Green Lane. The sites have an indicative development capacity of 329 units and have PTAL scores of 2 to 3. All of the sites have access to bus routes which serve the A118 High Road, as well as a designated cycle route which runs along the length of High Road. The sites either have their own access or are located adjacent to the existing highway.

Table 6-15: Development Cluster GC10: High Road (between Cricklefield Place and Green Lane)

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
49	Charter House, 450 High Road, Ilford	G	A	A	G	G	G	A
51	Recorder House, 531-549 High Road and 501 High Road, Ilford	G	A	A	G	G	G	A
55	463 High Road	G	A	A	G	G	G	A
60	123 Francis Avenue, Ilford	A	A	A	G	G	G	A
62	Balfour House, 394-398 High Road Ilford	A	A	G	G	G	G	A
89	Ilford County Court, High Road, Ilford	A	A	A	G	G	G	A
93	395-405 High Road, Ilford	A	A	G	G	G	G	R

6.3.10 Development Cluster GC11: Green Lane

There are a total of seven sites within this development cluster generally located to the north and south of Green Lane, close to Ilford Sports Club. The first site, The Ford Sports Grounds, is located further north, to the east of Newbury Park. The sites have an indicative development capacity of 1012 units and have PTALs ranging between 0 and 3.

All of the sites have good access to the bus network, with bus services operating along both Green Lane and the A118 High Road in proximity to the sites. Four of the sites are within 960m of a rail station; however three are over this recommended walking distance. Local services are available along the A118 High Road, with the majority of the sites being within 800m of the local centre.

Table 6-16: Development Cluster GC11: Green Lane

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
68	The Ford Sports Grounds (Phases 1 & 2)	G	R	R	G	A	G	A
140	127-129 Stanley Road	A	A	A	G	A	G	A
142	47 Park Road, Ilford	A	A	A	G	G	G	R
143	Land adjacent to 2 Eynsford Road, Seven Kings	A	A	A	G	A	G	A
181	225-227 Green Lane, Ilford	G	A	R	G	G	G	A
183	1-3 Pelham Road, Ilford	A	A	A	G	G	G	R
209	TA Centre, Gordon Road, Ilford	G	A	A	G	G	G	R

6.3.11 Development Cluster GC12: High Road, West of Seven Kings

This development cluster consists of a total of six sites, with the majority located near to the A118 High Road in Seven Kings. The sites have an indicative development capacity of 192 units and have PTAL scores ranging from 2-4. The sites have good access to the local services and facilities located along the High Road, as well as bus stops and Seven Kings rail station. A designated cycle lane also runs along the A118 High Road.

Table 6-17: Development Cluster GC12: High Road, West of Seven Kings

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
52	567-571 High Road	G	A	G	G	G	G	G
58	Seven Kings Methodist Church and Hall, Balmoral Gardens, Seven Kings	A	A	G	G	G	G	G
64	514-518 High Road, Ilford	A	A	G	G	G	G	G
81	530-560 High Road, Ilford	A	A	G	G	G	G	G
82	573-603 High Road, Ilford	G	A	G	G	G	G	G
132	Craven Gardens Car Park, Craven Gardens, Barkingside	G	A	G	G	A	G	A

6.3.12 Development Cluster GC13: High Road, East of Seven Kings

This development cluster consists of a total of five sites, located along the A118 High Road between Seven Kings and Goodmayes. The sites have an indicative development capacity of 758 units and have PTAL scores of 3-4. The sites are located within the local centre and therefore have good access to local services and facilities, such as supermarkets and retail stores. Bus stops and a designated cycle lane are located along the A118 High Road and the sites are also within 480m walking distance of either Seven Kings or Goodmayes rail stations.

Table 6-18: Development Cluster GC13: High Road, East of Seven Kings

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
48	Seven Kings Car Park & Lorry Park, High Road, Seven Kings	G	A	G	G	G	G	G
70	645 - 861 High Road, Seven Kings	A	A	G	G	G	G	G
73	674-700 High Road, Seven Kings	G	A	G	G	G	G	G
74	706 - 720 (Homebase) High Road, Seven Kings	G	A	G	G	G	G	G
83	Telephone Exchange, Corner of Kingswood Road and High Road, Goodmayes	G	A	G	G	G	G	G

6.3.13 Development Cluster GC14: Goodmayes Road

There are a total of six sites within this development cluster with an indicative development capacity of 96 units. Five of the sites are located around Goodmayes rail station, to the east and west of Goodmayes Road, and one of the sites is located on Longbridge Road, approximately 1.6km to the south of Goodmayes rail station. The sites have PTAL scores of 3-4 and are located close to local services and amenities as well as the rail station and bus stops.

Table 6-19: Development Cluster GC14: Goodmayes Road

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
54	Former Lord Napier Pub, 521 Green Lane	G	A	G	G	G	G	G
57	25-31 Goodmayes Road	A	A	G	G	G	G	G
59	58-64 Goodmayes Road, Goodmayes	A	A	G	G	G	G	G
84	55 - 61 Goodmayes Road, Goodmayes	A	A	G	G	G	G	G
90	Car Park rear of 39 Goodmayes Road,	G	A	G	G	G	G	G

	Goodmayes							
125	Rear of 561-567 Longbridge Road	G	A	R	G	A	G	R

6.3.14 Development Cluster GC15: A118 High Road between Goodmayes and Chadwell Heath

There are a total of ten sites within this development cluster, with a total indicative development capacity of 1049. The sites are located both north and south of the A118 High Road between Goodmayes and Chadwell Heath, and have PTAL scores ranging between 2 and 4 with the higher values relating to sites located closer to the rail stations and centres of Goodmayes and Chadwell Heath. All of the sites have good access to a strategic cycle route which runs along the A118 High Road as well as the bus services that operate along this route.

Table 6-20: Development Cluster GC15: A118 High Road between Goodmayes and Chadwell Heath

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
56	Chadwell Heath Service Station, 1023 High Road, Chadwell Heath	G	A	A	G	G	G	A
65	1145 (Alfa Romeo) High Road, Chadwell Heath	A	A	G	G	G	G	G
69	822 (Tesco) High Road, Goodmayes	G	A	G	G	G	G	G
71	Chadwell Heath Retail Park, High Road, Chadwell Heath	G	A	A	G	G	G	G
72	Goodmayes Retail Park, High Road, Goodmayes	G	A	A	G	G	G	G
75	Metropolitan Police, 919 - 925 High Road, Chadwell Heath	G	A	A	G	G	G	A
79	Car Park and Works, corner of Cedar Park Gardens and Wangey Road, Chadwell Heath	G	A	G	G	G	G	G
86	1171 (Kia) High Road, Chadwell Heath	A	A	G	G	G	G	G
88	Car Park junction of Wangey Road/Cedar Gardens, Chadwell Heath	G	A	G	G	G	G	G

92	Corner of Wangey Road and Station Road, Chadwell Heath	A	A	G	G	G	G	G
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6.3.15 Development Cluster GC16: Chadwell Heath

This development cluster consists of three sites, located around Chadwell Heath station to the east of the Borough. The sites have an indicative development capacity of 52 units and have PTAL scores ranging between 2 and 4. All of the sites are within 480m walking distance of Chadwell Heath rail station, where there are services between London Liverpool Street, Brentwood and Gidea Park.

Bus stops are available along Station Road and the A118 High Road. The only cycle route in the area is along the A118 High Road to the north of the sites. The car park adjacent to Chadwell Heath station has an existing access junction onto Station Road, whilst the other sites are located alongside the highway.

Table 6-21: Development Cluster GC16: Chadwell Heath

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
87	Car Park adj. to Chadwell Heath Station, Chadwell Heath	G	A	A	G	A	G	G
91	Hinds Head PH, 2A Burnside Road and 76-80 Valance Avenue, Chadwell Heath	A	A	A	G	A	G	G
95	8a Cedar Park Gardens, Chadwell Heath	A	A	G	G	G	G	G

6.3.16 Development Cluster GC18: Seven Kings & Ley Street

This development cluster consists of a total of four sites which have an indicative development capacity of 190 units. Three of the sites are located along Cameron Road / High Road, adjacent to Seven Kings rail station, the fourth site is located on Ley Street, to the northwest of Seven Kings. The sites have PTALs ranging from 3-4, and have good access to bus services and cycle routes, with cycle routes running along Ley Street, Cameron Road and High Road. The three sites on Cameron Road / High Road have very good access to Seven Kings rail station, with the fourth site being within 960m of Newbury Park Underground station.

Table 6-22: Development Cluster GC18: Seven Kings & Ley Street

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
53	Shanon Centre, 14 Cameron Road, Seven Kings	G	A	G	G	G	G	G
78	4-12 Cameron Road and 625-643, High Road	G	A	G	G	G	G	G

85	16 -32B Cameron Road and 625-643, High Road	A	A	G	G	G	G	G
145	480-482 Ley St, 22-30 Lynn Road, Ilford	G	A	A	G	G	G	A

6.3.17 Development Cluster GC19: Ley Street & Eastern Avenue, Newbury Park

This development cluster consists of three sites with an indicative development capacity of 388 units. Two of the sites are located off Ley Street, which links Ilford to the south with Newbury Park to the north and the third site is located adjacent to the eastbound carriageway of Eastern Avenue, to the west of Newbury Park. The sites have PTALs between 1b-3, and are all within 400m walking distance of a bus stop.

Newbury Park is the closest rail station to the sites, however this is beyond the recommended 960m walking distance for two of the sites. A local cycle route runs along Ley Street, providing a connection to Ilford to the south and to Barkingside to the north, as the route continues along Horns Road.

Table 6-23: Development Cluster GC19: Ley Street & Eastern Avenue, Newbury Park

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
146	Ley Street House, 497-499 Ley Street, Ilford	G	A	A	G	G	G	R
94	617-631 Eastern Avenue (Junction Yoxley Drive)	A	A	A	G	G	G	A
178	Ley Street Council Depot	G	A	A	G	G	G	R

6.3.18 Development Cluster GC20: Cranbrook Road & Wanstead Park Road, Ilford

Seven sites make up this development cluster located to the north of Ilford town centre. The sites have an indicative development capacity of 406 units. The sites on Cranbrook Road and Mansfield Road have high PTALs (6a) and are within 200m walking distance of the local centre of Ilford, as well as being in close proximity to bus stops along Cranbrook Road and Ilford rail station.

The sites on Wanstead Park Road have lower accessibility to Ilford town centre and public transport, with a PTAL score of 2. There are a number of local services and amenities along Cranbrook Road and the sites are within walking distance of the services available within Ilford town centre, including the rail station.

Table 6-24: Development Cluster GC20: Cranbrook Road & Wanstead Park Road, Ilford

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
34	51-71 Cranbrook Road, Ilford	G	G	G	G	G	G	G
35	245-275 Cranbrook Road, Ilford	G	G	G	G	G	G	A

27	48 Cranbrook Road	G	G	G	G	G	G	G
43	Between Mansfield House & 2 Mansfield Road, Ilford	A	G	G	G	G	G	G
44	7 Morland Road, Ilford IG1 4JU	A	G	G	G	G	G	G
172	61-63 & rear of 59-91 Wanstead Park Road, IG1 3TQ	A	A	A	G	G	A	A
177	Land r/o 41-57 Wanstead Park Road, Ilford	G	A	A	G	G	A	A

6.3.19 Development Cluster GC22: Newbury Park

Two sites make up this development cluster, located to the south of Eastern Avenue near Newbury Park station. Both sites have a PTAL of 3 and are in close proximity to bus services along Eastern Avenue and Newbury Park station, which provides access to Central line underground services. Local services and facilities including an Aldi supermarket, local convenience stores and restaurants are located to the west of the sites around Ley Street / Eastern Avenue.

Table 6-25: Development Cluster GC22: Newbury Park

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
50	Newbury House, 890-900 Eastern Avenue	G	A	A	G	A	G	G
96	Suffolk Court, Newbury Park	G	A	R	G	A	G	G

6.3.20 Development Cluster GC23: Eastwood Road & Barley Lane, Goodmayes

The two sites within this development cluster are located on Eastwood Road and Barley Lane, to the north of the A118 High Road and Goodmayes rail station. The sites both have a PTAL of 3 and have a total development capacity of 12 units. The sites are in close proximity to a range of services along High Road and bus services are available from High Road or Barley Lane. Goodmayes rail station, where there are services between London Liverpool Street and Brentwood, is within 480m walking distance of both sites.

Table 6-26: Development Cluster GC23: Eastwood Road & Barley Lane, Goodmayes

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
61	19 Eastwood Road, Seven Kings	A	A	G	G	G	G	G
63	45 Barley Lane, Seven Kings	G	A	A	G	G	G	G

6.4 Origin Category: Central

The Central origin category includes nine development clusters and a total of 45 sites in the west of the Borough, around the local centres of Gants Hill, Newbury Park, Wanstead and Barkingside. A plan showing the location of the development clusters and their sites is provided at **Appendix M**.

6.4.1 Development Cluster C1: Gants Hill / Eastern Avenue

There are six sites within this development cluster comprising a total of 274 indicative units, located around Gants Hill and the A12 Eastern Avenue. The sites have PTALs ranging from 4 – 6a, with all of the sites having access to the existing highway. All of the sites are located along Eastern Avenue, aside from Aerodene House.

The sites are all located either within the town centre or within walking distance of the services and facilities in the centre of Gants Hill, which include a range of shops, supermarkets and restaurants. Overall, the sites have good access to public transport as well as the local centre and cycle networks.

Table 6-27: Development Cluster C1: Gants Hill / Eastern Avenue

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
100	Aerodene House, 41-55 Perth Road, Gants Hill	G	G	G	G	G	G	G
103	Eastern Avenue Storage Buildings, Eastern Avenue, Gants Hill	G	A	G	G	G	G	G
105	Wentworth House, Eastern Avenue, Gants Hill	G	A	G	G	G	G	G
106	Commercial House, Eastern Avenue, Gants Hill	G	G	G	G	G	G	G
107	Montrose House, Eastern Avenue, Gants Hill	G	G	G	G	G	G	G
182	330- 332 Eastern Avenue, Ilford	G	A	G	G	G	G	G

6.4.2 Development Cluster C2: Wanstead

There are a total of eight sites within this development cluster located in the Wanstead area, comprising a total of 160 indicative units.

The sites within this development cluster have PTALs ranging from 1b – 5. Six of the sites have access to the existing highway. Seven of the sites are located within 800m walking distance of local services and amenities, such as shops and restaurants. All of the sites within this development cluster have access to existing cycle routes.

Table 6-28: Development Cluster C2: Wanstead

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
163	Land adj. 1 Elm Close Wanstead	G	A	A	G	A	G	G
164	Land adjacent to 1 Seagry Road, Wanstead	G	A	G	G	G	G	G
165	17 Aldersbrook Road Wanstead	G	R	R	G	G	G	R
166	1-5 Station Approach, Wanstead	G	A	G	G	G	G	G
170	Wanstead Police Station, Spratt Hall Road, Wanstead	R	G	A	G	A	G	A
199	Wanstead Hospital, Makepeace Road, Wanstead	G	A	A	G	G	G	A
175	Wanstead Station Car Park	R	G	G	G	G	G	G
176	Snaresbrook Station Car Park	G	A	G	G	G	G	G

6.4.3 Development Cluster C3: Clayhall / Cranbrook

There are two sites within this development cluster comprising a total of 101 indicative units, located around Eastern Avenue / Woodford Avenue.

The sites have PTALs ranging from 3-4, with both of the sites having access to the existing highway. The sites are all located either within the centre or within walking distance of the services and facilities in Gants Hill, including a range of shops, supermarkets and restaurants.

A strategic cycle network runs along the A12 Eastern Avenue past the site located at Redbridge Station, and continues along A1400 Woodford Avenue passing the site located on the corner of Beehive Drive and Woodford Avenue giving both sites good accessibility to the cycle network.

Table 6-29: Development Cluster C3: Clayhall / Cranbrook

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
147	Corner of Beehive Lane/Woodford Avenue, adj. 8 Spurway Parade	G	A	G	G	G	G	G
192	Redbridge Station, Eastern Avenue, Redbridge	G	A	G	G	G	G	G

6.4.4 Development Cluster C4: Barkingside / Aldborough

There are a total of six sites within this development cluster comprising a total of 107 indicative units, located across Barkingside, Aldborough, Clementswood and Fairlop. The sites within this development cluster are widely distributed, and therefore have PTALs ranging from 2 – 6a. All of the sites except for City House have access to the existing highway, and all of the sites are within walking distance of a bus stop.

Table 6-30: Development Cluster C4: Barkingside / Aldborough

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
16	City House, 9-17 Cranbrook Road	R	G	G	G	G	G	G
101	395-397 Eastern Avenue, Gants Hill	G	A	G	G	G	G	G
123	61-63 High Street, Barkingside	G	A	G	G	G	G	A
130	Queen Victoria House, Cranbrook Road, Barkingside	G	A	A	G	G	G	A
153	723-733 Cranbrook Road	G	A	A	G	A	G	R
188	Land r/o 73-83 Little Gearies, Gants Hill	G	A	A	G	G	G	R

6.4.5 Development Cluster C5: Gants Hill Central

This development cluster which is located around the roundabout with Gants Hill Station consists of two sites, which comprise a total of 184 indicative units.

The site located on the corner of Woodford Avenue / Eastern Avenue has a PTAL score of 5, and is located in the centre of Gants Hill and within walking distance of local services and amenities, such as Gants Hill Station. The site located on the corner of Woodford Avenue / Cranbrook Road North has a PTAL score of 4, and is located south of Gants Hill station and within walking distance of the local centre and services including shops and restaurants. A National Cycle Route runs along A12 Eastern Avenue and A1400 Woodford Avenue giving both sites access to the existing Cycle Network.

Table 6-31: Development Cluster C5: Gants Hill Central

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
102	Woodford Avenue/Eastern Avenue Corner, Gants Hill	G	G	G	G	G	G	G
104	Woodford Avenue/Cranbrook Road North, Gants Hill	G	G	G	G	G	G	G

6.4.6 Development Cluster C6: East Redbridge

There are a total of 14 sites within this development cluster comprising a total of 848 indicative units, located around Newbury Park and Barkingside.

The sites within this development cluster have PTALs ranging from 2–3, with nine of the sites having access to the existing highway. All of the sites apart from the site located on Chase Lane / Perkins Road are located either within the town centre or within walking distance of the centre and local services and facilities including a range of shops, supermarkets and restaurants. The development cluster as a whole has good connectivity to local transport modes, and pedestrian networks.

Table 6-32: Development Cluster C6: East Redbridge

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
76	Land at Newbury Park Station, Eastern Avenue	G	A	A	G	G	G	G
77	B&Q Store, Springfield Drive, Barkingside	G	A	G	G	G	G	A
99	Car Showroom, Eastern Avenue, Gants Hill	R	A	G	G	G	G	A
121	New Mossford Site, Part of Barnardos Village	G	A	A	G	G	G	G
131	366-380 Horns Road, Barkingside	G	A	A	G	G	G	G
126	Station Approach/Carlton Drive, Barkingside	G	A	A	G	G	G	G
138	107-111 Netley Road, Aldborough	G	A	A	G	G	G	G
141	6-10 Tring Close, Newbury	R	A	A	G	G	G	A
155	134 Horns Road, Barkingside	G	A	A	G	G	G	A
179	Chase Lane/Perkins Road, Newbury Park	G	A	R	G	G	G	A
124	Public Conveniences Horns Road	R	A	G	G	G	G	A
66	Newbury Park Station Car Park - West	G	A	A	G	G	G	G
98	Access Road adjacent to western Newbury Park Station	G	A	A	G	G	G	G
208	713 Newbury Park (Holiday Inn), Newbury Park	G	A	G	G	G	G	G

6.4.7 Development Cluster C7: West Barkingside / North Clayhall

There are a total of two sites within this development cluster comprising a total of seven indicative units. The sites within this development cluster have PTALs ranging from 1b – 3, and both have access to the existing highway.

The site located at 2 Mossford Green is located nearby to Barkingside town centre and local amenities, and within walking distance of bus stops and Barkingside rail station; whereas Heathcote Clinic is located in a more residential area with poor access to train services and local amenities.

Table 6-33: Development Cluster C7: West Barkingside / North Clayhall

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
122	2 Mossford Green, Barkingside	G	A	G	G	A	G	A
189	Heathcote Clinic, Heathcote Avenue, Clayhall	G	R	R	G	A	G	R

6.4.8 Development Cluster C8: Fullwell Cross, Barkingside

There are a total of two sites within this development cluster comprising a total of 123 indicative units, located in Barkingside near to Fullwell Cross roundabout.

Both of the sites within this development cluster have PTALs of 3, and have access to the existing highway. The sites are located within the town centre and therefore have access to local amenities, and they are also all located within walking distance of local public transport services including bus and train services from Fairlop Underground Station.

Table 6-34: Development Cluster C8: Fullwell Cross, Barkingside

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
128	Coral Bingo Club, 2a Fairlop Road, Barkingside	G	A	G	G	G	G	A
129	Fullwell Cross Health Centre, Fencepiece Road, Barkingside	G	A	G	G	G	G	A

6.4.9 Development Cluster C10: Southend Road Industrial Estate

There are a total of three sites within this development cluster comprising a total of 229 indicative units. The Tesco store has a PTAL of 2, and Westview Drive and Repton Court have a lower PTAL of 1b. All of the sites have access to the existing highway.

The site off Westview Drive is located in a residential area close to the A1400, opposite which is a Tesco superstore and Southend Industrial Estate. Bus stops are located in close proximity to the site along the A1400

and an existing cycle route also runs along part of the A1400, with the Roding Valley Way passing to the west of the site through Roding Valley Park.

The site at Repton Grove is not in close proximity to any local centres or train stations; however there are bus services available outside the site from Fullwell Avenue. A cycle route also runs through Claybury Park, which is located to the north of the site.

Table 6-35: Development Cluster C10: Southend Road Industrial Estate

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
119	Tesco Store, Southend Road, Woodford Green	G	A	R	G	G	G	R
149	Land r/o 3, 5 and 7 Westview Drive,	G	R	R	G	G	G	R
152	Repton Court, Claire House and Fullwell Avenue	G	R	R	G	G	G	R

6.5 Origin Category: East Redbridge

The East Redbridge origin category includes five development clusters and a total of 26 sites in the north and east of the Borough, around the local centres of Hainault, Goodmayes and Chadwell Heath. A plan showing the location of the development clusters and their sites is provided at **Appendix N**.

6.5.1 Development Cluster ER1: Chadwell Heath / Goodmayes

There are a total of four sites in this development cluster which comprise a total of 584 indicative units. The sites are located around the areas of Chadwell Heath and Goodmayes. The sites located within this development cluster have relatively low PTALs ranging between 1a – 2. The only site within walking distance to the local centre and its amenities is the Polygram Building on Chadwell Heath Lane. All the sites however are within close proximity to the cycle network.

Table 6-36: Development Cluster ER1: Chadwell Heath / Goodmayes

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
67	Land in and around King George/Goodmayes Hospitals	R	A	R	A	G	G	R
80	Dunelm Nursing Home and Grovelands Day Centre, Grove Road, Chadwell Heath	R	R	R	G	A	G	R
144	Land adjacent. to 24-26 Fields Park Crescent, Chadwell Heath	G	R	R	G	G	G	R

180	Polygram Building, Unit 1 Clyde Works, Chadwell Heath Lane, Chadwell Heath	R	R	A	G	G	G	R
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6.5.2 Development Cluster ER3: Hainault

This development cluster consists of 19 sites, which have a combined total of 1314 indicative units. The sites are located predominately in Hainault, with a few sites falling just outside of the area into the wards of Fairlop and Barkingside. The sites located within this development cluster have PTALs ranging between 1a - 3. All of the sites are within walking distance of the local bus network.

Table 6-37: Development Cluster ER3: Hainault

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
133	Oakfield, Forest Road, Barkingside	G	A	A	A	G	G	G
154	Garage Block 8-10 Wannock Gardens, Hainault, Ilford	R	R	R	G	A	G	R
157	Kelvin Hughes, New North Road, Hainault	G	A	G	G	A	G	G
158	Covered Reservoir, New North Road, Hainault	R	A	R	G	A	G	R
159	Marlyon Road Housing Estate, Hainault, Ilford, IG6 3XN.	G	R	R	G	A	G	R
161	113-115 Manford Way	G	A	G	G	G	G	G
171	Rear of 591 New North Road	G	A	A	G	G	G	R
187	250-260 Fencepiece Road	G	A	A	G	G	A	A
193	Capital Gate, 320 New North Road	G	A	A	G	G	G	A
197	Alfred's Head PH, Manford Way, Hainault	R	A	G	G	G	G	R
198	Land between 135-137 Brocket Way, Hainault	A	R	A	A	A	G	R
203	Land at Baywood Square Garages, Hainault (2 sites)	R	R	R	G	A	G	R
210	Hainault LUL Depot, Thurlow Gardens,	G	A	G	A	A	G	G

	Hainault							
211	153-221 Manford Way, Hainault	G	A	G	G	A	G	R
212	Land to rear of Church, Foremark Close, Hainault	R	R	A	A	G	G	R
213	Library and Community Centre, Manford Way, Hainault	G	A	G	G	G	G	R
173	Hainault Station Car Park	G	A	A	G	R	G	G
174	Land adjacent to Hainault Station	G	A	A	G	R	G	G
127	Fairlop Station Car Park	G	A	A	A	G	G	G

6.5.3 Development Cluster ER4: Five Oaks Lane

There is one site in this development cluster, which is located on Five Oaks Lane in Chigwell and has an indicative capacity of 425 units. The site has a PTAL of 0. The site is located adjacent to Hainault Forest Country Park, but has no access to the existing highway. This site already has planning permission.

Table 6-38: Development Cluster ER4: Five Oaks Lane

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
156	Land at Five Oaks Lane, Chigwell	R	R	R	R	A	R	R

6.5.4 Development Cluster ER5: Billet Road

There is one site in this development cluster, located on Billet Road in Romford. The site has an indicative development capacity of 800 units. The Billet Road site has a PTAL of 2, and has access to the existing highway.

Table 6-39: Development Cluster ER5: Billet Road

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
97	Area of Open Land at Billet Road and Surrounding Area (Phases 1 & 2)	G	R	R	G	A	G	R

6.5.5 Development Cluster ER6: Newton Industrial Estate

This development cluster consists of one site, which is located within the Newton Industrial Estate and has an indicative development capacity of 16 units. The site has a low PTAL score of 1b, however is within 400m of the bus network.

Table 6-40: Development Cluster ER6: Newton Industrial Estate

Site ID	Site Name	A Access to Existing Highway	B PTAL	C Proximity to Local Centre	D Proximity to Existing Pedestrian Networks	E Proximity to Existing Cycle Networks	F Proximity to Existing Bus Network	G Proximity to Existing Train Services
137	Newton Industrial Estate, Eastern Avenue	G	R	R	A	A	G	R

6.6 Summary

Of the five core growth areas which have been identified by LBR; Ilford, the Crossrail Corridor, Gants Hill, South Woodford and Barking, it is clear that a significant number of the proposed site allocations and associated new homes are focused within the main urban areas of the Borough. These most notably include Ilford and the Crossrail Corridor, where public transport accessibility and access to other services and amenities is at its highest.

The remainder of the proposed development is proposed on other sites, outside of these main growth areas, in other parts of the Borough. Again, it is clear that where possible, sites have been chosen which have reasonable access to public transport and local amenities. Some sites however, are inherently less accessible with these tending to be focused around Woodford as well as some locations within East Redbridge.

The main issues with these sites are typified by having reduced access to local centres, cycle networks and rail services with the latter often relating to sites being located further than the arbitrary 960m walk threshold from a station, which is the measure employed by TfL within the PTAL calculation.

It should be noted that the review presented in this chapter has been based upon existing conditions, for example, current accessibility levels and access to local services and amenities. In this regard, the review does not take account of potential improvements which may be delivered in the future either by the proposed development(s) itself or by other improvements in the area.

This is particularly relevant for green belt sites such as Billet Road and the Hospital sites where due to a lack of existing development; permeability, accessibility and access to services is inherently lower in these locations than in some other areas. The delivery of development on these sites will have the potential to improve permeability and provide accessibility enhancements which will be of benefit to the proposed sites, as well as the existing communities in these areas.

There are a number of measures which can be introduced to improve accessibility and promote mode choice and amongst others the following should be considered for all sites as they come forward for development, irrespective of their location:

- Preparation of site masterplans to ensure that site access(es) facilitate direct and convenient links for travel by foot and cycle, to form connections with existing pedestrian and cycle networks, including links with bus stops and rail stations;
- Provision of facilities on site to promote sustainable travel habits including lockers, changing and drying facilities, accessible high quality cycle parking, information concerning travel options and the services available, electric car charging points and car club provision and constrained car parking provision where this is needed;
- Requirement for site Travel Plans;
- Contributions to improve access to public transport services; and,
- Opportunities for integration with other improvements, for example Crossrail

7. Conclusions

AECOM was commissioned by the London Borough of Redbridge (LBR) to prepare transport evidence in connection with their emerging Local Plan. The purpose of this study has been to consider the impact on the highway network from planned housing growth in the Borough up until 2030.

The remit of the report has been to present a high level cumulative assessment of the development proposed within the Local Plan for the Borough; it does not assess specific impacts in detail. The report seeks to consider the proposed growth and extent of potential transport impacts, in terms of location and level of impact. This information should help inform LBR of areas where mitigation may be required and further work concerning the form and level of funding associated with this should be undertaken, prior to site delivery.

LBR has been developing its Local Plan since 2011 and based on its own assessment of need, is proposing to deliver 18,936 homes (including 2,700 from windfall sites) over the Plan period. Appendix 1 of the Local Plan provides a list of the development opportunity sites that have the potential to deliver mixed use development during the plan period, up to 2030. All of the proposed allocation sites listed in Appendix 1 of the Local Plan have been expressed by LBR as a calculated value of residential units, for comparative purposes.

In particular, LBR is promoting growth in the Borough's Investment and Growth Areas, including:

- Ilford;
- Crossrail Corridor;
- Gants Hill;
- South Woodford; and
- Barkingside.

Notwithstanding this, growth within Redbridge as with many parts of London has already placed increasing pressure upon the local transport system which includes congestion on key roads and considerable demand upon some public transport services.

The introduction of Crossrail has the potential to provide some relief to both the existing highway and public transport services, but will also be likely to attract further activity into the Borough. A key focus for transport and for new development is for it to therefore promote sustainable travel practices including:

- Reviewing the need to travel and where travel is necessary, at what time;
- Travelling by walking or cycling;
- Travelling by bus, underground or rail;
- Travelling by more sustainable vehicle choices, such as taxi, electric vehicle or car clubs; and lastly,
- Travelling by private vehicle, when other options are less viable

All new development shall be encouraged to be designed to promote sustainable travel and link in to and / or improve walking, cycling and public transport connectivity. Developments will be expected to introduce and monitor travel plans which set ambitious targets to reduce the dependency of new residents upon private car travel. LBR will also seek to manage car parking provision at new development in combination with these objectives.

When developers come forward associated with the proposed site allocations, the appropriate planning processes will need to be followed. For all sites where traffic impacts are anticipated, LBR will request Transport Statements or Transport Assessments to be produced and the remit of these documents should be scoped with the authority, as well as TfL and the HE where appropriate, prior to their preparation and submission. The preparation of the TS / TA reports will allow additional detail concerning the specific proposals (ie. site access, land use(s) and accommodation schedule, location and travel characteristics) to be evaluated.

It may therefore be appropriate for detailed modelling to be undertaken at that stage, including capacity analysis and the design of mitigation schemes, where this is identified as being necessary. LBR will seek transport contributions from developers where site specific mitigation is identified as being required.

The quantitative and qualitative assessments which have been reported within this document should help to identify the potential sites and growth areas where mitigation and further analysis are most likely to be required.

7.1.1 Quantitative Assessment

From the initial inception of the project, AECOM has worked closely with officers of LBR in their roles as the local planning authority and local highway authority. Following scoping discussions and background research, a spreadsheet model was developed for LBR. The model has subsequently been used as the basis for a series of quantitative assessments, enabling the extent of potential transport impacts to be identified.

The over-riding objective of the spreadsheet model has been for it to provide a flexible, functional mechanism for analysing transport patterns in LBR within the context of the baseline situation, the committed situation going forward and the proposed situation based on the implementation of planned growth within the Borough up to 2030.

The model has subsequently been used as the basis for a quantitative assessment of traffic impact at the identified junctions and links forming the highway network study area.

The model has been developed using a combination of recent and new survey data, for a study area comprising 22 junctions and seven links which was agreed in advance with LBR. The method for including background traffic growth forecasts within the spreadsheet model was discussed with LBR. Whilst it is recognised that TEMPRO can over-estimate traffic growth levels, particularly in London, it was agreed with LBR that in order to ensure a robust assessment when considering the 2030 future year scenario, traffic growth forecasts would be applied from DfT's Trip End Model TEMPRO. TfL has confirmed that this approach should ensure a worst-case assessment, although indicated that lower growth factors may be appropriate.

A standardised set of trip rates have been applied to all proposed development sites which following initial analysis of the TRICS database, were based on a combination of recently approved committed development scheme assessments. The rates are taken for PTAL areas 2-4 and variation factors for more and less accessible areas have been applied. Sensitivity surveys of recently completed development sites in the Borough were also undertaken, which have verified the rates used. This method was agreed with LBR and whilst noting that the use of TRICS follows best practice, TfL were supportive of the use of observed site data to verify the proposed rates.

For the purposes of trip distribution and assignment within the spreadsheet model, all of the individual development sites listed in Appendix 1 of the Local Plan, of which there are more than 200, have been grouped into approximately 40 'development clusters', based upon their origin category (Central, Growth Corridor, East Redbridge and Woodford) and their assumed access onto the local road network. It is important to note that the access points for individual developments or clusters is likely to be different to those assumed in this assessment when developments reach the planning application stage. At that time Transport Assessments and associated site specific trip generation and distribution will need to be produced based on the proposed arrangements and it is recognised that other tools are available and may be able to be used to help inform these more detailed assessments.

In terms of vehicular trips, the quantitative assessment has found that the pattern of growth is predicted to vary across the Borough. Intrinsically, the most significant increases in traffic demand are reported in the main growth areas and are also concentrated upon key strategic routes such as the A12 and A118 High Road, with lower levels of growth predicted on non-principal roads in the Borough.

This indicates that the levels and distribution of growth proposed by the Local Plan will likely have the most significant impacts within the main urban areas and town centres. Going forward, the feasibility of further intensifying growth in these areas, as proposed by the Mayor, will therefore need to be considered further.

It should also be noted that some areas are predicted to experience reductions in traffic in the 2030 Do Something scenario (which includes all of the proposed site allocations from Appendix 1 of the Local Plan) when compared against the 2030 Do Minimum. This is because in the Do Minimum case, background growth forecasts have been applied generically across the whole of the Borough whereas in the Do Something case, the growth forecasts have been adjusted down to reflect the proposed development which has then been added at the specific locations identified by LBR.

The spreadsheet model results indicate that seven junctions are predicted to experience a net increase of between 20-30% with the traffic forecast to be generated by all development sites considered in the 2030 Do Something scenario. The list below is in the order of percentage impact, with the highest impact first:

- Junction 7: High Road / Cameron Road (29.9% AM);
- Junction 8: A118 High Road / Barley Lane (28.3% AM);

- Junction 5: Winston Way / Griggs Approach / Riches Road; (24.4% AM)
- Junction 2: Ilford Lane / Winston Way (23.7% AM);
- Junction 6: High Road / A1083 Green Lane / Winston Way (23.5% AM);
- Junction 13: A12 Eastern Avenue / Barley Lane / Hainault Road (22.2% AM); and,
- Junction 3: A123 Cranbrook Road / High Street / Chapel Road / Winston Way / Roden Street / A118 Ilford Hill (20.8% AM)

A further six junctions are predicted to experience an increase in traffic demand of between 10-20%, with the remaining nine junctions experiencing less than a 10% increase or a reduction in demand, as a result of the growth calculations mentioned above.

The spreadsheet model results indicate that three of the seven links assessed will experience a net increase of over 20% with the traffic forecast to be generated by all development sites considered in the 2030 Do Something scenario. The list is in order of percentage impact, with the highest impact first:

- Link 7: Barley Lane south of Grensham Drive (43.4% PM);
- Link 1: A118 High Road, Ilford (34.1% AM); and,
- Link 4: Billet Road (24.5% AM).

The remaining four links are predicted to experience relatively neutral impacts, or reductions in traffic demand, again noting the growth calculations mentioned above.

It is acknowledged that the predicted levels of development traffic represent potential unconstrained demand and does not therefore reflect a general lack of excess highway capacity at key locations and at the peak times. It should also be noted that the assessment represents the end-state, at 2030 which represents the end of the Plan period. As such, no consideration to the potential phasing of development is considered.

The findings also do not allow for potential emerging travel habits, such as modal shift or peak spreading, and do not account for potential trip internalisation for example on larger sites, where there will be the potential for complimentary land uses to be provided, thus reducing the need for off-site trips to be made. In this regard, the predicted increases in unconstrained traffic demand need to be treated with some caution, when interpreting the results.

Notwithstanding this, the findings do provide useful indications of the key locations where traffic demand arising from the proposed site allocations is likely to be at its most concentrated and further analysis can be conducted to attribute the levels of impact to particular development clusters as well as sites specifically.

In the first instance, an assessment of the impact could be undertaken to understand the likely significance of the effect. This will determine whether the existing infrastructure (for example, a junction design) can accommodate the additional forecast demand. Where this is the case, no further analysis may be needed.

Should a significant effect be identified, for example in the form of additional delay or queuing, it may be appropriate for mitigation measures to be considered. These could include both 'soft' and 'hard' interventions and indeed, may include a mix of measures, rather than any one in isolation. Some examples of potential mitigation measures are provided below:

'Soft' Measures

- Accessibility improvements (to facilitate increased movement by sustainable transport modes such as walking, cycling and public transport)
- Provision of complimentary land uses to reduce the need for off-site travel, particularly at peak times
- Travel planning (including for example, promotion of sustainable travel, provision of lockers and changing facilities, high quality cycle parking, cycle hire / pool bikes, car clubs, electric charging points etc)
- Restriction of car parking provision (on site) and / or better management of off-site provision (CPZ / exemption for new residents to apply for permits)

'Hard' Measures

- Site access strategy and parking layout
- Bus priority measures
- Provision of new / additional sustainable transport infrastructure (wayfinding, cycle routes, bus stops, real time information, additional services and capacity etc)
- Review of existing highway configuration to provide additional capacity (road widening, junction design and operation for example, signalisation)

Within the Local Plan document, LBR has already identified that it will seek to use the CIL (Community Infrastructure Levy) as a mechanism for deriving funding for community infrastructure, including transport projects. This will exclude site specific works however, which developments will be expected to contribute towards either wholly or in combination with other developments, to be assessed on a site-by-site basis.

Local transport improvements proposed within Redbridge up to 2016/17 are listed within the second Spending Plan period of Local Implementation Plan 2. To complement the Mayor of London's Transport Plan, they include improvements to:

- Road corridors;
- Shopping parades;
- Traffic management;
- Cycleways; and,
- Pedestrian connections

LBR identify however, that there are no 'big ticket' capital items such as new highways and much of the current expenditure is targeted towards managing and maintaining existing assets. Within the Infrastructure Delivery Plan LBR state that "The Council will also work with Transport for London to smooth traffic flow on the Transport for London Road Network and Strategic Road Network and address congestion hot spots associated with growth in the Borough" and that "Locally the need for many physical transport improvements associated with individual development will be determined on a site specific basis".

In terms of multi-modal trips, the quantitative assessment has sought to identify those locations where further analysis in terms of the cumulative impact of development sites on public transport provision, in collaboration with public transport operators and bodies including TfL may be required.

As with the additional traffic demand discussed earlier in this chapter, in the first instance, an assessment of the impact of additional public transport demand in this case could be undertaken to understand the likely significance of the effect. This will determine whether the existing services and infrastructure (for example, a bus service) can accommodate the additional forecast demand. Where this is the case, no further analysis may be needed.

Should a significant effect be identified, for example in the form of excess demand for a service, it may be appropriate for mitigation measures to be considered. These could include the need for additional capacity to be introduced or for new routes / services to be implemented.

In terms of demand for travel by bus, the locations experiencing the most predicted additional demand are those with origins in the Ilford growth corridor, as this is the area with the highest concentration of development sites. Predicted demand for bus travel has also been shown to be quite concentrated at development cluster ER3, near to Hainault and Fairlop. This is expected to be associated with a more limited number of bus stops in this area, meaning that demand for public transport is focused on a smaller number of stops and therefore the impact appears to be more concentrated.

Working with TfL the Council has already identified the desirability of providing a new bus service linking the Barley Lane side of the King George / Goodmayes Hospital site with Aldborough Road south. The intention in this case would be the bus to run along the A12, going past Newbury Park station.

In terms of rail travel, all four existing stations are expected to experience increases in rail demand; most notably at Ilford station which will receive around 40% of the forecast additional demand. The three remaining stations, Seven Kings, Goodmayes and Chadwell Heath, are predicted to receive around 10% each of the remaining additional demand. To a lesser extent, the Central underground line is also expected to receive additional

passenger demand from growth, although this will be distributed across a greater number of stations, including those on the Hainault Loop branch, where overcrowding is less prominent. The two underground stations predicted to receive the greatest increases in passenger numbers based on the proposed site allocations are Newbury Park and Hainault; both on the Hainault Loop branch.

It is understood the Crossrail is expected to release capacity on the Central and District underground lines, as commuters switch services to take advantage of the new destinations which will be accessible by Crossrail. In this regard Crossrail will add new service capacity as well as create additional capacity on existing services, with figures of around 10% overall additional capacity on the London Underground expected⁴.

In addition, the New Tube for London programme is expected to increase Central Line capacity through improved signalling and the potential to provide walk-through trains. It has been indicated that these measures may achieve capacity increases of around 25% across the Central Line⁵.

It is recognised that the first principles approach that has been adopted is not dynamic in that it assumes that mode share recorded in 2011 will remain the same in 2030 and does not therefore account for potential modal shift, for example arising through travel planning measures and improved accessibility (ie. Crossrail). The impact at the aforementioned stops and stations will depend on available capacity on public transport services in 2030 as well as behavioural changes in method of travel.

7.1.2 Qualitative Assessment

Qualitative assessments have also been undertaken of the potential site allocations, with each of the sites evaluated against a set of pre-defined criteria including accessibility to public transport, local services and walking and cycling routes.

The qualitative assessment has identified that of the five core growth areas which have been identified by LBR; Ilford, the Crossrail Corridor, Gants Hill, South Woodford and Barkingside, a significant number of the proposed site allocations and associated new homes are focused within the main urban areas of the Borough. These most notably include Ilford and the Crossrail Corridor, where public transport accessibility and access to other services and amenities is at its highest.

The remainder of the proposed development is proposed on other sites, outside of these main growth areas, in other parts of the Borough. Where possible, it is clear that sites have been chosen which have reasonable access to public transport and local amenities. Some sites however, are inherently less accessible with these tending to be focused around Woodford as well as some locations within East Redbridge.

The main issues with these sites are typified by having reduced access to local centres, cycle networks and rail services with the latter often relating to sites being located further than the arbitrary 960m walk threshold from a station, which is the measure employed by TfL within the PTAL calculation.

It should also be noted that the review that has been undertaken has been based upon existing conditions, for example, current accessibility levels and access to local services and amenities. In this regard, the review does not take account of potential improvements which may be delivered in the future either by the proposed development(s) itself or by other improvements in the area.

This is particularly relevant for green belt sites such as Billet Road and the Hospital sites where due to a lack of existing development, permeability, accessibility and access to services is inherently lower in these locations than in some other areas. The delivery of development on these sites will have the potential to improve permeability and provide accessibility enhancements which will be of benefit to the proposed sites, as well as the existing communities in these areas.

There are a number of measures which can be introduced to improve accessibility and promote mode choice and amongst others the following should be considered for all sites as they come forward for development, irrespective of their location:

- Preparation of site masterplans to ensure that site access(es) facilitate direct and convenient links for travel by foot and cycle, to form connections with existing pedestrian and cycle networks, including links with bus stops and rail stations;

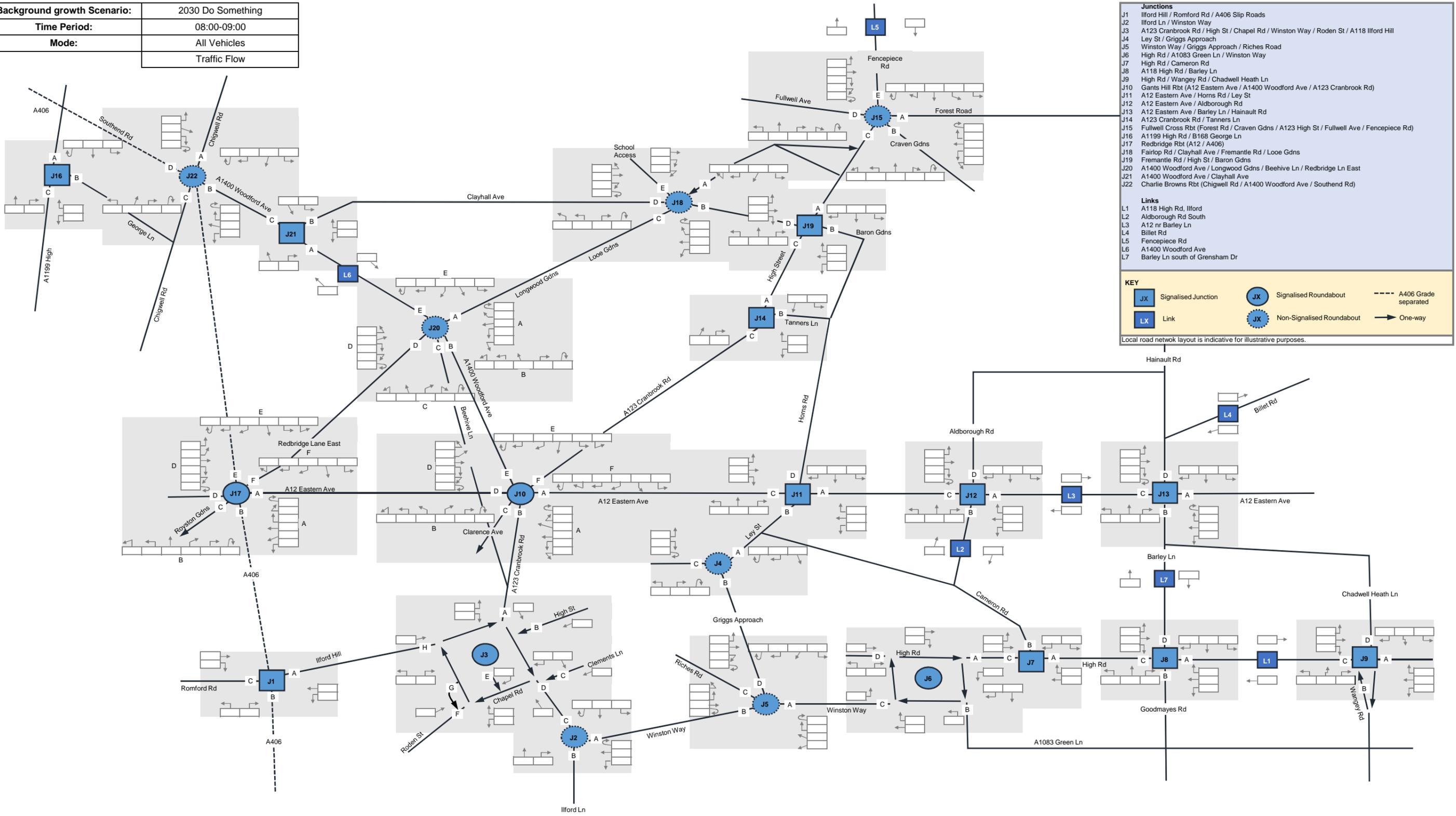
⁴ Crossrail Business Case Update: Summary Report (July 2011)

⁵ TfL Budget 2016/17 and Business Plan (March 2016)

- Provision of facilities on site to promote sustainable travel habits including lockers, changing and drying facilities, accessible high quality cycle parking, information concerning travel options and the services available, electric car charging points and car club provision and constrained car parking provision where this is needed;
- Requirement for site Travel Plans;
- Contributions to improve access to public transport services; and,
- Opportunities for integration with other improvements, for example Crossrail

Appendix A

Background growth Scenario:	2030 Do Something
Time Period:	08:00-09:00
Mode:	All Vehicles
	Traffic Flow



Junctions

- J1 Ilford Hill / Romford Rd / A406 Slip Roads
- J2 Ilford Ln / Winston Way
- J3 A123 Cranbrook Rd / High St / Chapel Rd / Winston Way / Roden St / A118 Ilford Hill
- J4 Ley St / Griggs Approach
- J5 Winston Way / Griggs Approach / Riches Road
- J6 High Rd / A1083 Green Ln / Winston Way
- J7 High Rd / Cameron Rd
- J8 A118 High Rd / Barley Ln
- J9 High Rd / Wangey Rd / Chadwell Heath Ln
- J10 Gants Hill Rbt (A12 Eastern Ave / A1400 Woodford Ave / A123 Cranbrook Rd)
- J11 A12 Eastern Ave / Horns Rd / Ley St
- J12 A12 Eastern Ave / Aldborough Rd
- J13 A12 Eastern Ave / Barley Ln / Hainault Rd
- J14 A123 Cranbrook Rd / Tanners Ln
- J15 Fullwell Cross Rbt (Forest Rd / Craven Gdns / A123 High St / Fullwell Ave / Fencepiece Rd)
- J16 A1199 High Rd / B168 George Ln
- J17 Redbridge Rbt (A12 / A406)
- J18 Fairlop Rd / Clayhall Ave / Fremantle Rd / Looe Gdns
- J19 Fremantle Rd / High St / Baron Gdns
- J20 A1400 Woodford Ave / Longwood Gdns / Beehive Ln / Redbridge Ln East
- J21 A1400 Woodford Ave / Clayhall Ave
- J22 Charlie Browns Rbt (Chigwell Rd / A1400 Woodford Ave / Southend Rd)

Links

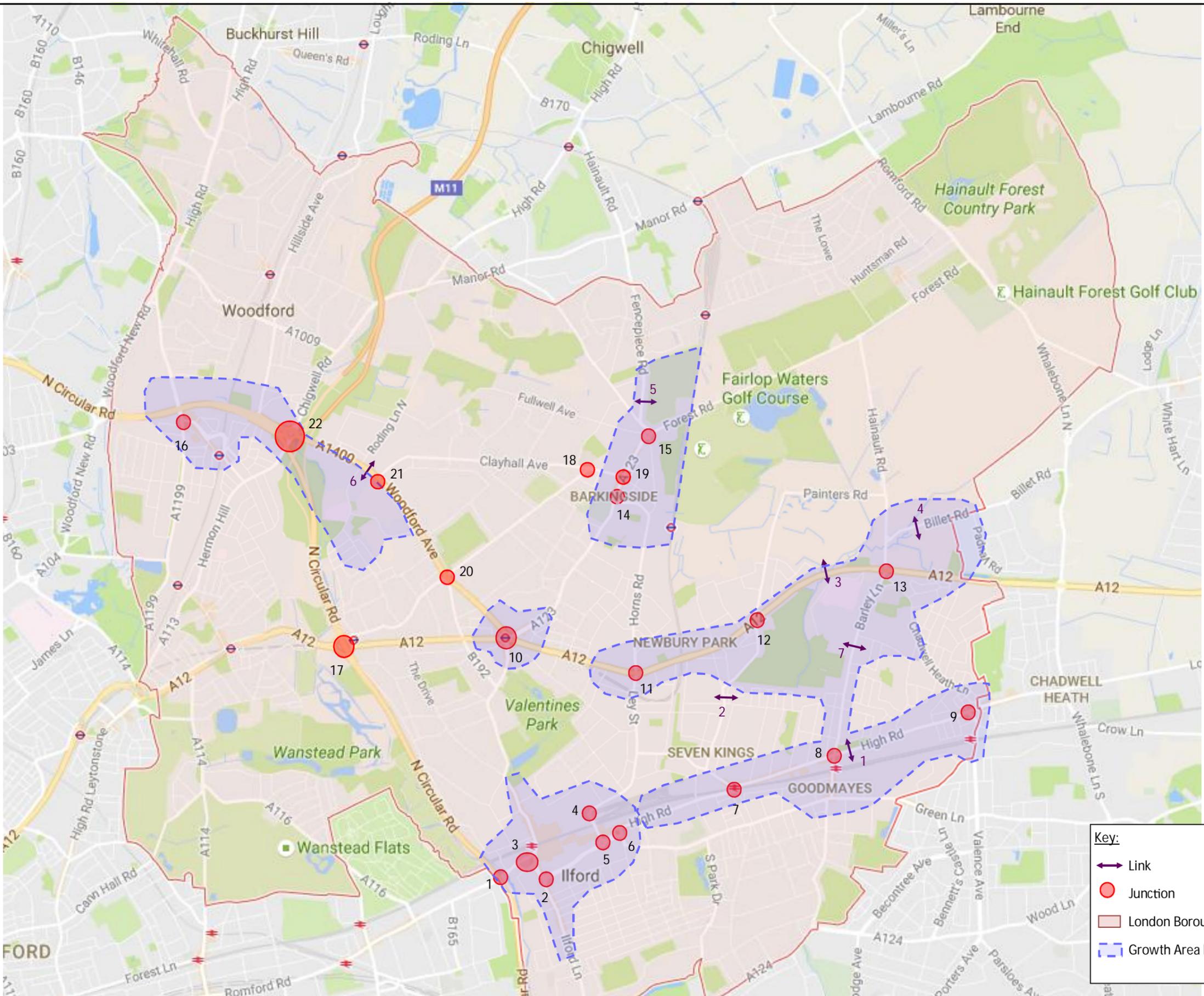
- L1 A118 High Rd, Ilford
- L2 Aldborough Rd South
- L3 A12 nr Barley Ln
- L4 Billet Rd
- L5 Fencepiece Rd
- L6 A1400 Woodford Ave
- L7 Barley Ln south of Gresham Dr

KEY

- JX Signalised Junction
- JX Signalised Roundabout
- A406 Grade separated
- LX Link
- JX Non-Signalised Roundabout
- One-way

Local road network layout is indicative for illustrative purposes.

Appendix B



Appendix B - Traffic Survey Locations (Junctions and Links)

Appendix C

Planning Application Ref	Main Location	Application Type	Full Description	Number of units/rooms
1210/14	Trolley Bus Depot, Ley Street Depot, 531, Ley Street, Ilford	Major Application	Erection of two-to four-storey block to provide new 4FE (840 pupils) Primary School (Seven Kings Primary School), with associated parking, landscaping and servicing.	
2057/14	Oaks Park High School, 45-65, Oaks Lane, Newbury Park, Ilford, IG2 7PQ	Major Application	Construction of three storey sixth form building to enable 2FE expansion of existing school, single storey changing room block, associated landscaping, car and cycle parking.	
3207/13	Gardens Of Peace Cemetery, 1, Five Oaks Lane, Chigwell, IG7 4QP	Major Application	Extension and alterations to existing buildings. New road layout within the site and car park for 19 vehicles. Boundary fencing and landscaping.	
3399/13	The Joker, Cameron Road, Seven Kings, Ilford, IG3 8LG	Major Application	Demolish existing public house. New 4-6 storey building to provide 95 bedroom hotel including ancillary car park and one commercial unit to ground floor.	95
4444/14	Woodbridge High School, St Barnabas Road, Woodford Green, IG8 7DQ	Major Application	Erection of a new creative arts building comprising of a three storey teaching block with connected double height performance hall, and refurbishment of the existing hard courts, new parking provision and associated landscaping.	
0309/15	Former PLA Sports Ground, The Drive, Ilford, Essex	X Variation/Removal of Condition(s)	Variation of Condition 2 (Approved Drawings) of planning permission 3443/05 (Racquets and fitness club with associated outdoor facilities, access and parking, plus playing fields/community use.): Changes to the elevation and design of approved building.	
0540/14	Redbridge College, Little Heath, Chadwell Heath, Romford, RM6 4XT	Major Application	Proposed demolition of numbers 11 & 12 Little Heath. Removal of existing temporary college buildings, erection of two new college buildings (performance block and teaching block). Relocated vehicular access to Chadwell Heath Lane.	
1543/14	Beal High School, Woodford Bridge Road, Ilford	Major Application	Construction of a detached 2/3 storey building for an alternative provision Business and Innovation Hub for 100 students aged 14-19.	
2202/14	L.B Of Redbridge Public Protection Service, 8, Perth Terrace, Newbury Park, Ilford, IG2 6AT	Major Application	Change of use from office to residential hostel. Internal alterations to form 23 family rooms (to accommodate up to a maximum of 122 people) with communal kitchen and bathroom facilities.	
2831/14	Redbridge Primary School, College Gardens, Ilford, IG4 5HW	Major Application	Two storey extension to the rear of the school to provide an additional form of entry (210 pupils).	
1445/16	Al Noor Muslim Primary School, 619-629, Green Lane, Seven Kings, Ilford, IG3 9RP	Major Application	Demolish existing buildings. Erection of 2FE Primary School with associated external playspace, service area and landscaping.	
3477/16	Development Site Adjacent Mayfield School, Kinfauns Road, Goodmayes, Ilford	Major Application	Erection of new leisure centre facility. Advertisement consent sought under App no. 3478/16.	
3121/16	16, Ilford Hill, Ilford, IG1 2DA	X Variation/Removal of Condition(s)	Variation of (Condition 2) of approved planning permission 2672/12 (Change of use from Public House (A4) to Hotel (C1) and retention of Bar/Restaurant at part ground floor level. Two storey rear extension and part three storey rear extension.	30
0951/13	Development Site At The Shannon Centre, Cameron Road, Seven Kings, Ilford	Major Application	Demolish existing building. New six storey building including lower ground floor to provide 32 flats (21, one-bedroom, 9, two bedroom and 2, three-bedroom) and two commercial units with associated landscaping, and basement parking.	32
1490/13	Development Site At Joycott, Oakhurst, The Willows, And Havering, Five Oaks Lane, Chigwell	Major Application	Change of use of land to open space, demolition and residential development comprising 12 affordable housing units (two x 2 beds, five x 5 beds and five x 3 beds), 9 private houses (one x 2 beds, two x 3 beds and part of six x 3 beds) and 16 apartments.	37
1279/13	Development Site Adjacent 39, Ilford Hill, Ilford	Major Application	Redevelopment of the site to provide 141 residential units comprising of one, two and three bedroom flats in three blocks of 10, 14 and 18 storeys in height, and ground floor flexible A1, A2, A3, B1 and D2 floor space, with associated landscaping.	141
2715/13	Development Site At Barnardos Phase 4/5, Tanners Lane, Barkingside, Ilford	Major Application	Demolition of Barnardo House and adjacent sub station on Tanners Lane. Erection of 32 new dwellings and conversion and change of use of the listed cottages 1-11 and Cairns House to 34 apartments and day nursery. Associated landscaping and parking arrang	66
3410/13	420, Eastern Avenue, Ilford, IG2 6NS	Major Application	Demolish all the existing buildings. New mixed use development to provide 105 residential flats and 730sqm commercial (A1/A2/A3/D1) floor space in three blocks ranging in height from three to seven storeys. Re-provision of existing public toilet facilitie	105
3444/13	Kelvin Hughes, New North Road, Hainault, Ilford, IG6 2UR	Major Application	Demolition of former industrial site. Erection of 182 residential units and commercial floorspace with flexible use (B1, D1 and D2). New access and associated landscaping and parking arrangements (Amended plans received 28th March 2014).	182
3909/14	Development Site At Repton Court And Claire House, Repton Grove, Clayhall, Ilford	Major Application	Variation of Condition 2 (Approved Drawings) of planning permission 0664/12 (Demolish existing buildings. Redevelopment of site to provide 149 new residential units (comprising three bedroom houses, one and two bedroom flats and three bedroom duplexes).	150
0362/14	Water Reservoir Opposite 632 To 654, New North Road, Hainault, Ilford	Major Application	Redevelopment of the site to provide 99 residential units with associated access, parking and landscaping.	99

2364/15	Development Site 567 To 571, High Road, Seven Kings, Ilford	Major Application	Demolition of existing buildings. Erection of a mixed use development comprising of 35 residential units and ground level commercial use in a 9 storey building (8 stories are above ground level), with bicycle and bin store and associated parking and land	35
2792/15	Charter House, 450, High Road, Ilford	Major Application	Change of use of the existing building; extensions and alterations to provide 96 residential units comprising 52 x 1 bed, 20 x 2 bed and 24 x 3 bed with private and communal amenity spaces. Provision of office floorspace on the upper/lower ground floors.	96
3782/14	Valentines House, 51-69, Ilford Hill, Ilford	Major Application	Change of use of the existing buildings from office (B1) to residential (C3) and commercial (A1-A3) with horizontal and vertical extensions to create 122 residential units and retail floorspace with associated car and cycle parking and public realm improv	122
2537/15	Lord Napier, 521, Green Lane, Seven Kings, Ilford, IG3 9RH	Major Application	Demolition of existing buildings. Construction of 31 affordable homes for rent and shared ownership, with associated parking and landscaping including new cycle and bin store.	31
2125/14	Newbury House, 890-900, Eastern Avenue, Ilford	Prior Approval Determination	Change of use from Office (B1) to Dwellings (C3).	60
0029/14	Arodene House, 41-55, Perth Road, Gants Hill, Ilford	Prior Approval Determination	Change of use of floors 1-6 from B1(a) office to C3 residential use.	50
3678/14	Charter House, 450, High Road, Ilford	Prior Approval Determination	Change of use of 2849sqm (floorspace) from Office (B1) to Dwellings (C3).	45
0039/15	City House, 9, Cranbrook Road, Ilford, IG1 4DU	Prior Approval Determination	Conversion of existing B1 (a) Office building at first, second and third floor levels, into 27 self-contained residential units with existing basement parking provision.	27
4909/15	Ley Street House, 497-499, Ley Street, Ilford	Prior Approval Determination	Change of use of first floor from offices (B1) to 26 residential units (C3).	26
1961/16	Arodene House, 41-55, Perth Road, Gants Hill, Ilford	Prior Approval Determination	Change of Use from Office (B1) to Residential (C3) 60 flats.	60
3517/16	Arodene House, 41-55, Perth Road, Gants Hill, Ilford	Prior Approval Determination	Change of Use from Office (B1) to Residential (C3) 57 flats.	57
3663/15	497-499 Ley Street House, Ley Street, Ilford, Essex, IG2 7QX	Prior Approval Determination	Change of use of second and third floors from offices (B1) to 52 residential units (C3).	52
3702/15	Ley Street House, 497-499, Ley Street, Ilford, IG2 7QX	Prior Approval Determination	Change of use of second floor from offices (B1) to 26 residential units (C3).	26
3249/15	Ley Street House, 497-499, Ley Street, Ilford, IG2 7QX	Prior Approval Determination	Change of use of existing office building (B1) and ancillary buildings to 95 Residential Units (C3) (summary).	95
3279/15	Ley Street House, 497-499, Ley Street, Ilford, IG2 7QX	Prior Approval Determination	Change of use of existing office building (B1) and ancillary buildings to 104 Residential Units (C3) (summary).	104
0215/16	480-482, Ley Street, Ilford, IG2 7BZ	Major Application	Demolish existing car show room and MOT workshops. Redevelopment of the site to provide 71 residential units comprising 26 x 1 bedroom, 40 x 2 bedroom, 3 x 3 bedroom and 2 x 4 bedroom within part 3, 4 and 6 storey blocks associated internal courtyard.	71

- Not included, non-representative PTAL
- Not included, no vehicular trip rates provided in the TA/TS or no TA/TS available
- Not included, non-residential land use
- Not included, duplicate sites, trip rates already included

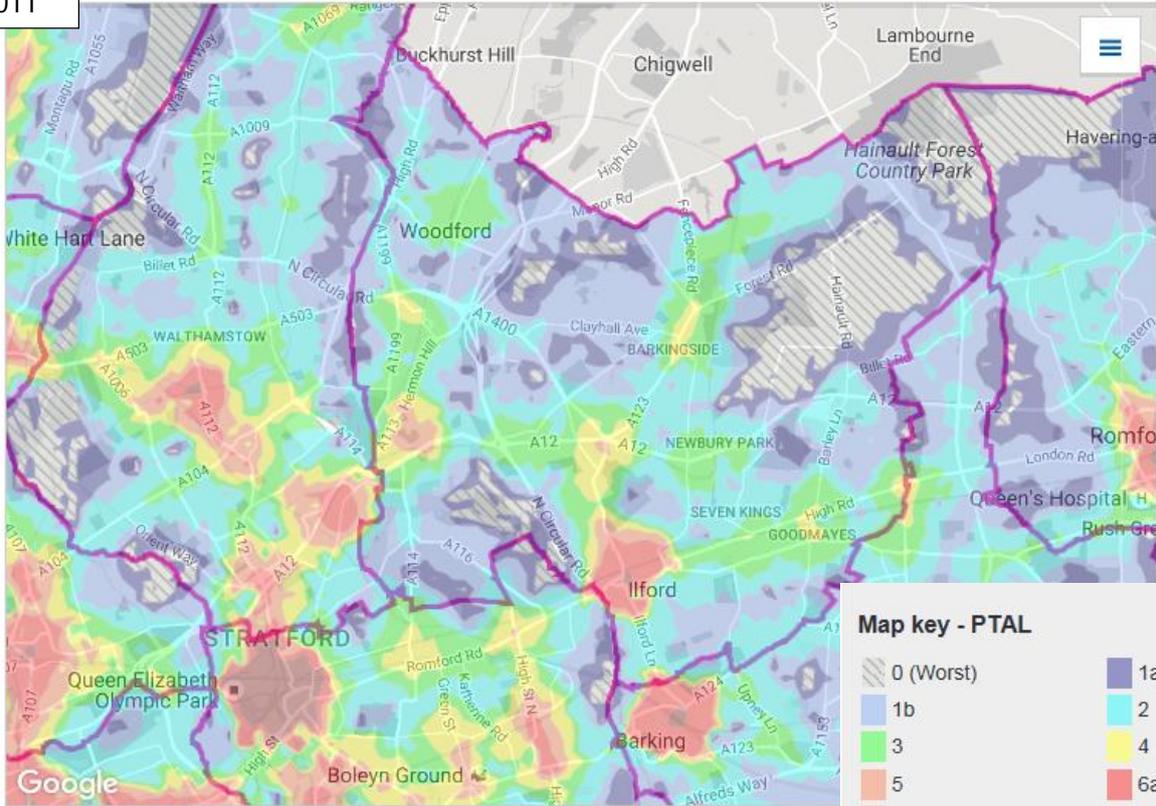
CD Ref	Planning Application Ref	Main Location	Number of units/rooms (C3 Land)	Employment land use area		Area per FTE (m²)	Estimated no. of employees	PTAL	AM		PM		Notes	Appendix 1 Ref		Cluster Allocated
				GIA / Rooms	NIA				Arrivals	Departures	Arrivals	Departures		Site Ref	Cluster	
CD1	1210/14	Trolley Bus Depot, Ley Street Depot, 531, Ley Street, Ilford		4178		36	116	3	93	44	43	93	273 vehicles during peak period - TA			GC19
CD2	2057/14	Oaks Park High School, 45-65, Oaks Lane, Newbury Park, Ilford, IG2 7PQ		3600		36	100	1b-2	35	23	23	35	116 Daily arrivals & Departures - TA			C6
CD3	3207/13	Gardens Of Peace Cemetery, 1, Five Oaks Lane, Chigwell, IG7 4QP			223		0	0-1b					No info - No guidance available on cemetery employees			No employees - not included
CD4	3399/13	The Joker, Cameron Road, Seven Kings, Ilford, IG3 8LG		95		2	48	3	3	2	5	2	Transport Statement			GC18
CD5	4444/14	Woodbridge High School, St Barnabas Road, Woodford Green, IG8 7DQ		2700		36	75	3	60	46	46	60	Transport Assessment			W5
CD6	0309/15	Former PLA Sports Ground, The Drive, Ilford, Essex					0	3	80	67	165	108	TA 2005 - Variation to existing planning permission from 2005			GC20
CD7	0540/14	Redbridge College, Little Heath, Chadwell Heath, Romford, RM6 4XT		1470		36	41	0-1b	0	0	0	0	In Appendix 1	Site 98	ER1	
CD8	1543/14	Beal High School, Woodford Bridge Road, Ilford		1458		36	41	1a	22	15	15	22	Transport Statement			C10
CD9	2202/14	L.B Of Redbridge Public Protection Service, 8, Perth Terrace, Newbury Park, Ilford, IG2 6AT		23		2	12	1b	6	0	0	6	No info			GC19
CD10	2831/14	Redbridge Primary School, College Gardens, Ilford, IG4 5HW		1072		36	30	1b	10	6	5	10	31 daily arrivals and departures - TA			C10
CD11	1445/16	Al Noor Muslim Primary School, 619-629, Green Lane, Seven Kings, Ilford, IG3 9RP		1407		36	39	3	79	73	73	75	Transport Assessment			GC15
CD12	3477/16	Development Site Adjacent Mayfield School, Kinfauns Road, Goodmayes, Ilford		1793		70	26	3	14	7	29	26	Transport Assessment			GC15
CD13	3121/16	16, Ilford Hill, Ilford, IG1 2DA	30					6a	2	5	4	2	No info			GC2
CD14	0951/13	Development Site At The Shannon Centre, Cameron Road, Seven Kings, Ilford	32					2-4	2	7	6	2	In Appendix 1	Site 53	GC18	
CD15	1490/13	Development Site At Joycott, Oakhurst, The Willows, And Havering, Five Oaks Lane, Chigwell	37					0-1b	4	10	8	4	No info			ER4
CD16	1279/13	Development Site Adjacent 39, Ilford Hill, Ilford	141					5-6b	7	21	17	8	In Appendix 1	Site 11	GC1	
CD17	2715/13	Development Site At Barnardos Phase 4/5, Tanners Lane, Barkingside, Ilford	66					2-4	16	46	37	16	In Appendix 1	Site 124	C6	68 units in Appendix 1
CD18	3410/13	420, Eastern Avenue, Ilford, IG2 6NS	105					5-6b	6	16	13	6	In Appendix 1	Site 101	C7	
CD19	3444/13	Kelvin Hughes, New North Road, Hainault, Ilford, IG6 2UR	182					2-4	14	39	32	14	In Appendix 1	Site 161	ER3	
CD20	3909/14	Development Site At Repton Court And Claire House, Repton Grove, Clayhall, Ilford	150					2-4	11	32	26	11	In Appendix 1	Site 156	C10	
CD21	0362/14	Water Reservoir Opposite 632 To 654, New North Road, Hainault, Ilford	99					0-1b	10	28	23	10	In Appendix 1	Site 162	ER3	
CD22	2364/15	Development Site 567 To 571, High Road, Seven Kings, Ilford	35					2-4	3	8	6	3	In Appendix 1	Site 52	GC12	
CD23	2792/15	Charter House, 450, High Road, Ilford	96					2-4	7	21	17	7	In Appendix 1	Site 49	GC10	In Appendix 1 with 3678/14
CD24	3782/14	Valentines House, 51-69, Ilford Hill, Ilford	122					2-4	16	46	37	16	In Appendix 1	Site 124	GC1	
CD25	2537/15	Lord Napier, 521, Green Lane, Seven Kings, Ilford, IG3 9RH	31					2-4	2	7	5	2	In Appendix 1	Site 54	GC14	
CD26	2125/14	Newbury House, 890-900, Eastern Avenue, Ilford	60					2-4	5	13	11	5	In Appendix 1	Site 50	GC22	
	0029/14	Arodene House, 41-55, Perth Road, Gants Hill, Ilford	50					4	3	8	4	1	In Appendix 1			
	3678/14	Charter House, 450, High Road, Ilford	45										In Appendix 1			96 units in Appendix 1 with 2792/15
CD27	0039/15	City House, 9, Cranbrook Road, Ilford, IG1 4DU	27					5-6b	1	4	3	1	In Appendix 1	Site 21	C4	
	4909/15	Ley Street House, 497-499, Ley Street, Ilford	26					2	11	5	5	11	Transport Report			
	1961/16	Arodene House, 41-55, Perth Road, Gants Hill, Ilford	60										In Appendix 1			57 units in Appendix 1
CD28	3517/16	Arodene House, 41-55, Perth Road, Gants Hill, Ilford	57					2-4	12	10	4	1	In Appendix 1	Site 102	C1	
	3663/15	497-499 Ley Street House, Ley Street, Ilford, Essex, IG2 7QX	52					2	8	6	6	9	Transport Report			
	3702/15	Ley Street House, 497-499, Ley Street, Ilford, IG2 7QX	26					2	11	5	5	11	Transport Report			
	3249/15	Ley Street House, 497-499, Ley Street, Ilford, IG2 7QX	95					2	4	11	14	8	Transport Statement			
CD29	3279/15	Ley Street House, 497-499, Ley Street, Ilford, IG2 7QX	104					2	4	11	14	8	In Appendix 1	Site 150	GC19	Same report both for 104 units
CD30	0215/16	480-482, Ley Street, Ilford, IG2 7BZ	71					3	5	15	12	5	Transport Assessment			GC18
Committed Development Total (2030 DM)			1445	17796			526		529	622	680	558				
			Homes	GIA		Jobs										
Committed Development Sites, excluding those included in App 1 (2030 DS)			138	16326		485		413	313	429	448					

NOTES:
1. Employment land use area extracted from planning applications
2. Estimated no. of employees derived from employment land use area, based on Employment Densities Guide, 2010, Office of Project & Programme Advice & Training (OffPAT), Homes & Communities Agency
3. Some sites are duplicated (grey text) in the Committed Development list where multiple planning applications exist for the same site. Where duplication occurs, the planning application ref that aligns with Appendix 1 (where applicable) or the most recent planning application has been taken as correct. Sites have not been double counted.
4. The trip generation for the committed sites featured in App1 is the same as that used for the App 1 sites (provided in the table above for reference)
5. Where no trip generation information exists within the planning application, standardised trip rates (per PTAL Category) have been used for the committed residential development sites. For employment sites with limited information, a first principles approach has been taken.

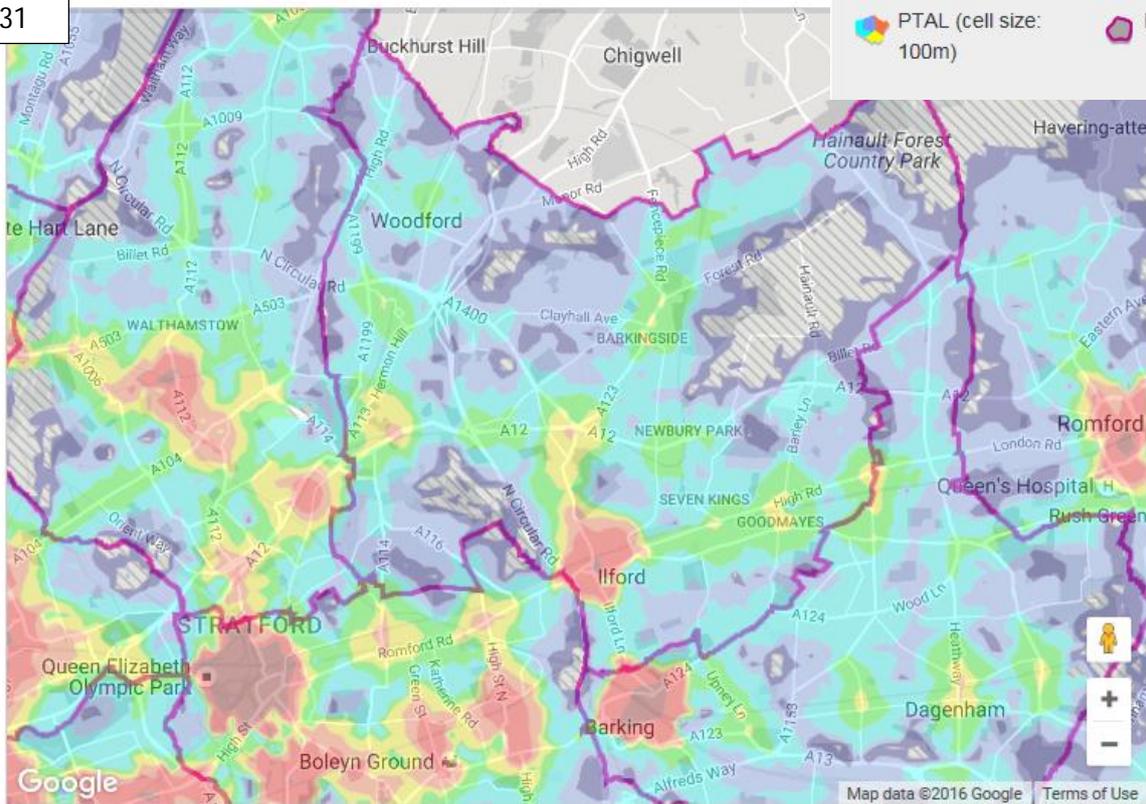
Appendix D

LB Redbridge PTAL Forecast (2011 to 2031)

2011

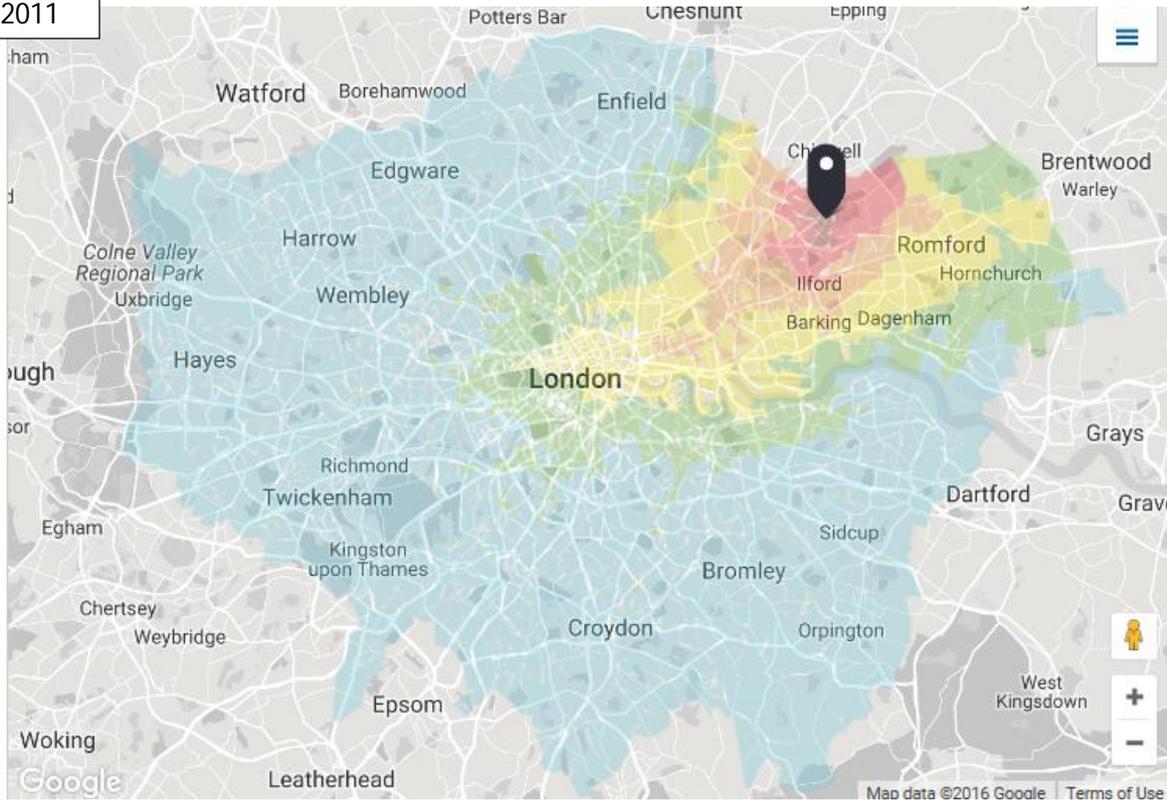


2031

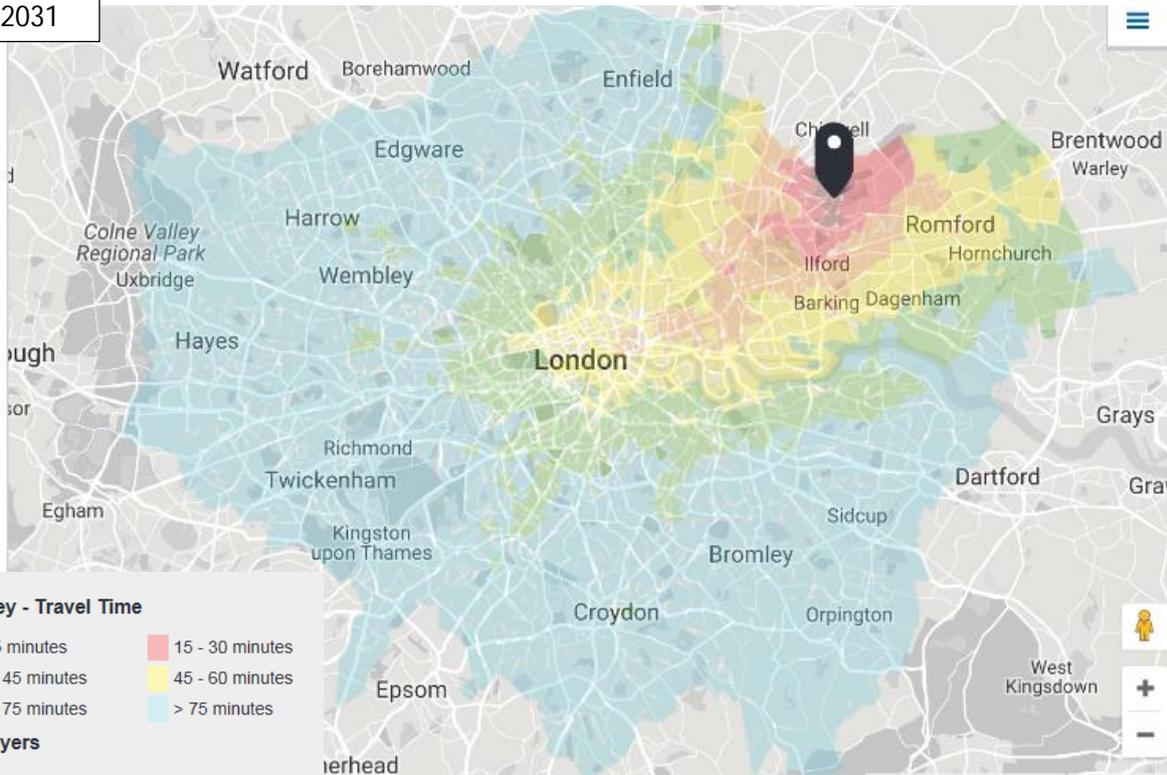


Barkingside Travel Time (2011 to 2031)

2011



2031



Map key - Travel Time

- < 15 minutes
- 15 - 30 minutes
- 30 - 45 minutes
- 45 - 60 minutes
- 60 - 75 minutes
- > 75 minutes

Map layers

- Travel Times

Appendix E

Appendix E

Trip Distribution Response to LBR queries

The information in this Appendix is provided to clarify the methodology proposed for the Trip Distribution element of the transport evidence as presented to LBR at the progress meeting of 29th November 2016. Initial feedback from LBR highlighted that journeys to work from the Woodford area would be expected to have a higher proportion towards Tower Hamlets and the City. The two main areas identified for further analysis related to the proposed vehicular trip distributions presented in Table 10 of the Method Note and the proposed selection of MSOAs to represent the Woodford area of the borough.

Vehicular Trip Distributions

The source data which forms Table 10 of the draft Method Note has been reviewed to allow an additional row 'Other External LB', containing the combination of all of the non-stated London Borough's distribution. In addition to this, a non-London Borough external trip distribution row has been inserted to allow the proportion of external trips to be broken down into either London Borough or non-London destinations. The proposed updates have been made to Table 10 of this Method Note.

Woodford MSOA Origin-Destination Choice

In addition to reviewing the proposal calculations AECOM has undertaken sensitivity analysis for alternative Woodford MSOA areas, covered by Redbridge MSOAs 001 and 007 (as opposed to the 004 and 009 originally proposed).

Car Driver Proportions

The same method of using 2011 Census Journey to work data for car driver trips has been applied to Redbridge MSOAs 001 and 007 areas. These results are presented in Table F1 alongside the results for MSOAs 004 and 009 for comparative purposes.

Table F1: AECOM calculations from Woodford MSOA Origin-Destination option analysis

Destination	Origin Category			
	Initial Proposal		Sensitivity Test	
	Redbridge 004	Redbridge 009	Redbridge 001	Redbridge 007
Newham	5%	8%	5%	9%
Barking & Dagenham	4%	4%	3%	4%
Waltham Forest	13%	14%	16%	15%
Havering	4%	4%	4%	3%
Tower Hamlets	4%	6%	7%	6%
Other External LB	21%	21%	18%	22%
External LB Total	51%	57%	52%	58%
Non LB External	26%	18%	25%	20%
External Total	76%	75%	76%	78%
Internal	24%	25%	24%	22%
Total	100%	100%	100%	100%

Note: Some rounding errors

Table F1 indicates that the two options presented display broadly similar trip distributions. The sensitivity test proportion of trips to Tower Hamlets in particular displays a difference of between 1 to 3% additional vehicles. AECOM propose to use the trip distribution for MSOA's 004 and 009 considering a higher number of development opportunity sites fall within these two areas (15 sites, approximately 400 dwellings compared to 11 sites, approximately 291 dwellings in MSOAs 001 and 007).

Mode Share

Further analysis of the mode share proportions has been analysed from the same source Census data utilised to gain the car-driver distributions. In effect, the analysis was aimed at trying to establish whether a greater number of residents from the chosen MSOAs use public transport rather than drive a car to reach their destinations, as this may explain the distributions displayed in Table 10 of the Method Note. The mode share calculations for both the initially proposed MSOAs and those selected for the sensitivity test are presented in Table F2.

Table F2: 2011 Census Journey to Work Mode Shares for Woodford MSOAs

Travel Mode	Initial Proposal		Sensitivity Test	
	Redbridge 004	Redbridge 009	Redbridge 001	Redbridge 007
Car Driver	39%	39%	43%	34%
Rail/Underground	51%	42%	47%	54%
Bus	4%	6%	2%	4%
Cycle	1%	2%	2%	2%
Walk	5%	10%	6%	6%
Sample Size (Trips)	2511	5643	4015	5209

Table F2 demonstrates that non-car driving modes are the dominant modes of travel for all of the Woodford MSOAs analysed. As such, the 34% to 43% of journeys by car drivers represent a lower proportion of journey to work trips compared to trips by rail/underground. Within the context of a car-driver mode share, the minor distribution differences between the two Woodford MSOA options identified earlier (with a 1% to 3% difference identified for Tower Hamlets) would not represent a significant difference when applied to the spreadsheet model.

Conclusion

In relation to the Woodford MSOA choice, AECOM note that there is very little statistical difference between the two options analysed, and as such either 004 and 009 or 001 and 007 MSOAs would be appropriate for future use in developing the spreadsheet model. AECOM propose to use the trip distribution for MSOA's 004 and 009 considering a higher number of development opportunity sites fall within these two areas (15 sites, approximately 400 dwellings compared to 11 sites, approximately 291 dwellings in MSOAs 001 and 007).

Appendix F

Growth Corridor Origin Assignment			
Place of Work Category	Proportion	Assignment	Central Point
Outside Greater London			
East/South-East	3.80%	A12 EB 33%; N Circular SB (to/from A13) 33%; High Rd E (to A12) 33%	
East	6.69%	A12 to/from M25 50%; High Rd E (to A12) 50%	
West/North-West	3.91%	To/from M11 via N Circular NB 50%; A12 to/from M25 25%; High Rd E (to A12) 25%	
Greater London			
Central	11.92%	N Circular NB 33%; N Circular SB 33%; A12 WB 33%	
North/North-West	11.45%	N Circular NB 100%	
North-East	33.42%	N Circular SB 50%; A12 EB 25%; High Rd E (to A12) 25%	
South/South-East	3.63%	N Circular SB 50%; A12 EB 25%; High Rd E (to A12) 25%	
Redbridge Internal			
Zone A	0.27%	Chigwell Rd N 100%	
Zone B	0.82%	Chigwell Rd N 25%; Chigwell Road S 75%	
Zone C	0.27%	A12 WB 100%	
Zone D	1.26%	A123 50%; A116 50%	Woodford Avenue via A123
Zone E	1.63%	Horns Rd 100%	To/from Barkingside High St area
Zone F	1.53%	Woodford Ave 50%; Horns Rd 25%; A123 25%	
Zone G	7.85%	A123 33%; Ley St 33%; High Rd 33%	To/from High Street/Station area
Zone H	1.43%	Horns Rd 50%; A123 50%	
Zone I	1.66%	Ley St 33%; Aldborough Rd S 33%; High Rd; 33%	To/from Seven Kings/Goodmayes Stations
Zone J	0.95%	New North Rd 50%; Aldborough Rd N 50%	
Zone K	3.74%	Barley Ln 100%	
Zone L	3.77%	High Rd 50%; Green Ln 50%	To/from Valence Park (South of Green Lane)
Total	100%		

Central Origin Assignment			
Place of Work Category	Proportion	Assignment	Central Point
Outside Greater London			
East/South-East	4%	A12 EB 50%; N Circular SB (to/from A13) 50%	
East	6%	A12 to/from M25 100%	
West/North-West	5%	To/from M11 via N Circular NB 50%; A12 to/from M25 50%	
Greater London			
Central	12%	N Circular NB 33%; N Circular SB 33%; A12 WB 33%	
North/North-West	15%	N Circular NB 100%	
North-East	28%	N Circular SB 50%; A12 EB 50%	
South/South-East	3%	N Circular SB 75%; A12 EB 25%	
Redbridge Internal			
Zone A	1%	N Circular NB; Chigwell Rd 100%	
Zone B	1%	Chigwell Rd S 50%; Chigwell Rd N 50%	
Zone C	1%	A12 WB 100%	
Zone D	2%	A12 WB 100%	Woodford Ave via A123
Zone E	2%	Clayhall Avenue 33%; A123 33%; Longwood Gardens; 33%	To/from Barkingside High St area
Zone F	3%	Woodford Avenue 33%; Clayhall Avenue 33%; Longwood 33%	
Zone G	8%	A123 50%; Ley St 50%	To/from High Street/Station area
Zone H	3%	A12 25%; A123 25% Woodford Ave 50%	
Zone I	2%	Ley St 50%; Aldborough Rd S 50%	To/from Seven Kings/Goodmayes Stations
Zone J	2%	Manor Rd 50%; A123 50%	
Zone K	2%	A12 E 100%	
Zone L	1%	Ley St/Benton Rd 25%; Barley Ln 75%	To/from Valence Park (South of Green Lane)
Total	100%		

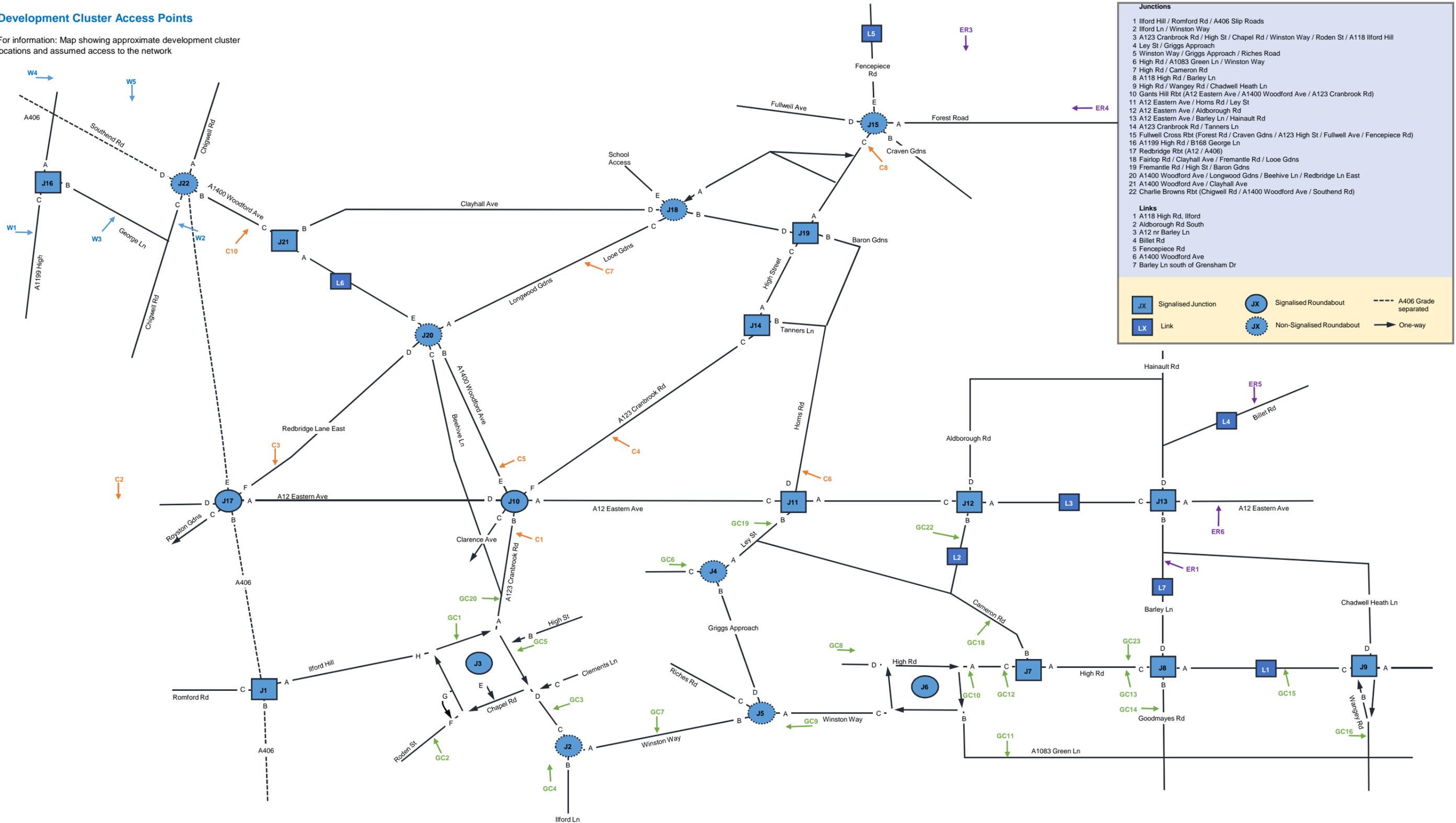
East Redbridge Origin Assignment			
Place of Work Category	Proportion	Assignment	Central Point
Outside Greater London			
East/South-East	6.88%	A12 EB 75%; N Circular SB (to/from A13) 25%	
East	4.89%	A12 to/from M25 100%	
West/North-West	3.72%	Hainault Rd/Romford Rd to/from Chigwell Row (then M25) 50%; A12 WB to/from N Circular NB 50%	
Greater London			
Central	11.16%	N Circular NB 33%; N Circular SB 33%; A12 WB 33%	
North/North-West	13.61%	N Circular NB 100%	
North-East	25.84%	N Circular SB 25%; A12 EB 75%	
South/South-East	3.31%	N Circular SB 50%; A12 EB 50%	
Redbridge Internal			
Zone A	0.87%	Chigwell Rd 100%	
Zone B	1.43%	Chigwell Rd N 25%; Chigwell Rd S 75%	
Zone C	0.87%	A12 50%; Chigwell Rd S 50%	
Zone D	0.97%	A12 50%; A123 50%	Woodford Ave via A123
Zone E	2.55%	Forest Rd 50%; A123 via Horns Rd 50%	To/from Barkingside High St area
Zone F	2.70%	Woodford Ave 50%; Forest Rd 50%	
Zone G	5.40%	A123 33%; Ley St 33%; High Rd 33%	To/from High Street/Station area
Zone H	2.04%	Horns Rd 100%	
Zone I	1.94%	Aldborough Rd So 33%; Cameron Rd S 33%; High Rd; 33%	To/from Seven Kings/Goodmayes Stations
Zone J	5.30%	Hainault Rd 100%	
Zone K	4.43%	Barley Ln 100%	
Zone L	2.09%	Barley Ln 100%	To/from Valence Park (South of Green Lane)
Total	100%		

Woodford Origin Assignment			
Place of Work Category	Proportion	Assignment	Central Point
Outside Greater London			
East/South-East	3.84%	A12 EB 25%; N Circular SB (to/from A13) 75%	
East	6.69%	A12 to/from M25 100%	
West/North-West	3.94%	To/from A10 via N Circular NB 50%; A110 to/from A10 50%	
Greater London			
Central	11.91%	N Circular NB 33%; N Circular SB 33%; A12 WB 33%	
North/North-West	11.44%	N Circular NB 100%	
North-East	33.40%	N Circular SB 50%; A12 EB 50%	
South/South-East	3.63%	N Circular SB 50%; A12 EB 50%	
Redbridge Internal			
Zone A	0.27%	Chigwell Rd N 50%; A1199 50%	
Zone B	0.81%	Chigwell Rd N 50%; A1199 50%	
Zone C	0.27%	Hermon Hill 100%	
Zone D	1.26%	A114 50%; B192 50%	Woodford Ave via A123
Zone E	1.63%	Clayhall Ave 50%; Tomswood Hill 50%	To/from Barkingside High St area
Zone F	1.53%	Clayhall Ave 50%; Longwood Gardens 50%	
Zone G	7.84%	N Circular 33%; A123 33%; Ley St 33%	To/from High Street/Station area
Zone H	1.43%	A12 50%; Longwood Gardens 50%	
Zone I	1.66%	Ley St 50%; Aldborough Rd S 50%	To/from Seven Kings/Goodmayes Stations
Zone J	0.95%	Manor Rd 50%; A123 50%	
Zone K	3.73%	Barley Ln 100%	
Zone L	3.77%	Barley Ln 50%; High Rd 50%	To/from Valence Park (South of Green Lane)
Total	100%		

Appendix G

Development Cluster Access Points

For information: Map showing approximate development cluster locations and assumed access to the network



Appendix H

Transport Evidence

Site No.	Address	Site size (ha)	Ward	Current Use	Proposed Use	Indicative Development Capacity	Phasing Period 2015-2020	Planning Status	PTAL Rating	MSOA	Origin Category	Cluster
1	Sainsbury's, Roden Street, Ilford	1.96	Clementswood	Retail	Retail/ Employment/ Housing	700	1	Application submitted	5-6b	033	Growth Corridor	GC2
2	The Exchange Shopping Centre, High Road, Ilford	2.5	Valentines	Commercial/Retail/Emp loyment	Employment/ Retail/ Housing/ Leisure	214	1	Application submitted	5-6b	029	Growth Corridor	GC6
3	Britannia Music - 60-70 Roden Street and land between Chapel Road and Roden Street, Ilford	0.7	Loxford	Vacant	Employment/ Retail/ Housing	354	1	Consent granted	5-6b	033	Growth Corridor	GC2
4	Depot Mill Road/Mill House, Ilford Hill	0.91	Loxford	Offices/Depot/ Car Park	Employment/ Housing	332	1	No current planning application or new permission	5-6b	033	Growth Corridor	GC1
5	Ley Street car park and bus depot, Ilford	0.8	Valentines	Car Park (Multi- storey)/Depot	Employment/ Housing	292	1	No current planning application or new permission	5-6b	029	Growth Corridor	GC6
6	If Bar 71 Ilford Hill	0.15	Loxford	Commercial	Retail/ Employment/ Housing	137	1	No current planning application or new permission	5-6b	033	Growth Corridor	GC1
7	193-207 High Road, Ilford (Harrison and Gibson)	0.31	Clementswood	Retail/Offices	Retail/ Employment/ Housing	323	1	No current planning application or new permission	5-6b	030	Growth Corridor	GC5
8	Site bounded by Chapel Road, High Road and Clements Lane	0.6	Clementswood	Retail/Offices	Retail/ Employment/ Housing	219	1	Consent granted for 14 units on part of site	5-6b	030	Growth Corridor	GC3
9	Peachy House, 39 Ilford Hill, Ilford	0.59	Loxford	Car Park	Retail/ Employment/ Housing	141	1	Consent granted for 141 units	5-6b	032	Growth Corridor	GC1
10	51-69 Ilford Hill (Valentines House)	0.43	Loxford	Offices	Employment/ Housing	122	1	Consent granted for 122 units	5-6b	033	Growth Corridor	GC1
11	226-244 High Road, Ilford	0.14	Clementswood	Commercial	Retail/ Employment/ Housing	101	1	Consent granted	5-6b	030	Growth Corridor	GC7
12	Land between Mill Road & the Railway Line, Ilford	0.3	Loxford	Car Park	Housing	97	1	No current planning application or new permission	5-6b	032	Growth Corridor	GC1
13	40 Ilford Hill, Ilford	0.29	Loxford	Park/Former Police Station/ Car	Retail/ Housing	106	1	No current planning application or new permission	5-6b	032	Growth Corridor	GC2
14	Land adjacent to Clements Lane and Clements Road	0.24	Clementswood	Offices/Retail/ Hotel/Car Park	Retail/ Employment/ Housing	87	1	No current planning application or new permission	5-6b	030	Growth Corridor	GC3
15	260 – 268 High Road, Ilford	0.13	Clementswood	Public Toilets/ Retail	Housing	42	1	No current planning application or new permission	2-4	030	Growth Corridor	GC8
16	City House, 9-17 Cranbrook Road	0.05	Clementswood	Offices	Retail/ Employment/ Housing	27	1	Consent granted	5-6b	032	Growth Corridor	C4
17	1 Riches Road, Ilford	0.04	Clementswood	Housing	Housing	24	1	Consent granted	5-6b	030	Growth Corridor	GC7
18	22-32 Chapel Road, Ilford	0.06	Loxford	Public Toilets/Retail/Residenti al	Retail/ Housing	24	1	No current planning application or new permission	5-6b	033	Growth Corridor	GC2
19	Rear of 2-34 Riverdene Road	0.07	Clementswood	Commercial	Housing	15	1	Consent granted	5-6b	032	Growth Corridor	GC2
20	20 Clements Lane, Ilford, IG1 2QY	0.63	Clementswood	Leisure/Assembly	Housing	229	1	Consent granted	5-6b	030	Growth Corridor	GC3
21	202-224 High Road Ilford	0.1	Clementswood	Commercial	Housing	15	1	Consent granted	5-6b	030	Growth Corridor	GC7
22	288 Ilford Lane, Ilford	0.08	Loxford	Industrial	Retail/ Housing	9	1	Consent granted	2-4	032	Growth Corridor	GC4
23	180 High Road, Ilford	0.03	Clementswood	Bank	Housing	7	1	Consent granted	5-6b	030	Growth Corridor	GC7
24	213-215 High Road, Ilford	0.04	Clementswood	Retail	Housing	7	1	Consent granted	5-6b	030	Growth Corridor	GC7
25	210 Ilford Lane, Ilford	0.05	Loxford	Retail	Housing	5	1	Consent granted for mixed use with 6 flats	2-4	032	Growth Corridor	GC4
26	Rear of 2-4 Clements Road	0.03	Clementswood	Retail	Housing	5	1	Consent granted	5-6b	030	Growth Corridor	GC5
27	48 Cranbrook Road	0.09	Valentines	Retail	Housing	5	1	Consent granted	5-6b	026	Growth Corridor	GC20
28	1-7 Hainault Street, Ilford	0.05	Clementswood	Retail	Housing	4	1	Consent granted	5-6b	030	Growth Corridor	GC6
29	239 Ilford Lane, Ilford	0.01	Loxford	Retail	Housing	3	1	Consent granted	2-4	032	Growth Corridor	GC4
30	187 - 191 High Road (Argos)	0.1	Clementswood		Housing/Retail	80	1	Pre app circa 80	5-6b	030	Growth Corridor	GC7
31	Land adjacent to Cranbrook Road, High Road and the railway, incorporating Station Road (Includes Bodgers)	0.8	Clementswood	Commercial/Retail/Offic es	Retail/ Housing/ Health	259	1	No current planning application or new permission	5-6b	030	Growth Corridor	GC5
32	Town Hall Car Park	0.7	Clementswood	Retail/ Car Park	Retail/ Employment/ Housing	227	1	No current planning application or new permission	5-6b	030	Growth Corridor	GC5
33	Land bounded by Clements Road, Chadwick Road and Postway Mews	0.66	Clementswood	Royal Mail sorting office/Depot/Retail/Chur ch	Retail/ Employment/ Housing	214	1	No current planning application or new permission	5-6b	030	Growth Corridor	GC5
34	51-71 Cranbrook Road, Ilford	0.35	Valentines	Commercial	Retail/ Housing	128	1	No current planning application or new permission	5-6b	026	Growth Corridor	GC20

35	245-275 Cranbrook Road, Ilford	0.54	Valentines	Commercial/Employment	Employment/ Housing	134	1	Consent granted	5-6b	026	Growth Corridor	GC20
36	73-85 Ilford Hill and 1-7 Cranbrook Road	0.26	Loxford	Commercial/Ilford Station	Retail/ Employment/ Housing	95	2	No current planning application or new permission	5-6b	032	Growth Corridor	GC1
37	Central Library Service Yard	0.05	Clementswood	Service Yard	Housing	20	1	No current planning application or new permission	5-6b	030	Growth Corridor	GC1
38	Redbridge Enterprise and Ilford Retail Park	1.86	Clementswood	Retail/Offices/Residential	Employment/ Retail/ Housing/ Education	398	2	No current planning application or new permission	2-4	030	Growth Corridor	GC8
39	Kenneth More Theatre and Janice Mews	0.4	Clementswood	Theatre, theatre store and warehouses	Retail/ Housing/ Leisure/ Health	146	2	No current planning application or new permission	5-6b	030	Growth Corridor	GC5
40	69-126 Ley Street & Opal Mews, Ilford	0.9	Valentines	Retail/Residential	Retail/ Housing/ Health	328	2	No current planning application or new permission	5-6b	026	Growth Corridor	GC6
42	112-114 High Road, Ilford	0.2	Clementswood	Retail/Offices	Retail/ Housing	73	2	No current planning application or new permission	5-6b	030	Growth Corridor	GC5
43	Between Mansfield House & 2 Mansfield Road, Ilford	0.11	Valentines	Residential	Housing	45	2	No current planning application or new permission	5-6b	026	Growth Corridor	GC20
44	7 Morland Road, Ilford IG1 4JU	0.1	Valentines	Commercial/Retail	Housing	41	2	No current planning application or new permission	5-6b	026	Growth Corridor	GC20
45	300 - 318 High Road, Ilford	0.27	Clementswood	Commercial	Retail/ Employment/ Housing	88	2	No current planning application or new permission	5-6b	030	Growth Corridor	GC8
46	177 - 185 High Road (JB/Boots), Ilford	0.19	Clementswood		Housing/Retail	69	2	No Current Planning application or new Permission	5-6b	030	Growth Corridor	GC7
47	Britannia Car Park, Clements Road/Albert Road	0.2	Clementswood	Car Park (Multi-storey)	Housing/ Car Park	73	3	No current planning application or new permission	5-6b	030	Growth Corridor	GC5
48	Seven Kings Car Park & Lorry Park, High Road, Seven Kings	0.62	Seven Kings	Car Park (partly vacant)	Retail/ Housing/ Health	170	1	No current planning application or new permission	2-4	024	Growth Corridor	GC13
49	Charter House, 450 High Road, Ilford	0.18	Clementswood	Offices	Housing	96	1	Consent granted	2-4	030	Growth Corridor	GC10
50	Newbury House, 890-900 Eastern Avenue	0.1	Newbury	Office	Housing	60	1	Consent granted	2-4	020	Growth Corridor	GC22
51	Recorder House, 531-549 High Road, Ilford	0.7	Clementswood	VACANT/Newspaper Office/Industry	Employment/ Housing/ Health	175	1	No current planning application or new permission	2-4	030	Growth Corridor	GC10
52	567-571 High Road	0.09	Goodmayes	Retail	Housing	35	1	Consent granted	2-4	034	Growth Corridor	GC12
53	Shanon Centre, 14 Cameron Road, Seven Kings	0.08	Seven Kings	Leisure	Housing	32	1	Consent granted	2-4	024	Growth Corridor	GC18
54	Former Lord Napier Pub, 521 Green Lane	0.09	Clementswood	Public House	Housing	31	1	Consent granted	2-4	034	Growth Corridor	GC14
55	463 High Road	0.1	Clementswood	Retail	Housing	25	1	Consent granted	2-4	030	Growth Corridor	GC10
56	Chadwell Heath Service Station, 1023 High Road, Chadwell Heath	0.08	Chadwell	Vacant (Former service station)	Housing	23	1	Consent granted	2-4	019	East Redbridge	GC15
57	25-31 Goodmayes Road	0.05	Goodmayes	Retail	Housing	16	1	Consent granted	2-4	024	Growth Corridor	GC14
58	Seven Kings Methodist Church and Hall, Balmoral Gardens, Seven Kings	0.15	Goodmayes	Church and Church Hall	Community/Housing	21	1	No current planning application or new permission	2-4	034	Growth Corridor	GC12
59	58-64 Goodmayes Road, Goodmayes	0.07	Goodmayes	Commercial/Public House	Retail/ Housing	13	1	Consent granted	2-4	034	Growth Corridor	GC14
60	123 Francis Avenue, Ilford	0.05	Clementswood	Commercial	Housing	5	1	Consent granted	2-4	030	Growth Corridor	GC10
61	19 Eastwood Road, Seven Kings	0.06	Seven Kings	Housing	Housing	7	1	Consent granted	2-4	024	Growth Corridor	GC23
62	Balfour House, 394-398 High Road Ilford	0.23	Clementswood	Offices	Housing	5	1	Consent granted	2-4	030	Growth Corridor	GC10
63	45 Barley Lane, Seven Kings	0.06	Seven Kings	Housing	Housing	5	1	Consent granted	2-4	024	Growth Corridor	GC23
64	514-518 High Road, Ilford	0.04	Goodmayes	Retail/Warehouse/Offices	Housing	4	1	No current planning application or new permission	2-4	034	Growth Corridor	GC12
65	1145 (Alfa Romeo) High Road, Chadwell Heath	0.15	Chadwell	Car Showroom	Retail/ Housing/ Health	28	1	No current planning application or new permission	2-4	019	East Redbridge	GC15
66	Newbury Park Station Car Park - West	0.28			Housing	31	1	No Current Planning application or new Permission	2-4	013	East Redbridge	C6
67	Land in and around King George/Goodmayes Hospitals	51	Seven Kings/Newbury	Sports Ground	Subject to detailed Masterplanning-Hospital facilities/Residential/School/ Open Space/ Sports	500	2	No current planning application or new permission	0-1b	024	Growth Corridor	ER1
68	The Ford Sport Ground (Phases 1 & 2)	16	Seven Kings/ Newbury	Sports Ground	Hospital retained - Housing/ Community/ Health/ Education/ Public Open Space/ Sports	851	2	No current planning application or new permission	0-1b	023	Growth Corridor	GC11
69	822 (Tesco) High Road, Goodmayes	4.06	Seven Kings	Retail	Retail/ Housing/ Education/ Health	449	2	No current planning application or new permission	2-4	024	Growth Corridor	GC15
70	645 - 861 High Road, Seven Kings	1.61	Seven Kings	Commercial/Employment/Residential	Retail/ Housing	268	2	No current planning application or new permission	2-4	024	Growth Corridor	GC13
71	Chadwell Heath Retail Park, High Road, Chadwell Heath	1.5	Chadwell	Retail	Housing/ Retail	147	2	No current planning application or new permission	2-4	019	East Redbridge	GC15
72	Goodmayes Retail Park, High Road, Goodmayes	2.74	Seven Kings	Retail	Retail/ Housing/ Health	239	2	No current planning application or new permission	2-4	024	Growth Corridor	GC15
73	674-700 High Road, Seven Kings	1.06	Seven Kings	Commercial/Restaurant	Retail/ Employment/ Housing/ Health	130	2	No current planning application or new permission	2-4	024	Growth Corridor	GC13

74	706 - 720 (Homebase) High Road, Seven Kings	1.04	Seven Kings	Retail	Retail/ Housing	173	2	No current planning application or new permission	2-4	024	Growth Corridor	GC13
75	Metropolitan Police, 919 - 925 High Road, Chadwell Heath	0.91	Seven Kings	Office/Industrial	Employment/ Housing/ Health	89	2	No current planning application or new permission	2-4	024	Growth Corridor	GC15
76	Land at Newbury Park Station, Eastern Avenue	0.73	Aldborough	Car Park	Housing	72	1	No current planning application or new permission	2-4	013	East Redbridge	C6
77	B&Q Store, Springfield Drive, Barkingside	0.59	Aldborough	Retail	Housing	64	2	No current planning application or new permission	2-4	013	East Redbridge	C6
78	4-12 Cameron Road and 625-643, High Road	0.43	Seven Kings	Commercial/Employment/Residential	Housing/ Employment/ Retail	80	2	No current planning application or new permission	2-4	024	Growth Corridor	GC18
79	Car Park and Works, corner of Cedar Park Gardens and Wangey Road, Chadwell Heath	0.29	Chadwell	Car Park/Industrial	Housing	32	2	No current planning application or new permission	2-4	019	East Redbridge	GC15
80	Dunelm Nursing Home and Grovelands Day Centre, Grove Road, Chadwell Heath	0.69	Chadwell	Community	Housing	63	2	No current planning application or new permission	2-4	019	East Redbridge	ER1
81	530-560 High Road, Ilford	0.3	Goodmayes	Industrial	Housing/ Health	33	2	No current planning application or new permission	2-4	034	Growth Corridor	GC12
82	573-603 High Road, Ilford	0.3	Goodmayes	Industrial (Car related)	Housing/ Health	33	2	No current planning application or new permission	2-4	034	Growth Corridor	GC12
83	Telephone Exchange, Corner of Kingswood Road and High Road, Goodmayes	0.14	Seven Kings	Offices/ Nursery	Housing/ Health	17	2	No current planning application or new permission	2-4	024	Growth Corridor	GC13
84	55 - 61 Goodmayes Road, Goodmayes	0.13	Goodmayes	Retail/Residential	Retail/ Housing	24	2	No current planning application or new permission	2-4	034	Growth Corridor	GC14
85	16 -32B Cameron Road and 625-643, High Road	0.21	Seven Kings	Commercial/Employment/Residential	Housing/ Retail	29	2	No current planning application or new permission	2-4	024	Growth Corridor	GC18
86	1171 (Kia) High Road, Chadwell Heath	0.12	Chadwell	Car Showroom	Retail/ Housing	22	2	No current planning application or new permission	2-4	019	East Redbridge	GC15
87	Car Park adj. To Chadwell Heath Stn, Chadwell Heath	0.31	Goodmayes	Car Park	Housing	34	2	No current planning application or new permission	2-4	034	Growth Corridor	GC16
88	Car Park junction of Wangey Road/Cedar Gardens, Chadwell Heath	0.1	Chadwell	Car Park/Industrial	Housing	12	2	No current planning application or new permission	2-4	019	East Redbridge	GC15
89	Ilford County Court, High Road, Ilford	0.14	Clementswood	County Court	Housing	15	2	No current planning application or new permission	2-4	030	Growth Corridor	GC10
90	Car Park rear of 39 Goodmayes Road, Goodmayes	0.08	Goodmayes	Car Park	Housing	10	2	No current planning application or new permission	2-4	034	Growth Corridor	GC14
91	Hinds Head PH, 2A Burnside Road and 76-80 Valance Avenue, Chadwell Heath	0.11	Goodmayes	VACANT (Public House)/Retail	Housing	12	2	Consent granted	2-4	034	Growth Corridor	GC16
92	Corner of Wangey Road and Station Road, Chadwell Heath	0.08	Chadwell	Offices	Retail/ Housing	8	2	Consent granted	2-4	019	East Redbridge	GC15
93	395-405 High Road, Ilford	0.07	Clementswood	Builders Yard	Housing	8	2	No current planning application or new permission	2-4	030	Growth Corridor	GC10
94	617-631 Eastern Avenue (Junction Yoxley Drive)	0.05	Aldborough	Commercial	Housing	5	2	No current planning application or new permission	2-4	013	East Redbridge	GC19
95	8a Cedar Park Gardens, Chadwell Heath	0.03	Chadwell	Residential/Industrial	Housing	6	2	No current planning application or new permission	2-4	019	East Redbridge	GC16
96	Suffolk Court, Newbury Park	1.4	Newbury	Residential	Housing (in fill)	15	2	No current planning application or new permission	2-4	023	Growth Corridor	GC22
97	Area of Open Land at Billet Road and Surrounding Area, RM6 5RX	21.6	Aldborough	Green Belt	Housing/ Sport/ Education	800	3	No current planning application or new permission	2-4	013	East Redbridge	ER5
98	Access Road adjacent to western Newbury Park Station Car Park	1.4			Housing	31	2	No Current Planning application or new Permission	2-4	013	East Redbridge	C6
99	395-397 Eastern Avenue, Gants Hill	0.04	Cranbrook	Office	Housing	25	1	Consent granted	5-6b	015	Central	C4
100	Aerodene House, 41-55 Perth Road, Gants Hill	0.16	Cranbrook	Offices/Retail	Employment/ Residential	57	1	Consent granted	2-4	035	Central	C1
101	Car Showroom, Eastern Avenue, Gants Hill	0.27	Cranbrook	Car Showroom	Residential/ Retail	105	1	Consent granted	5-6b	035	Central	C6
103	Eastern Avenue Storage Buildings, Eastern Avenue, Gants Hill	0.41	Cranbrook	Warehouse	Employment/ Retail/ Residential	77	2	No current planning application or new permission	2-4	035	Central	C1
104	Woodford Avenue/Eastern Avenue Corner, Gants Hill	0.53	Barkingside	Commercial/Retail	Retail/ Housing	112	2	No current planning application or new permission	5-6b	015	Central	C5
104	Woodford Avenue/Cranbrook Road North, Gants Hill	0.34	Barkingside	Commercial/Retail	Retail/ Residential	72	2	No current planning application or new permission	5-6b	015	Central	C5
105	Wentworth House, Eastern Avenue, Gants Hill	0.3	Cranbrook	Offices	Retail/ Residential	56	2	No current planning application or new permission	2-4	035	Central	C1
106	Commercial House, Eastern Avenue, Gants Hill	0.17	Cranbrook	Commercial/Offices	Retail/ Employment/ Residential	36	2	No current planning application or new permission	5-6b	035	Central	C1
107	Montrose House, Eastern Avenue, Gants Hill	0.16	Cranbrook	Commercial/Offices	Retail/ Employment/ Residential	34	2	No current planning application or new permission	5-6b	035	Central	C1
108	KGM House, 14 Eastwood Close, South Woodford	0.1	Church End	Office	Housing	12	1	Consent granted	2-4	007	Woodford	W3
109	29 Glebelands Avenue, South Woodford	0.08	Church End	Housing	Housing	8	1	Consent granted	2-4	007	Woodford	W1
110	27 Glebelands Avenue, South Woodford	0.05	Church End	Housing	Housing	7	1	Consent granted	2-4	007	Woodford	W1
111	Rear of 127 High Road, South Woodford	0.08	Church End	Retail	Housing	7	1	Consent granted	2-4	007	Woodford	W4
112	5 Bedford Road, Church End	0.07	Church End	Housing	Housing	7	1	Consent granted	2-4	007	Woodford	W1
113	Eaton Court, High Road, South Woodford	0.06	Church End	Housing	Housing	6	1	Consent granted	2-4	007	Woodford	W1
114	31 Marlborough Road and South Woodford Station Car Park	0.04	Church End	Retail	Housing	5	1	Consent granted	2-4	009	Woodford	W3
116	120 Chigwell Road, South Woodford	0.9	Roding	Vacant (Industrial)	Housing	82	2	No current planning application or new permission	2-4	009	Woodford	W2
117	Station Estate, off George Lane, South Woodford	0.76	Church End	Industrial/Employment	Employment/ Housing/ Retail	120	2	No current planning application or new permission	2-4	007	Woodford	W3
119	Tesco Store, Southend Road, Woodford Green	1.58	Clayhall	Commercial	Retail/ Housing	71	2	No current planning application or new permission	2-4	036	Central	C10
120	Southend Road and Maybank Road	0.4			Housing/Employment	33	3	No Current Planning application or new Permission	2-4	009	Woodford	W5
121	96 George Lane & 53-55 Marlborough Road, South Woodford Car Park, South Woodford	0.78	Church End	Builders Yard/ Retail/Commercial	Sui Generis (Builders Merchant/ Employment/ Housing)	130	2	No current planning application or new permission	2-4	007	Woodford	W1
121	New Mossford Site, Part of Barnardos Village	1.8	Aldborough	Vacant	Housing/ Employment	212	1	Consent granted	2-4	013	East Redbridge	C6
122	2 Mossford Green, Barkingside	0.02	Barkingside	Housing	Housing	3	1	Consent granted	2-4	010	Central	C7
123	61-63 High Street, Barkingside	0.04	Barkingside	Retail/Commercial	Housing	7	1	Consent granted	2-4	010	Central	C4

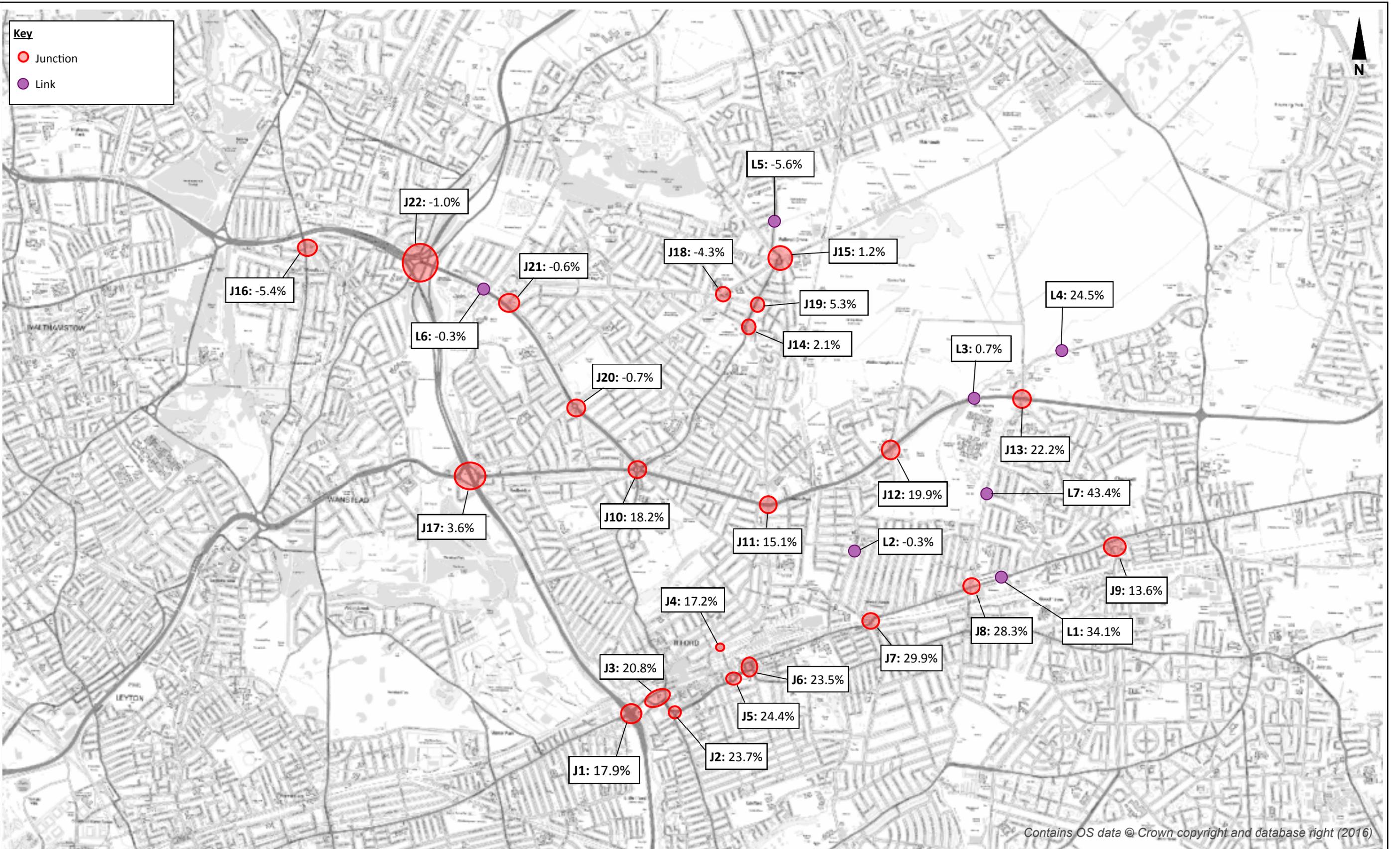
124	Public Conveniences Horns Road	0.02	Barkingside	Public Conveniences	Housing	6	1	Consent granted	0-1b	013	East Redbridge	C6
125	Rear of 561-567 Longbridge Road	0.04	Loxford	Housing	Housing	2	1	Consent granted	2-4	031	Growth Corridor	GC14
126	Station Approach/Carlton Drive, Barkingside	0.75	Aldborough	Builders Yard	Housing	65	1	No current planning application or new permission	2-4	013	East Redbridge	C6
127	Coral Bingo Club, 2a Fairlop Road, Barkingside	0.35	Fullwell	Bingo Club	Retail/ Housing	66	2	No current planning application or new permission	2-4	010	Central	C8
127	Fairlop Station Car Park	0.1			Housing	11	1	No Current Planning application or new Permission	2-4	006	East Redbridge	ER3
129	Fullwell Cross Health Centre, Fencepiece Road, Barkingside	0.34	Fairlop	Health	Health/ Housing	57	2	No current planning application or new permission	2-4	006	Central	C8
130	Queen Victoria House, Cranbrook Road, Barkingside	0.35	Aldborough	Offices	Community	24	2	No current planning application or new permission	2-4	013	East Redbridge	C4
131	366-380 Horns Road, Barkingside	0.07	Aldborough	Garage/Residential	Housing	4	2	No current planning application or new permission	2-4	013	East Redbridge	C6
132	Craven Gardens Car Park, Craven Gardens, Barkingside	0.35	Fairlop	Car Park	Retail/ Housing/ Health	66	2	No current planning application or new permission	2-4	006	Central	GC12
133	Oakfield, Forest Road, Barkingside	24.6	Fairlop	Public Open Space/ Sport/Redbridge Sports Centre	Open Space/ Sport/ Housing/ Education/ Healthcare	614	3	No current planning application or new permission	2-4	006	Central	ER3
134	Car park at Medway Close, Ilford	0.24	Loxford	Car Park	Housing	18	1	Consent granted	2-4	032	Growth Corridor	GC4
135	300-302 Ilford Lane, Ilford	0.03	Loxford	Commercial	Employment /Housing	7	1	Consent granted	2-4	032	Growth Corridor	GC4
136	407 Ilford Lane	0.01	Loxford	Retail	Housing	4	1	No current planning application or new permission	2-4	032	Growth Corridor	GC4
137	Newton Industrial Estate, Eastern Avenue	1.1	Newbury	Industrial	Employment/ Community	16	1	No current planning application or new permission	0-1b	019	East Redbridge	ER6
138	107-111 Netley Road, Aldborough	0.12	Aldborough	Housing	Housing	14	1	Consent granted	2-4	013	East Redbridge	C6
139	Car Park, Daffodil Gardens, Ilford	0.08	Loxford	Car Park	Housing	9	1	No current planning application or new permission	0-1b	032	Growth Corridor	GC4
140	127-129 Stanley Road	0.05	Clementswood	Housing	Housing	9	1	Consent granted	2-4	030	Growth Corridor	GC11
141	6-10 Tring Close, Newbury	0.05	Aldborough	Housing	Housing	7	1	Consent granted	2-4	013	East Redbridge	C6
142	47 Park Road, Ilford	0.04	Clementswood	Housing	Housing	6	1	Consent granted	2-4	030	Growth Corridor	GC11
143	Land adjacent to 2 Eynsford Road, Seven Kings	0.07	Seven Kings	Housing	Housing	6	1	Consent granted	2-4	034	Growth Corridor	GC11
144	Land adjacent. to 24-26 Fields Park Crescent, Chadwell Heath	0.04	Chadwell	Housing	Housing	6	1	Consent granted	0-1b	019	East Redbridge	ER1
145	480-482 Ley St, 22-30 Lynn Road, Ilford	0.45	Newbury	Commercial (Retail/Industrial/Works hops)	Housing	49	2	Consent granted	2-4	023	Growth Corridor	GC18
146	Ley Street House, 497-499 Ley Street, Ilford	0.47	Newbury	Offices	Housing	104	2	No current planning application or new permission	2-4	023	Growth Corridor	GC19
147	Corner of Beehive Lane/Woodford Avenue, adj. 8 Spurway Parade	0.05	Cranbrook	Dry Cleaners	Housing	9	1	Consent granted	2-4	015	Central	C3
148	Holy Trinity Church, Hermon Hill, South Woodford	0.21	Roding	Church Hall	Housing	9	1	Consent granted	2-4	009	Woodford	W3
149	Land r/o 3, 5 and 7 Westview Drive,	0.19	Roding	Housing	Housing	9	1	Consent granted	0-1b	009	Woodford	C10
150	Woodford Green Post Office, Johnston Road	0.09	Monkhams	Post Office	Housing	9	1	Consent granted	0-1b	001	Woodford	W5
151	76-76A Gordon Road, South Woodford	0.09	Roding	Housing	Housing	4	1	Consent granted	0-1b	009	Woodford	W5
152	Repton Court, Claire House and Fullwell Avenue	1.79	Fullwell	Residential	Housing	149	1	Consent granted	2-4	010	Central	C10
153	723-733 Cranbrook Road	0.08	Barkingside	Housing	Housing	14	1	Consent granted	2-4	015	Central	C4
154	Garage Block 8-10 Wannock Gardens, Hainault, Ilford	0.05	Barkingside	Garage	Housing	2	1	Consent granted	0-1b	006	Central	ER3
155	134 Horns Road, Barkingside	0.12	Aldborough	Pub	Housing	6	1	Consent granted	2-4	013	East Redbridge	C6
156	Land at Five Oaks Lane, Chigwell	21.98	Hainault	Housing/	Housing	425	1	Consent granted	0-1b	002	East Redbridge	ER4
157	Kelvin Hughes, New North Road, Hainault	2.23	Fairlop	Industrial	Employment /Housing	182	1	Consent granted	2-4	006	Central	ER3
158	Covered Reservoir, New North Road, Hainault	1.65	Hainault	Reservoir (Covered)	Housing	99	1	Consent granted	0-1b	002	East Redbridge	ER3
159	Marlyon Road Housing Estate, Hainault, Ilford, IG6 3XN.	1.065	Hainault	Residential	Housing	60	1	No current planning application or new permission	0-1b	002	East Redbridge	ER3
160	Garage at top of Hillside Avenue,	0.046	Bridge	Garage	Housing	9	1	Consent granted	2-4	005	Woodford	W5
161	113-115 Manford Way	0.12	Hainault	Offices	Housing	9	1	Consent granted	2-4	002	East Redbridge	ER3
162	The Horse and Well Public House, 566-568 High Road	0.11	Monkhams	Pub	Housing	8	1	Consent granted	2-4	001	Woodford	W5
163	Land adj. 1 Elm Close Wanstead	0.056	Wanstead	Vacant	Housing	8	1	Consent granted	2-4	027	Central	C2
164	Land adjacent to 1 Seagry Road, Wanstead	0.08	Wanstead	Housing	Housing	6	1	Consent granted	2-4	027	Central	C2
165	17 Aldersbrook Road Wanstead	0.06	Wanstead	Housing	Housing	5	1	Consent granted	0-1b	027	Central	C2
166	1-5 Station Approach, Wanstead	0.02	Wanstead	Offices	Housing	5	1	Consent granted (Completed)	2-4	014	Woodford	C2
167	663 Chigwell Road, Woodford Bridge	0.054	Bridge	Commercial	Housing	5	1	No current planning application or new permission	0-1b	005	Woodford	W5
168	191 Whitehall Road, Woodford Green	0.11	Monkhams	Housing/Open Space	Housing	5	1	Consent granted	2-4	001	Woodford	W5
169	R/o The White Hart Public House, Chigwell Road, Woodford Bridge	0.07	Bridge	Car Park	Housing	4	1	Consent granted	0-1b	005	Woodford	W5
170	Wanstead Police Station, Spratt Hall Road, Wanstead	0.1	Wanstead	Office	Housing	4	1	Consent granted (Completed)	2-4	014	Woodford	C2
171	Rear of 591 New North Road	0.07	Hainault	Housing	Housing	4	1	Consent granted	2-4	002	East Redbridge	ER3
172	61-63 & rear of 59-91 Wanstead Park Road, IG1 3TQ	0.59	Valentines	Storage/Residential	Housing	37	1	Consent granted for 37 units (commenced)	0-1b	029	Growth Corridor	GC20
173	Hainault Station Car Park	0.28			Housing	18	1	No Current Planning application or new Permission	2-4	003	East Redbridge	ER3
174	Land adjacent to Hainault Station	0.59			Housing	8	1	No Current Planning application or new Permission	2-4	003	East Redbridge	ER3
175	Wanstead Station Car Park	0.07			Housing	18	1	No Current Planning application or new Permission	5-6b	018	Central	C2
176	Snaresbrook Station Car Park	0.36			Housing	44	1	No Current Planning application or new Permission	2-4	014	Central	C2
177	Land r/o 41-57 Wanstead Park Road, Ilford	0.31	Valentines	Garages/Vacant	Housing	16	2	No current planning application or new permission	2-4	029	Growth Corridor	GC20
178	Ley Street Council Depot	2.56	Newbury	Depot	Housing	279	2	No current planning application or new permission	2-4	023	Growth Corridor	GC19
179	Chase Lane/Perkins Road, Newbury Park	3.45	Aldborough	Commercial	Retail/ Housing	193	2	No current planning application or new permission	0-1b	013	East Redbridge	C6
180	Polygram Building, Unit 1 Clyde Works, Chadwell Heath Lane, Chadwell Heath	0.43	Chadwell	Industrial	Housing	15	2	No current planning application or new permission	0-1b	019	East Redbridge	ER1
181	225-227 Green Lane, Ilford	0.17	Clementswood	Commercial/	Housing	14	2	No current planning application or new permission	2-4	030	Growth Corridor	GC11
182	330- 332 Eastern Avenue, Ilford	0.13	Cranbrook	Car	Housing	14	2	No current planning application or new permission	2-4	035	Central	C1

183	1-3 Pelham Road, Ilford	0.03	Clementswood	Vacant	Housing	2	2	No current planning application or new permission	2-4	030	Growth Corridor	GC11
184	73-77 Grove Road &15-25 Carnarvon Road, South Woodford	0.23	Church End	Garages/Industrial	Housing	9	2	No current planning application or new permission	0-1b	007	Woodford	W4
185	38 Grove Hill, South Woodford	0.09	Church End	Hotel/Residential	Housing	5	2	No current planning application or new permission	2-4	007	Woodford	W1
186	52 Tavistock Road, South Woodford	0.08	Church End	Residential	Housing	3	2	No current planning application or new permission	0-1b	007	Woodford	W1
187	250-260 Fencepiece Road	0.32	Fairlop	Car Showroom	Housing	18	2	No current planning application or new permission	2-4	006	Central	ER3
188	Land r/o 73-83 Little Gearies, Gants Hill	0.17	Barkingside	Residential	Housing	10	2	No current planning application or new permission	2-4	015	Central	C4
189	Heathcote Clinic, Heathcote Avenue, Clayhall	0.1	Fullwell	Health Centre	Health Centre/ Community/ Housing	4	2	No current planning application or new permission	0-1b	010	Central	C7
190	Works at Maybank Road & Chigwell Road, Woodford	1	Roding	Commercial/Employment	Housing/ Employment	82	2	No current planning application or new permission	0-1b	009	Woodford	W5
191	410-418 Ilford Lane, Ilford	0.8	Loxford	Industrial	Housing	7	2	No current planning application or new permission	2-4	033	Growth Corridor	GC4
192	Redbridge Station, Eastern Avenue, Redbridge	0.75	Clayhall	Car Park	Housing	92	1	No current planning application or new permission	2-4	036	Central	C3
193	Capital Gate 320 New North Road	1.1	Fairlop	Residential	Housing	70	2	No current planning application or new permission	2-4	006	Central	ER3
194	Charteris Road Car Park & Woodford Station Car Park, Woodford	0.81	Monkhams	Car Park	Housing/ Retail	47	1	No current planning application or new permission	2-4	001	Woodford	W5
195	330-348 Uphall Road, Ilford	0.44	Loxford	Industrial	Housing	36	2	No current planning application or new permission	2-4	033	Growth Corridor	GC4
196	Hills of Woodford, 536-564 High Road, Woodford Green	0.36	Monkhams	Car Showroom	Housing	20	2	No current planning application or new permission	2-4	001	Woodford	W5
197	Alfred's Head PH, Manford Way, Hainault	0.32	Hainault	Public House	Retail/ Housing	18	2	No current planning application or new permission	2-4	002	East Redbridge	ER3
198	Land between 135-137 Bocket Way, Hainault	0.37	Hainault	Public Open Space	Housing/ Open Space	15	2	No current planning application or new permission	0-1b	002	East Redbridge	ER3
199	Wanstead Hospital, Makepeace Road, Wanstead	1.21	Snaresbrook	Health Centre	Health Centre/ Community/ Housing	70	2	No current planning application or new permission	0-1b	014	Woodford	C2
200	Woodford Library, Snakes Lane, Woodford Green	0.21	Monkhams	Library	Library/ Housing	13	2	No current planning application or new permission	2-4	001	Woodford	W5
201	19 Aldersbrook Road, Wanstead	0.15	Wanstead	Vacant	Housing	6	2	No current planning application or new permission	0-1b	027	Central	W5
202	Rayleigh Road Garage Site, Woodford Green	0.13	Bridge	Garages	Housing	7	2	No current planning application or new permission	0-1b	005	Woodford	W5
203	Land at Baywood Square Garages, Hainault (2 sites)	0.16	Hainault	Garages	Housing	6	2	No current planning application or new permission	0-1b	002	East Redbridge	ER3
204	408 Ilford Lane, Ilford	0.07	Loxford	Vehicle Repairs	Housing	6	2	No current planning application or new permission	2-4	033	Growth Corridor	GC4
205	56 Grenville Gardens, Woodford Green	0.08	Roding	Vacant	Housing	3	2	No current planning application or new permission	0-1b	009	Woodford	W5
206	Site at Roding Lane North, Woodford Green	1.6	Fullwell	Industrial	Housing/ Open Space	64	2	No current planning application or new permission	0-1b	010	Central	W5
207	Madeira Grove Clinic	0.05			Housing	5	2	No Current Planning application or new Permission	2-4	001	Woodford	W5
208	713 Newbury Park (Holiday Inn), Newbury Park					39			2-4	017	Central	C6
209	TA Centre, Gordon Road, Ilford	2.28	Mayfield	Community	Education/ Community/ Housing	124	3	No current planning application or new permission	2-4	031	Growth Corridor	GC11
210	Hainault LUL Depot, Thurlow Gardens, Hainault	1.49	Fairlop	Depot	Community/ Housing	83	3	No current planning application or new permission	0-1b	006	Central	ER3
211	153-221 Manford Way, Hainault	0.86	Hainault	Commercial/Residential	Retail/ Housing (infill and extension)	48	3	No current planning application or new permission	2-4	002	East Redbridge	ER3
212	Land to rear of Church, Foremark Close, Hainault	0.34	Hainault	Community/Residential	Community/ Housing (infill development)	19	3	No current planning application or new permission	2-4	002	East Redbridge	ER3
213	Library and Community Centre, Manford Way, Hainault	0.55	Hainault	Library/Community	Library/ Community Housing	31	3	No current planning application or new permission	2-4	002	East Redbridge	ER3

Appendix I

PEAK FLOW COMPARISON
(Comparison based on Master Sheet Selection)

Junction / Link Ref	Junction / Link Location	% Increase 2030 Do Minimum - 2030 Do Something	
		AM	PM
J1	Ilford Hill / Romford Rd / A406 Slip Roads	17.9%	15.1%
J2	Ilford Ln / Winston Way	23.7%	16.4%
J3	A123 Cranbrook Rd / High St / Chapel Rd / Winston Way / Roden St / A118 Ilford Hill	20.8%	14.1%
J4	Ley St / Griggs Approach	17.2%	10.8%
J5	Winston Way / Griggs Approach / Riches Road	24.4%	16.3%
J6	High Rd / A1083 Green Ln / Winston Way	23.5%	16.9%
J7	High Rd / Cameron Rd	29.9%	25.8%
J8	A118 High Rd / Barley Ln	28.3%	22.8%
J9	High Rd / Wangey Rd / Chadwell Heath Ln	13.6%	8.9%
J10	Gants Hill Rbt (A12 Eastern Ave / A1400 Woodford Ave / A123 Cranbrook Rd)	18.2%	11.3%
J11	A12 Eastern Ave / Horns Rd / Ley St	15.1%	9.7%
J12	A12 Eastern Ave / Aldborough Rd	19.9%	9.6%
J13	A12 Eastern Ave / Barley Ln / Hainault Rd	22.2%	14.3%
J14	A123 Cranbrook Rd / Tanners Ln	2.1%	-2.9%
J15	Fullwell Cross Rbt (Forest Rd / Craven Gdns / A123 High St / Fullwell Ave / Fencepiece Rd)	1.2%	-3.8%
J16	A1199 High Rd / B168 George Ln	-5.4%	-6.0%
J17	Redbridge Rbt (A12 / A406)	3.6%	0.5%
J18	Fairlop Rd / Clayhall Ave / Fremantle Rd / Looe Gdns	-4.3%	-4.7%
J19	Fremantle Rd / High St / Baron Gdns	5.3%	0.5%
J20	A1400 Woodford Ave / Longwood Gdns / Beehive Ln / Redbridge Ln East	-0.7%	-1.9%
J21	A1400 Woodford Ave / Clayhall Ave	-0.6%	-2.3%
J22	Charlie Browns Rbt (Chigwell Rd / A1400 Woodford Ave / Southend Rd)	-1.0%	-2.7%
L1	A118 High Rd, Ilford	34.1%	18.4%
L2	Aldborough Rd South	-0.3%	-3.5%
L3	A12 nr Barley Ln	0.2%	0.7%
L4	Billet Rd	24.5%	18.6%
L5	Fencepiece Rd	-5.6%	-6.4%
L6	A1400 Woodford Ave	-0.3%	-2.0%
L7	Barley Ln south of Gresham Dr	29.2%	43.4%



Net Change in Traffic Flow - Junctions and Links

Appendix J

Multi-modal Trip Generation Summary

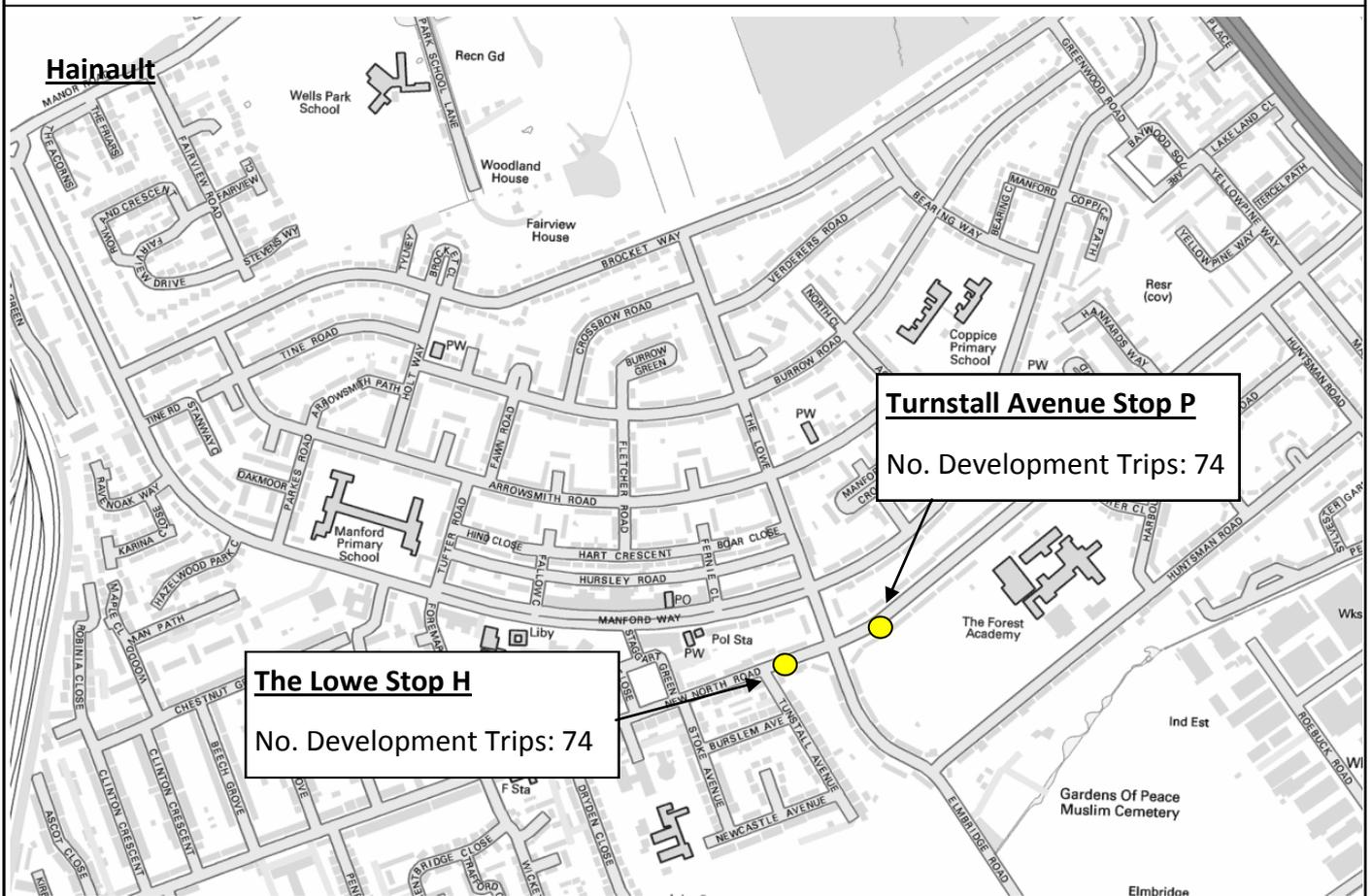
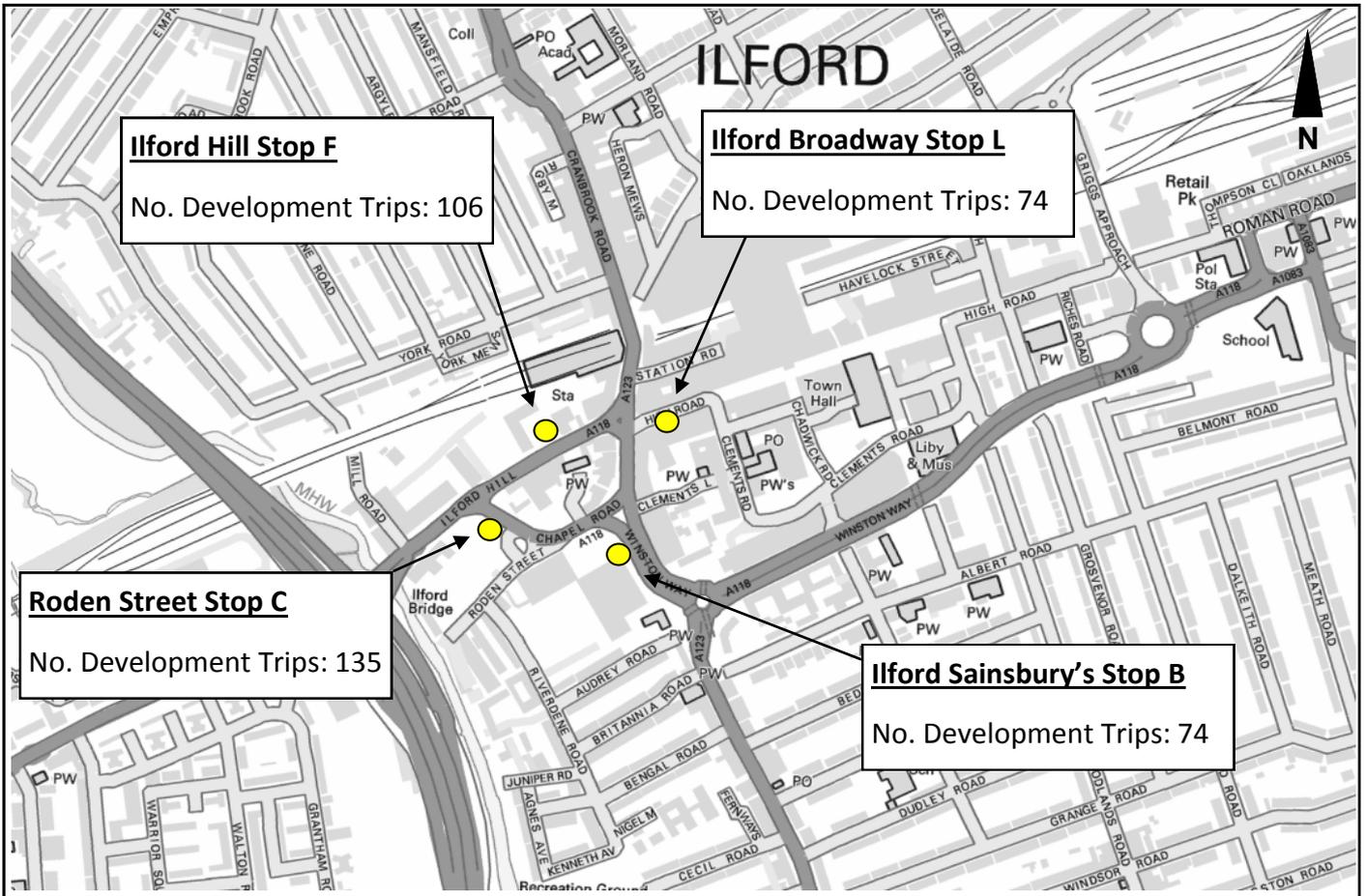
: 5 Highest journey numbers

By Bus Stop

By Rail Station

Location	AM	PM	Total
7 Kings Stop M	11	8	19
7 Kings Stop T	21	16	38
Aldborough Rd South Stop K	19	14	33
Barley Ln/Goodmayes Stop C	43	33	76
Beal Road Stop VK	23	17	40
Bengal Road Stop R	6	4	10
Buckingham Road Stop R	57	43	100
Chadwell Heath Stop B	3	2	5
Chapel Road Stop P	30	23	53
Christchurch Road	47	36	83
Churchfields	1	1	2
Clarendon Road Stop V	9	7	16
Clarendon Road Stop W	9	7	16
Coventry Road Stop VJ	23	17	40
Dudley Road Stop D	6	4	10
Forest Road	48	37	84
Gants Hill Stop CH	15	12	27
Gants Hill Stop CN	15	12	27
Gants Hill Stop CR	0	0	0
Gants Hill Stop WQ	10	8	18
Gants Hill Stop WS	10	8	18
Goodmayes Hospital Stop L	33	25	58
Goodmayes Hospital Stop N	33	25	58
Goodmayes Rd Stop D	43	33	76
Goodmayes Stop E	5	4	10
Goodmayes Stop F	5	4	10
Griggs Approach	47	36	83
Hamilton Avenue Stop CB	6	5	11
Horns Road Stop NL	48	36	84
Ilford Broadway Stop L	74	57	131
Ilford Fire Station Stop V	19	14	33
Ilford Hill Stop F	106	81	187
Ilford Sainsbury's Stop B	30	23	53
Ilford Stop G	74	57	131
Ley Street Perth Road	22	17	38
Ley Street Stop NK	48	36	84
Longwood Gardens	1	1	1
Montpelier Gardens	59	45	104
Fulwell Cross Stop A	7	5	12
Fulwell Cross Stop D	7	5	12
New Road 7 Kings Stop L	11	8	19
Newbury Park Stop NB	4	3	7
Northview Drive Stop F	13	10	23
Nutter Ln Stop R	9	7	16
Oaks Ln Stop NC	4	3	7
Onslow Gardens Stop A	5	4	8
Onslow Gardens Stop R	5	4	8
Padnall Road Stop EB	1	1	2
Pandhall Road Stop J	45	34	79
Pandhall Road Stop W	45	34	79
Perth Road	22	17	38
Redbridge Library Stop L	34	26	60
Redbridge Stop RB	11	9	20
Reynolds Avenue Stop G	59	45	104
Roden Street Stop C	135	103	238
Scottes Ln Stop D	3	2	5
Somerville Road Eastern Avenue Stop EF	1	1	2
South Park Dr Stop A	57	43	100
South Woodford Stop D	8	6	14
South Woodford Stop E	8	6	14
Southend Road Wood Gn Stop L	1	1	2
St P & P Church Stop L	30	23	52
St P & P Church Stop X	30	23	52
The Lowe Stop H	74	56	130
Turnstall Avenue Stop P	74	56	130
Vernon Ave Stop K	18	14	32
Vernon Ave Stop L	18	14	32
Wigram Road Stop S	9	7	16
Winston Way Prim Sc Stop Z	0	0	0
Woodford Trading Est Stop Q	13	10	23
Total	1821	1390	3211

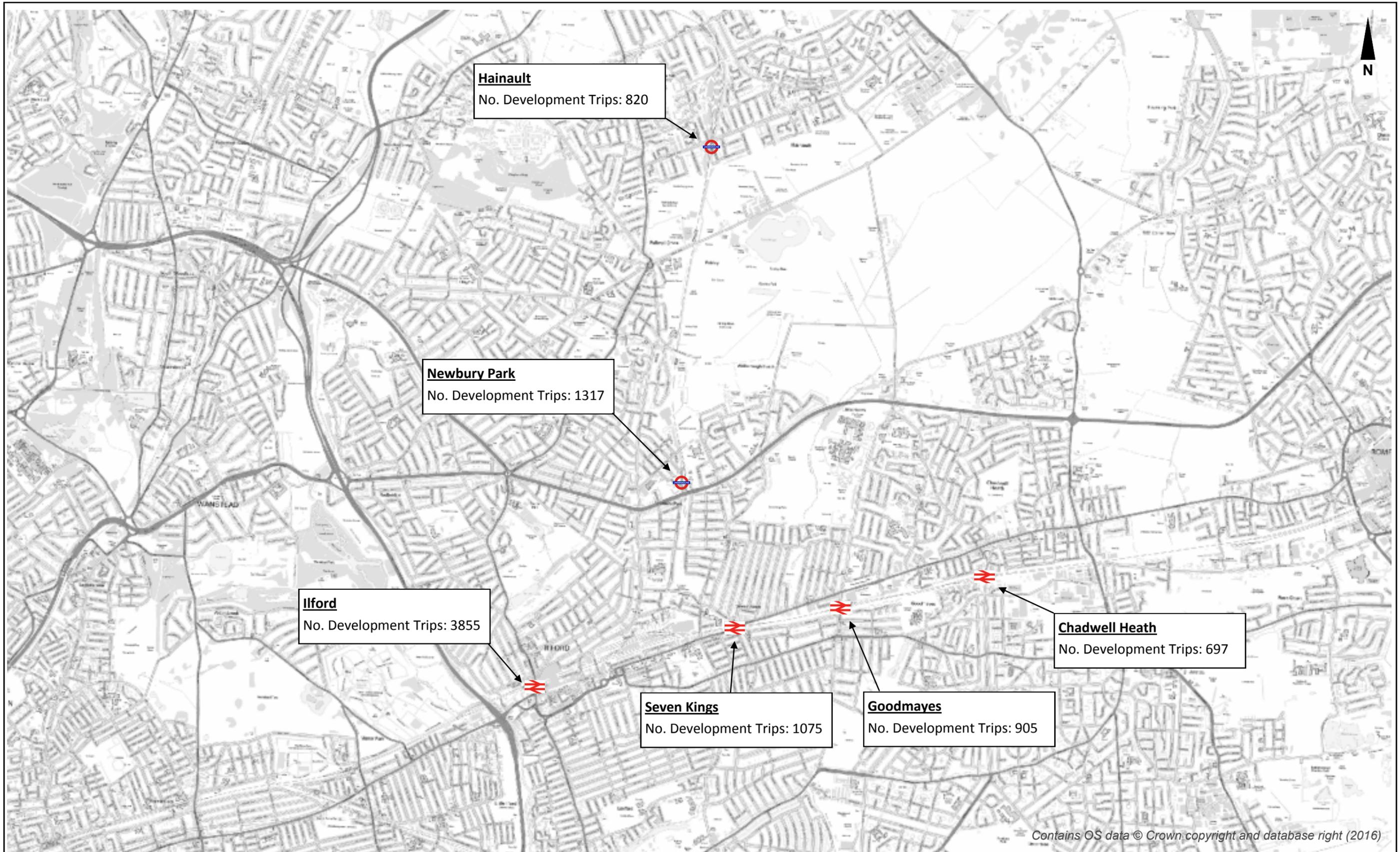
Location	AM	PM	Total	AM %
Barkingside	4	3	8	0%
Chadwell Heath	697	535	1232	7%
Fairlop	342	263	605	3%
Gants Hill	353	271	623	3%
Goodmayes	905	695	1600	9%
Hainault	820	630	1450	8%
Ilford	3855	2960	6815	38%
Newbury Park	1317	1012	2329	13%
Redbridge	63	48	111	1%
Seven Kings	1075	826	1901	11%
South Woodford	399	306	705	4%
Wanstead	100	77	177	1%
Woodford	202	155	358	2%
Total	10132	7781	17914	



Bus Stop Demand (2030 Do Something, AM Peak)

Appendix J





Rail / Underground Station Demand (2030 Do Something, AM Peak)

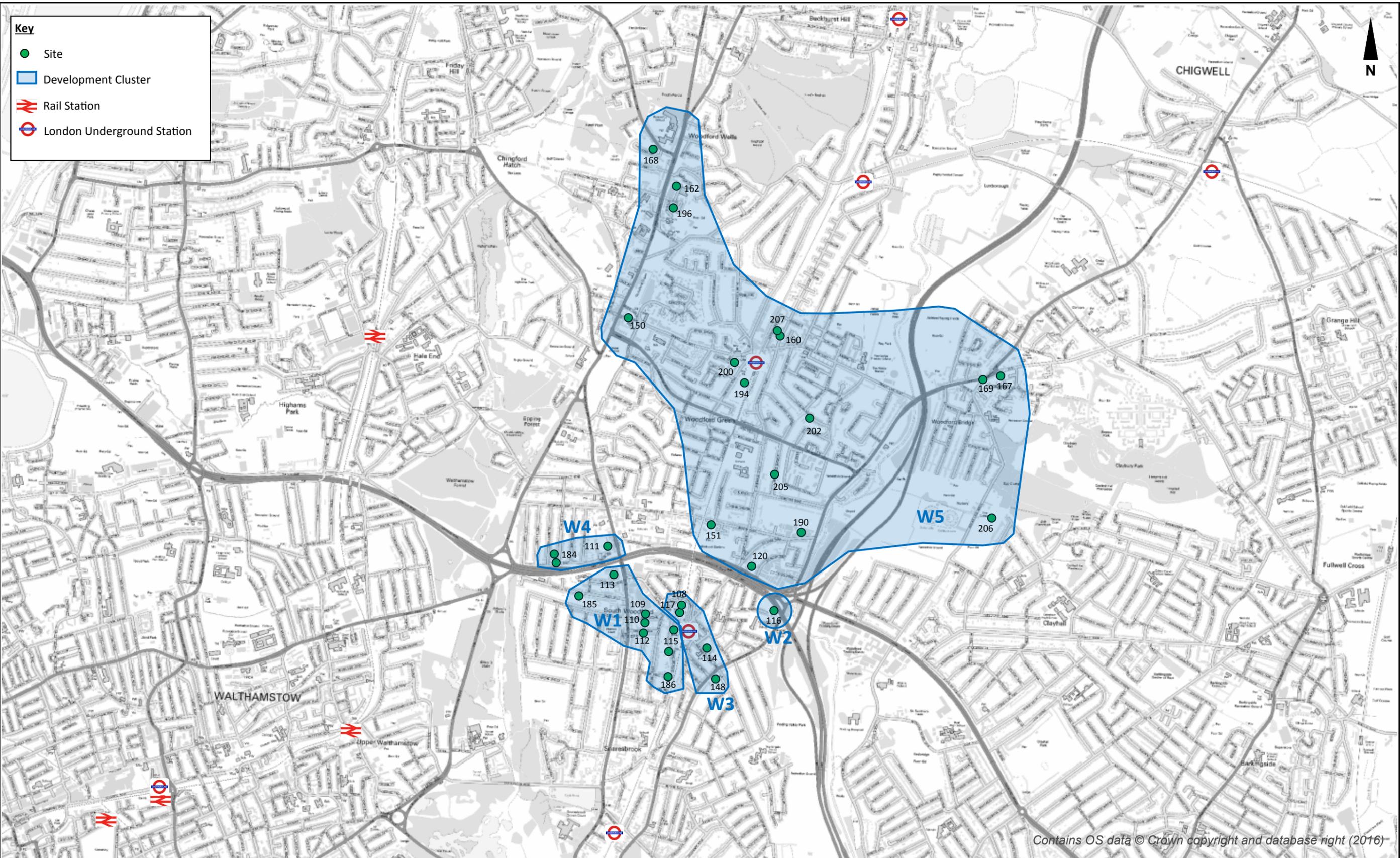
Appendix J



Appendix K

Key

- Site
- Development Cluster
- Rail Station
- London Underground Station



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Woodford Origin Category



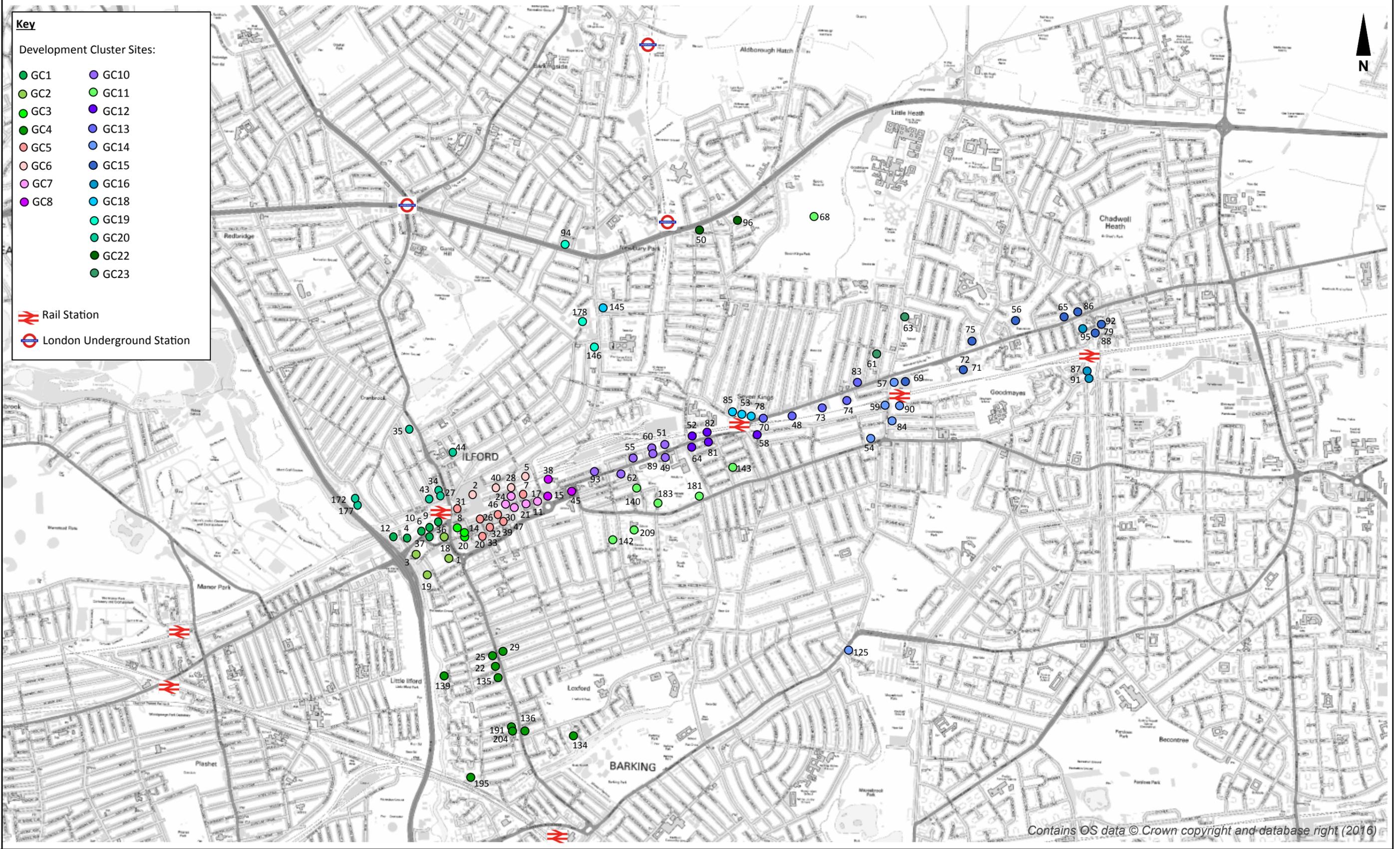
Appendix L

Key

Development Cluster Sites:

● GC1	● GC10
● GC2	● GC11
● GC3	● GC12
● GC4	● GC13
● GC5	● GC14
● GC6	● GC15
● GC7	● GC16
● GC8	● GC18
	● GC19
	● GC20
	● GC22
	● GC23

 Rail Station
 London Underground Station



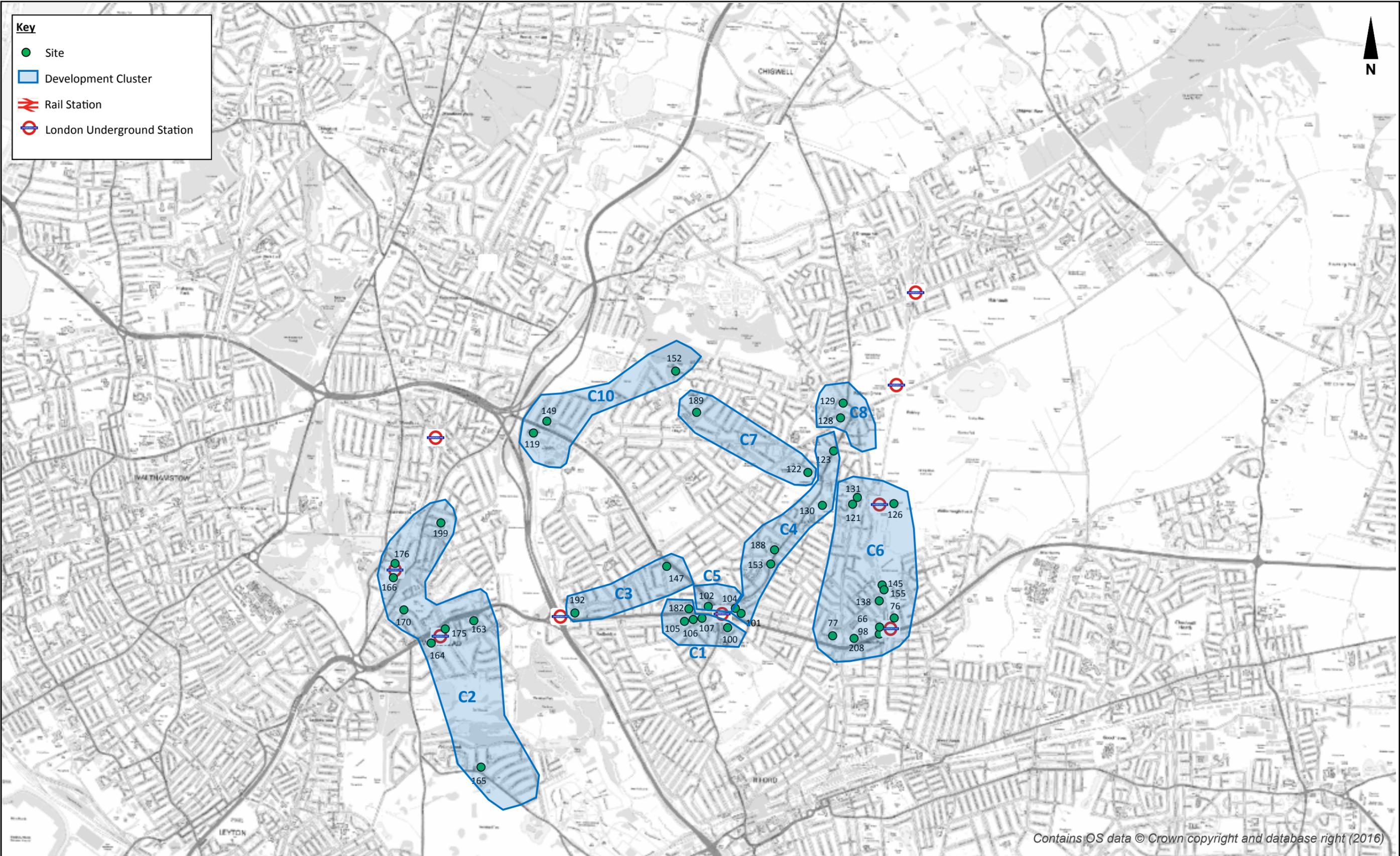
Growth Corridor Origin Category



Appendix M

Key

- Site
- Development Cluster
- Rail Station
- London Underground Station



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Central Origin Category

Appendix N

Key

- Site
- Development Cluster
- Rail Station
- London Underground Station

