West London Tram – The Ealing Case

PART B

Introduction
This report is Part B ”West London Tram: The Ealing Case”, produced by Llewelyn Davies for the Ealing Council West London Tram Team.

The report accompanies Part A of the report. The Part B report is intended to be used as a reference document for Part A, showing the research and analysis done in relation to the West London Tram scheme and its impact upon each of the Council services and responsibilities.

Background – What this document does
The Part A Report presents the headline advantages and disadvantages of the Tram in relation to Ealing Council. It will be used as part of the Council Papers leading up to the submission of the Order under the Transport and Works Act 1992. The information it uses draws upon this Part B Report, which is a treatment of each effect of the Tram in relation to each of the services and responsibilities of Ealing Council.

The Part B report uses an ‘Impact Matrix’ to guide its structure. The Impact Matrix plots each Tram impact along the column headers, classified by the WEBTAG Guidance criteria (Environment, Safety, Accessibility, Economy, Integration, plus the added People and Communities section used to recognise the wider concerns that the Council has beyond simply transport effects). The Council responsibilities and powers are shown as the row headers.

Each cell in the matrix therefore represents the relationship between each effect and each service or responsibility. These relationships are given a section header on the matrix that represents a section in the Part B report.

The existence of the relationship is based on a combination of professional judgement, a series of interviews with service heads and council officers, and the research of secondary sources such as Council plans and strategies, transport modelling information, and documents produced for the West London Tram project.

The cells on the matrix have been shaded to show whether there is a relationship between the impact and the council responsibility, and if so, whether this relationship is one that has is considered to be positive, negative, or of mixed impact. A green cell indicates where the Tram has a positive impact on the Council service, a red cell indicates a negative impact, and an amber cell indicates where there are both positive and negative impacts. A grey cell indicates that there is no relationship between the Tram impact and the Council service, and therefore no analysis required.

A Note on Structure

This document is written to be an ordered treatment of each Council service, and the effect that each Tram impact has upon it. The Council services are not structured on the matrix or in the report to explicitly represent the current structure of council departments, rather to group responsibilities under service headings such as education, social services, sports and leisure and so on.

The report is written so that each service is considered in turn, with minimum use of cross-references. Much of the document is written using a common set of indicators and data derived from the modelled performance of the Tram and road network, together with a consideration of other material that allows us to produce a series of quantified effects of the Tram. A summary of these are presented in Chapter 2 of Part B. A more detailed consideration of these effects can be found in Part A of this report.

This document is to be used as a 'reference' tool to assess the Tram's impacts upon various council services. This use of standard indicators in each section inevitably results in some repetition. Users wanting an overview of Tram impacts should therefore read Part A.

The modelling data used in Part B includes:

- Journey times of both car and public transport users in 2011
- Traffic levels in 2011, both with and without Tram
- Demand (i.e. total number of trips) of car and public transport users in 2011
- Accessibility to various points along the Tram route (such as town centres) in 2011, both car and public transport
- Plus secondary sources such as other research and findings from linked reports such as Economic Impact Assessments

The model results above are taken from the most recent available at the time of writing, which are Run 42 of the TfL Saturn model, from September 2004.

Various data sources have been used in the production of the West London Tram: The Case for Ealing. These are:

- Interviews with various Council Officers
- TfL Saturn Model results (run 42)
- Various Council Plans and Strategies
- Other documents on the benefits and disbenefits of light rail
- Other documents produced for the West London Tram scheme.

TfL supplied modelling results from the Saturn Model, of which the results from Run 42 were used. Both the AM Peak and Interpeak results were used. The analysis draws upon the weighted results from the model, which represent people's perception of time and convenience. For example time spent waiting is perceived as longer than time spent in motion. These weighted results reflect more accurately the travel decisions that people would make taking account of the relative attractive of different modes of travel. . These model results, in the 'with Tram' scenario, take into account the traffic

management measures proposed by the Borough, which have now been adopted as part of the scheme by TfL. These are therefore taken into account when discussing the 'with Tram' traffic flows that appear later in the report.

This information is ordered into a series of Tram impacts, structured under the WEBTAG criteria, plus the People and Communities criteria created for this work. The table below lists these impacts.

Table 1: Tram Impact Classified under WEBTAG Criteria

WEBTAG Criteria	Tram Impact
Environment	Pollution
	Journey Ambience
	Image of Uxbridge Road
	Traffic Impacts on Alternative Routes
	Visual Impact of Masts, Catenary, Signs and Surfaces
	Impacts on Green or other Public space
	Open Space and Landscaping Opportunities
	Impact on Townscape
Safety	Impact on Traffic Conflict and Collisions
	Impact on Traffic Danger on Diversionary Routes
Accessibility	Journey Times
	Higher Capacity Compared to Bus
	Reliability of Public transport Service
	Population Catchments of Jobs and Services
	Frequency of Public Transport Stops on Uxbridge Road
	Capacity for Other Road Traffic
	Traffic Impacts on Alternative Routes
	Parking on Uxbridge Road
	Access for some Businesses and Services
Economy	Enhanced Image of Uxbridge Road
	Speed, reliability, ride quality and image impact on regeneration, densification and intensification
	Land values resulting from greater accessibility
	Land use policy: higher density at interchanges
People and Communities	Accessibility to local amenities and employment and social inclusion
	Transport economic efficiency and reliability: Ealing Residents

We have attempted to produce judgement and analysis for each Tram impact, on each Council service. However, where other accompanying documents such as the Environmental Impact Assessment or the Economic Impact Report are expected to provide more in depth analysis, we have flagged this in the report.

In addition, the programme of Council officer meetings did not cover every service responsibility, though it did cover those most heavily affected by the Tram. Reviews of council plans and strategies were used when staff were not available, but, further research could identify impacts in further detail, such as specific Heads of affected schools, or Sports and Leisure service leaders.

1. The Principal Effects of the Tram

The following chapters analyse the effect of the Tram on a number of Council services, where it has been judged that there will be an impact, whether positive, negative, or mixed. The analysis of these impacts is based upon the principal effects of the Tram identified during the research stages of this project. These impacts, which have been discussed in Part A of the report as well as the previous sections of Part B, are re-capped here, so as not to be repeated in subsequent sections of this report, which focus purely on the analysis of these impacts against the relevant Council Service. These impacts are grouped within the five WEBTAG categories, plus the People and Communities category created to recognise the wider perspective of the council beyond that for which the WEBTAG criteria were created.

1.1: Environment

1.1.1: Pollution

Pollution sources, such as noise and vibration and air quality could potentially affect nursery provision along the Tram route. This will occur both during construction, and during the Tram's operation.

The Environmental Impact Assessment will fully assess the impacts of noise and air pollution of the situation in 2011 with and without the Tram, in comparison to the 2003 baseline. These changes will be mapped to indicate where across the Borough increases and decreases are predicted to occur.

Full analysis of the effect of (potentially) less pollution on these services cannot fully be explored until the completion of the Environmental Impact Assessment, but we can make a judgement at this stage using the EIA Scoping Study, and evidence from other Tram schemes and knowledge of the pollution effects of light rail.

We could expect that the Tram will introduce a new form of noise and air pollution during the construction phase of the Tram, with potential adverse effects on users of nursery services close to the Tram route. However, the low noise creation and air pollution emissions of the Tram, plus the expected reduction in overall traffic levels following the its completion and subsequent operation, will have longer term benefits to those services close to the Tram route.

1.1.2: Journey Ambience

The Tram offers a number of 'softer' benefits to users such as greater journey 'ambience' that the Tram gives to Uxbridge Road. Combined, these could induce mode shift towards the Tram from other modes of transport, and contribute to including new public transport (specifically Tram) users.

1.1.3: Image of Uxbridge Road

The introduction of the Tram along the Uxbridge road has the potential to enhance the image of the Uxbridge Road as long as appropriate attention is given to the detailing, such as the landscape and public realm interventions

and the ‘kit’ used on the Tram infrastructure. Assuming that these are carried out to a high standard the image of Uxbridge Road and the centres along it could be enhanced, especially in a sub-regional context.

Enhanced image is a ‘soft’ benefit of the Tram, and is difficult to measure, despite attempts to do this for a variety of Tram schemes. However, there are indications that transport schemes such as the one proposed for West London are perceived favourably from the perspective of potential developers, and can raise the profile of areas in which Tram schemes are constructed. This was indicated in research done on the effects of the Croydon Tramlink.

1.1.4: Traffic Impacts on Alternative Routes

The TfL modelling allows us to predict which streets and routes across the Borough will experienced increased (or decreased) traffic in 2011 with and without the Tram. The effect that the Tram will have upon a number of selected services and individual streets are shown in Appendix 4 of this report. The impact of these traffic changes is based on a comparison of the 2011 ‘do minimum’ scenario as compared to the most likely ‘with Tram and traffic management measures’ scenario.

These traffic impacts take into account the proposed traffic management measures which have been adopted by TfL as part of the overall Tram package.

These traffic increases have implications relating to safety, accessibility and environmental quality.

1.1.5: Visual Impact of Masts, Catenary, Signs and Surfaces

Inevitably the engineering associated with the Tram has a visual impact. In relation to signs, masts and other Tram infrastructure, poor quality equipment or design could have a negative impact on the appearance and the streetscape

It could be considered that the Tram will have a negative impact on certain parts of the townscape in the Borough. The poles, wires, surfaces, street furniture and the vehicles that associate the Tram scheme have an impact upon the places through which they run. It is this additional ‘kit’ that bus services do not have that causes this additional impact.

It is impossible to quantify the impact of ‘image’ or visual intrusion on conservation. It is very much down to individual perceptions, and is also dependent on the design and type of engineering used.

1.1.6: Impacts on Green or other Public Space

The Tram may, depending on the land-take of the route, result in the loss of some green space, pathways or road space. The degree to which this is expected to occur is minimal, and cannot be fully confirmed until the design of the route is finalised.

There may also be an impact on the Trees that line much of the Uxbridge Road. These trees are an important part of the character of the Borough, both as an aspect of the environment and also to Ealing's residents. The Tram scheme could potentially result in the loss of some of these trees and should be considered as disbenefit of the scheme. Again, the extent to which this will occur will be confirmed when the Tram scheme design and route is finalised.

1.1.7: Open Space and Landscaping Opportunities

The introduction of a piece of infrastructure such as the West London Tram requires use and adaptation of a significant amount of the road space, especially in comparison with bus services. This may provide potential for more and better designed open space.

The Tram could potentially present opportunities for better landscaping or open space opportunities, such as pedestrianisation in the town centres. A more sustainable transport system may also reduce the need to create additional car parking along the route. The Tram may also give the opportunity for the upgrading or replacement of the street furniture along the Tram route. In a small number of locations certain demolition of buildings may also release additional land for use as new urban spaces.

The Tram route may present the possibility to upgrade the urban environment in Ealing by providing the means to improve cycle routes by segregating them from traffic, or creating areas of soft landscaping along the route, which may strengthen the streetscape

1.1.8: Impact on Townscape

The introduction of a piece of infrastructure of the scale of the proposed West London Tram scheme could arguably have a negative effect on the townscape of the Borough, especially in particularly sensitive urban location such as town centres or conservation areas. Again, this impact id not quantifiable and relies on people's perceptions. In addition, the impact may change in its significance depending on the design of the Tram vehicles and associated engineering, the integration of the Tram with a existing streetscape and the landscape design used along the route.

1.2: Safety

1.2.1: Impact on Traffic Conflict and Collisions

The introduction of the Tram will lead to a significant reduction in the overall number of public transport vehicles operating on Uxbridge Road corridor.This may improve road safety by reducing the overall number of vehicles and by giving additional priority to cyclists and pedestrians. This benefit of less car collisions cannot, however, be predicted with certainty. In particular, crash rates can be as much a consequence of traffic mix as traffic volume. There is no automatic relationship between volumes of motor traffic and crash rates. Speeds and street layouts plus many other factors play a part.

Anecdotal indications from the introduction of the Luas, light rail scheme in Dublin would appear to indicate that there is an adjustment period required for road users to adapt to the introduction of new road users. The Red Line offers a good example of some of the potential pitfalls if street management and traffic enforcement is not handled with sufficient vigour. For the first couple of months after the introduction of the Luas Red Line, accidents (many quite minor, but resulting in significant delays) were running at about two per week.

This has occurred despite significant public information campaigns to inform other road users of the pending introduction of the Tram, indicating that information without strong enforcement is not sufficient and as a result significant delays have been a feature of the Red Line since its introduction. The differences are exacerbated when contrasted with the Green Line which is 95% segregated and is operating efficiently with only one minor accident recorded so far. The example above from Dublin suggests that along with public information, that strict enforcement measures, possibly including, but not limited to CCTV at critical junctions may be necessary in order to ensure safety and the efficient running of the Tram.

1.2.2: Impact on Traffic Danger on Diversionary Routes

where the Tram causes an increase in traffic levels on diversionary routes, it could be considered to have a safety impact. However, the programme of traffic mitigation adopted by TfL as part of the overall package will succeed in reducing the danger of traffic on some of the roads worst affected by increased traffic as a result of the Tram in 2011, and there will be a reduction in traffic on other routes which could reduce traffic danger. This is potentially an area of specific concern to the borough and certain roads may need to have their current traffic management and road safety measures re-evaluated in the context of higher levels of traffic on *certain* routes, bearing in mind the caveat above that not all diversionary routes will experience an appreciable increase in traffic levels over the non-Tram scenario.

The traffic changes along key routes and streets near to key services are included in appendix 4.

1.3: Accessibility

1.3.1: Journey Times

From the TfL Saturn Modelling Results (Run 42), journey time savings for existing users within Ealing are as follows, comparing 2001 with Tram to 2011 without Tram:

The journey time savings are derived from the priority the Tram receives at junctions and on the segregated portions of the route, and time savings from both waiting time and in-vehicle time.

Table 2 Time Benefits on all Journeys to, from and within LBE, 2011 with Tram against 2011 without Tram

	Public Transport		Car		Net Benefit	
	Peak	Interpeak	Peak	Interpeak	Peak	Interpeak
Total time benefits (minutes)	205,000	442,000	-96,500	-136,000	108,000	306,000
% change per trip in minutes	-8.6%	-12%	7.4%	7%	-	-
Time saved / person trip (minutes)	4.6	5.1	-0.9	-0.7	-	-

1.3.2: Higher Capacity compared to Bus

The expected increases population and employment across west London over the next 10 – 15 years are expected to create up to a 20% increase in demand for public transport services between now and 2011. The current bus network could not meet this demand, and expanding and improving the bus network to these levels would prove economically inefficient and would create extra bus traffic that would put the Uxbridge Road under increasing traffic pressure. The Tram can carry a much larger number of people with many fewer, albeit longer, vehicles on the street.

Once the Tram infrastructure is provided, extra passenger capacity can be provided up to a practical limit of around double the forecast demand at 2011. This provides generous “headroom” to meet the demand arising from growth and development in Ealing, together with further switching of trips from car to public transport.

1.3.3: Reliability of Public Transport Service

The Tram service can be regarded as more reliable than the alternative public transport mode would be in 2011 due to the better priority that can be given at junctions, as Trams carry larger numbers of people on a given amount of road space, with better boarding and alighting times, and continuous priority, as over 70% of the route is segregated for the Tram (as opposed to currently 40% reserved for bus priority).

1.3.4: Population Catchments for Jobs and Services

The TfL Saturn modelling provides us with information regarding the changing population catchments accessible to the various points along the Tram route, by highway (car) and public transport. This information allows us to assess the relative accessibility of those nursery services within or near to the town centres.

These catchments in relation to various centres and facilities are included in Chapter 2.2.5. The figures show the population accessible to the given point in a defined range of time-bands. The population shown is a percentage of the Borough population, which is approximately 297,000 people. The analysis in the following chapter refer to these tables.

1.3.5: Frequency of Public Transport Stops on Uxbridge Road

In order to maintain the efficiency of the Tram system, the number of stops that the Tram makes is likely to be less than the number of stops currently along the 207/607 bus route, meaning larger distances between Tram stops than bus stops. If the Tram does not proceed, between now and 2011 a number of bus stops will have to be removed to maintain bus efficiency, however, the number of stops removed is relatively minor in the context of the whole route (10 westbound and 7 eastbound along the route).

1.3.6: Capacity for Other Road Traffic

At some points along the route, the Tram will mean that there is reduced capacity for other road traffic in order to maintain the priority running needed to maintain the efficiency of the Tram. This may be in the form of shared running between Tram and other traffic, or where segregated running means reduced road space for other traffic, or where other traffic has to be diverted in order for the Tram to maintain its current route.

1.3.7: Traffic impacts on Alternative Routes

The traffic changes along various streets and facilities in the Borough are shown in Appendix 4. these traffic changes have an impact in terms of accessibility to places, in addition to the impact on safety and the environment as discussed elsewhere

1.3.8: Parking on Uxbridge Road

The Tram route may reduce the amount on on-street parking available along Uxbridge Road, although at present there is little on-street parking along the Tram route. This extent to which this occurs cannot be fully measured until the scheme design is finalised

1.3.9: Access for some Businesses and Services

The reallocation of space in favour of the Tram may have specific implications for certain businesses along the route in terms of access for servicing, deliveries and collections. Those most likely to be affected are those in the town centre areas and those locations where public transport only and Tram only corridors will be in place.

The construction of the Tram and the associated changes to the urban environment may have consequences for particular businesses along the route. Especially where Tram only or public transport only routes are implemented, there is likely to be some impact on a number of businesses, although the design will seek to minimise the impact. There will be an ongoing assessment of access and servicing which will be used to monitor this potential disadvantage.

Until the scheme design is confirmed, and construction arrangements finalised, it is not known for how long businesses would be affected, or how many would be affected at any one time. It should be a key requirement of the Borough to ensure that construction is phased to minimise disruption.

Advice was sought from those involved with the LUAS scheme in Dublin, and anecdotal information was supplied on the effects that the construction of the scheme had on businesses. This evidence suggested that although businesses were affected, it was only comparable in scale to what may occur anyway to such a street – such as a major sewer repair or roadworks. Although this is an inconvenience, such inconveniences are often experienced as part of urban life, and some gentrification of businesses was reported after construction, so the long term gain may prove to outweigh the short term pain

1.4: Economy

1.4.1: Enhanced Image of Uxbridge Road

The Tram scheme could arguably improve the image of the Uxbridge Road corridor and the town centres that lie along it. Evidence from studies on the Croydon Tramlink, suggests that the Tram generated a sense of civic pride and helped facilitate urban renewal, raised the profile of the entire area, and attracted higher rents, new developments and private sector investment[1]. In addition, The International Association of Public Transport (UITP) has argued that light rail "contributes positively to the social dimension of a city, improves the quality of life and makes it more liveable "[2].

1.4.2: Speed, reliability, ride quality and image impact on regeneration, densification and intensification

The Tram, both through its image and perception and by the benefits it offers in transport terms over the bus could support policies that focus development in town centres, through providing additional 'headroom' for development and by providing extra capacity to soak up the trips created by new housing and employment development that the existing bus network cannot accommodate.

The predicted growth in travel demand across the Borough will exceed the current capacity of the public transport network. Extending the bus network is possible, but will only serve to meet demand, not improve conditions, and as traffic congestion increases the bus becomes unreliable, journey times increase and it becomes economically inefficient. The Tram provides the required capacity to meet demand in 2011. The Tram also offers other service improvements such as improved ride quality and image that would not be possible by simply extending the bus service to meet demand. These further increase the benefits of public transport over car and provide the incentive for further mode switch.

The additional capacity, reliability and journey speed means more people are in the catchment of the town centres in 2011 with the Tram than would be without the Tram allows development sites to be built at higher densities at places where public transport accessibility is high, such as town centres and

[1] Colin Buchanan and Partners 'The Economic and Regeneration Benefits of Croydon Tram link'

[2] Quoted in Merseytram (2004) MerseyTram (Liverpool City Centre to Kirkby) Order; Statement of Case p. 50

interchanges. Increased catchments also means a potential increase in demand for services, and an increase in supply for labour, which permits more intensive uses of town centre sites.

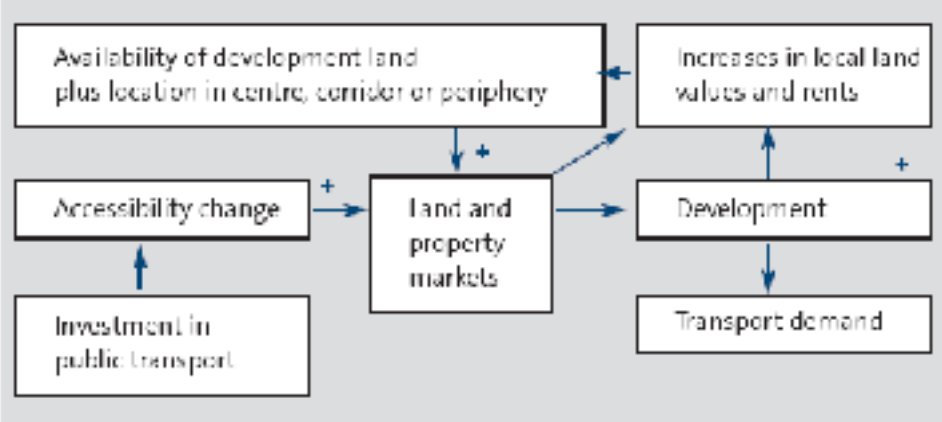
1.4.3: Land values resulting from greater accessibility

The rationale behind the increasing land prices as a result of investment in public transport and the impact of the resultant change in accessibility levels has been long established. The figure below, gives the theoretical background, in the context of a case study analysis done by RICS on behalf of the Department for Transport and the Office of the Deputy Prime Minister. The basic thesis is that investment in public transport is beneficial if there is a resultant increase in accessibility levels and that this, combined with the availability of development land, can have a positive effect on the land and property markets, which in turn can lead to more development and increased land values.

The essential problem with this thesis is the absence of any robust quantitative evidence. This is despite the plethora of academic theoretical research on the topic the majority of which support the basic premise outlined below. The case study undertaken by RICS in Croydon found little appreciable impact on property markets. There are numerous less scientifically robust examples which might be used to counter this argument, with the most recent example being Dublin where Property Agents are reporting increases in property values along the tram route in the region of 20% above the rest of the market in Dublin.

This perhaps points to a possible explanation which may shed some light on the potential impact of the WLT on land values. The key difference between South London and Dublin is the impact that the two separate schemes had on overall accessibility levels. Dublin, being a notoriously congested city with little quality public transport up to this point, experienced a significant increase in accessibility levels. Croydon on the other hand, given its pre-existing accessibility levels, experienced only a very slight increase in accessibility levels. This was concentrated at certain areas on the route which had previously had relatively low levels of accessibility. Understanding the theoretical framework below, it is clear why the impact on Dublin property prices has been relatively great.

The WLT is more likely to emulate the case of Croydon rather than Dublin, given the relatively good existing levels of accessibility. However, the current emerging capacity constraints along the Uxbridge Road corridor cannot be overlooked in looking at the impact of the WLT on land values. Were sufficient capacity not available to maintain current accessibility levels, it could be envisaged that development, which relies on high levels accessibility, would seek other locations, potentially having a negative effect on the land values in Ealing. Accepting this argument suggest that the WLT would help to sustain continued growth in land values along the corridor.



Source: RICS (2004) Land value and public transport, p.5

1.4.4: Land use policy: higher density at interchanges

The Tram allows the Borough to pursue a policy aimed at allowing high density development, as the post-Tram public transport network has the capacity to support the trips generated by such development. The Tram will allow the Council to do this with greater confidence than with the bus-based alternative. This is encapsulated in land-use policy, especially at places where transprt accessibility is high, such as the potential public transport interchange that could be developed at Ealing Broadway.

1.5: People and Communities

1.5.1: Accessibility to local amenities and employment and social inclusion

The Tram improves the performance of the public transport network through reducing journey times. This means that more people can reach jobs, services and the town centres along the route in less time, as shown by the modelling which shows that the accessibility of the Southall, Hanwell and Acton will increase significantly. These changes in accessibility are shown in 1.2.5.

These changes in accessibility may promote social inclusion in that it allows the people better access to jobs and services than in a no-Tram scenario, promoting choice for services, and removing any transport or access based barriers to employment that may occur. There may be other barriers to employment that exist however, to which the Tram cannot on its own contribute, such as structural barriers such as language or skills gaps. The Tram could be part of an overall regeneration package that combined are able to remove these barriers.

1.5.2: Transport economic efficiency and reliability: Ealing Residents

This impact describes the combined accessibility effects (section 3.3) above, in relation to how specifically benefits the residents of Ealing, in relation to the improved accessibility to services, facilities or jobs.

Each of the following Chapters focus on a particular Council service, and how the effects of the Tram described in Chapter 3 impact upon these services.

In the following sections these effects of the Tram are considered in turn to those responsibilities and powers of the Council on which the Tram is judged to have an impact. The council responsibilities and services are:

- Regeneration and major projects – which include Neighbourhood Renewal, the Town Centre Strategies and the implementation of the Response Programme
- Planning and Development Control, including planning policy, development control, and conservation

Followed by other mainstream Council services, namely

- Education
- Street operation and enforcement
- Sports, leisure and recreation
- Housing and environmental health
- Social services
- Environmental services

2. Regeneration and Major Projects

2.1: Regeneration

This section deals with the services and functions of Ealing Council in relation to regeneration, plus other major projects such as the implementation of the Response programme and the delivery of the Town Centre Strategies. Although not an obligatory function, Local Authorities have discretionary power to pursue regeneration and development to benefit disadvantaged people and communities.

Regeneration in Ealing is not the responsibility of one department, nor is it crystallised in one strategy or plan. It is a crosscutting theme that is a feature of many strategies and policies including:

- The Community Strategy
- The Local Neighbourhood Renewal Strategy
- The UDP
- The Community and Neighbourhood Strategy
- The Social Inclusion Strategy
- The Town Centre Strategies

The discretionary responsibilities held by the Council in relation to regeneration, encapsulated in the strategies and plans above have been summarised under the following categories:

- Neighbourhood Renewal – The Implementation of the Neighbourhood Renewal Strategy, relating to specific neighbourhood-based regeneration programmes, such as those running in Southall and Acton
- Social exclusion
- Community safety

These are in addition to the Town Centre strategies and the Response Programme.

It is under these headings that the Tram's effect on regeneration in the Borough is approached.

2.1.1: Pollution from Public Transport

In terms of regeneration, and specifically neighbourhood renewal, areas such as the regeneration areas of Southall and Acton often have poor health levels among children and adults. Although primary health concerns are with nutrition, the effects of drugs, sexual health and exercise, the expected benefits in terms of pollution can contribute to the overall improvement to the environment and the health benefits this can bring in the future.

The more immediate disbenefits in relation to the impacts during construction will have an impact on those neighbourhoods closest to the route, such as the Windmill Park neighbourhood or the northerly parts of the South Acton estate.

These impacts, however, are relatively short term and have a limited negative impact on the achieving neighbourhood renewal.

2.1.2: Image of Uxbridge Road

This improvement in image and profile may encourage investors into areas where, due to perceived economic weakness or uncertainty, investors have previously been reluctant to enter. The Tram may give confidence to investors through the level of investment and what this represents. The Tram could therefore 'unlock' development sites, or give the potential for intensification on existing sites in areas such as Southall. The effect of this is likely to be accessible job opportunities for the Southall community.

2.1.3: Capacity, Reliability, and Accessibility Impacts

This section is primarily concerned with how the transport benefits of the Tram can help achieve the neighbourhood renewal targets in relation to improving the accessibility of residents of disadvantaged neighbourhoods to reach a greater range of jobs, services and amenities.

A key aim of neighbourhood renewal is to improve employment opportunities to residents in neighbourhoods blighted by social exclusion. Although the main access related barrier to employment are skills or education related, there is an element of the access issue, which is physical access. The Tram can contribute to the removal of this barrier. The South Acton neighbourhood and the Windmill Park neighbourhood are the neighbourhood renewal areas that are best positioned to benefit from these accessibility improvements due to the proximity to the Tram route.

2.2: The Town Centre Strategies

The Town Centre Strategies have been produced to set out how the Council wants the town centres within the Borough to develop over the next 10-15 years. The Town Centres are significant centres of activity, and are the focus of the majority of employment, retail, culture, leisure and increasingly, residential uses and development. In response to the important role the town centres play in the continuing development of the Borough, the strategies were produced.

The Tram will pass through four centres in Ealing, for each of which a strategy has been produced. The Tram could play a significant part in delivering these strategies, as discussed in the following sections.

Ealing Town Centre Strategy

Ealing town centre is classified in the London Plan as a metropolitan centre, comprising of Ealing Broadway and West Ealing. It plays an important role for the borough and West London as a location for investment, a location for employment, retail, leisure, and as a place to study and live.

Its main aims for development are to continue to attract people into the centre to ensure it survives and prospers in the face of increasing competition from

nearby centres, whilst maintaining a quality of life for those living nearby. The strategy encourages development, focused on brownfield and currently underused sites, but ensuring they can be accessed by sustainable means – by discouraging car use and encouraging the use of public transport. It wishes to create new public space and maintain and improve the urban environment. It wishes to retain its present catchment, and reduce journeys to other centres outside the Borough.

The various impacts of the Tram have an effect on the ability of the Borough to achieve these aims. These impacts are discussed below.

Southall Town Centre Strategy
Southall town centre is designated as a major centre. The Southall Town Centre Strategy recognises the importance of Southall in terms of its multicultural identity and importance as a focus for communities of a variety of ethnic backgrounds. The strategy aims to use this multiculturalism as a basis for growth, through specialist shopping, cultural and economic activities and to act as a gateway for multiculturalism and commercial development, for its local, sub-regional, national and international markets.

The Tram will have an effect on the ability of the Council to deliver the objectives set out in the Southall Town Centre Strategy. The following sections describe how these impacts will affect the delivery of the Strategy.

Acton Town Centre Strategy
Acton town centre is designated as a District centre, and therefore its function is predominantly to serve a walk-in catchment. However, the strategy still wishes to develop Acton as a location for employment and cultural activities as well as a more specialised retail role which cannot only be supported by a local, walk-in catchment. There is also a need for a good quality public transport route. This is also needed to support the residential proposals within the planning pipeline, and also to contribute to the environmental quality of the area through reducing traffic congestion and reliance on the car to access the centre.

The sections below examine the impacts of the Tram on the Acton town centre and the Strategy intended to guide its development over the next 10 years.

Hanwell Town Centre Strategy
The Hanwell Town Centre Strategy focuses on improving both the environment and the range and quality of shops within the town centre for the benefit of its local catchment. It recognises the problems of congestion, both on town centre activities and the problems of rat-running and its effect on those living near to the centre.

Hanwell is classified as a District Centre, and so serves a local, walk-in catchment rather than, say, Ealing or Southall that depend on a wider catchment. In this sense, the Tram should be treated differently in terms of the

town centre strategy. The environmental impact of it may be more important than the increases in accessibility it gives across a wider area, as these environmental effects are of more concern to the delivery of the Town Centre Strategy than increasing the size of its catchment across the Borough, as its predominant catchment ins a local one.

The effect that the Tram will have on delivering the objectives set out in the Town Centre Strategy are set out below.

2.2.1: Pollution and town centres

Ealing
The Town Centre Strategy currently recognises that poor air quality is a weakness in Ealing centre, and that any development strategy for Ealing centre must be implemented without compromising environmental quality, meaning limiting the provision of new car parking spaces, and limiting congestion to avoid air and noise pollution. In essence this means that new customers must be attracted to the town centre by means other than the car.

The Tram provides the opportunity to do this, as it both provides the spare capacity in terms of people-carrying capabilities that would not be possible with the bus, which is nearing saturation point. It also has a negligible environmental impact, as it uses relatively quiet and emission free vehicles. The Tram can therefore assist in the development strategy, through its people carrying capacity, which is needed to support growth, and also contribute to the environmental policies by carrying these people in a sustainable, environmentally friendly alternative to bus or car.

Southall
The Southall strategy does not have any policies specifically relating to pollution, but environment is part of one of the major themes. Lowering the amount of pollution contributes towards improving the overall environment of the streets in Southall, specifically the Broadway, which are the focus on activity in the area, but this does not contribute to a specific aim within the Strategy.

Acton
The Acton strategy does not have any policies specifically relating to pollution, but environment is part of one of the major themes, under the label ‘Pride of Place’. Lowering the amount of pollution contributes towards improving the overall environment of the town centre, and could improve the public perception of it, but the actual contribution of this impact upon the town centre strategy is minimal.

Hanwell
The Hanwell strategy does not have any policies specifically relating to pollution, but environment is part of one of the major themes. Lowering the amount of pollution contributes towards improving the overall environment of the streets in Hanwell town centre, which are the focus on activity in the area,

but the actual contribution of this impact upon the town centre strategy is minimal.

2.2.2: Journey Ambience and Image of Uxbridge Road

Ealing
For Ealing to maintain its position in the hierarchy of centres in west London, it must continue to attract new custom and new investment. To maintain the competitive advantage of Ealing Town Centre, the Town Centre Strategy aims to create a distinct, attractive town centre that is accessible to a wide catchment.

The image of the Tram, and the journey ambience benefits it offers could play a role in strengthening the overall image of Ealing centre. Although this cannot be accurately measured, it may improve the perception of the centre in the eyes of both potential customers to the current centre and its facilities, as well as to potential investors improve the retail offer.

Southall
The Town Centre Strategy promotes the development of the area for residential, retail, commercial and employment uses, through a phased programme for high quality development. The Tram represents a step-change in accessibility for Southall, both to other parts of the Borough and as part of the wider transport network through the Tram's interchanges with the Tube and national rail, and to Heathrow services and eventually Crossrail. The Tram may give confidence to such investors by creating a sense of stability and optimism of the area's economic future, countering any current reluctance to invest in the area due to uncertainty regarding it's economic future.

In terms of journey ambience, the enhanced ride quality that the Tram provides over the bus can improve the profile of Southall as a destination among customers, shoppers and job-seekers, who may perceive Southall as better connected than before in terms of public transport. The degree to which this is the case however, cannot be accurately measured.

Acton
Although the main function of Acton is to serve the local population, the strategy wishes to promote Acton as a location for the arts and media sectors, and to promote a greater range of retailers, residential uses and attract more investment on a range of potential development sites. The Tram could assist in raising the profile, image and perception of Acton to potential employers, developers, and investors.

In terms of journey ambience, the enhanced ride quality that the Tram provides over the bus can contribute towards persuading people to use public transport rather than the car as a means of accessing Acton.

Hanwell
The Town Centre Strategy contains a number of development opportunities for retail, leisure and employment uses. The improved journey ambience and the enhanced ride quality that the Tram provides over the bus could raise the profile of these sites, due to Hanwell being better connected in terms of public transport than under bus conditions. The degree to which this is the case however, cannot be accurately measured.

2.2.3: Traffic Impacts on Alternative Routes and the Town Centres

One of the main concerns over the environment quality of the town centres is the level of traffic congestion. Congestion in or near the town centre makes for an unpleasant environment for both visitors and those living nearby. Any development in the centre must be done so with regard to environmental quality, especially relating to any potential increases in traffic levels.

There are concerns that the Tram will cause car traffic to seek alternative routes on streets avoiding the Tram route. There are fears that this will be especially felt at places where there is increased pressure on road space, such as in the town centres.

Where a significant increase in traffic as a result of the Tram (judged to be an increase of 25% in traffic flows with the Tram compared with no Tram in 2011) is predicted, traffic management measures have been proposed. These traffic management schemes have already been proposed in conjunction with the Tram scheme as part of the TfL package, as a means of mitigating the negative impact of traffic diversion. The model results reported in this document assume implementation of these measures unless otherwise stated.

2.2.4: Visual Impacts of the Tram

The Tram will have impacts from the visual intrusion of masts, catenary, signs and surfaces. There could also be a loss of green or other public space, although this may be offset by creating better landscaping opportunities elsewhere.

The impacts above are all impacts relating to how the Tram could potentially alter the urban environment of the town centres. Inevitably the engineering associated with the Tram has a visual impact. Some may regard this impact as negative, especially on the historic parts of the town centres, or where combined with existing street furniture the streetscape may appear cluttered. The extent to which the Tram will require the removal of areas of landscaping or the loss of buildings has yet to be confirmed, but it is expected to be minimal in the case of the town centres.

The Tram route may present the possibility to upgrade the urban environment such as creating areas of soft landscaping along the route, improve the streetscape, or be part of the overall upgrade to specific places such as

Ealing Broadway as a transport interchange, or the public space improvements in Acton.

Creating a high quality urban environment is an important part of the strategies for the town centres. Creating a good quality interchange at Ealing Broadway is a major facet of the Ealing strategy, as is improving the streetscape and landscaping generally. This improvement however, must be done with the highest regard to the current character of the Borough, using the highest quality in terms of design, to produce a smart, uncluttered streetscape.

In relation to signs, masts and other Tram infrastructure, poor quality equipment or design could have a negative impact on the appearance and the streetscape, undermining the aim of the strategy that hopes to improve it. However from an urban design and conservation point of view, this can be mitigated by providing well designed, good quality signs, poles and so on. However, there is a fine balance between conserving the character, which may restrict the development of the town centre, and ensuring that high quality design allows development to occur to maintain the economic and social position of Ealing centre whilst ensuring any potential environmental impacts are kept to a minimum.

Due to the pressure on land use, there may be a reallocation of the road space at various points, which may present the opportunity to improve landscaping, or pedestrian or cycle access along the route. The Council should incorporate the need to be involved, or exert its influence upon these aspects of the design, in its Borough Strategy for the Tram. It may also give the opportunity to better manage the road space, and provide the opportunity to clamp down on illegal street trading and subsequently manage street trading better than before.

It is difficult to quantitatively assess the visual impact that the Tram route will have, but in terms of the Town Centre Strategy, it could be considered that it will be in conflict with the aim to maintain an uncluttered streetscape. However, in Southall it may give the opportunity to manage street trading better than it is now. It may also give the opportunity to incorporate new street furniture, streetscape improvements or landscaping opportunities may present the opportunity to implement some of the objectives the town centre strategy contains.

2.2.5: Journey Times, Capacity , Reliability and Accessibility Jobs and Services

The above impacts are a summary of the potential transport benefits that the Tram offers that may increase the patronage and accessibility of town centres.

Although there are time savings for public transport users, journey times for car users are expected to increase. The percentage change in journey times across all journeys to, from and within the borough is expected to rise by 0.9

minutes (7.4%) during the AM peak, and 0.7 minutes (7%) during the interpeak period. Increased journey times may affect those people who use the car to access town centre services. On the other hand providing relatively better access by public transport rather than the car is consistent with the Town Centre Strategies and wider transport aims of Ealing Council. It should be noted from the charts below that accessibility by car will remain quicker by car than by public transport. The Tram would simply go some way towards closing the gap.

Ealing

The journey time savings on public transport mean that people reach destinations in less time, and essentially the accessibility of these places increases. The changes in accessibility to Ealing town centre are shown below.

Figure 1 Accessibility of the LB Ealing Population to Ealing Town Centre by Public Transport (AM Peak Period)

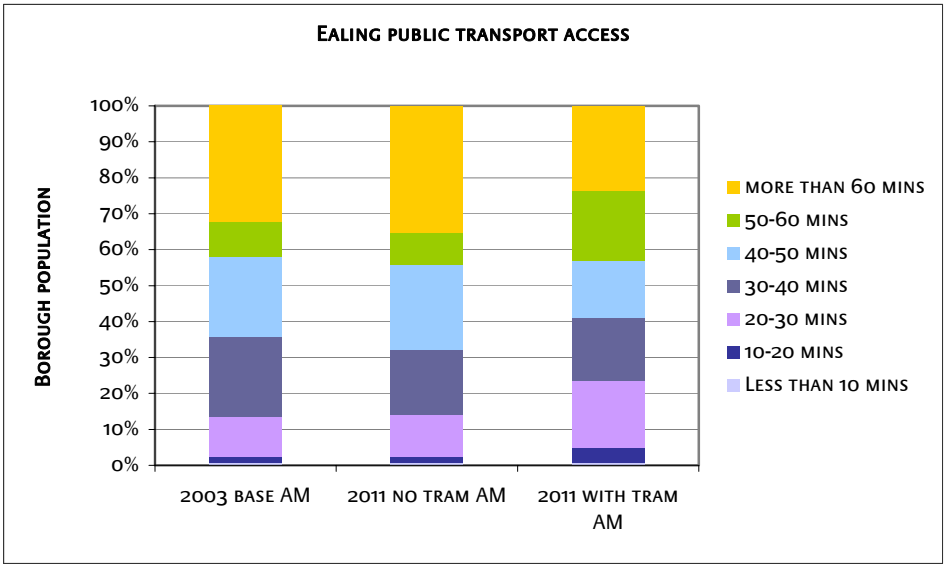
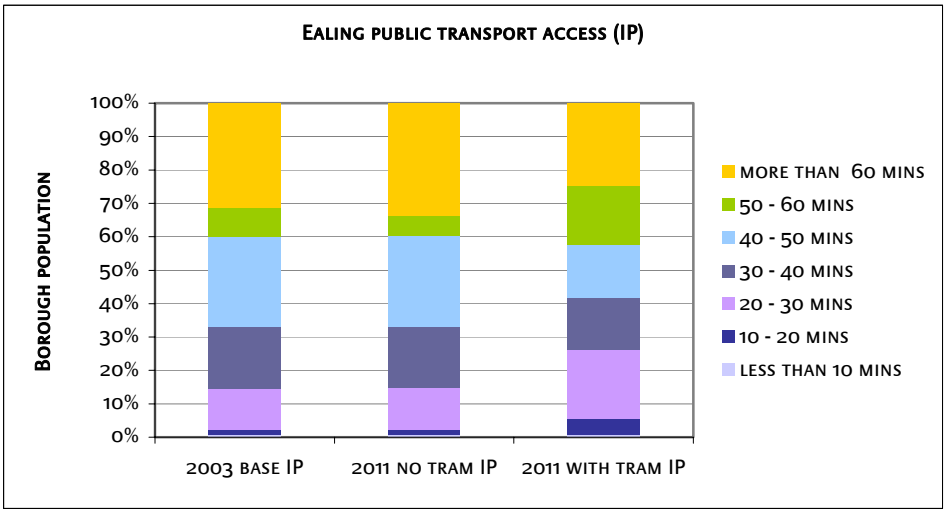


Figure 2 Accessibility of the LB Ealing Population to Ealing Town Centre by Public Transport (Inter- Peak Period)



These charts show the changes in accessibility for public transport users during the AM peak (at the top) and the inter-peak periods as percentages of the LBE population as defined by the TfL model – approximately 297,000 (this was created before the 2001 Census population figure of 301,000 was announced). The table below shows what this means in terms of actual numbers of people:

Table 3: Accessibility of the LB Ealing Population to Ealing Town Centre by Public Transport

	30 Minute Travel Time		60 Minute Travel Time	
	AM Peak	Inter-Peak	AM Peak	Inter-Peak
2011 Without Tram	42,000	44,000	193,000	197,000
2011 With Tram	70,000	78,000	228,000	224,000

This shows that accessibility to Ealing town centre is higher in both the AM peak and inter-peak periods, for both 30 minute and 60 minute travel times.

The Tram will also affect the catchments of car users as well as public transport users. These are shown below:

Figure 3 Accessibility of the LB Ealing Population to Ealing Town Centre by Highway (AM Peak Period)

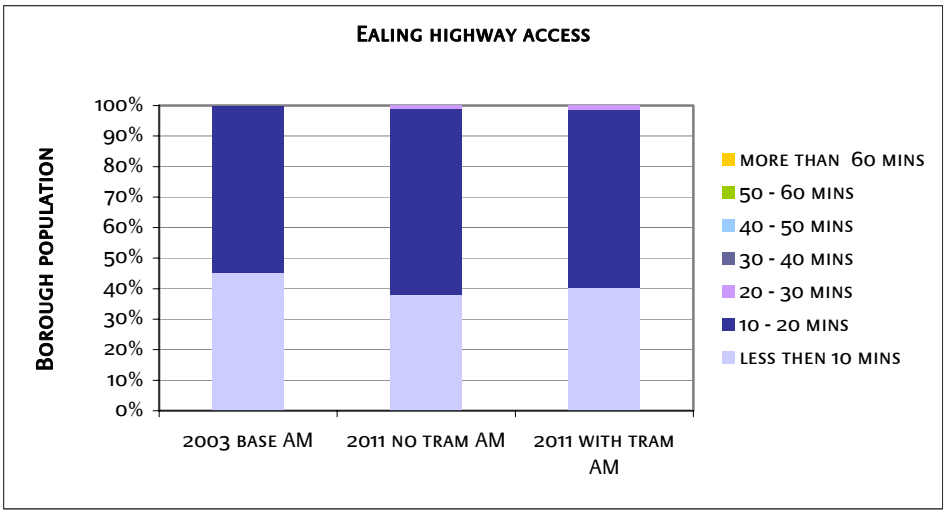
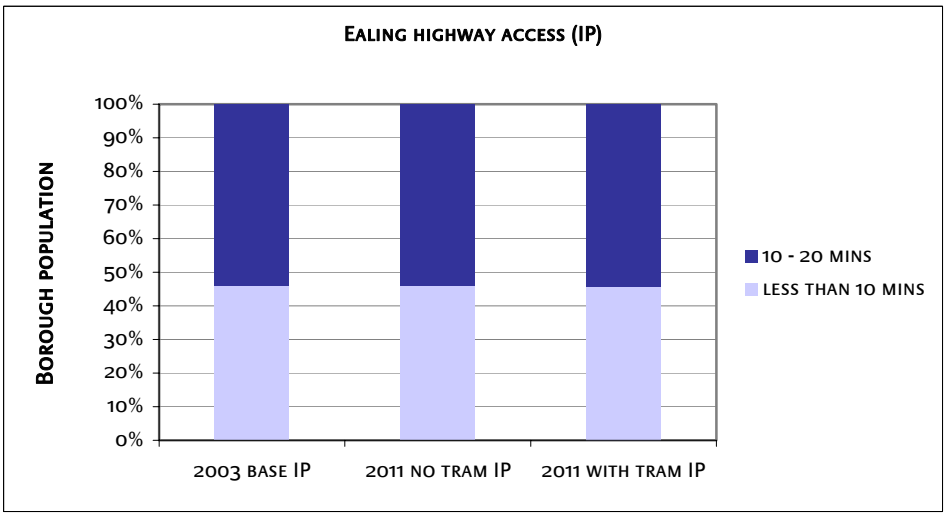


Figure 4 Accessibility of the LB Ealing Population to Ealing Town Centre by Highway (Inter-Peak Period)



The table below shows what this translated to in terms of actual numbers of people within a 10 minute drive-time.

Table 4: Accessibility of the LB Ealing Population to Ealing Town Centre by Highway

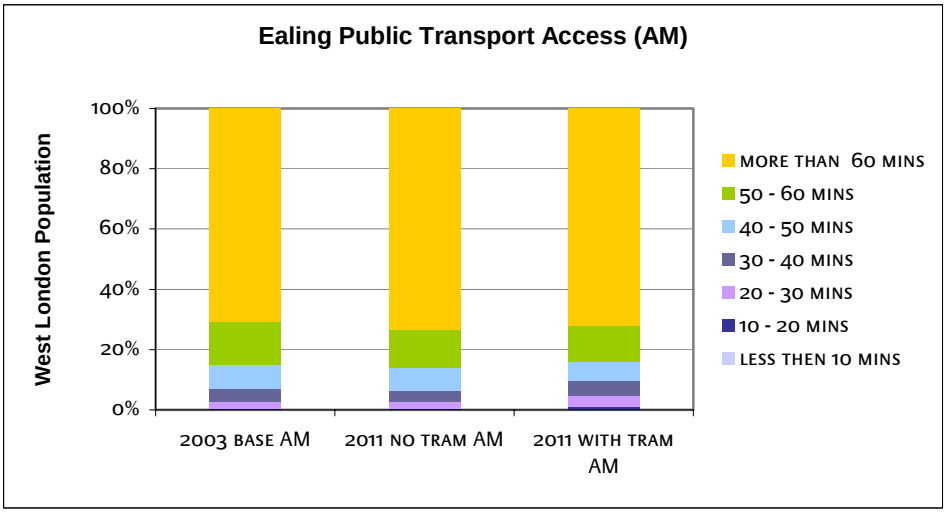
	10 Minute Travel Time	
	AM Peak	Inter-Peak
2011 Without Tram	112,000	137,000
2011 With Tram	120,000	135.000

The population accessibility to Ealing town centre in 2011 with the Tram is better than without during the AM peak, but slightly worse during the inter-peak.

These charts show accessibility purely in relation to the population of the Borough of Ealing. Ealing town centre also serves a population beyond the Borough boundaries, extending into the West London sub-region. The accessibility of Ealing town centre to the wider West London population (as defined by the TfL model) is shown on the charts below

Figures 5 – 8 show the accessibility of the population of all of West London (as defined in the TfL model) to Ealing town centre – 1.34 million people.

Figure 5 Accessibility of the West London Population to Ealing Town Centre by Public Transport (AM Peak Period)



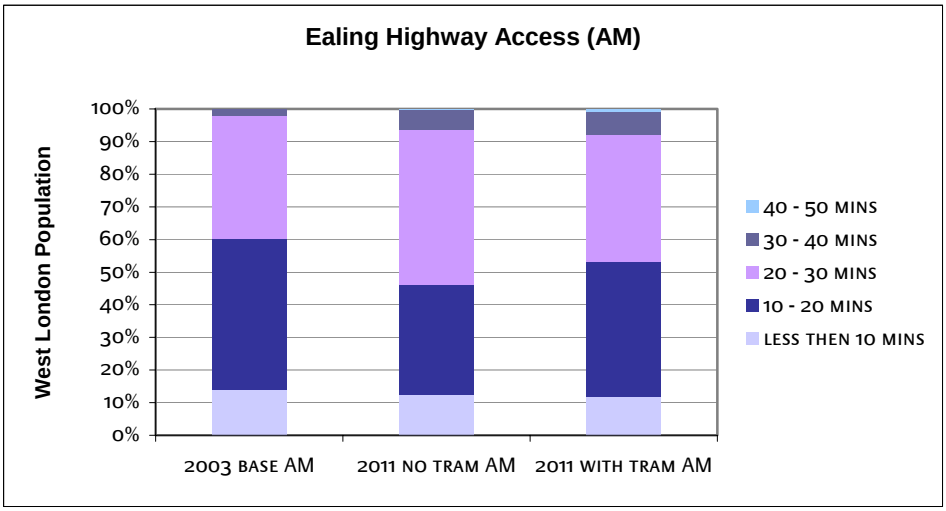
The table below shows what these figures translate as in terms of the number of people within a 20, 30 and 60 minute travel time.

Table 5: Accessibility of the West London Population to Ealing Town Centre by Public Transport (AM Peak Period)

	20 Minute Travel Time	30 Minute Travel Time	60 minutes travel time
	AM Peak	AM Peak	AM Peak
2011 Without Tram	7,000	41,000	394,000
2011 With Tram	14,000	70,000	415,000

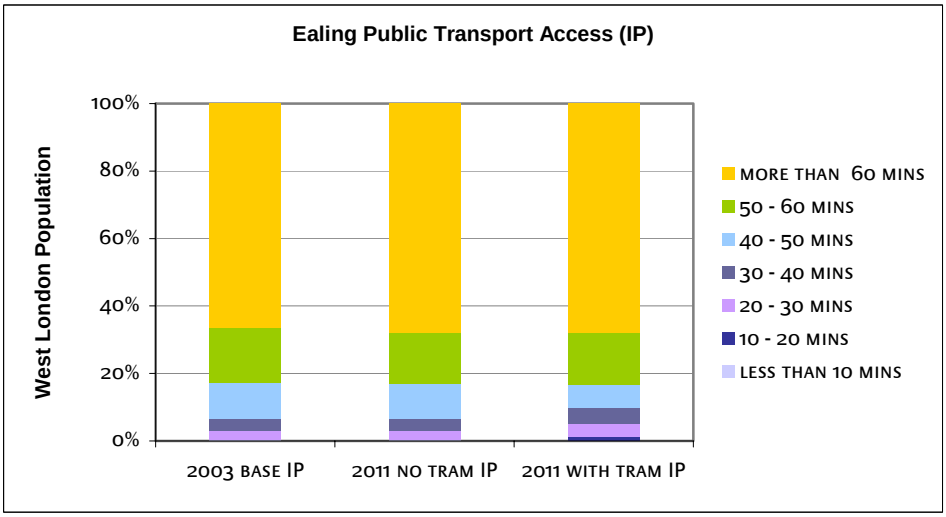
Again, as with the Ealing population, more people within West London are accessible to Ealing town centre via public transport in 2011 with the Tram than without during the AM peak for journeys of up to 20, 30 and 60 minutes

Figure 6 Accessibility of the West London Population to Ealing Town Centre by Highway (AM Peak Period)



For highway (car) journeys during the AM peak, accessibility is broadly similar in 2011 with and without the Tram, for example there are 1.234 million people within a 30 minute drive with the Tram, and 1.255 million without the Tram.

Figure 7 Accessibility of the West London Population to Ealing Town Centre by Public Transport (Inter-Peak Peak Period)



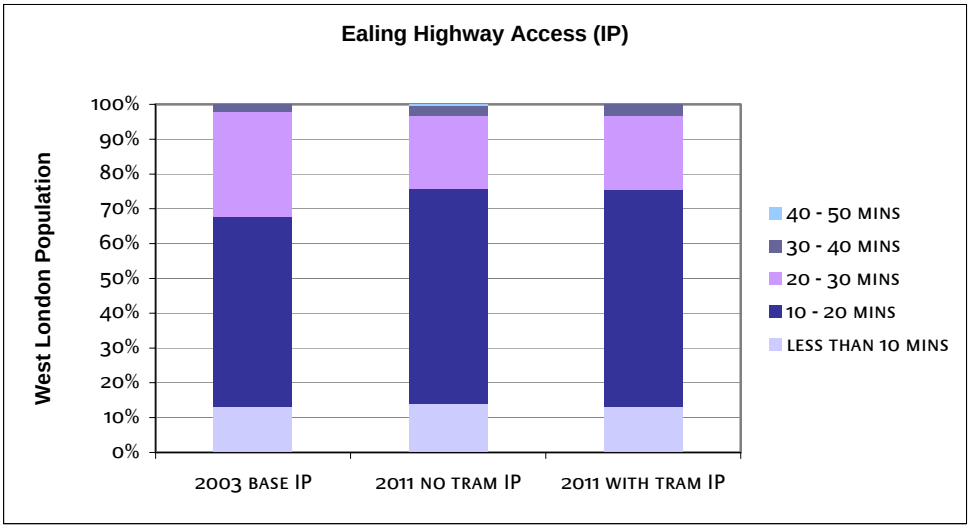
The table below explains the figure above in relation to actual population numbers for 30 and 60 minute journeys.

Table 6: Accessibility of the West London Population to Ealing Town Centre by Public Transport (Inter-Peak Peak Period)

	30 Minute Travel Time	60 Minute Travel Time
	Inter-peak	Inter-peak
2011 Without Tram	44,000	478,000
2011 With Tram	78,000	480,000

This table shows that more people are accessible to Ealing town centre via public transport across West London during the inter-peak in 2011 with the Tram than without.

Figure 8 Accessibility of the West London Population to Ealing Town Centre by Highway (Inter- Peak Period)



The table below shows how these translate to actual numbers of people for 10, 20 and 30 minute journey times.

Table 7: Accessibility of the West London Population to Ealing Town Centre by Car (Inter- Peak Period)

	10 Minute Travel Time	20 minute travel time	30 Minute Travel Time
	Inter-peak	Inter-peak	Inter-peak
2011 Without Tram	188,000	1.012m	1.297m
2011 With Tram	175,000	1.012m	1.297m

Figure 8 and Table 7 show that highway accessibility is slightly worse in 2011 with the Tram than without during the inter-peak period.

The above figures show that Ealing town centre with the Tram will be more accessible by public transport, whilst the Tram does not have significant effects on the catchment area for private car access.

A key part of the strategy for Ealing town centre strategy is to attract more people to the centre in order to use its shops, services, invest, live and work in Ealing. This must be done whilst maintaining the quality of life and environment of those living near or within the centre. This increase in catchment and footfall is required to improve the quality of the centre by creating a more distinct retail environment, offering choice to those living and visiting the centre, and ensure a healthy mix of shopping, leisure and cultural facilities. This improvement and growth is also required in order to remain competitive with other town centres across West London.

The Town Centre Strategy recognises that this growth must be achieved in a sustainable way, without putting further increase on the already overcrowded highway network, and the resulting environmental impacts this has in terms of demand for parking, pollution and congestion. This means making it as easy as possible for people to reach Ealing by means other than the private car. The Tram offers a way of achieving these policy objectives, through its people-carrying capabilities that allow scope for more custom without the impact on the highway network or parking demand, and the improved reliability and journey times the Tram offers over the bus could encourage further mode shift away from the car.

Southall

Journey time savings on public transport mean that people reach destinations in less time, and essentially the accessibility of these places increases. The changes in accessibility to Southall town centre are shown below.

Figure 9 Accessibility of the LB Ealing Population to Southall Town Centre by Public Transport (AM Peak Period)

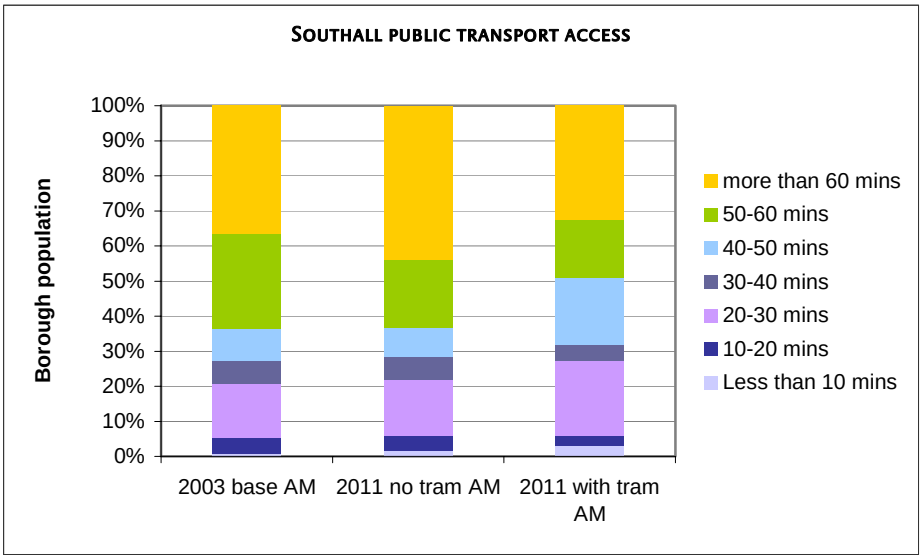
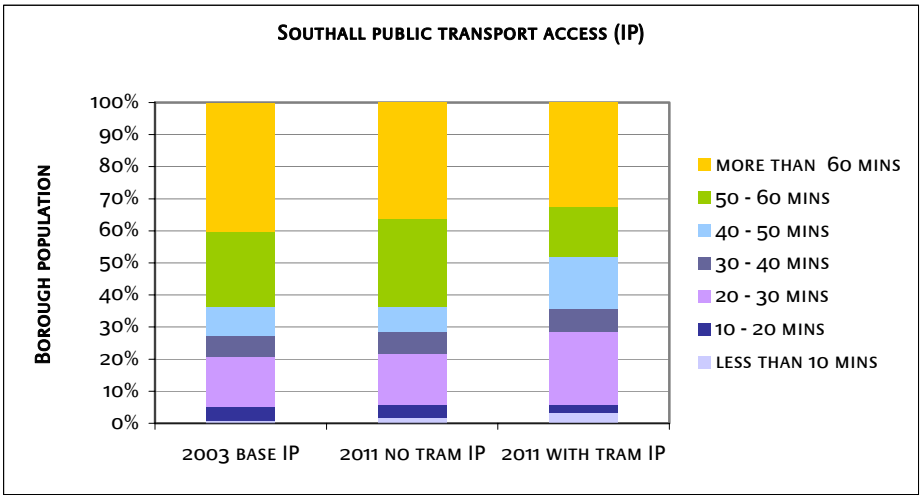


Figure 10 Accessibility of the LB Ealing Population to Southall Town Centre by Public Transport (Inter- Peak Period)



These charts show the changes in accessibility for public transport users during the AM peak (at the top) and the inter-peak periods, for the Ealing Borough population. The table below shows what this means in terms of the actual population numbers for 30 and 60 minute journey times.

Table 8: Accessibility of the LB Ealing Population to Southall Town Centre by Public Transport

	30 Minute Travel Time		60 Minute Travel Time	
	AM Peak	Inter-Peak	AM Peak	Inter-Peak
2011 Without Tram	64,000	65,000	167,000	185,000
2011 With Tram	85,000	84,000	191,000	200,000

Here we see that accessibility improves in 2011 with the Tram on public transport in both the AM peak and inter-peak periods, on journey times of 30 and 60 minutes.

The Tram will also affect the catchments of car users as well as public transport users. These are shown below:

Figure 11 Accessibility of the LB Ealing Population to Southall Town Centre by Highway (AM Peak Period)

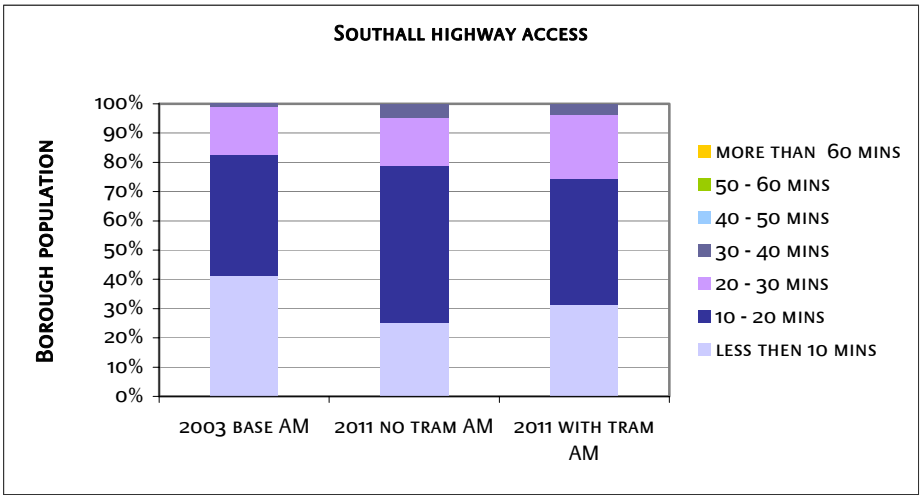
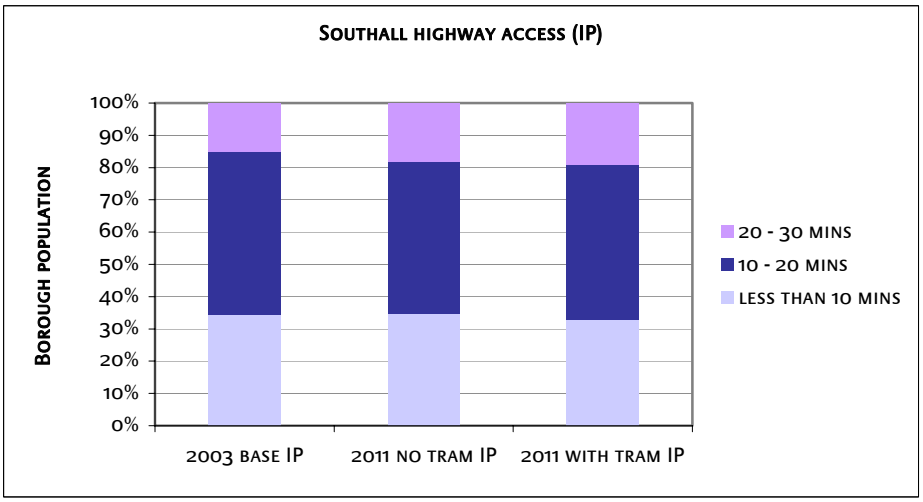


Figure 12 Accessibility of the LB Ealing Population to Southall Town Centre by Highway (Inter- Peak Period)



These graphs show that the number of people during the morning peak period who can reach Southall town centre within a 10 minute drive will be greater in 2011 with the Tram than in 2011 without the Tram, the actual population implications of which are shown on the table below.

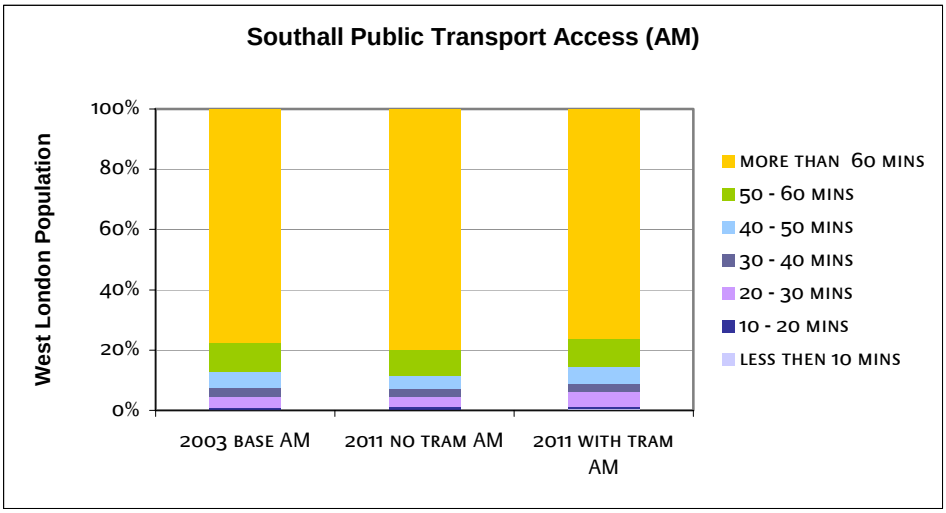
Table 9: Accessibility of the LB Ealing Population to Southall Town Centre by Highway

	10 Minute Travel Time	
	AM Peak	Inter-Peak
2011 Without Tram	75,000	103,000
2011 With Tram	83,000	98,000

Highway accessibility to Southall is slightly better in 2011 with the Tram for journeys up to 10 minutes during the AM peak, but slightly worse for journeys in the inter-peak.

Like Ealing, Southall has a wider catchment than just the population of the Borough of Ealing. Accessibility to the whole of the West London sub-region (as defined in the TfL model) is shown below.

Figure 13 Accessibility of the West London Population to Southall Town Centre by Public Transport (AM Peak Period)



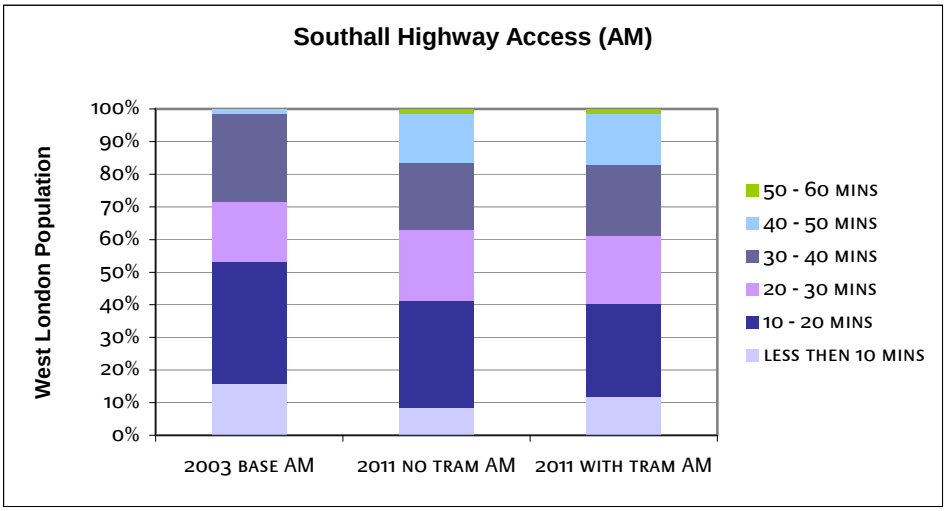
The table below related to the information shown above but in table form, using actual numbers of people rather than a proportion of the West London population.

Table 10: Accessibility of the West London Population to Southall Town Centre by Public Transport (AM Peak Period)

	30 Minute Travel Time	60 Minute Travel Time
	AM Peak	AM Peak
2011 Without Tram	17,000	300,000
2011 With Tram	17,000	360,000

Table 10 shows that accessibility is broadly similar in the with Tram and without Tram scenarios via public transport across the West London population.

Figure 14 Accessibility of the West London Population to Southall Town Centre by Highway (AM Peak Period)



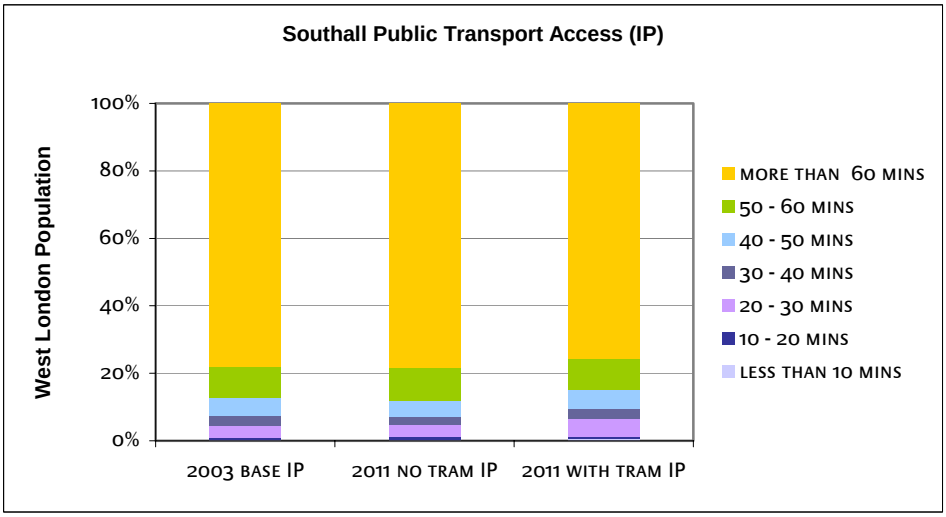
For car journeys during the AM peak, accessibility is very similar for both the with and without Tram scenarios, as the table below shows

Table 11: Accessibility of the West London Population to Southall Town Centre by Highway (AM Peak Period)

	10 Minute Travel Time	20 Minute Travel Time
	AM Peak	AM Peak
2011 Without Tram	113,000	552,000
2011 With Tram	159,000	543,000

The number of people in West London who are accessible to Southall via highway journeys of up to 10 minutes is higher in 2011 with the tram, but slightly lower when extended to journeys of up to 20 minutes.

Figure 15 Accessibility of the West London Population to Southall Town Centre by Public Transport (Inter- Peak Period)



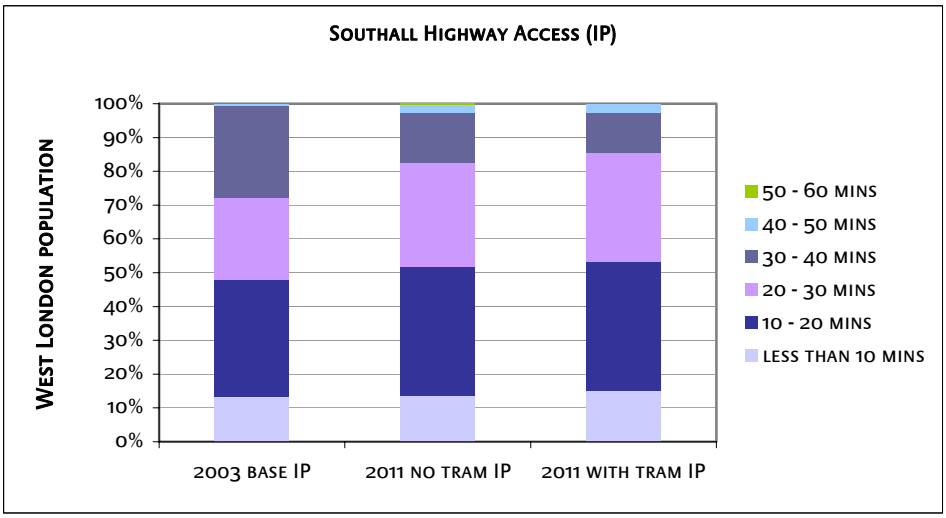
The table below translates some of this information into actual population numbers for 20, 30 and 60 minute journeys.

Table 12: Accessibility of the West London Population to Southall Town Centre by Public Transport (Inter- Peak Period)

	20 Minute Travel Time	30 Minute Travel Time	60 minute Travel time
	Inter-peak	Inter-peak	Inter-peak
2011 Without Tram	17,000	69,000	325,000
2011 With Tram	17,000	98,000	363,000

Accessibility to Southall from across West London via public transport is slightly better in 2011 with the Tram than without, except for journeys of up to 20 minutes.

Figure 16 Accessibility of the West London Population to Southall Town Centre by Highway (Inter-peak Period)



Again, during the inter-peak period the advent of the Tram does not seem to particularly harm the car access of Southall. The table below, using the same information as the figure above, shows the actual population numbers for 10, 20 and 30 minute travel times.

Table 13: Accessibility of the West London Population to Southall Town Centre by Highway (Inter-peak Period)

	10 Minute Travel Time	20 Minute Travel Time	30 minute Travel time
	Inter-peak	Inter-peak	Inter-peak
2011 Without Tram	179,000	694,000	1.1m
2011 With Tram	200,000	714,000	1.1m

The above figures show that Southall town centre will be more accessible by public transport, with the Tram than without, while accessibility by car would be only marginally affected.

A key part of the strategy for Southall town centre strategy is to attract more people to the centre in order to use its shops, services, invest, live and work in Southall. This increase in catchment and footfall is required to develop Southall as a vibrant, diverse dynamic town centre hosting a collection of retail, cultural and employment services that will reinforce its role as both a sub-regional centre for West London, but also of national and international renown.

The Town Centre Strategy recognises that this growth must be achieved whilst also improving the environment and image of the town centre environment through using high quality urban design, streetscape improvements and street management. The strategy also recognises that the growth in accessibility must be achieved through less reliance on the car, and by modes such as public transport, cycling and walking. This is linked to reducing traffic flows and congestion in the centre.

The introduction of the Tram supports these objectives, both in terms of a sustainable mode of transport able to carry the increased capacity needed to achieve the desired levels of growth, but also in achieving the environmental objectives in terms of improving public transport, achieving growth in a sustainable way and improving the image and profile of Southall.

Acton

Unlike Ealing and Southall, Acton is less dependent on a wider catchment of West London residents and serves a more local catchment. For this reason the accessibility analysis below deals with the Borough population only. The predicted changes in accessibility to Acton town centre are shown below.

Figure 17 Accessibility of the LB Ealing Population to Acton Town Centre by Public Transport (AM Peak Period)

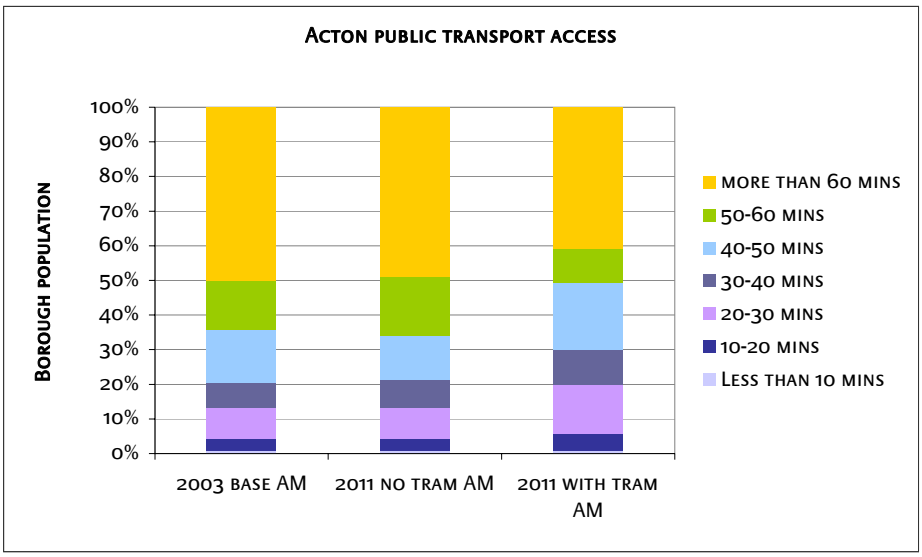
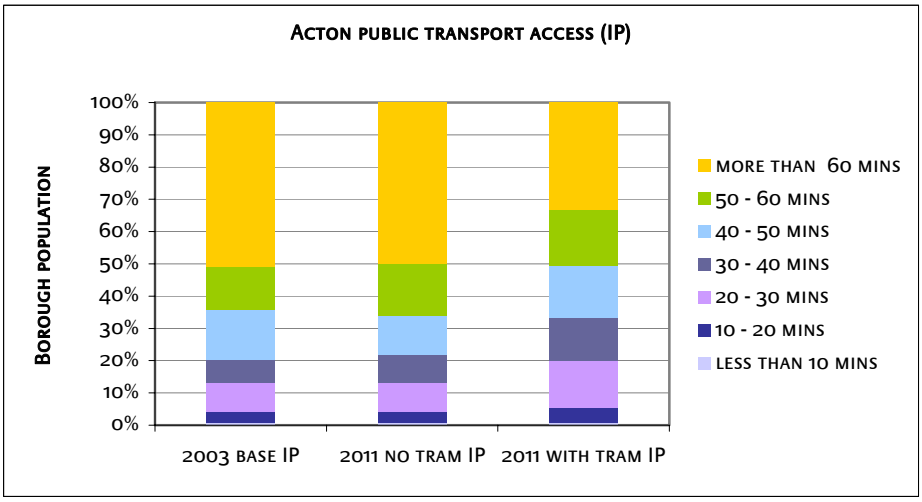


Figure 18 Accessibility of the LB Ealing Population to Acton Town Centre by Public Transport (Inter-Peak Period)



- These charts show the changes in accessibility for public transport users during the AM peak (at the top) and the inter-peak periods. In terms of the actual population changes in town centre catchments, these are shown in the table below:

Table 14: Accessibility of the LB Ealing Population to Acton Town Centre by Public Transport

	30 Minute Travel Time		60 Minute Travel Time	
	AM Peak	Inter-Peak	AM Peak	Inter-Peak
2011 Without Tram	39,000	39,000	152,000	148,000
2011 With Tram	60,000	60,000	176,000	152,000

This shows that accessibility to Acton via public transport is better in 2011 with the Tram than without, in both the AM and inter peak periods, across a range of journeys times.

The Tram will also affect the catchments of car users as well as public transport users. These are shown below:

Figure 19 Accessibility of the LB Ealing Population to Acton Town Centre by Highway (AM Peak Period)

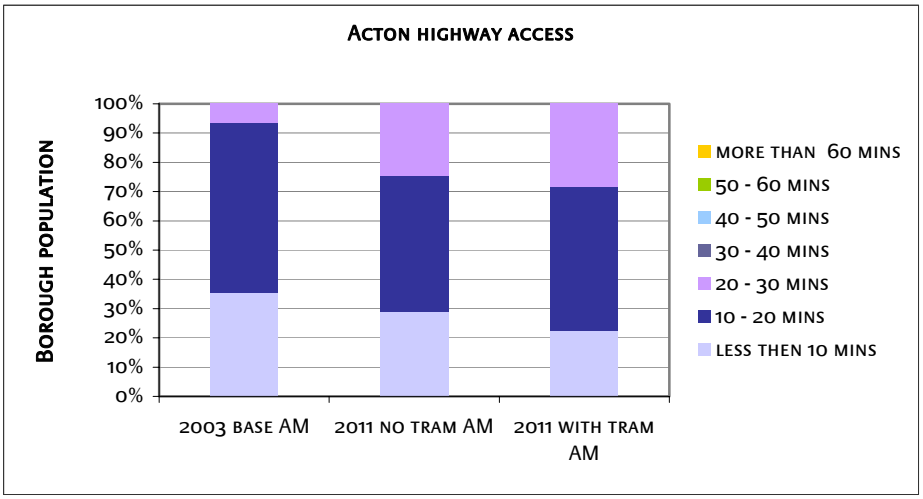
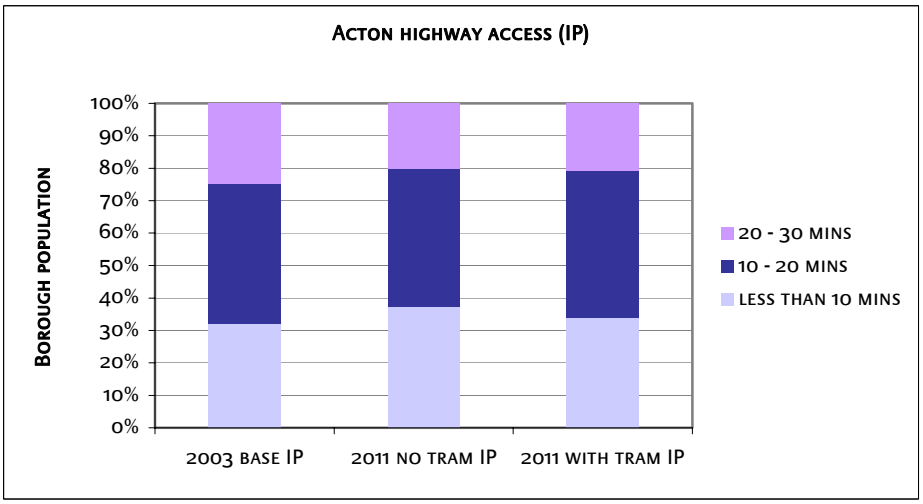


Figure 20 Accessibility of the LB Ealing Population to Acton Town Centre by Highway (Inter- Peak Period)



These graphs show that the number of Borough residents who (during the morning peak period) can reach Acton town centre within a 10 minute drive will actually be lower in 2011 with the Tram than in 2011 without the Tram, the table below shows this, using actual population numbers.

Table 15: Accessibility of the LB Ealing Population to Acton Town Centre by Highway

	10 Minute Travel Time	
	AM Peak	Inter-Peak
2011 Without Tram	86,000	111,000
2011 With Tram	66,000	101,000

The above figures show that Acton town centre is more accessible by public transport, whilst the Tram causes the accessibility to decrease by car compared to no Tram in 2011. However, the centre will still be more

accessible by car than by public transport in terms of journey time catchments. All of the Borough population will be within a 30 minute drive time, compared to only 20% of the population within 30 minutes by public transport.

The Town Centre Strategy wishes to make the centre more accessible by public transport in order to both attract new demand in terms of people to use shops plus other cultural and leisure uses, and also for potential employers. The Tram can help underpin this potential increase in users in a sustainable way, without the environmental and traffic consequences of car-borne users.

Hanwell

Unlike Ealing and Southall, Hanwell is less dependent on a wider catchment of West London residents and serves a more local catchment. For this reason the accessibility analysis below deals with the Borough population only.

The predicted changes to the accessibility of Hanwell town centre are shown below.

Figure 21 Accessibility of the LB Ealing Population to Hanwell Town Centre by Public Transport (AM Peak Period)

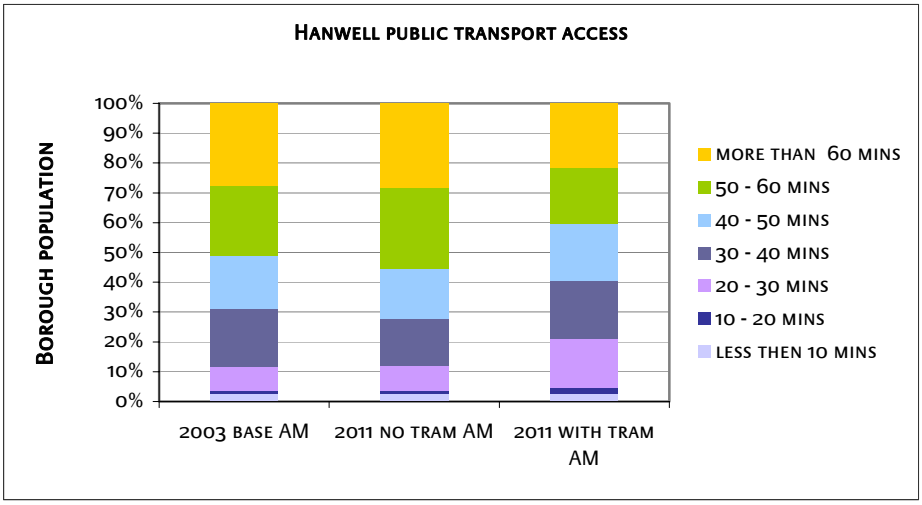
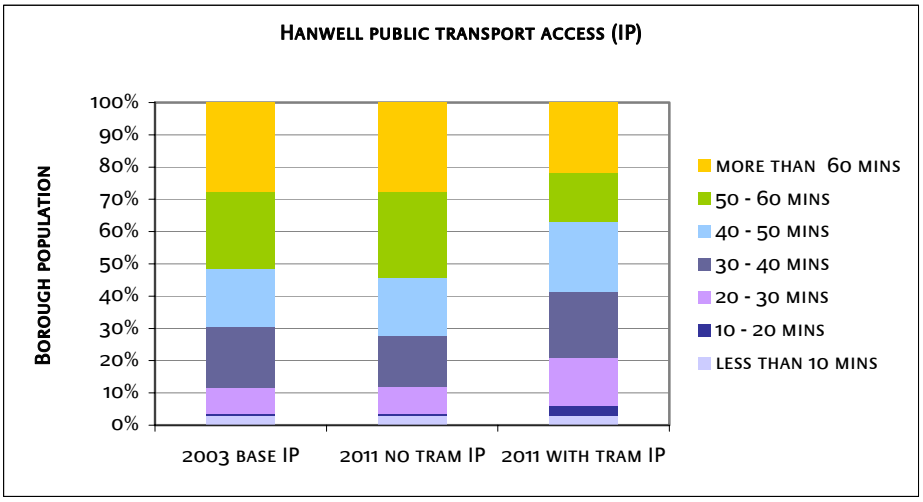


Figure 22 Accessibility of the LB Ealing Population to Hanwell Town Centre by Public Transport (Inter-Peak Period)



These charts show the changes in accessibility for public transport users during the AM peak (at the top) and the inter-peak periods.

In Hanwell, we are more concerned with those people within a short travel distance of the centre, as it is a district centre. In 2011, there are 17,000 people within a 20 minute travel time, compared to 10,000 in 2011 without the Tram in 2011, denoting a wider population catchment for the centre.

The Tram will also affect the catchments of car users as well as public transport users. These are shown below:

Figure 23 Accessibility of the LB Ealing Population to Hanwell Town Centre by Car (AM Peak Period)

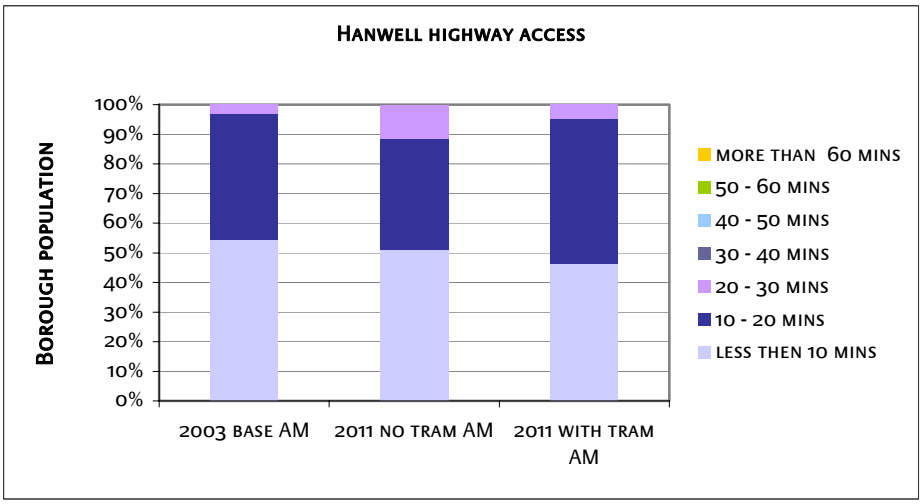
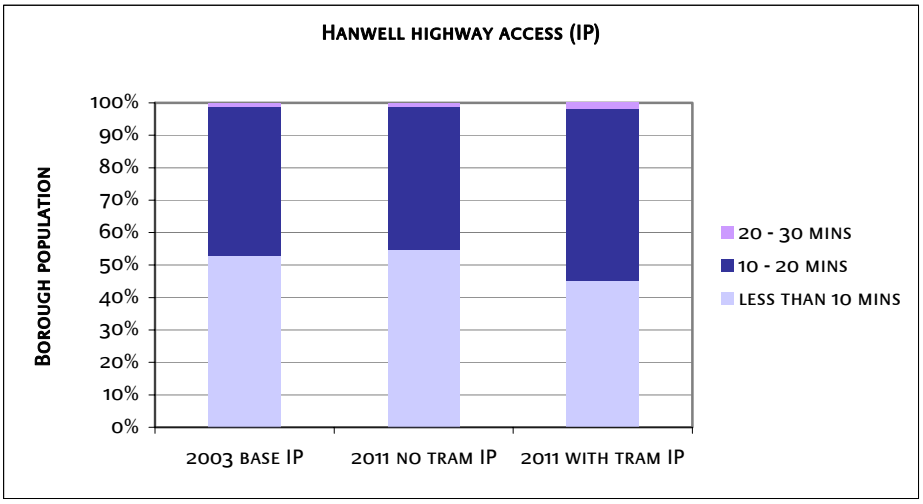


Figure 24 Accessibility of the LB Ealing Population to Hanwell Town Centre by Car (Inter- Peak Period)



However, there are fewer people within a 10 minute drive of Hanwell town centre in 2011 with the Tram than without. However, as has been stressed before, Hanwell has a predominantly local catchment, and does not depend on long journeys by either public transport or car. What may be of more concern, is the increased accessibility to other centres that Hanwell residents will have, such as to Ealing and Southall.

2.2.6: Access to Public Transport Stops along Uxbridge Road

The Tram will have fewer stops along the route than the current 207 and 607 bus routes, with larger distances between Tram stops than bus stops. This could mean longer distances from stop to destination, depending on the location along the route (even taking into consideration the forced removal of some bus stops between now and 2011 that would be needed to maintain bus efficiency, which would be required if the Tram was not to proceeded. The stops removed would have little overall impact along the length of the whole route.)

However, Tram stops are strategically positioned to be near to important functions such as town centres, so the effect of fewer stops along the length of the route would be minimal in terms of the access to town centres.

2.2.7: Capacity for Other Road Traffic

Ealing

In Ealing town centre, the current designs propose shared running of road traffic, Trams and public transport along significant portions of Ealing Broadway such as between Haven Green and Northcote Avenue, meaning there is less capacity for traffic through the centre of Ealing.

In strategy terms, there is an aim to improve the street environment, and the strategy highlights the amount of congestion within the centre as a weakness of the area. However, the strategy also admits there is a potential conflict in

discouraging car use in the centre and the potential knock-on effect this would have on nearby residential routes. Also, many residents would like access to the centre and parking within it protected.

Reducing the amount of traffic that can flow through the town centre may have the result of diverting traffic to other residential roads nearby, in an attempt to find a quicker diversionary route, although this can be addressed by the off-route mitigations programme.

However, reducing the amount of road space for cars within the centre would help to achieve the aims of the strategy in terms of reducing congestion in the centre of Ealing, and could have environmental benefits on those using it, whilst the mitigations programme will attempt to limit the impact on diversionary routes.

Southall

In Southall town centre, the current designs propose shared running of traffic along significant portions of Southall Broadway and Southall High Street, meaning there is less capacity for traffic through the centre of Southall.

In strategy terms, there is an aim to improve the street environment, and the strategy highlights the amount of congestion within the centre as a problem that needs tackling. The Strategy also favours an integrated approach to managing public transport, parking, cycling and pedestrian routes.

Reducing the amount of traffic that can flow through the town centre may have the result of diverting traffic to other residential roads nearby, in an attempt to find a quicker diversionary route. The traffic modelling shows that there will be indeed increases in traffic to some roads to the south of Uxbridge Road, on roads such as Park Avenue, Beaconsfield Road and South Road, whilst there are also decreases along the Broadway and Southall High Street. This presents mixed benefits in terms of the effects of the Tram on local traffic flows, their environmental impacts and the effect this has on achieving the aims set out in the Town Centre Strategy.

Acton

In strategy terms, there is an aim to improve the street environment, and the strategy aims to tackle the problem of congestion in Acton. It also suggests that High Street could be used for cultural events, markets, festivals and so on. Although the diverting of traffic would have an impact on alternative routes, it may present opportunities to replace and upgrade public realm, street furniture, give the opportunity for upgraded open space and pedestrian flows, and create a more pleasant, people-focused town centre, without the unpleasant environmental effects of excessive traffic.

Diverting traffic from the town centre means an increased strain on the diversionary routes. However, the final design and routing is still under consideration.

Hanwell
In Hanwell there will be sections of the route that are shared running between the Tram and other vehicles. This means less capacity for other vehicles along the Tram route in Hanwell, and potential increased congestion on this part of the route.

In strategy terms, there is an aim to improve the street environment, and the strategy highlights traffic restraint as a policy objective. Reducing the amount of road space for cars within the centre would help to achieve the aims of the strategy in terms of reducing congestion in the centre of Hanwell, and could have possible environmental benefits on those using it.

Reducing the amount of traffic that can flow through the town centre may have the result of diverting traffic to other residential roads nearby, in an attempt to find a quicker diversionary route. However, the mitigations programme adopted as part of the scheme will counteract some of these increases.

2.2.8: Parking on Uxbridge Road

Ealing
The Town Centre Strategy aims to improve the current quality of car parking, whilst not increasing the number of places. Ealing currently has a lower number of car parking spaces than other comparable centres, but the Tram would provide greater access by public transport, in line with the strategy.

The number of spaces lost due to the Tram will be minimal, due to the fact there is little on-street parking along the route.

Southall
The Southall Town Centre Strategy aims to implement a number of Controlled Parking Zones in the Town Centre, upon which the Tram route may have an impact. Reduced parking on the Uxbridge Road is likely to be necessary by 2011 to provide for public transport priority, whether for bus or Tram.

Acton
The Acton Town Centre Strategy aims to encourage a shift away from the car towards more sustainable forms of transport such as walking, cycling or public transport. A reduction in parking may encourage this shift, both because of fewer conditions for other modes of travel and enabling more space for pedestrian activity.

Hanwell
The Hanwell Town Centre Strategy aims to improve the quality of car parking in the area, as well as the review of the ‘stop and shop’ arrangements. Any loss of parking as a result of the Tram could be considered a disbenefit, but can be mitigated by incorporating this in the review of parking through the life of the strategy in order to minimise this loss through provision elsewhere.

2.2.9: Access for Businesses and Services

Advice was sought from those involved with the LUAS scheme in Dublin, and anecdotal information was supplied on the effects that the construction of the scheme had on businesses. This evidence suggested that although businesses were affected, it was only comparable in scale to what may occur anyway to such a street – such as a major sewer repair or roadworks. Although this is an inconvenience, such inconveniences are often experienced as part of urban life, and some gentrification of businesses was reported after construction, so the long term gain may prove to outweigh the short term pain. As well as disruption of private business, there may also be disruption to some council services such as waste and recycling. However, through speaking with Waste and Recycling Officers it is considered that this disruption will be manageable.

The Council could seek to minimise this disruption through negotiating with constructors to seek a construction schedule with a minimal impact on businesses and services. This would depend on, however, the level of involvement with the scheme that the Council wishes to seek, and the level of cooperation that the constructors wish to concede. The timing of the construction programme and location of each phase should therefore be important criteria during the tendering process. Disruption during construction of the Tram could be mitigated through a process that will include consultation with local businesses to manage access arrangements, investigation into alternative access points and times, and the creation of a Code of Construction Practice between contractors and the authority.

2.2.10: Enhanced Image of Uxbridge Road

Ealing
The Town Centre Strategy aims to attract new retailers, investors and customers in order to maintain its prominent position as a Metropolitan Centre. Ealing is facing increasing competition from other centres in West London such as White City and Uxbridge, both of which have new developments in the pipeline.

The image of Ealing centre could potentially be enhanced through the provision of the Tram. This could be valuable in maintaining Ealing's competitive advantage among other centres, especially given the developments occurring in nearby centres.

Southall
The Town Centre Strategy aims to attract new retailers, investors and customers in order to improve its image and regenerate the local economy. The image of Southall centre could potentially be enhanced through the provision of the Tram, and raises the profile of the centre in the perceptions of potential investors, employers and retailers. This could be valuable in achieving the goals set out in the Strategy to have a sub-regional influence, and become an international gateway

Acton
The Town Centre Strategy aims to make Acton a more attractive place and to promote it as a retail, leisure and cultural destination, as well as attract investment from the media, culture and arts sectors. The Tram could contribute to this by raising the profile of the centre in the perceptions of potential investors, employers and retailers.

Hanwell
The Town Centre Strategy aims to make Hanwell a more attractive place for its local catchment. Although the Tram may improve the image of Hanwell, the policy is more aimed at its local catchment. It is likely that the image of the Tram and the benefit it will bring to Hanwell will be much less in comparison to what it could do for Southall or Ealing, the strategy would be more concerned with its environmental impact.

2.2.11: Speed, reliability, ride quality and image to promote regeneration, densification, and intensification

This impact concerns the transport benefits (as discussed in the above sections), and how this could allow policies that pursue growth through increased densities and more intensive uses within the town centres.

The additional capacity, reliability and journey speed means more people are in the catchment of the town centres in 2011 with the Tram than would be without the Tram. This plus the additional capacity allows development sites to be built at higher densities at places where public transport accessibility is high, such as town centres and interchanges. Increased catchments also means a potential increase in demand for services, and an increase in supply for labour, which permits more intensive uses of town centre sites.

Ealing
The Town Centre Strategy includes objectives to encourage residential development in the town centre, and encourage office development, taking advantage of Ealing's good public transport accessibility. This must be done, however, with the minimal impact on the environment and without damaging the quality of life of existing residents. This relates to promoting development that will not create extra traffic congestion and retaining the current environmental and architectural quality. The aspiration for growth in homes, retail and jobs within the Town Centre Strategy are dependent on the public transport system being improved sufficiently to allow these targets to be realised.

The Tram can play a role in allowing these things to occur. Residential and employment development can occur without the constraints of a near-capacity public transport system which would be the case if the Borough continued to rely on the bus. These developments can, subject to high quality design, occur at high densities due to the level of public transport accessibility. These densities can be maximised at sites which are particularly near to transport interchanges, such as Ealing Broadway.

There are currently, however, a number of sites in the development pipeline within Ealing town centre that are planned to be developed at high densities, and demand for sites in Ealing is high due to its proximity and current accessibility to central London. Many sites would be developed regardless of whether the Tram is built. However, this development may put the bus and traffic network under considerable pressure that could usefully be expanded by the Tram.

Southall

The Town Centre Strategy includes objectives to encourage retail development in the town centre, and encourage the growth of new businesses in the area. This must be done, however, through promoting the use of public transport to carry new shoppers, visitors and labour. This means promoting development that will not create extra traffic congestion that will further harm the environmental quality of the centre.

The Tram can play a role in allowing these things to occur. Retail and employment development can occur without the constraints of a near-capacity public transport system which would be the case if the Borough continued to rely on the bus. These developments can, subject to high quality design, occur at high densities due to the level of public transport accessibility. The Tram could potentially also contribute to the connectivity of Southall with Heathrow, subject to further extensions of the Tram or the establishment of transport interchanges.

The improvements to accessibility may help to persuade developers to invest in the area, through the contribution the Tram would make to regenerating the local economy, and giving confidence to developers that the better transport links and wider catchments it provides can sustain investment. It could also allow sites already in the pipeline to be developed at higher densities, especially where they are very near to the Tram stops and interchanges.

Acton and Hanwell

The Town Centre Strategies include objectives to encourage investment in the areas, and there are a number of development sites which could accommodate residential, employment or mixed uses. The densities or intensification of activities, or at least the viability of them coming forward, could be improved by the Tram scheme, due to the improved accessibility and other transport benefits to gives the area.

The Tram can play a role in allowing these things to occur. Retail and employment development can occur without the constraints of a near-capacity public transport system, which would be the case if the Borough continued to rely on the bus. These developments can, subject to high quality design, occur at high densities due to the level of public transport accessibility.

The improvements to accessibility may help to persuade developers to invest in the area, through the contribution the Tram would make to regenerating the local economy, and giving confidence to developers that the better transport

links and wider catchments it provides can sustain investment. It could also allow sites already in the pipeline to be developed at higher densities, especially where they are very near to the Tram stops and interchanges.

2.2.12: Increased land values resulting from greater accessibility

As sites become more accessible, they may become in more demand from developers, and the more intensive uses that can be developed upon them may raise the land value of the sites. This is of direct benefit to the Council if it is the landowner, but has indirect advantages to the Borough in that it may attract higher-end retailers and employers. This may however, be at the expense of local employers or retailers.

An RICS study of land values and property prices found it was very difficult to prove a relationship between a particular public transport investment and increases in property prices. But it is undeniable that the highest property prices occur in locations well served by public transport.

2.2.13: Accessibility to local amenities and employment and social inclusion

The modelling data demonstrates the changes that the Tram makes to the catchments of the town centre through the changes in accessibility (see figures 1-24 above). This has a contribution to social inclusion in that these accessibility changes improve the range and quality of jobs and services that those in disadvantaged areas can reach by public transport.

Ealing

Ealing is one of the main centres for jobs and services in West London, and therefore access to it is important in economic and social terms for those in deprived areas, both to access services and jobs. The Town Centre Strategy recognises the importance of making the town centre accessible, by a variety of modes (to the full range of) people (including those whose mobility is impaired).

The charts in 2.2.5 demonstrate how the accessibility of Ealing centre changes in 2011 both with and without the Tram for the Borough as a whole.

Relating these to social exclusion, the new Tram route would allow more people to access Ealing's services, though the improvements in accessibility and journey times on specific regeneration areas is not known. In terms of accessing jobs, although the Tram may make travel to Ealing more reliable, it is felt that the main barriers to employment in regeneration areas within the Borough are more related to structural problems such as skills mismatch, linguistic barriers to employment or lack of qualifications. Improved transport accessibility alone could not solve unemployment problems in Ealing's disadvantaged areas.

Southall

Southall is, and is aiming to develop as, a place of importance in terms of the location jobs and services in West London, particularly in relation to its

multicultural character and its place at the centre of local business and cultural networks for Asian, Afghan and Somali communities. Therefore access to it is important in economic and social terms for those in these communities, both to access services and jobs. The Town Centre Strategy recognises the importance of making the town centre fully accessible, both in terms of allowing people to reach jobs and services and accessible in term of a variety of other modes (cycle, pedestrians) and people (such as those whose mobility is impaired).

The charts in section 2.2.5 demonstrate how the accessibility of Southall centre changes in 2011 both with and without the Tram for the Borough as a whole.

Relating these to social exclusion, the new Tram route would allow more people to access Southall's services, though the improvements in accessibility and journey times on specific regeneration areas is not known. In terms of accessing jobs, although the Tram may make travel to Ealing more reliable, it is felt that the main barriers to employment in regeneration areas within the Borough are more related to structural problems such as skills mismatch, linguistic barriers to employment or lack of qualifications. Improved transport accessibility alone could not solve unemployment problems in Ealing's disadvantaged areas.

Acton & Hanwell
The charts in section 2.2.5 demonstrate how the accessibility of Acton centre changes in 2011 both with and without the Tram for the Borough as a whole.

Relating these to social exclusion, the new Tram route would allow more people to access Acton and Hanwell's services, though the improvements in accessibility and journey times on specific regeneration areas such as the South Acton estate are not known. In terms of accessing jobs, although the Tram may make travel to Ealing more reliable, it is felt that the main barriers to employment in regeneration areas within the Borough are more related to structural problems such as skills mismatch, linguistic barriers to employment or lack of qualifications. Improved transport accessibility alone could not solve unemployment problems in Ealing's disadvantaged areas.

2.3: Implementation of the Response Programme
The Authority is currently undergoing a programme of change in relation to how it delivers its customer queries and services. This is intended to improve the efficiency and quality of services and comes partly in response to the Government's e-government agenda, by which public services are available online. The Response service deals with both channels such as the Internet or the telephone, as well as direct contact at a network of contact points through the Borough.

The main contact point will be a single, consolidated reception at Perceval House, bringing together all the currently dispersed Council receptions. There

will also be a second ‘tier’ of contact points in the form of dedicated PCs or kiosks in public places such as town centres, libraries and sports centres.

The Tram could potentially reinforce the Response points policy, in the accessibility it gives to Perceval House and the town centres, in which some response points will be located – as well as helping to guide locational decisions in terms of other contact point to those locations most accessible, such as libraries or sports centres along the Tram corridor.

The impact that the Tram will have on the Response Programme is discussed below.

2.3.1: Accessibility to Services and Amenities

Under the Response programme, Perceval House will become an important focus of the delivery of Council Services, in terms of where customers will access the Council for a variety of functions. Therefore, accessibility to it through a variety of modes of transport is important – and in line with current national and local policy – this must increasingly be on modes other than the car, to avoid putting pressure on the road network, traffic congestion, the environment and parking shortages. The Tram, through improved reliability, journey time savings, people-moving capacity and image benefits gives improved accessibility to places along the Tram route allowing more people to reach places in less time, by a sustainable mode of transport. The improved public transport accessibility that the Tram would give to Ealing town centre, very close to Perceval House and the primary Response Centre, is shown in 2.2.5 below. The analysis below refers to the Inter-peak periods, as it is during these times when the majority of such activities will occur.

The figures show that, during the inter-peak period (10am – 4pm), that in 2011 approximately 30% of the Borough population (or 78,000 people) will be within a 30 minute for public transport travel time of Ealing town centre. In 2011 with no Tram, this will only be 15% of the borough population (or approximately 40,000 people).

Clearly some people will still want to use the car to access these services, although parking may be limited, and the Council is keen to promote public transport.

The highway accessibility information shows that the Tram does not alter car accessibility a great deal, it remaining mainly constant between 2003 and 2011, both with and without the Tram.

This accessibility data shows that the Tram will increase the accessibility of the borough population to the location of the main Response Centre, via a high quality, sustainable mode of transport. The improvements in accessibility, journey time, journey quality and people-carrying capacity could also help plan the location of the second tier of Response Centres and outlets. These could be in town centres, already the focus for the majority of jobs, services and amenities, as well as existing Council facilities. Below are a number of

Council facilities that are within 400m of a Tram stop, which could potentially be locations for Response Points:

- Acton Swimming Baths
- Dormers Wells Leisure Centre
- Reynolds Sports Centre
- Twyford Sports Centre
- Southall Sports Centre
- Acton Library
- Ealing Central Library
- West Ealing Library
- 10 Primary and Nursery Schools
- 4 High Schools

However, these Response Point need to be accessible to the whole of the Borough population, so clearly these Response Points must be scattered throughout the Borough to be accessible to all, not just along the Tram route. This is to ensure local accessibility as well as providing them near to centres of activity. A local network of libraries, community centres and housing offices can provide this role, but the Tram does reinforce the Uxbridge Road and the town centres upon it as the main focus for retail, services and employment on the route.

3. Planning Services

Planning and development control is one of the most important roles that a local authority plays. It does this through the implementation of the policies set out in the Plan for the Environment (adopted on 12th October 2004), as the Ealing UDP is known. The Tram has the potential to both influence sites currently in the development pipeline, and influence future policy through the additional capacity it gives to public transport on the corridor and the enhanced 'image' it could give to the Uxbridge road in the eyes of developers or investors.

The impact of the Tram must also be considered in terms its effect on townscape and that it could directly affect buildings of archaeological or historical interest.

There are three main aspects upon which this report examines the Tram's impact. These are:

- Planning Policy
- Development Control
- Conservation

The impacts of the Tram must be taken into consideration of both the Planning services activities, such as development control and conservation, as well as its aspirations and aims in terms of the development of the Borough, as encapsulated in its planning policy.

The impact of the Tram is considered on each of the planning roles in turn.

3.1: Planning Policy

The Borough's role in terms of planning policy is to set out the Borough's policy for development in the future, which it sets out in the Borough's planning documents, such as the Plan for the Environment. The Tram may present opportunities for planning policy in terms of focusing development, raising densities, or the creation of new nodes of activity or mixed use sites at important interchanges, such as Ealing Broadway.

The impacts of the Tram upon planning policy relate to what the Tram, and its associated transport benefits, as well as other softer, benefits allows the Borough to do in the medium and long term in terms of altering or developing policy to enhance the Tram's benefits to the Borough and its residents, such as through the location of housing, employment and services.

Much of the opportunity for growth occurs in or near the Uxbridge Road corridor, including Southall gasworks – one of the largest brownfield sites in West London. Half of all the development sites identified in the recently adopted Unitary Development plan are within walking distance of the Tram route. This means that increased travel demand is likely to be focused in the southern half of the borough served by the Uxbridge Road. The UDP identifies development 96 sites in the Borough. Of these, 49 are located within

a few minutes walk of the Tram route. These sites represent 29% of the potential increase in floorspace in the Borough.

3.1.1: Image of Uxbridge Road

Enhanced image is a 'soft' benefit of the Tram, and is difficult to measure, despite attempts to do this for a variety of Tram schemes. However, there are indications that transport schemes such as the one proposed for West London are perceived favourably from the perspective of potential developers, and can raise the profile of areas in which Tram schemes are constructed. This was indicated in research done on the effects of the Croydon Tramlink. This could slightly alter the demand for sites within the development pipeline, or improve their viability.

This may give increased confidence to planning policy in terms of promoting sites along the Tram route for housing, employment or mixed uses.

3.1.2: Journey times, Capacity and Reliability of public transport and catchment for jobs and services

This section essentially covers the transport-related benefits of the Tram, and how this can affect the formation of planning policy in the Borough.

With the Tram, the extra passenger demand that is expected from population and employment growth can be absorbed. It is not possible to do this efficiently through extending the bus network, as it would not be cost effective to do so, and the increase in buses would create more congestion, due to the relative people-carrying capacity of Tram compared to buses on a given amount of road space. This gives generous 'headroom' to meet demand arising from growth in Ealing, and will allow development sites to be promoted at high densities without the limits of a near-full transport network that would occur if there was a continued reliance on buses. This extra capacity also allows these developments to encourage mode switch from car to public transport through limiting car parking on new developments, encourage cycle-friendly development and more radical approaches such as considering car-free housing at sites where public transport accessibility is particularly good.

The Tram also improves the performance of the public transport network through reducing journey times. This means that more people can reach jobs, services and the town centres along the route in less time, as shown by the modelling which shows that the accessibility of the Southall, Hanwell and Acton will increase significantly.

This increase in catchments and quicker journeys allows the Council to bring forward more development sites (depending on their availability), at an arguably faster rate, and possibly at higher densities, that would not be possible with a continual reliance on the bus and the congestion that would accompany it.

3.1.3: Speed, reliability, ride quality and image to promote regeneration, densification, and intensification

The Tram, both through its image and perception and by the benefits it offers in transport terms over the bus could support policies that focus development in town centres, through providing additional 'headroom' for development and by providing extra capacity to soak up the trips created by new housing and employment development that the existing bus network cannot accommodate.

The Tram allows more people to access the site, which would support higher levels of activity on a given site (i.e. higher density uses).This also allows car parking to be reduced and densities to be maximised. These policies of intensification and the use of high densities in town centres and near to public transport modes supports elements of the current Town Centre Strategies and the New Plan for the Environment, as well as elements of the wider policy context found in documents such as the London Plan.

3.1.4: Land use Policy: Higher Densities at Interchanges

The Borough supports improvements to all stations, particularly those that provide interchange between modes of travel. It also permits the development of other uses providing there is the sufficient supporting transport and social infrastructure.

The Tram allows the Borough to pursue its policy aimed at interchanges, which allows high density development as long as the public transport network has the capacity to support the trips generated by such development. The Tram will allow the Council to do this with greater confidence than with the bus-based alternative, at sites such as Ealing Broadway.

There are other elements part of the approach to interchanges that must also be part of the strategy, such as the improvement to the infrastructure at interchanges and providing good quality public realm and access. The Tram may allow these to happen, as part of the Borough's strategy to the Tram, and through working in partnership with TfL to ensure any developments are done with the Boroughs best interest being represented.

3.1.5: Accessibility to local amenities and employment and social inclusion

Chapter 2.1 discusses how the increases in accessibility can allow the town centres to become centres for the development of housing and employment, which is in line with current planning policy. This policy may also extend to other facilities to which residents wish to access, such as schools, libraries and community centres.

Planning policy seeks to locate these facilities in order to reduce the need to travel and to enhance the town centres. However, some facilities need to be located in local areas, and have a local catchment, and would be primarily supported by a walk-in catchment, such as primary schools or churches.

Some facilities can be located near to the Tram route in order to ensure they are accessible by large parts of the Borough, and planning policy recommends to locate these where they are served by public transport. These include:

- Sports centres
- Secondary, further and higher educational facilities
- Large scale community centres

The Tram can improve the accessibility of such facilities in the future, and may help guide policy decisions on where they should be located.

This has particular benefit to places where good access to community facilities is required, such as the areas selected for regeneration policy, such as Southall or the wards that are the target for Neighbourhood Renewal funding, namely Dormers Wells and the South Acton estate.

3.2. Development Control

The New Plan for the Environment contains a series of policies to which new developments in the Borough must adhere to in order to receive planning permission. Development control is the service that ensures that these policies are correctly interpreted and monitors the development in the Borough.

The impact on Development Control is twofold. Firstly, It has both a role in the planning process of the Tram itself, ensuring, within the scope of development control, that it is planned in the best interests of the Borough. The impacts that are of particular consideration include:

- The traffic impacts on alternative routes, such as those streets near to the Uxbridge Road
- The visual impact of the Tram poles, signs, catenary and associated street furniture
- Loss of Trees, building frontages or open space
- The road space the Tram would take up on sections of the road or carriageway controlled by the Borough
- The direct impacts on parking or CPZ's controlled by the Borough
- The loss of access to businesses and services

The Development Control service has a role to try and influence these impacts to best serve the interests of the Borough, and ensure it is consistent with the policies set out in the New Plan for the Environment. The extent to which this is possible is dependent on the level to which the Council decides to be involved with the Tram. As a joint promoter of the Tram, it has the greatest potential to be involved with the project design through having a formal role alongside TfL. Other levels of involvement would not allow the Council to influence the Tram in order to serve Ealing's needs.

Secondly, the type or characteristics of developments along the Tram corridor may alter as a result of the Tram being given full approval. The Tram, and the increased capacity it would give to the public transport system, may allow

increased capacities in terms of houses or jobs on development sites along the Tram route.

Currently the doubt as to whether the Tram will go ahead is creating some uncertainty and an obstacle to their development. Removal of this uncertainty will unlock the sites, and help to determine the type or density of the development that will occur.

The following sections examine how the identified impacts of the Tram will affect these two aspects of the Borough's Development Control service.

3.2.1: Image of Uxbridge Road

Enhanced image is a 'soft' benefit of the Tram, and is difficult to measure, despite attempts to do this for a variety of Tram schemes. However, there are indications that transport schemes such as the one proposed for West London are perceived favourably from the perspective of potential developers and could slightly alter the demand for sites within the development pipeline, or improve their viability. This view is supported by Development Control to a certain extent, though it was stressed that many sites on the Tram corridor would be developed anyway due to the demand for sites in close proximity to inner London.

3.2.2: Visual Impacts of Masts, Catenary, Signs and Surfaces

It is impossible to quantify the impact of 'image' or visual intrusion on conservation. It is very much down to individual perceptions. However, there are elements of the Tram that can be controlled in order to minimise the impact upon the route, such as the exact route through the town centres, and ensuring the 'kit' of the Tram interacts well in terms of urban design into the existing urban environment. It is this impact that the Development Control service must monitor as part of its role within the planning of the Tram (although the exact definition of this role is yet to be confirmed).

3.2.3: Impact on Green Space

The Tram may, depending on the land-take of the route, result in the loss of some green space, pathways or road space. This has an impact on development control in relation to the role it will play in the planning and design of the Tram alongside TfL, ensuring that the best interests of the Borough are served in relation to minimising the loss of green space or public realm.

However, there is also a way of off-setting this disbenefit. The implementation of a piece of infrastructure such as the West London Tram requires use and adaptation of a significant amount of the road space, especially in comparison with bus services. Stops, platforms, realigned junctions, plus the potential for road space to be reallocated to pedestrian use due to the reduction in car-priority. A more sustainable transport system may also reduce the need to create additional car parking along the route. The Tram may also give the opportunity for the upgrading or replacement of the street furniture along the

Tram route. These present the potential for improving or enhancing the quality of the urban environment in Conservation Areas. Such opportunities must be designed to the highest quality and must reflect the character of the conservation areas.

3.2.4: Wider Population for Jobs and Services

The increases in accessibility that the Tram brings to the town centres of Hanwell, Acton and Ealing may improve developer interest in these areas, or increase the speed in which development sites are taken up. However it is believed that such sites will be developed with or without the Tram, due to their location near to inner London and the current buoyant market, but the increases in accessibility may bring these sites forward quicker.

The increases in accessibility could also allow lower parking levels for developments. This releases a higher proportion of the site for productive use, and is in line with sustainability policies in terms of accessing developments by public transport and limiting the amount of car parking in new developments.

3.2.5: Parking on Uxbridge Road

The Development Control service monitors the provision of car parking proposed when assessing applications. The Borough wishes to limit the amount of new car parking through encouraging alternative forms of transport, such as public transport. The Tram provides a high capacity (or higher than the bus system could be) public transport route along the Uxbridge Road. This may allow the number of car parking spaces associated with developments along the public transport corridor to be minimised.

3.2.6: Access to some Businesses and Services

Through its involvement in the detailed planning of the route, the Borough has a responsibility to limit the disbenefits in terms of access to the Borough's businesses and services as well as maintaining the efficiency of the Tram.. The Borough Development Control service can influence this process as and when development applications are made in relation to properties along thre Uxbridge Road.

3.2.7: Speed, reliability, ride quality and image to promote regeneration, densification, and intensification

These impacts are related, and so have been dealt with here jointly. The Tram, both through its image and perception and by the benefits it offers in transport terms over the bus can support policies that intend to focus development in town centres, through providing additional 'headroom' for development and by providing extra capacity to soak up the trips created by new housing and employment development that the existing bus network cannot accommodate. This also allows car parking to be reduced and densities to be maximised. These policies of intensification and the use of high densities in town centres and near to public transport modes supports elements of the Town Centre Strategies and the New Plan for the

Environment, as well as elements of the wider policy context found in documents such as the London Plan.

The increases in accessibility to jobs and services that the Tram provides, especially to the town centres of Ealing and Acton, plus the image benefits it gives to these areas, may contribute to rising land values to sites in these areas.

3.3: Conservation

The council seeks to preserve and enhance its areas of historic or architectural interest through planning powers and the designation of conservation areas. These cover various residential areas, town centres, parks and open spaces. The protection of trees through tree preservation orders also falls under the heading of conservation.

The Tram runs through a number of these conservation areas and therefore the environmental implications of the scheme upon them must be considered. The Tram runs through the following conservation areas:

- Churchfields
- St. Marks Church and Canal
- Hanwell Clock Tower
- Hanwell Cemeteries
- Ealing Town Centre
- Ealing Common
- Creffield
- Acton Town Centre
- Acton Park

3.3.1: Pollution

Pollution sources, such as noise and vibration and air quality could potentially affect the conservation areas and trees along the Tram route. This will occur both during construction, and during the Tram's operation.

In terms of conservation, reductions in air pollution can be considered to be of benefit to both the buildings and open spaces that make up the conservation areas near to the Tram route, and to the Trees along the Uxbridge Road. This benefit may be particularly felt along the most sensitive parts of the Tram route in terms of the potential affect on the urban environment, such as in the historic centres of Acton, Ealing and Hanwell.

3.3.2: Image of the Uxbridge Road and Visual Impacts

In terms of enhanced image, it could be thought of that a modern, efficient public transport system such as the Tram adds to the image of the places along the Uxbridge Road and Ealing in general. This is not quite so simple in terms of conservation, where the introduction of the Tram through environmentally sensitive areas may not be considered as positive.

It is impossible to quantify the impact of 'image' or visual intrusion on conservation. It is very much down to individual perceptions. However, there

are elements of the Tram that can be controlled in order to minimise the impact upon the conservation areas, such as the exact route through the town centres, and ensuring the 'kit' of the Tram interacts well in terms of urban design into the existing urban environment.

A more specific extension of the point above is the visual impact of the Tram catenary, masts, poles and surfaces on the urban environment. These items could potentially harm the visual integrity of the urban environment along the route, particularly in the historic town centres of Ealing, Hanwell, Acton in area. The choice of materials and elements of design of the poles, vehicles, stops and so on can limit the extent to which there is an impact upon conservation areas.

There are certain points along the route which may be considered particularly sensitive due to their historic character, such as the Hanwell Clock Tower Conservation Area, Ealing Town Centre and Acton Town Centre. Such an opportunity for this may be in Acton Town Centre, where the opportunities for public realm improvement could be incorporated with its designation as one of the Mayor's "100 Public Spaces for London" to make an improvement to the urban environment in Acton.

The trees that line much of the Uxbridge Road are an important part of the character of the Borough, both as an aspect of the environment and also to Ealing's residents. The Tram scheme could result in the loss of some of these trees and should be considered as disbenefit of the scheme. However, there may be ways in which to limit this impact, such as the creation of new landscaping opportunities where the Tram allows, and replacing the Trees that are lost at other points on the route.

There are mixed benefits to the conservation of the Borough relating to the Tram image and visual intrusion. It must be understood that there is an impact visually on Ealing's historic townscapes and a potential for the loss of trees, but the effects can be mitigated through appropriate design, and compensation in terms of replacement trees, and also the Tram presents an opportunity to improve and enhance the public realm and streetscape of certain points along the Tram route.

3.3.3: Landscaping and Open Space

The implementation of a piece of infrastructure such as the West London Tram requires use and adaptation of a significant amount of the road space, especially in comparison with bus services. Stops, platforms, realigned junctions, plus the potential for road space to be re-aligned to pedestrian use due to the reduction in car-priority. A more sustainable transport system may also reduce the need to create additional car parking along the route. The Tram may also give the opportunity for the upgrading or replacement of the street furniture along the Tram route. These present the potential for improving or enhancing the quality of the urban environment in Conservation Areas. Such opportunities must be designed to the highest quality and must reflect the character of the conservation areas.

3.3.4: Speed Reliability, Ride Quality and Image to promote regeneration, densification, intensification

The opportunities the Tram provides in maximising or intensifying the development of sites along the route is discussed in section 2.1. Conservation also has a role to play in this through its role as assessing proposed developments in relation to policies pertaining to conservation and urban design, especially in sensitive areas such as the Conservation Areas, where the impact development could have has to be monitored through respecting the planning controls in place.

4. Education

This section describes the potential positive and negative impacts that the Tram scheme will have on the provision and delivery of education services for which the Borough is responsible. It includes analysis relating to the following services:

- Nursery and Early Years Services
- Primary Education
- Secondary Education
- Transport for Children with Special Educational Needs
- Youth and Play Services (delivered through Connexxions)

It has also taken into account higher and further education, which although not a specific responsibility of the Council, is very much related to the Council's delivery of education services.

The aspects of the Education service on which the Tram will have the most significant impact are those which are within the catchments, or walking distances, of the Tram stops. Walking distances for such a transport scheme are generally thought to be around 5 minutes, or approximately 400m, with an upper limit of 10 minutes walk, or 800m. Those Educational facilities outside these catchments are unlikely to benefit from the Transport benefits offered by the Tram, due to the distance they lie from its route. However the analysis of traffic impacts of the Tram on education services are considered for the whole borough.

4.1: Nursery Services

Nursery Services are generally provided through Nursery Units within Primary Schools, together with additional services provided via dedicated Nursery Centres or Early Years Education Centres. Those Nursery Units near to the Tram route are shown in Table 16.

Table 16: Nursery Facilities within 800m of the Tram Corridor

Type of Facility	Facilities within 100m of a Tram Stop	Facilities 100-200m of a Tram Stop	Facilities 200-400m of a Tram Stop	Facilities 400m – 800m of a Tram Stop
Dedicated Nursery Units	Hanwell Nursery Centre		Southall Children Centre (Grove House Site)	
			South Acton Early Excellence Centre	
Nursery Units in Schools		St. Joseph RC Primary School	Derwentwater Primary School	Beaconsfield Primary School
		St Johns Primary School	North Primary School	Drayton Green Primary School
		St Saviours CE Primary School	Dormers Wells Junior and Infant School	Oaklands Primary School
		Tudor Primary School	Hambrough Primary School	East Acton Primary School
				Blair Peach Primary School
				Blair Peach Primary School

4.1.1: Pollution and its effect on Nursery Services

The EIA has a study area of 100m either side of the Tram route for noise pollution assessment, as it is considered unlikely that there would be significant noise levels beyond 100m from the Tram route, so it is the Nursery Services within this boundary that could be judged to be affected by the changes in noise pollution. The table above shows there is one nursery service within 100m of the Tram route, which could be judged to be marginally affected by these changes in pollution during the construction phase.

The effect of pollution on nursery services is judged to be a **marginal benefit** overall, taking into account both the construction impacts and longer term benefits, given the expected decreases in noise pollution and air emissions associated with Tram as opposed to the other public transport, and through the reduction in pollution from other traffic as a result in the expected decrease in overall traffic levels in 2011 that will occur as a result of the Tram

as opposed to the 2011 traffic levels expected if the Tram does not go ahead. However, as stated above, the results of the EIA will confirm the extent to which this will occur.

4.1.2: Traffic on Alternative Routes: Conflict and Collisions

Of the three dedicated nursery school sites (Southall Children's Centre, South Acton Early Excellence Centre, Hanwell Nursery Centre), the impact of traffic changes on alternative routes is expected to be largely positive with traffic reductions along routes near to these services. Nursery Services that share sites with Primary Schools are discussed in section 4.3.3.

The results below present an overview of the results. The full results are presented in Appendix 4 and should be referred to for detailed data on the impact on individual roads and points adjacent to relevant locations.

The slight decreases in traffic along alternative routes adjacent to nursery schools suggest that the impact on pupil safety is likely to be positive. There may be a safety consideration connected with the familiarisation period where pupils, as with other members of the public, adjust to the presence of a new road user in the form of the Tram.

Table 17: Traffic Impacts on Nursery Services

Schools and Education		
Nursery	Affected Roads	Overall Impact of Tram
Hanwell Nursery Centre	Uxbridge Road	+
South Acton Early Excellence Centre	East Churchfield Road	+
Southall Childrens Centre (Grove House Site)	North road	+

4.1.3: Journey Times

The impact of journey time savings on Nursery Services is dependent on a number of factors:

- The mode of travel used to access nursery services
- And subsequently the effect that the Tram will have on the journey times of these modes.

The Department of Transport Travel to School survey 2002/2003 gives the mode share for journeys to school for various age groups within London. The survey does not give the travel behaviour for children below the age of 5, however, travel behaviour can be expected to be similar to that of the 5 – 10 year olds. The travel to school mode split for 5 – 10 year old children in London, 2002/2003 is as follows:

Table 18: Travel to school mode split for 5 – 10 year old children in London, 2002/2003

Travel to School Mode	% of Mode Share
Walk	55
Car	34
Bus	8
Other (mostly Taxi)	3
All Modes	100
Average Trip Length	*1.4km*

From the Travel to school modes we can presume that more than half of those attending Nursery Services will walk, and therefore will not be affected by the journey time savings that the Tram will precipitate.

Assuming that around a third of pupils travel to nursery services by car, the Tram will lead to a 7.4% increase to these journey times than without the Tram in 2011, a disbenefit to these users. However, the average journey length is relatively short (1.4km), so a 7.4% increase in the time it takes to travel this distance is less than one minute.

Only 8% of users use bus services. Although journey times for public transport users will be 8.6% less in 2011 with the Tram than without, these journey time savings will not benefit many service users.

4.1.4: Reliability of the Public Transport Service

As described in 4.1.3, the degree to which the improvements to the public transport services affect the delivery of nursery services is dependent on the mode share of public transport, and the Tram in particular. Currently only 8% use the bus, and 34% use the car. It is from these sources that there may be a potential mode shift towards the Tram, as it becomes a more favourable option. An alternative effect of the Tram may be that trips are shifted away from car trips to walking, even if they are not shifted to the Tram. Enhanced reliability is part of the reason for encouraging mode shift to Tram.

This mode shift is only likely to occur in those Nursery Services where the 207/607 bus is currently used as a transport mode. These are judged to be those within (400m) 5 minutes walk of a Tram stop. There may also be some mode shift, to a lesser extent, to those within a 10 minutes walk of a Tram stop, i.e. 800m. The list of Nursery Services that fall into this category are shown in section 4.1 above.

4.1.5: Population Catchments

Although nursery services generally have predominantly local catchments, improved accessibility means that for many, journeys to nursery school may become quicker, there is a greater choice in terms of the services people can access, and shorter public transport journeys may encourage mode shift away from the car.

The following sections discuss the accessibility of nursery schools along the Tram route. Accessibility refers to the figures 1 - 24 above.

Nursery Services near Southall Town Centre
There are a number of Nursery Services the near to Southall town centre, for which we can judge their accessibility and population catchment. These are:

- The Southall Children's Centre (Grove House site)
- North Primary School Nursery Service
- Hambrough Primary School Nursery Centre
- Tudor Primary School.

In terms of accessibility by car, there is a decline in those with less than 10 minutes drive, falling from around 35% to just under 30% without the Tram, and just under 20% with the Tram. Nursery services have a predominantly local population, and therefore of most relevance are those people within a 10 minute drive of these services.

For public transport journeys less than 30 minutes, there are approximately 5% more people able to do this than in 2011 with no Tram. This means that accessibility increases slightly (journey times reduce) with the Tram on public transport journeys to these schools.

Nursery Services near Hanwell Town Centre
St. Joseph's RC Primary School Nursery Service and Oaklands Primary School Nursery Service are both near to the Hanwell town centre, and so their accessibility can be judged by using the modelling outputs for Hanwell town centre.

For these services, the population accessible within 10 minutes by car falls between 2003 and 2011, with the fall being slightly greater with the Tram than without. For journeys less than 20 minutes, these services are accessible by a higher population with the Tram than without in 2011, but both 2011 scenarios are generally less accessible than the 2003 baseline.

For public transport, the number of people within a 10 minute journey is relatively constant between 2003 and both the with and without Tram scenarios in 2011. Within a 20 minute public transport travel time, nearly double the amount of people are accessible to Hanwell's Nursery Services with the Tram than both without the Tram in 2011, and the 2003 baseline.

Nursery services near Ealing Town Centre
St. Saviour's CE Infant School Nursery Service is near Ealing town centre. Accessibility by car will drop slightly between 2003 and 2011, though this drop will be higher with the Tram, so fewer people (around 3 or 4%) will be within a 10 minute drive of this service in 2011 with the Tram than without.

However, for public transport journeys, accessibility increases. Just under a quarter of the borough's population will be within 30 minutes public transport

travel time of this service with the Tram in 2011, compared to around 12 or 13% for both 2011 without the Tram and the 2003 baseline.

Nursery services near Acton Town Centre
The Nursery Services at Berrymede Junior School, East Acton Primary School, and Derwentwater Primary School are all near to Acton Town Centre.

For car users travelling to these services, accessibility falls with the Tram. Approximately 30% of the Borough population is less than 10 minutes drive in 2011 without the Tram, but only 22% are within 10 minutes with the Tram. This is compared with a baseline figure of 36% in 2003.

Among public transport users, more people will be accessible with the Tram than without, with 20% of the Boroughs population being within 30 minutes travel time in 2011 with the Tram, compared to approximately 13% of people in 2011 without the Tram.

Conclusion on accessibility to nursery services
In conclusion, accessibility to Nursery services by public transport increases with the Tram, with slight falls without the Tram, especially with shorter journeys. Car users are likely to experience somewhat higher journey times with the Tram than without. Given that the mode share of car users is likely to be considerably more than public transport, the Tram may have a negative effect on the accessibility of Nursery Services.

4.1.6: Parking on Uxbridge Road
This will only affect those Nursery Services that are on, or very close to, the Tram route. There are no services within 100m of the route, so any effects will be marginal. The service nearest the Tram route is the Southall Children's Centre, and the service at North Primary School, which are approximately 150-200m from the route. It is unlikely that those drivers using these services will be directly affected by any loss of parking on this part of the route.

4.2: Transport for Children with Special Educational Needs
In Ealing approximately 500 children use the Special Educational Needs Transport Service. This is in vehicles ranging in size from minicabs to coaches. This service picks pupils up from their homes and takes them to a number of educational establishments across the Borough, using these minicabs, minibuses and so on.

Detailed information is not available about specific routes and the children they carry, due to the sensitivity of the data, however, we do know that around a third of pupils live between 1 and 2 miles away from the school they attend, another third live between 2 and 3 miles, with only 10% living 4 or more miles away. Of those attending to schools on the proposed Tram route, they tend to live closer to their schools than those attending other schools.

The Tram will potentially impact upon the delivery of this service by affecting journey times.

4.2.1: Traffic on Diversionary Routes

Since two thirds of all children live within 3 miles of the school they attend, the impact of the Tram would be relatively minimal – depending on the specific route taken by the SEN vehicles. The specific routes are not known, and in any case with change along with pupil home locations.

4.3: Primary Education

There are a number of Primary schools which are within the 800m or 10 minute walking catchment of the Tram route. These are shown on Table 5 below:

Table 19: Primary School Facilities within 800m of the Tram Corridor

Type of Facility	Facilities within 100m of a Tram Stop	Facilities 100-200m of a Tram Stop	Facilities 200-400m of a Tram Stop	Facilities 400m – 800m of a Tram Stop
Primary Schools	Christ Church CE Junior School	St. Marks Primary School	Tudor Primary School	Blair Peach Primary School
		North Primary School	Dormers Wells Junior and Infant School	Beaconsfield Primary School
			Hambrough Primary	Drayton Green Primary School
			St. Joseph RC Primary School	Oaklands Primary School
			St Johns Primary School	St. Vincent's RC Primary School
			St Saviours CE Infant School	East Acton Primary School
			Derwentwater Primary School	Berrymede Infant and Junior School

The following sections examine how the Tram will affect these primary schools.

4.3.1: Pollution

Pollution sources, such as noise and vibration and air quality could potentially affect primary school provision along the Tram route. This will occur both during construction, and during the Tram's operation.

The EIA has a study area of 100m either side of the Tram route for noise pollution assessment, as it is considered unlikely that there would be unacceptable noise levels beyond 100m from the Tram route, so it is the primary schools within this boundary that could be judged to be most affected by the changes in noise pollution. There is one primary school this close to the route, Christ Church C of E Junior School. It is likely that this school would suffer from increases in noise pollution during the construction of the Tram, but longer term reductions given the overall decrease in traffic as predicted through the TfL transport modelling.

There are a number of nursery services within 200m of the Tram route, which could be judged to be marginally affected by these changes in pollution. These services are North Primary School and St. Marks Primary School. The remainder of the schools along the route are likely to only be marginally affected by the pollution effects of the Tram scheme, both during construction and after operation.

The effect of pollution on primary school services is judged to be a marginal benefit overall given the expected decreases in noise pollution and air emissions associated with Trams as opposed to the other public transport, and through the reduction in pollution from other traffic as a result in the expected decrease in overall traffic levels in 2011 that will occur as a result of the Tram as opposed to the 2011 traffic levels expected if the Tram does not go ahead. However, as stated above, the results of the EIA will confirm the extent to which this will occur.

4.3.2: Journey ambience and reliability

The Tram service will be more reliable than the alternative public transport in 2011 due to the better priority they can be given. The Tram also has ‘softer’ benefits to users such as better benefits journey ‘ambience’ and the enhanced image of the Tram. Combined, these benefits could induce mode shift towards the Tram from other modes of transport in relation to journeys made to primary schools.

Mode Split for Primary School children is shown on Table 4. Assuming 34% use the car, it is from this source that there may be a potential mode shift towards public transport as a result of the Tram.

This mode shift is only likely to occur to those primary schools within walking distance of the Tram stops. The list of those services that fall into this category are shown on table 5 above.

4.3.3: Traffic on alternative routes

For the purposes of assessing the impact on alternative routes, we concentrate on those Primary Schools that fall within a 400m catchment area. Ten Primary Schools fall within this area and, as might be anticipated, the overall impact of the Tram on specific primary school locations is expected to be mixed. There is a roughly even split between those Primary Schools which

will benefit from reduced traffic on alternative routes and those which will suffer traffic increases.

The schools most likely to benefit from the introduction of the Tram in terms of reduced traffic are Derwentwater, North Primary and St. John's RC. Derwentwater and St. John's RC Primary are expected to experience the most significant reductions in traffic on alternative routes such as Churchfield Road and Felix Road/Alexandria Road.

The expectation for the Southall area is relatively mixed: there are a number of primary schools which can expect higher levels of traffic, including Christ Church CE, Hambrough, St. Mark's, St. Joseph's and Tudor Primary in Ealing. The Grove adjacent to St. Saviour's CE Infant is a no through Road, but there are increases to High Street / Ealing Green which are located near to this primary School.

The overall impact on primary schools is judged to be neutral overall in terms of road traffic, if one takes into account the reduced traffic along the Uxbridge Road corridor, which has resulting positive implications for both access and safety. However, detailed examination of mitigation measures will be necessary in order to ensure that the impact of additional traffic on alternative routes is kept to a minimum. The same caveat applies for primary schools as for nursery schools regarding the addition of Trams to the streetscape as a potential safety risk in the short term until students familiarise themselves with the presence of a new road user.

Table 20: Traffic Impacts on Primary Schools

Schools and Education		
Primary	**Affected Roads**	**Overall Impact of Tram**
Christ Church CE Junior	New Broadway	-
Derwentwater	Churchfield Road	+
Dormer's Well Junior and Infant +	Dormers Wells Lane	=
Hambrough	Beaconsfield Road, South Road	-
North Primary +	Lady Margaret Road, Uxbridge Road, North Road	+
St. John's Primary +	Felix Road, Alexandria Road	+
St. Joseph RC Primary +	York Avenue	-
St. Mark's Primary	Boston Road	-
Tudor Primary	Dane Road, Uxbridge Road	-

+ Includes a Nursery School Unit

4.3.4: Journey Times

The impact of journey time savings on primary school services is dependent on:

- The mode of travel used to access primary school services

- And subsequently the effect that the Tram will have on the journey times of these modes.

The Department of Transport Travel to School survey 2002/2003 gives the mode share for journeys to school for various age groups within London. The travel to school mode split for 5 – 10 year old (primary school age) children in London, 2002/2003 is as follows:

Table 21: Travel to School Mode Split for Primary School (5-10 yr old children

Travel to School Mode	**% of Mode Share**
Walk	55
Car	34
Bus	8
Other (mostly Taxi)	3
All Modes	100
Average Trip Length	*1.4km*

Primary Schools tend to have local catchments, therefore journeys are relatively short and are made either on foot or by car. Due to the age of the children, public transport is generally not a popular mode of travel to primary schools.

It is likely that more than half of those attending primary schools will walk, and therefore will not be affected by the journey time savings that the Tram will precipitate.

Around a third of pupils travel to primary schools by car. The Tram will lead to a 7.4% increase to these journey times than without the Tram in 2011, a disbenefit to these users. However, the average journey length is relatively short (1.4km), so a 7.4% increase in the time taken is relatively minimal.

Only 8% of users use bus services as the chosen mode of transport. Although journey times for public transport users will be 8.6% less in 2011 with the Tram than without, these journey time savings will not benefit many service users. There would, however, be some switch to Tram as a result of those quicker journeys.

Therefore, it can be considered that the Tram has mixed but marginal effects on primary school services, as it means slightly longer journeys by car, although offset by shorter public transport trips

4.3.5: Stops with Tram in comparison to bus

None of the stops that will be lost will adversely affect the primary schools within 800m of the Tram, however the home end of journeys could be affected. But given that public transport access to Primary Schools is of a relatively low importance (see Table 7), then this will have a minimal effect.

4.3.6: Parking on Uxbridge Road

Any loss will only affect those primary schools that are on, or very close to, the Tram route. Schools very near to the Tram route include Christ Church C of E Junior School and North Primary School. Around a third of pupils travel to primary school by car, and there is potential that the changes in parking arrangements caused by the Tram could mean less convenient parking for some parents delivering and collecting children.

4.3.7: Accessibility to local Amenities

Transport efficiency and reliability: Borough residents.

Although primary schools generally have predominantly local catchments, improved accessibility means that for many, journeys to school may become shorter by public transport. This could widen the choice of schools within a given journey time and could encourage mode shift away from the car. This increase in accessibility in order to provide a greater choice of services and amenities is an important part of the Council's strategies relating to regeneration and tackling social exclusion, especially amongst deprived neighbourhoods.

We have included analysis relating to the accessibility tables shown in Chapter 1.2.5, and have focused on car travel times of less than 10 minutes, and public transport ravel times of less than 20 minutes, reflecting the local catchments that Primary Schools have. The population catchments the analysis is based on refer to the West London population, as defined by the TfL model, as Primary Schools are not exclusive to Ealing residents, but also to residents of surrounding Boroughs.

The following sections discuss the accessibility of primary schools along the Tram route.

Schools near Southall Town Centre

There are a number of primary schools within or near to Southall town centre, for which we can judge their accessibility and population catchment. These are:

- North Primary School
- Hambrough Primary School Nursery Centre
- Tudor Primary School.
- Beaconsfield Primary School
- Blair Peach Primary School

Table 22: Highway Accessibility to Primary Schools in Southall.

	10 Minute Travel Time
	AM Peak
2011 Without Tram	113,000
2011 With Tram	159,000

As this table shows, there are 46,000 more people within a 10 minute drive in 2011 with the Tram than without.

Table 23: Public Transport Accessibility to Primary Schools in Southall

	10 Minute Travel Time	20 Minute Travel Time
	AM Peak	AM Peak
2011 Without Tram	5,000	17,000
2011 With Tram	9,000	17,000

The table above shows there are more people within a 10 minute public transport travel time in 2011 with the Tram than in 2011 without the Tram.

Schools near Hanwell Town Centre.
Schools near to Hanwell include:

- St. Joseph's RC Primary School
- Oaklands Primary School
- St. Marks Primary School
- St. Johns Primary School.

Proximity to Hanwell town centre allows their accessibility to be judged by using the accessibility modelling outputs for Hanwell town centre.

Table 24: Highway Access to Primary Schools in Hanwell

	10 Minute Travel Time
	AM Peak
2011 Without Tram	198,000
2011 With Tram	178,000

For these schools, the population accessible by car within 10 minutes is lower in 2011 with the Tram than without.

Table 25: Public Transport Accessibility to Primary Schools in Hanwell

	10 Minute Travel Time	20 Minute Travel Time
	AM Peak	AM Peak
2011 Without Tram	8,000	11,000
2011 With Tram	8,000	13,000

For public transport journeys, there are more people accessible within a 20 minute travel time in 2011 with the Tram than without, but the same number of people accessible within a 10 minute journey in both 2011 scenarios.

Primary Schools in Ealing Town Centre
There are 2 primary schools located near to Ealing town centre.
- St. Saviour's CE Infant School,
- Christ Church CE Junior School

Table 26: Highway Access to Primary Schools in Ealing

	10 Minute Travel Time
	AM Peak
2011 Without Tram	164,000
2011 With Tram	160,000

The table above shows that car accessibility will be slightly less in 2011 with the Tram than without.

Table 27: Public Transport Accessibility to Primary Schools in Ealing

	10 Minute Travel Time	20 Minute Travel Time
	AM Peak	AM Peak
2011 Without Tram	2,000	7,000
2011 With Tram	2,000	14,000

However, for public transport journeys, accessibility increases. There are twice as many people within a 20 minute public transport Travel time in 2011 with the Tram than without.

Primary Schools in Acton Town Centre
There are three primary schools near Acton town centre.

- Berrymede Junior School
- East Acton Primary School
- Derwentwater Primary School

However, they are not within the 400m, 5 minute walking catchment of a Tram stop, and so any accessibility advantages they have to be considered with the further walk to the school in mind.

Table 28: Highway Access to Primary Schools in Acton

	10 Minute Travel Time
	AM Peak
2011 Without Tram	230,000
2011 With Tram	243,000

In 2011 with the Tram, there are more people accessible within a 10 minute drive than in 2011 without the Tram, as is shown in the Table above.

Table 29: Public Transport Accessibility to Primary Schools in Acton

	10 Minute Travel Time	20 Minute Travel Time
	AM Peak	AM Peak
2011 Without Tram	3,000	12,000
2011 With Tram	3,000	16,000

Among public transport users, more people will be accessible with the Tram than without for journeys of less than 20 minutes, and accessibility is the same across the two scenarios for journeys of less than 10 minutes.

In conclusion, public transport accessibility to primary schools will be better with the Tram for these Primary Schools near to the Tram route, in comparison with the situation in 2011 without the Tram. However, highway accessibility is predicted to be slightly worse overall with the Tram than without in 2011. Therefore, the Tram offers mixed benefits to primary schools, given that more people tend to use the car than public transport to get to primary schools. However, primary schools generally have local catchments, and so the negative effect of this impact is limited. These results also show some advantages, particularly in terms of regeneration and social exclusion, where improved accessibility to primary schools by public transport would be considered to be in line with Council policy and conducive to regeneration strategy. In terms of a Borough wide perspective, given that the discussions above are focused on only those schools within 800m of the route, which equates to 18 out of 65 schools in the Borough, there are a large number of Primary Schools to which the Tram will have no or very little impact, so from this Borough-wide perspective, the Tram will have little or no effect on the majority of Primary School services.

4.4: Secondary Schools and Further and Higher Education

Approximately half of Ealing's secondary schools are along the Tram route, with three being within a 5 minute walk of a Tram stop, and another three being within a 10 minute walk. This presents good opportunities for both pupils and the schools, as secondary schools in Ealing, and London generally, have a very wide catchment (occasionally across Borough boundaries), with pupils often using public transport to reach them.

Table 30: Secondary Schools with 800m of the Tram Route

Type of Facility	Schools within 100m of a Tram Stop	Schools 100-200m of a Tram Stop	Schools 200- 400m of a Tram Stop	Schools 400m – 800m of a Tram Stop
Secondary Schools	Villiers High School		Acton High School	The Ellen Wilkinson School for Girls
	Twyford CE High School			Drayton Manor High School
				Dormers Wells High School
Further / Higher Education	Ealing, Hammersmith & West London College (Acton Campus)	TVU St. Mary's Road Campus		
		(WLC) (Ealing and Southall Campuses)		

4.4.1: Pollution effects of the Tram

Pollution sources, such as noise and vibration and air quality could potentially affect secondary schools along the Tram route. This will occur both during construction, and during the Tram's operation.

The EIA has a study area of 100m either side of the Tram route for noise pollution assessment, as it is considered unlikely that there would be significant noise levels beyond 100m from the Tram route, so it is the college and schools within this boundary that could be judged to be most affected by the changes in noise pollution. There are two secondary schools approximately this close to the route, Villiers High School, and Twyford CE High School, plus the Acton Campus of the WLC. It is likely that these schools would suffer from increases in noise pollution during the construction of the Tram, but longer term reductions given the overall decrease in traffic as predicted through the TfL transport modelling, and replacement of diesel buses with quieter Trams.

The other secondary schools along the Tram route could be judged to be marginally affected by these changes in pollution. These schools are:

- Acton High School
- WLC, Ealing and Southall Campuses
- TVU

The remainder of the secondary schools in Ealing are likely to only be marginally affected by the pollution effects of the Tram scheme, both during construction and after operation.

The effect of pollution on secondary school services is judged to be a marginal benefit overall given the expected decreases in noise pollution and air emissions associated with Trams as opposed to buses, and through the lower pollution from other traffic as a result in the expected decrease in overall traffic levels in 2011 that will occur as a result of the Tram as opposed to the 2011 traffic levels expected if the Tram does not go ahead. However, as stated above, the results of the EIA will confirm the extent to which this will occur.

4.4.2: Journey Ambience, reliability and capacity

The degree to which the improvements to the public transport services affect the journeys to secondary schools is dependent on the mode share of public transport, in comparison to others. Secondary schools tend to have diverse catchments covering a broad area, often beyond administrative boundaries. The 2002/3 Department for Transport Travel to School Survey supplied information on the mode of travel to secondary schools, as can be seen below.

Table 31: Travel to School Mode for Secondary School children (11-16 yr olds)

Travel to School Mode	**% of Mode Share**
Walk	32
Bicycle	1
Car	22
Bus	34
Other (mostly Taxi)	12
All Modes	100
Average Trip Length (km)	*3.4*

Currently 34% use the bus, and 22% use the car. It is from these sources that there may be a potential mode shift towards the Tram, as it becomes a more favourable option (particularly from the 207 and 607 bus routes, which will be replaced by the Tram). With a third of pupils using the bus at present, this represents a significant proportion of public transport users, and for those secondary schools near the route, the Tram may become the most appropriate transport choice, for at least part of the journey. There may also be some mode shift towards the Tram from car, depending on the advantages the Tram presents over the car for the individuals concerned.

This mode shift is most likely to occur to those secondary school pupils where the Tram offers most benefit, or where the 207/607 bus is currently used as a transport mode, i.e. those within walking distance of the Tram stops. These are Villiers High, Twyford CE High and Acton High, plus the Acton Campus of the WLC.

It is not possible to quantify these benefits, nor predict the number of children and parents that are likely to take advantage of these benefits. However, it would be reasonable to expect benefits to some of the 34% already using the Bus, while a further proportion will choose to switch mode to Tram because of the improved public transport offer.

4.4.3: Traffic Impacts on Diversionary Routes

The majority of affected High Schools in the Borough are expected to experience no significant change in the levels of traffic on adjacent alternative routes. This is true for Acton High School, Drayton Manor High School, Greenford High School and Ellen Wilkinson School for Girls.

Twyford High School is expected to have a substantial decrease in traffic along Uxbridge Road, which should have positive knock-on effects for safety and air and noise pollution. The Villiers High School will see a technically significant increase in traffic along Avenue Road/Villiers Road, however the overall impact on the school is more varied as there will be decreases in traffic recorded along Park Avenue, although at 18% this lies just below the technically significant traffic volume of 20%.

On balance the overall impact of increased traffic on alternative routes, is likely to have a minimal impact on secondary schools in the borough. The majority of schools will see little or no effect on the levels of traffic along adjacent alternative routes and as such the change over the period is largely insignificant.

Table 32: Traffic Impacts on Secondary Schools

Schools and Education		
Secondary	Affected Roads	Overall Impact of Tram
Acton High School	Gunnersbury Lane	=
Drayton Manor High School	Drayton Bridge Road	=
Greenford High School	Ruislip Road East	=
The Ellen Wilkinson School for Girls	Queen's Drive, Hanger Lane	=
Twyford High School	Uxbridge Road, Twyford Avenue	-
Villiers High School	Park Avenue, Avenue Road/Villiers Road	-

With regard to tertiary institutions, for the purpose of this report we refer to the three Ealing, Hammersmith and West London Colleges and the Thames Valley University Ealing Campus. The overall impact on the tertiary sector is relatively negative although there are some exceptions. The TVU in particular is set to experience relatively high increases on adjacent alternative routes, which will not be mitigated by traffic management measures, unless the programme for these traffic management measures is extended in scope.

Of the three Colleges, in Acton, Ealing and Southall, only Acton is projected to experience a decrease in traffic, with significant decreases anticipated on High Street in particular. Ealing is largely neutral, although a significant increase is anticipated along Ealing Green. For Southall, a significant increase in traffic is expected along Beaconsfield Road, which will be partially mitigated by a decrease along South Road.

Table 33: Traffic Impacts on Future & Higher Educational Facilities

Schools and Education		
Tertiary	Affected Roads	Overall Impact of Tram
Thames Valley University Ealing Campus - various locations along Uxbridge Road and Ealing Green	Ealing Green, High Street, Bond Street, Uxbridge Road, Grange Road	-
Ealing Hammersmith and West London College Sites		
Acton	Gunnersbury Lane, High Street	+
Ealing	Mattock Lane, Ealing Green	=
Southall	Beaconsfield Road, South Road	-

4.4.4: Fewer Stops on the Public Transport Route

Tram stops are located strategically to serve facilities such as Secondary Schools, where they are near to such stops, so it is unlikely that the removed stops will affect the access to secondary schools, although some pupils at the origin of their journey may find they have a somewhat longer walk to their nearest stop.

4.4.5: Parking on Uxbridge Road

Any reduction will only affect those secondary schools that are on, or very close to, the Tram route. Schools nearest the Tram route are Villiers High School and Twyford CE High School, plus the Acton branch of WLC. Around a fifth of pupils travel to secondary school by car, and there is potential that the changes in parking arrangements caused by the Tram could mean parking difficulties for some school users – though it is likely that many of those arriving at school by car will be passengers rather than drivers. also, the amount of parking on Uxbridge Road is very limited, and some parking may be supplied nearer the school.

It is therefore considered that the potential loss in parking on the Uxbridge Road is a marginal disbenefit on secondary school users, though this cannot be quantified until the parking arrangements and changes are confirmed as part of the scheme's design process.

4.4.6: Accessibility to local Amenities and transport efficiency

There are a number of secondary schools (6 out of the 13 in Ealing) that could potentially benefit from the Tram as they lie on or near its route, and are currently served by the 207 and 607 bus routes. The 2002/2003 TfL Travel to School Survey states that 34% of secondary school pupils is London travel to school by bus, so the Tram could benefit these users, plus there may be

mode shift away from the 22% that travel by car as the public transport system improves.

Due to the nature of secondary school provision in London, such as the competition for places and varying quality in results that schools achieve, many journeys to secondary school are relatively long distance in comparison to primary schooling, and secondary schools have very wide catchments. Therefore, increases in accessibility can extend choice and increase catchment areas. As a result of this, our analysis includes car journeys of up to 20 minutes and public transport journeys of up to 1 hour, across the West London population (as defined by the TfL model).

Villiers High School and WLC – Southall Campus

Table 34: Public Transport Accessibility to Villiers High School and WLC – Southall Campus

	10 Minute Travel Time	30 Minute Travel Time	60 minute Travel time
	AM Peak	AM Peak	AM Peak
2011 Without Tram	5,000	70,000	303,000
2011 With Tram	9,000	93,000	360,000

The table above shows that with the advent of the Tram, Villiers High School and the Southall WLC campus are more accessible by public transport across West London than without the Tram.

Table 35: Highway Accessibility to Villiers High School and WLC – Southall Campus

	10 Minute Travel Time	20 Minute Travel Time
	AM Peak	AM Peak
2011 Without Tram	114,000	542,000
2011 With Tram	160,000	542,000

The table above shows that in 2011 with the Tram, there are more people within a 10 minute travel time than without the Tram, but the same number of people within a 20 minute travel time.

Dormers Wells High School

Table 36: Public Transport Accessibility to Dormers Wells High School

	10 Minute Travel Time	30 Minute Travel Time	60 minute Travel time
	AM Peak	AM Peak	AM Peak
2011 Without Tram	9,000	32,000	143,000
2011 With Tram	9,000	32,000	171,000

The table above shows that public transport accessibility to Dormers Wells School is the same across the two scenarios (with and without Tram) for journeys of less than 10 and less than 30 minutes, but accessibility is higher for longer journeys of up to 1 hour.

Table 37: Highway Accessibility to Dormers Wells High School

	10 Minute Travel Time	20 Minute Travel Time
	AM Peak	AM Peak
2011 Without Tram	186,000	581,000
2011 With Tram	191,000	610,000

In terms of car access, Dormers Wells High will be accessible by more people across West London in 2011 with the Tram than without, both for journeys of less than 10 and less than 20 minutes.

Drayton Manor High School

Table 38: Public Transport Accessibility to Drayton Manor High School

	10 Minute Travel Time	30 Minute Travel Time	60 minute Travel time
	AM Peak	AM Peak	AM Peak
2011 Without Tram	5,000	16,000	155,000
2011 With Tram	5,000	13,000	173,000

Public transport accessibility does not improve greatly with the Tram, possibly due to that fact that Drayton Manor is away from the Tram Corridor, so involves a longer walking time to the school from the Tram stop. There are less people within a 30 minute travel time in the with-Tram scenario than the no-Tram scenarios, although more people within a 60 minute travel time.

Table 39: Highway Accessibility to Drayton Manor High School

	10 Minute Travel Time	20 Minute Travel Time
	AM Peak	AM Peak
2011 Without Tram	130,000	502,000
2011 With Tram	130,000	517,000

In terms of Highway accessibility, it is only slightly improved in the 2011 with Tram scenario, with 15,000 more people accessible within a 20 minute travel time.

The Ellen Wilkinson School for Girls

Table 40: Public Transport Accessibility to The Ellen Wilkinson School for Girls

	10 Minute Travel Time	30 Minute Travel Time	60 minute Travel time
	AM Peak	AM Peak	AM Peak
2011 Without Tram	4,000	20,000	479,000
2011 With Tram	4,000	20,000	460,000

In terms of public transport accessibility, it only varies slightly between the with and without tram scenarios, in that journeys within 10 and 30 minutes have the same number of people accessible to the school, with slightly less with the Tram for journeys of up to an hour.

Table 41: Highway Accessibility to The Ellen Wilkinson School for Girls

	10 Minute Travel Time	20 Minute Travel Time
	AM Peak	AM Peak
2011 Without Tram	127,000	700,000
2011 With Tram	135,000	598,000

For Highway accessibility the messages are mixed. There are slightly more people accessible by car for journeys of less than 10 minutes in 2011 with the Tram, but there are over 100,000 people less accessible in 2011 with the Tram than without for journeys of less than 20 minutes.

Twyford CE High School, Acton High School and WLC (Acton campus)

Table 42: Public Transport Accessibility to Twyford CE High School, Acton High School and WLC (Acton Campus)

	10 Minute Travel Time	30 Minute Travel Time	60 minute Travel time
	AM Peak	AM Peak	AM Peak
2011 Without Tram	3,000	49,000	395,000
2011 With Tram	3,000	85,000	495,000

For public transport journeys, there are considerable more people accessible to these schools in 2011 with the Tram than the without Tram scenario, as the table above shows.

Table 43: Highway Accessibility to Twyford CE High School, Acton High School and WLC (Acton Campus)

	10 Minute Travel Time	20 Minute Travel Time
	AM Peak	AM Peak
2011 Without Tram	230,000	961,000
2011 With Tram	243,000	905,000

For highway accessibility to these facilities, in 2011 with the Tram, there are more people accessible within a 10 minute journey time, but less people within a 20 minute journey time.

TVU, St. Mary's Road Campus

For the TVU, we have analysed both the inter-peak and AM peak figures, as users of the college will travel to the TVU at more varied times than pupils at secondary schools.

Table 44: Public Transport Accessibility to TVU, St. Mary's Road Campus

	10 Minute Travel Time		30 Minute Travel Time		60 minute Travel time	
	AM Peak	Inter-peak	AM Peak	Inter-peak	AM Peak	Inter-peak
2011 Without Tram	6,000	6,000	23,000	23,000	278,000	334,000
2011 With Tram	6,000	6,000	23,000	23,000	308,000	356,000

Public transport access to TVU during both the AM and inter-peak periods is the same between the 2011 with and without Tram scenarios for journeys of 10 minutes and 20 minutes, but there are more people accessible by public transport in 2011 with the Tram than without for journeys of up to 60 minutes.

Table 45: Highway Accessibility to TVU, St. Mary's Road Campus

	10 Minute Travel Time		20 Minute Travel Time	
	AM Peak	Inter-peak	AM Peak	Inter-peak
2011 Without Tram	164,000	209,000	683,000	915,000
2011 With Tram	175,000	209,000	720,000	903,000

For highway journeys in the AM peak, TVU is accessible to more people in 2011 with the Tram than without for both journeys of up to 10 minutes, and up to 20 minutes. During the inter-peak, there are the same number of people accessible to TVU for highway journeys of up to 10 minutes for both the with and without Tram scenarios, but slightly less people accessible in 2011 with the Tram for journeys of up to 20 minutes.

Conclusion on Secondary Schools

In conclusion, the Tram presents mixed benefits for secondary schools, it offers improved accessibility by public transport for those schools nearest the Tram route, with little impact on those towards the higher end of the walking catchment. In terms of car users, there is an overall drop in accessibility, though the impact of this has to be taken into consideration with the mode share of both PT users and car users in schools, as generally more people use the bus (and therefore will use the Tram, especially among schools currently served by the 207 and 607 services), than use the car, so more people would benefit than would be disadvantaged.

These improvements in accessibility comply with policies and objectives regarding the improvement of accessibility to amenities and services across the Borough, as more people are better connected to secondary schools, which can contribute to the reduction of social exclusion.

5. Street Operation and Enforcement

5.1 Enforcement of on-street parking and bus lanes

The council is responsible for the managing on street parking and has responsibility for enforcing the Controlled Parking Zones (CPZs) and bus and cycle priority measures.

5.1.1: Traffic Impact on alternative routes

The introduction of the Tram will result in a number of changes to the way that traffic travels through the borough. In some locations along the route the Uxbridge Road will become Tram only, or public transport only routes and hence traffic will have to be accommodated on alternative routes. The impact of increased volumes of traffic will need to be assessed on a street by street basis and existing parking arrangements and CPZs will need to be reassessed to establish whether or not they are sufficient to cope with the post-Tram situation.

While it is clear that some routes will be affected, the overall impact on traffic levels in the borough is positive and not all alternative routes will suffer from increased levels of traffic. As a result it may be possible to see if some parking, along with monitoring and enforcement resources, could be reallocated between those roads with higher priority and those which are set to become less busy as a result of the Tram.

Given the increased priority that certain roads will have in the post-Tram scenario, it is likely that the parking and control services of the council will have to apply greater focus to certain specific routes, as well as of course to the actual Tram route itself

5.1.2: Impact on Traffic Danger on Diversionary Routes

The likely outcome is mixed under this heading and many of the issues that are likely to arise are being dealt with in the detailed design stage which is ongoing between LBE and TfL and so it is not possible to assess precise impacts at this juncture.

5.1.3: Reliability of Public Transport Service

This increased priority for public transport has a dual implication for parking and public transport corridor enforcement. On the one hand the borough will probably have to allocate additional resources to ensure that the new public transport corridors are adequately enforced, ensuring effective operation – although the extent to which this occurs would depend upon the management regime agreed with TfL.

An additional possibility is that the introduction of the Tram will promote a modal shift towards more sustainable options. This could result in some car parking becoming surplus to requirements and it may become possible to reduce the allocation in certain areas.

5.1.4: Capacity for other road users along Tram corridor

In terms of street management the key issue as above is to ensure effective management of clearways, so that efficient use is made of the remaining road space allocated to other highway users.

5.1.5: Parking on Uxbridge Road

The implications for parking enforcement as a result of any reduction in parking availability are twofold. On the one hand, reduced parking in certain locations could result in a smoother flow of traffic with fewer vehicles searching for parking and driving in and out of parking spaces. On the other hand however, the reduction in parking may have a knock on effect in terms of drivers trying to access businesses and services along the Uxbridge Road, who may be tempted to park illegally.

While the first of these outcomes is of potential benefit the second echoes concerns outlined in sections 5.1.1 and 5.1.2 above. Appropriate street management procedures will need to be applied to ensure high levels of compliance with parking regulations, both on and off the route. As mentioned above, it might be useful to assess the scope and future effectiveness of the existing CPZs and reappraise the longer term CPZ Strategy.

5.1.6: Access to businesses for servicing & deliveries

In terms of parking enforcement, it is clear that there is the potential at certain locations for a heightened pressure on available space, and mitigating measures may be required. This is expected to be most severe during the construction phase when street space will be at its most constrained. Enforcement will be required to ensure that construction is not disrupted.

5.1.7: Speed, reliability, ride quality and image to promote Regeneration, Densification, Intensification

In the event that the Tram has the anticipated wider non-transit impacts, the development pressure and intensity of use along the route may increase. This has the potential to exacerbate the anticipated pressure on parking enforcement along the route. However this increased densification and intensity of use may be largely mitigated by a more sustainable modal split, with increased reliance on the Tram and other more sustainable modes of travel than on the private car.

5.2 Management of car parks

The Borough is responsible for managing some 21 car parks across the borough, ranging from small surface car parks to large multi-storey facilities. Of the 21 car parks, 11 of them are on or close to the Tram route. These eleven facilities equate to 1,473 off street car parking spaces, or 65% of the total spaces, with the largest concentration at Ealing town centre.

5.2.1: Parking on Uxbridge Road

The implications for the borough's car parks as a result of any reduction in parking availability are twofold. On the one hand, reduced parking along the route could lead to increased demand for off street parking. Conversely, with

more people using public transport and possibly cycling and walking, there may be a reduced demand for parking. The precise impact is difficult to estimate at this juncture, as the precise change in parking supply will not be clear until the current detailed design phase is completed. However it is likely that there will be a reduction in the supply of parking overall, making it more difficult to park along the route. There is also the possibility that some parking may be reduced on adjacent routes and the consequent knock-on effect that this would have.

It is important to stress however that reducing the supply of car parking is consistent with national, regional and local government guidance on encouraging more sustainable modes of travel and hence this likely reduction in parking can be interpreted as a beneficial disincentive, while the Tram at the same time offers a positive incentive to adopt a more sustainable option. It is therefore logical that the greatest impact is likely to be felt during the construction phase, when the public transport improvements are not yet in place.

5.3: Roads and Pathways Maintenance

The London Borough of Ealing has a responsibility for the upkeep of its roads, street and pathways within the Borough. This involves both regular street cleaning programmes and a schedule of planned maintenance programmes, plus associated activities such as gully cleaning and winter maintenance of roads.

Street cleaning in the town centres is a continuous operation and is done by hand-pushed carts. There is additional weekly or twice weekly mechanical sweeping of the Uxbridge Road and the town centres, which occur outside normal business hours during early mornings and late evenings. The programme for road maintenance is set annually in the light of budgetary considerations following a survey of the condition of public highways.

The Tram could potentially affect the delivery of these road-sweeping programmes, street cleaning and the maintenance of roads along the Tram route. The following section is a consideration of the impacts that the Tram will have on these services.

5.3.1: Traffic Impacts on Alternative Routes

These increases could potentially affect the programme of road maintenance activities and street cleaning. The residential streets either side of the Uxbridge Road currently have twice weekly road sweeping programmes. These occur outside normal hours such as early mornings, but could coincide with the running hours of the Tram.

This potential increase in traffic is thought to have a very minimal effect on the delivery of these services, and could be managed through early identification of the affected areas and building the route of the Tram and affected roads into the route planning of such services.

There is both an environmental aspect to this, in the potential levels of litter that may change as a result of this impact, and an accessibility perspective in how the traffic impacts on these alternative routes have on the ability for road maintenance vehicles to efficiently deliver their service

The Traffic management measures that are part of the Tram 'package' could potentially affect these routes and may also need mitigation through route planning. Specific measures such as width restrictions on roads could potentially affect mechanical sweeping vehicles due to their size.

However, the degree of this impact on this service can be considered minimal, and could be mitigated through the adaptation of service planning in response to the Tram.

The specific traffic impacts on particular streets and facilities are contained in Appendix 4.

5.3.2: Landscaping or Open Space Opportunities
This is a minimal impact, and can be incorporated into current road and pathway cleaning and maintenance programmes once these opportunities for landscaping or pedestrianisation are confirmed.

5.3.3: Capacity for Other Road Traffic
The road space that the Tram occupies, both through segregated and shared running, could reduce the amount of road space for other vehicles. This road space is also used by traffic created by maintenance and cleansing.

Street cleansing services that occur throughout the day (by small hand-push carts) will not be strongly adversely affected by this impact. Larger vehicles are more likely to be affected, but any likely delays that this could cause can be mitigated by incorporating these expected delays into the route planning process. Early identification of the Tram route and the likely traffic impacts can ensure these changes on the routes and programmes of road cleaning and maintenance can ensure there is scope for incorporating them into route planning processes.

5.3.4: Access for Businesses and Services
This impact needs to be considered in relation to both the construction phase and operation phase of the Tram.

The construction of the Tram may prevent some parts of the route from receiving street cleansing and maintenance whilst they are affected by the construction of the Tram. The degree to which this affects the delivery of the service is dependent on the size of each section of construction work, and the obligations the contractors have for cleaning while they are operating.

Following the commencement of operation, the routes and access of maintenance and cleaning vehicles may be affected by the Tram. This may be

more of an issue in town centres where space is restricted. The full extent of this impact is dependent on the detailed designing of the route.

It is expected that this will have a minimal impact on the delivery of the service, and again, is manageable through the alteration of routes in order to deal with its effects.

5.4 Cycling

Cycling is a key component of the Council's transport strategy and the council has actively been investing in the provision of facilities for cyclists including dedicated routes and parking facilities. The introduction of the Tram has the potential to enhance the facilities along LCN route 39 which runs along the Tram route and routes 41, 86, 87 and 88 all of which cross the route at some point.

5.4.1: Pollution

We could expect that the Tram will introduce a new form of noise and air pollution during the construction phase, with potential adverse effects on cyclists close to the Tram route. However, the low noise creation and air pollution emissions of the Tram, plus the expected reduction in overall traffic levels following the Trams completion and subsequent operation, will have longer term benefits to cyclists using the Uxbridge Road or roads close to it. All of these factors are likely to be of benefit to cyclists.

The effect of pollution on cyclists is likely to be of significant benefit overall given the expected decreases in noise pollution and air emissions associated with Trams as opposed to other public transport, and through the reduction in pollution from other traffic as a result in the expected decrease in overall traffic levels in 2011 that will occur as a result of the Tram as opposed to the 2011 traffic levels expected if the Tram does not go ahead. However, as stated above, the results of the EIA will confirm the extent to which this will occur.

5.4.2: Image of Uxbridge Road

The impact on cycling and the cycling environment in tandem with the improved town centres to be delivered through the Town Centre Strategies could expect to increase the number of people who choose to cycle rather than use, for example, the car.

5.4.3: Impact on Traffic Danger on Alternative Routes

The Tram could potentially increase the levels of traffic on roads that provide alternative routes to Uxbridge Road.

This could have significant impact on the attractiveness of cycling unless adequate mitigation measures are adopted. Without sufficient measures to offer cyclists priority, in tandem with the improvements along the Tram corridor, cyclists could find themselves increasingly in competition with other highway users (in more constrained situations such as narrower roads) and safety could be compromised.

Any increases in traffic along the LCN routes discussed above are likely to be of specific concern as these routes carry a relatively large number of cyclists.

5.4.5: Landscaping or Open Space opportunities

The Tram could potentially present opportunities for better landscaping or open space opportunities, such as pedestrianisation and enhanced facilities for pedestrians along the route and especially in the town centres. The challenge will be to ensure that appropriate ancillary facilities are provided for cyclists at key locations (eg. town centres, Tram stops) in line with the targets outlined in the Cycle Action Plan for Ealing.

Additionally, in certain locations extra space may provide room for enhanced or new cycle tracks, which should improve the attractiveness of cycling in the borough in addition to improving safety.

5.4.6: Reliability of the Public Transport network

The most likely beneficial impact of the Tram on cyclists is probably restricted to the extent that the Tram will act as a catalyst for a modal shift in favour of more sustainable methods of transport. The challenge therefore is to ensure that cyclists are appropriately reorganised in the design of the scheme and that appropriate allowance is made for cycle parking and other ancillary facilities in order to maximise the beneficial impacts of the scheme.

5.4.7: Capacity for other road traffic and the impact on cyclists

The biggest risk in relation to cyclists is that inadequate provision is made for cyclists at certain ‘crunch’ points and that as a result cycling becomes a less attractive option. Examples may be at some of the town centres where space between public transport, pedestrians, cyclists and other highway users is at a particular premium. While the precise allocation of road space at these key locations is part of the ongoing detailed design phase, it is important that the needs of cyclists are taken into account.

5.4.8: Impact of reduced parking and implications for cyclists

Reduced parking may have a number of effects on cyclists, some positive and some negative. On the negative side, it may be that reduced parking availability increases the prevalence of illegal parking, some of which may impact on cyclists. The potential disbenefit could be mitigated by strict enforcement as discussed in 5.4.4 above.

There could however be benefits as a result of the reduction in parking, with additional space available for cycle measures as outlined in 5.4.5 above. Also a reduction in parking along certain stretches of the route could also increase cycle safety as it removes the risk of cars pulling out into cycle lanes, or of car doors being opened into the path of cyclists.

5.4.9: Accessibility to local amenities and employment thus greater social inclusion

Previous sections have discussed how the increases in accessibility can allow the town centres to become centres for the development of housing and

employment nodes, which is in line with current planning policy. Public Transport accessibility levels will increase as a result of the introduction of the Tram, which will provide better access to jobs, services and amenities.

Cycling also has a role to play and could enhance local access. This could have an additional impact on social inclusion as cycling represents a low cost alternative to the private car or indeed public transport. This could enhance access in particular to local facilities such as sports centres, community centres, libraries and shopping and leisure facilities.

5.5 Road Safety

The likely outcome is mixed under this heading and many of the issues that are likely to arise are being dealt with in the detailed design stage which is ongoing between LBE and TfL and so it is not possible to assess precise impacts at this juncture.

5.6: Domestic and Commercial Waste Collection

The Borough has a responsibility for the collection of waste from both residential properties and commercial operations. This is done through a partnering contract with an external operation, but the terms of this are controlled by the Council.

Domestic and commercial waste collection occurs at a variety of frequencies depending on the level of demand. Along the Uxbridge Road the majority of collections are from commercial operations, though the level of domestic collections is rising. There is a twice daily commercial collection along the Uxbridge Road (morning and evening) and domestic collections a minimum of once a week, up to daily collections where waste levels are high.

The Tram, through the road space it takes up and the traffic impacts, could potentially affect the efficiency of the delivery of this service. The following sections consider these impacts.

5.6.1: Traffic Impacts on Alternative Routes

There are both domestic and commercial collections along these routes, at a minimum of once per week, and up to twice daily for commercial collections, such as shops on streets just off the Uxbridge Road.

These increases in traffic could lead to delayed collections, both along these roads, and have knock-on effects on the rest of the routes. This would subsequently require the re-scheduling of services.

There is both an environmental aspect to this, in the potential levels of accumulating refuse that may change as a result of this impact (although minimal), and an accessibility perspective in how the traffic impacts on these alternative routes have on the ability access their routes, and the delays on this accessibility that it may cause.

This impact is considered relatively minor, and is manageable. Traffic delays are already affecting routes, and the added impact of the Tram has the advantage of being a known impact, that can be planned for in advance.

Routes, both along the route and to the north and south of it, will therefore be realigned to take into account the added traffic expected to occur on these diversionary routes.

5.6.2: Capacity for Other Traffic

The road space that the Tram occupies, both through segregated and shared running, could reduce the amount of road space for other vehicles. This road space is also used by waste collection vehicles.

Waste collection operations, both commercial and domestic, occur at times when the Tram is in operation, and therefore may suffer from adverse impacts of this reduced capacity for other traffic. It is likely that commercial collections will be more at risk due to the higher frequency at which they occur,

Any likely delays that this could cause can be mitigated by incorporating these expected delays into the route planning process. Early identification of the Tram route and the likely traffic impacts can ensure these changes on the routes and programmes of waste collection can ensure there is scope for incorporating them into route planning processes.

There are likely to be short term negative impacts during the Tram construction period, and special waste collection arrangements may be needed.

5.6.3: Transport Efficiency

The increasing traffic congestion levels along the Uxbridge Road corridor is currently adversely affecting the delivery of Waste Collection services, this gradual decline is threatening the efficiency of services, which can only be remedied through the rescheduling of services from time to time.

This increasing inefficiency through increasing congestion along the Uxbridge Road, plus other routes near to the Uxbridge Road as drivers seek alternatives will have a cumulative negative impact upon waste collection.

The Tram offers a reduction in the overall traffic levels, and has manageable impacts, so offers potential efficiency benefits in comparison with the situation in 2011 without the Tram. The potential negative impacts of the Tram on waste collection can be minimised as the route and its potential traffic impacts can be confirmed well ahead of the required deadline for the scheduling of services. Overall, the Tram is considered to have a manageable impact upon Waste Collection.

5.7: Recycling

Local authorities are increasingly turning towards recycling due to government targets stating that by 2005 30% of all waste is to be recycled. Recycling in Ealing is done through a number of ways, these include:

- Kerbside and domestic collection – this is done through the domestic waste collection service
- Via recycling centres and neighbourhood recycling points
- Recycling points outside Tube and Train stations

The following sections describe how the Tram will affect the recycling service.

5.7.1: Traffic Impacts on Alternative Routes

Increases in traffic on routes near to the Tram route may cause congestion or traffic increases near to recycling points, and potentially act as a deterrent to potential users. This is however considered to be a minor impact, since other locations can be found for recycling if this proves necessary.

5.7.2: Landscaping Opportunities

Currently one way in which recycling is encouraged is by placing recycling points at busy nodes of activity such as Tube or train stations. The Tram offers opportunities to improve the facilities at places where the Tram interchanges with other services, and there is potential for incorporating recycling points at these interchanges.

Alternatively, streetscape and street furniture improvements that the Tram could initiate could potentially incorporate recycling points. Putting recycling points at places of activity such as these is a good way of promoting and encouraging recycling.

5.7.3: Access to Businesses and Services

The Tram does not affect access to any of the recycling centres in Ealing, but could potentially affect access to some of the smaller recycling points along the route or at the interchange stations.

This however is a manageable disbenefit, and would require the re-location of these services to a more appropriate location. The net impact could be a positive one, as it could present the opportunity to improve facilities (see 5.7.2).

6. Sports, Leisure and Recreation

The following section covers not only the services provided by LB Ealing's Active Ealing Team, but also a range of related services such as arts and culture, libraries, health promotion, parks and open spaces and so on. This diverse range of services is provided to the public in different ways. Some of the services are location dependent, such as libraries and parks, whereas others are more strategic such as health promotion.

6.1 Library Service

There are four libraries along the route of the Tram within the Borough, namely Acton Library, West Ealing Library, Hanwell Library as well as the Central Library in Ealing.

6.1.1: Image of Uxbridge Road

The impact on library services is likely to be restricted to those four libraries that are directly on or immediately adjacent to the Uxbridge Road. An improved image of the town centres is expected to result in more people coming to the area to visit and existing users spending longer. This has the potential to increase the patronage of library services at these locations.

6.1.2: Reliability of Public Transport Services

The degree to which the improvements to the public transport services affect the delivery of library services is dependent on the mode share of public transport, and the Tram in particular. Better reliability may increase the public transport mode share for trips to libraries; this may benefit users such as young people or older people, who may have less access to a car. This increase in public transport use to access libraries may only effect libraries such as Ealing central Library, which has more of a Borough-wide role than many other, smaller libraries, that are only intended to serve a local catchment.

6.1.3: Frequent Public Transport Stops on Uxbridge Road

The location of Tram stops proposed at the time of writing means that there is no loss of access to the library services in comparison with the bus stops along Uxbridge Road, however, origin stops may be located further from the start of some user's journeys with the Tram in comparison to bus.

6.1.4: Traffic Impact on Alternative Routes

The four libraries in the Borough potentially affected by the Tram are the Central Ealing Library, the West Ealing Library, Acton Library and Hanwell Library. The Central, West Ealing and Acton Libraries are located directly on the corridor and as such will benefit from the improved public transport accessibility along the corridor and will also experience less traffic along the route. As they lie directly on the route, it could be argued that the impact on alternative routes is likely to be less severe.

The Central Library at Ealing Town Centre is directly on the Tram Route and as such is not really directly affected by traffic on alternative routes. The Acton

library is expected to benefit from reductions in traffic along Acton Lane, whereas West Ealing library is anticipated to experience an increase in traffic on Leeland Terrace.

Table 46: Traffic Impacts on Arts & Leisure Services

Arts and Leisure Services		
Libraries	Affected Roads	Overall Impact of Tram
Acton Library	Uxbridge Road, Acton Lane	+
Ealing Central Library	Uxbridge Road	=
West Ealing Library	The Broadway, Leeland Terrace	-
Hanwell Library	Cherrington Road	-

6.1.5: Parking and implications for service delivery

Any reduction in parking on Uxbridge Road will only affect those libraries that are on, or very close to, the Tram route. Libraries near to the Tram route are outlined in 6.1 above. The changes in parking arrangements caused by the Tram could mean parking difficulties for some library users. This could impact disproportionately on people with disabilities, who may be dissuaded from using the libraries if access is perceived to be an issue. However, libraries generally have a local catchment, so the degree to which parking reductions and difficulties affect libraries depends on the mode of travel used to access them.

In terms of particular facilities, Central Ealing Library is served by the Car Park linked to the Shopping Centre, and therefore will not be affected by the tram. Acton Library has a public Car Park nearby, and so will not be affected by a loss of parking along the route. Hanwell Library is on a side road, so again should not be affected. West Ealing Library relies on on-street parking, so may be affected by the Tram.

It is therefore considered that the potential loss in parking on the Uxbridge Road is a marginal disbenefit on users of West Ealing Library only, though this cannot be quantified until the parking arrangements and changes are confirmed as part of the schemes design process. This design process needs to acknowledge the specific requirements of people with disabilities.

6.1.6: Speed, reliability, ride quality and image to promote Regeneration, Densification, Intensification

The implications for the library service are that the core libraries along the route at Acton, Ealing, and West Ealing could consolidate their positions and possibly experience higher patronage due to more intense use of the town centres on the whole.

6.1.7: Accessibility to local amenities and employment thus greater social inclusion

Previous sections have discussed how the increases in accessibility can allow the town centres to become centres for the development of housing and employment nodes, which is in line with current planning policy. This policy may also extend to other facilities which residents wish to access, such as libraries.

Planning policy seeks to locate these facilities in order to reduce the need to travel and to enhance the town centres. However, some facilities need to be located in local areas, and have a local catchment, and would be primarily supported by a walk-in catchment. This is the case for the majority of the libraries within the Borough.

Some facilities can be located near to the Tram route in order to ensure they are accessible by large parts of the Borough, and it is in line with policy to locate these where they are served by public transport. A good example would be the Ealing Central Library which serves more than a local catchment area and is located on the Tram route. The Tram can improve the accessibility of such facilities in the future, and may help guide policy decisions on where they should be located.

As Ealing Central Library is located within Ealing Town Centre, we can use data from the TfL Saturn model to assess the projected impact on Ealing Central Library. We have used the inter-peak period, as most users would use access the libraries during this period rather than in the morning peak. The Tram will result in an increase in the proportion of Ealing residents able to access the centre in less than 30 minutes by public transport rising from the current level of 13% to 23% in 2011. This is some 10% higher than the no Tram scenario.

The situation for other highway users is more muted with little change evident between the different scenarios in the inter peak (IP) period, suggesting that the Tram will have a limited impact on other highway users in Ealing.

6.2 Mobile Library

6.2.1: Traffic Impacts on alternative routes

As with the Community Special Needs Transport services, the mobile library service may be affected by the introduction of the Tram as some alternative routes will experience higher levels of traffic. This will most likely necessitate a review of the mobile libraries routes with a view to minimising the impact of higher traffic levels along certain routes. As the impact of the Tram along alternative routes is diverse, the overall impact of the Tram on mobile library services is likely to be largely neutral albeit very difficult to quantify at this juncture.

6.3 Community and Health Facilities

6.3.1: Traffic Impacts on alternative routes

The only Community Centre within the 400m catchment of the Tram is the Priory Community Centre. Winchester Street, which serves this facility, is expected to benefit from a reduction in traffic in the order of 30-32%.

There is one major hospital, Ealing Hospital which is located immediately off the Tram Corridor, where a significant decrease is expected along the Uxbridge Road, although no diversionary routes will directly affect the hospital. In addition to the hospital, there are two health centres along the route of the tram, namely Acton and Mattock Lane. The former is expected to benefit from reduced traffic on alternative routes (though Acton Lane is seldom used for through traffic), whereas little impact is expected for the latter.

Table 47: Traffic Impacts on Community & Health Facilities

Arts and Leisure Services		
Community & Health Facilities	Affected Roads	Overall Impact of Tram
Priory Community Centre	Winchester Street	+
Ealing Hospital	Uxbridge Road	=
Acton Health Centre	Uxbridge Road, Acton Lane	+
Mattock Lane Health Centre	Mattock Lane	=

6.3.2: Reliability of Public Transport Service

The degree to which the improvements to the public transport services affect Community and Health Facilities is dependent on the mode share of public transport, and the Tram in particular. There may be a potential mode shift towards the Tram, as it becomes a more favourable option. Enhanced reliability is part of the reason for encouraging mode shift to Tram.

This mode shift is only likely to affect those Facilities where the 207/607 bus is currently used as a transport mode. These Facilities are judged to be those within 5 minutes walk of a Tram stop. There may also be some mode shift, to a lesser extent, to those within a 10 minutes walk of a Tram stop. The Facilities that fall into this category are shown in section 6.3.1 above.

6.3.3: Less frequent Public Transport Stops on Uxbridge Road

This is a potential disbenefit to Tram users, although stops will remain that serve important facilities such as the Ealing Hospital and Health centres. These longer walking times are more likely to occur at the origin not destination.

6.3.4: Parking and implications for service delivery

Any reduction of parking on Uxbridge Road will only affect those facilities that are on, or very close to, the Tram route. Facilities near to the Tram route are

outlined in 6.3.1 above. The changes in parking arrangements caused by the Tram could mean parking difficulties for some users. This could impact disproportionately on people with disabilities, who may be dissuaded from using the facilities if access is perceived to be an issue.

The overall loss of parking on the Uxbridge Road may be of marginal disbenefit to Health and Community Centre users, though this cannot be quantified until the parking arrangements and changes are confirmed as part of the design process. This design process needs to acknowledge the specific requirements of people with disabilities.

6.3.5: Image of Uxbridge Road

The impact on community and health facilities is likely to be restricted to those locations that lie directly on or immediately adjacent to the Uxbridge Road, as outlined in section 6.3.1 above. An improved image of the area is expected to result in more people coming to the area to visit and existing users spending longer.

6.3.6: Speed, reliability, ride quality and image to promote Regeneration, Densification, Intensification

The implications for the Priory Community Centre are likely to be negligible although the centre may experience more intensive use as a result of the increased usage of the town centres more generally. The two health centres and the Hospital will benefit from improved accessibility, although this is likely to have a very limited impact on service provision.

6.3.7: Accessibility to local amenities and employment and social inclusion

Previous sections have discussed how the increases in accessibility can allow the town centres to become centres for the development of housing and employment nodes, which is in line with current planning policy. This policy may also extend to other facilities which residents wish to access, such as health and community facilities.

Planning policy seeks to locate these facilities in order to reduce the need to travel and to enhance the town centres. However, some facilities need to be located in local areas, and have a local catchment, and would be primarily supported by a walk-in catchment. Most Community and Health Centres fall into this category and therefore the overall impact of the Tram in this regard is likely to somewhat muted. The Uxbridge Road corridor could become a more favourable location for future community and health centres and halls with a wider catchment.

For Ealing Hospital, the catchment is much wider and its current location places it in an excellent position to capitalise on the benefits of the tram. The results show an increase in the proportion of people who are able to access the hospital in under 40 minutes, rising from just under 30% in the 2011 ‘no Tram’ scenarios to 40% in the 2011 ‘with Tram’ scenario for the Borough population.

Extending this to the West London are as defined by the model, there are 10,000 people within a 20 minute public transport travel time without the Tram in 2011, but 31,000 people within a 20 minute public transport travel time with the Tram – a significant increase.

As for other highway users, the impact is considered relatively modest with about a 2-3% decrease in the proportion of Ealing residents who are able to access the Hospital in less than 10 minutes.

In relation to car journeys, in 2011 there are 272,000 people within a ten minute drive without the Tram, but less in 2011 with the Tram – it falling to 256,000 people.

6.4 Sports and Leisure Centres

6.4.1: Pollution from Public Transport on Uxbridge Road

The EIA has a study area of 100m either side of the Tram route for noise pollution assessment, so it is the provision of leisure services within this boundary that could be judged to be affected by the changes in noise pollution. The following Leisure Services are located within 100m of the Tram route:

- Acton Swimming Baths
- Dormers Wells Leisure Centre
- Twyford Sports Centre

The effect of pollution on leisure services is judged to be a marginal benefit overall given the expected decreases in noise pollution and air emissions associated with Trams as opposed to the other public transport, and through the reduction in pollution from other traffic as a result in the expected decrease in overall traffic levels in 2011 that will occur as a result of the Tram as opposed to the 2011 traffic levels expected if the Tram does not go ahead. However, as stated above, the results of the EIA will confirm the extent to which this will occur.

6.4.2: Image of Uxbridge Road

The impact on sports and leisure centres is likely to be restricted to those two locations that lie directly on or immediately adjacent to the Uxbridge Road, namely the Acton Swimming Baths and the Twyford Sports Centre. An improved image of the areas is expected to result in more people coming to the area to visit and existing users spending longer. This has the potential to increase the patronage of leisure facilities at these locations.

6.4.3: Traffic Impacts on alternative routes

There are a number of sports and leisure facilities which are within our defined 400m catchment area. These facilities include the Acton Swimming Baths, Dormers Wells Leisure Centre, Reynolds Sports Centre, Twyford Sports Centre and Southall Sports Centre.

The general impact on alternative routes, adjacent to the sports and leisure facilities is neutral, however this masks a number of increases on specific routes.

Dormer's Wells Leisure Centre will experience mixed traffic impacts, with a significant decrease in traffic of some 61% at stretch of Dormers Wells Lane,with an increase of 41% at a different point along the same road. Another example is Southall Sports Centre, where significant increases are anticipated along Beaconsfield Road and a significant decrease along South Road. The final mixed impact location is Twyford Sports Centre where an increase of 47% and a decrease of 33% are anticipated along different stretches of Twyford Avenue. The other facilities are not expected to experience significant changes to traffic flows on alternative routes as a result of the introduction of the Tram.

Table 48: Traffic Impacts on Sports Leisure Services

Arts and Leisure Services		
Sports and Leisure Centres	Affected Roads	Overall Impact of Tram**
Acton Swimming Baths	Uxbridge Road, Acton Lane	=
Dormers Wells Leisure Centre	Dormers Wells Lane	=
Reynolds Sports Centre	Gunnersbury Lane	=
Southall Sports Centre	Beaconsfield Road, South Road	=
Twyford Sports Centre	Uxbridge Road, Twyford Avenue	=

*** See Appendix for full details*

6.4.5: Reliability of Public Transport Service

The degree to which the improvements to the public transport services affect Sports and Leisure Centres is dependent on the mode share of public transport, and the Tram in particular. Enhanced reliability is part of the reason for encouraging mode shift to Tram.

This mode shift is only likely to affect those Sports and Leisure Centres where the 207/607 bus is currently used as a transport mode. These Sports and Leisure Centres are judged to be those within 5 minutes walk of a Tram stop. There may also be some mode shift, to a lesser extent, to those within a 10 minutes walk of a Tram stop. The list of Sports and Leisure Centres that fall into this category are shown in section 6.4.1 above.

6.4.6: Less frequent Public Transport Stops on Uxbridge Road

The reduced number of stops along the Tram route in comparison to bus will only have a limited effect on the access to these facilities. Each will still be located near to a Tram stop, with the same access as is currently available by bus, with the exception of Twyford sports Centre, where the stop at the Acton Tram Depot is removed, meaning to access the sports centre the nearest stop is at the corner of Twyford Avenue and Uxbridge Road.

6.4.7: Parking and implications for service delivery

Any reduction in parking will only affect those Sports and Leisure Centres that are on, or very close to, the Tram route, and don't have a dedicated parking facility. Those Centres near to the Tram route are outlined in 6.4.1 above. The changes in parking arrangements caused by the Tram could mean parking difficulties for some users. This could impact disproportionately on people with disabilities, who may be dissuaded from using Sports and Leisure Centres if access is perceived to be an issue.

The overall loss of parking on the Uxbridge Road is likely to be of marginal disbenefit to Sports and Leisure Centres users, though this cannot be quantified until the parking arrangements and changes are confirmed as part of the scheme's design process. This design process needs to acknowledge the specific requirements of people with disabilities.

6.4.8: Speed, reliability, ride quality and image tog promote Regeneration, Densification, Intensification

These policies of intensification and the use of high densities in town centres and near to public transport modes supports elements of the current Town Centre Strategies and the New Plan for the Environment, as well as elements of the wider policy context found in documents such as the London Plan. The implications for the five centres identified in 1.2 are likely to be an increase in the number of users to facilities near to the town centres.

6.4.9: Accessibility to local amenities and employment and social inclusion

Previous sections have discussed how the increases in accessibility can allow the town centres to become centres for the development of housing and employment nodes, which is in line with current planning policy. This policy may also extend to other facilities which residents wish to access, such as sports and leisure centres.

Planning policy seeks to locate these facilities in order to reduce the need to travel and to enhance the town centres. However, some facilities need to be located in local areas, and have a local catchment, and would be primarily supported by a walk-in catchment. Most of the sports and leisure facilities have a somewhat larger catchment area.

Some facilities can be located near to the Tram route in order to ensure they are accessible from large parts of the Borough, and it is current policy to locate these where they are served by public transport. The five facilities outlined in 6.4.1 are all likely to serve a wider catchment area than a walking catchment and hence the additional accessibility provided by the Tram will broaden the catchment available to these facilities. The Tram can improve the accessibility of such facilities in the future, and may help guide policy decisions on where future facilities should be located.

Of the five facilities outlined above, three are located in the vicinity of Acton Town Centre, namely Acton Swimming Baths, Twyford Sports Centre and

Reynolds Sports Centre. The TfL Saturn Model indicates a significant increase in the proportion of Ealing residents who will be able to access Acton by public transport in less than 30 minutes, with the proportion rising from a base of 14% in 2003 to 20% in 2011 with the Tram in place. This level is some 6% higher than the 'no Tram' 2011 situation.

As with previous examples the level of change for other highway users is more modest. While the proportion of car users in the Borough within 10 minutes reach from Acton will increase by about 1% between our base year and our 2011 'with Tram' scenario, this is some 2% less than the 'without Tram' scenario, suggesting a minor disbenefit for car users.

For the Dormer's Wells Sports Centre, we have specific data from the TfL Saturn Model. The introduction of the Tram is anticipated to result in a modest increase in accessibility for public transport users over the non-Tram scenario.

The impact on other highway users is varied with an increase of about 1% anticipated for those who can access the Centre in under 10 minutes, however this is countered at the other end of the scale about 2% more taking 20-30 minutes.

The last of the facilities that we look at is the recently opened Southall Sports Centre, for which we will use Southall town centre as an approximation. Public Transport accessibility is set to improve as a result of the introduction of the Tram with the number of people taking 50-60 minutes to get to Southall decreasing by about 13% as compared to the 'no Tram' scenario, while there will be an increase in the proportion of people able to access Southall in 20-30 minutes increasing by about 7%.

In terms of other highway users the impact is projected to result in a 2% decrease in the proportion of people who can access Southall in under 10 minutes and a 1% increase in the proportion of people who can access Southall in 10-20 minutes and 20-30 minutes respectively. In the context of the benefits accrued by public transport users, the disbenefits experienced by other highway users could be considered as minor.

6.5 Health promotion

6.5.1: Pollution from Public Transport on Uxbridge Road

The effect of pollution on the council's health promotion objectives is judged to be a marginal benefit overall given the expected decreases in noise pollution and air emissions associated with Trams as opposed to the other public transport, and through the reduction in pollution from other traffic as a result in the expected decrease in overall traffic levels in 2011 that will occur as a result of the Tram as opposed to the 2011 traffic levels expected if the Tram does not go ahead. However, as stated above, the results of the EIA will confirm the extent to which this will occur.

6.5.2: Journey ambience and reliability of the Tram and the effect on Health Promotion

The degree to which the improvements to the public transport services affect Health Promotion is probably limited to the extent to which people can be encouraged to use their car less and adopt a relatively healthy lifestyle. Also the positive impact on environmental quality, especially air quality along the route may also contribute to healthier living in the Borough, hence facilitating the council in reaching its health promotion objectives.

6.5.3: Image of Uxbridge Road

In health promotion terms a more attractive urban environment may encourage people to choose healthier forms of travel over less sustainable modes. By creating a more attractive pedestrian and cycling environment, the Tram has the potential to help the Council to achieve its Health Promotion objectives. The 'Walking your Way to Health Initiative' from the British Heart Foundation is an example of clearly identified routes with clear signage which encourage people to take up a more active lifestyle and could be usefully applied to the Uxbridge Road. This can also be linked to the 'Safe Routes to Schools' initiative, linked to a drive to improve the health of children.

6.5.4: Traffic danger on diversionary routes

The increased traffic along certain key diversionary routes will be partially mitigated by reduced traffic on other routes, but will nonetheless increase the potential levels of traffic danger as a result of higher traffic levels.

6.5.5: Less frequent Public Transport Stops on Uxbridge Road

This is a potential disbenefit to Tram users. However, from a health promotion viewpoint a larger proportion of journey times spent walking could be regarded as a benefit, not a disbenefit.

6.5.6: Accessibility to local amenities and employment and social inclusion

Previous sections have discussed how the increases in accessibility can allow the town centres to become centres for the development of housing and employment nodes, which is in line with current planning policy. This policy may also extend to other facilities which residents wish to access, such as sports and leisure centres or parks.

Given that the Tram will provide increased accessibility to certain services such as the sports and leisure services, the introduction of the Tram may contribute towards the Council's Health Promotion objectives.

6.6 Activities for older adults

6.6.1: Journey ambience and reliability of the Tram and the effect on the encouragement of activities for older adults

The degree to which the improvements to the public transport services affect activities for older adults is probably limited to the extent to which people can be encouraged to get out and about more. As the Tram is a fully accessible

mode of travel it will open up opportunities for older adults to make journeys that heretofore were less pleasant and facilitate a more active lifestyle. Also the pedestrian environments created as part of the Tram project will make walking more pleasant and appealing.

6.6.2: Reliability of Public Transport Service

The degree to which the improvements to the public transport services affect the provision of activities for older adults is dependent on the mode share of public transport, and the Tram in particular. Enhanced reliability is part of the reason for encouraging mode shift to Tram.

This mode shift is only likely to affect the provision of activities for older adults where the 207/607 bus is currently used as a transport mode. These locations are judged to be those within 5 minutes walk of a Tram stop. There may also be some mode shift, to a lesser extent, to those within a 10 minutes walk of a Tram stop.

6.6.3: Accessibility to local amenities and employment and social inclusion

Previous sections have discussed how the increases in accessibility can allow the town centres to become centres for the development of housing and employment nodes, which is in line with current planning policy. This policy may also extend to other facilities which residents wish to access, such as sports and leisure centres or parks.

The increased accessibility offered by the Tram may provide additional opportunities for older people to access services than heretofore, although the precise benefit would be difficult to quantify at this juncture. This access related to both accessing services and facilities, and also the access improvements that the Tram offers in terms of getting on and off vehicles. The Tram gives guaranteed level boarding for each stop, which cannot be done by the bus, meaning the Tram is fully accessible to those with mobility difficulties.

6.7 Activities for people with disabilities

6.7.1: Journey ambience and reliability of the Tram

The degree to which the improvements to the public transport services affect activities for people with disabilities is probably limited to the extent to which people can be encouraged to get out and about more. As the Tram is a fully accessible mode of travel it will open up opportunities for older adults to make journeys that heretofore were less pleasant and hopefully encourage a more active lifestyle. The accessibility of the Tram removes some barriers to mobility, without resorting to using the car. Also the pedestrian environments created or enhanced as part of the Tram project will make enjoying these public, outdoor environments more pleasant and appealing.

6.7.2: Reliability of Public Transport Service

The degree to which the improvements to the public transport services affect the provision of activities for people with disabilities is dependent on the mode

share of public transport, and the Tram in particular. Enhanced reliability is part of the reason for encouraging mode shift to Tram.

This mode shift is only likely to affect the provision of activities for people with disabilities where the 207/607 bus is currently used as a transport mode. These locations are judged to be those within 5 minutes walk of a Tram stop. There may also be some mode shift, to a lesser extent, to those within a 10 minutes walk of a Tram stop.

6.7.3: Accessibility to local amenities and employment and social inclusion

Previous sections have discussed how the increases in accessibility can allow the town centres to become centres for the development of housing and employment nodes, which is in line with current planning policy. This policy may also extend to other facilities which residents wish to access, such as sports and leisure centres or parks.

The increased accessibility offered by the Tram may provide additional opportunities for people with mobility difficulties to access services than heretofore, although the precise benefit would be difficult to quantify.

6.8 Arts and Heritage

The Plan for the Environment seeks to promote the Borough as a 'leading West London centre for the arts, heritage and culture'. There is a cluster of art related facilities at Ealing Town Centre including the following:

- Pitzhanger Manor Gallery and House
- The Questors Theatre
- Ealing Studios
- UGC Cinema
- Ealing Jazz Festival held in Walpole Park

Of these only the UGC cinema, directly opposite the Town Hall, is directly adjacent to the Tram route, while the other facilities are clustered along Ealing Green and Mattock Lane, within 400 metres of Uxbridge Road.

6.8.1: Pollution from Public Transport on Uxbridge Road

The EIA has a study area of 100m either side of the Tram route for noise pollution assessment, so it is the facilities within this boundary that could be judged to be affected by the changes in noise pollution. The only facility identified in 6.8 above located within 100m of the Tram route is the cinema. Also, all of the above facilities (with the exception to the Jazz Festival) are indoor facilities, and so would not be expected to suffer from noise or air pollution.

The effect of pollution on arts and heritage is judged to be a marginal benefit overall given the expected decreases in noise pollution and air emissions associated with Trams as opposed to the other public transport, and through the reduction in pollution from other traffic as a result in the expected decrease in overall traffic levels in 2011 that will occur as a result of the Tram

as opposed to the 2011 traffic levels expected if the Tram does not go ahead. However, as stated above, the results of the EIA will confirm the extent to which this will occur.

6.8.2: Journey Ambience and Reliability of the Tram

The degree to which the improvements to the public transport services affect arts and heritage facilities is probably limited to the extent to which people can be convinced to get out and about more. As the Tram is a fully accessible mode of travel it will open up opportunities to make journeys that heretofore were less pleasant and hopefully encourage a more active lifestyle. Also the pedestrian environments created or enhanced as part of the Tram project will make enjoying these facilities more pleasant and appealing.

6.8.3: Image of Uxbridge Road

By enhancing the image of the whole Uxbridge Road corridor, these facilities along the route could be expected to benefit from this.

6.8.4: Higher capacity compared to bus

Arts and Culture in Ealing are anticipated to grow strongly. The current projections for traffic growth indicate that the current public transport provision will be inadequate by 2011. In this situation, restrained capacity may have an effect on Ealing as a location for arts and heritage activities if people experience difficulties in reaching the facilities. The Tram provides higher capacity and widens the catchment area for the cluster of facilities in Ealing.

6.8.5: Reliability of Public Transport Service

The degree to which the improvements to the public transport services affect the arts and heritage facilities is dependent on the mode share of public transport, and the Tram in particular. Enhanced reliability is part of the reason for encouraging mode shift to Tram. This figure is not available, but the enhanced reliability will improve the quality of the journey for those people who currently use public transport to access these facilities, and be part of the package to encourage more people to travel on public transport to access these facilities.

6.8.6: Parking and implications for service delivery

Any reduction in parking on Uxbridge Road will only affect those arts or heritage facilities that are on, or very close to, the Tram route. As the only facility directly on the Tram route is the cinema, there is no impact on arts and heritage facilities in Ealing in our judgement, as part of the redevelopment proposals around the cinema, off-street servicing is to be provided so the Tram is unlikely to have a negative effect in this way.

6.8.7: Speed, reliability, ride quality and image to promote Regeneration, Densification, Intensification

The implication for the arts and heritage facilities identified in 6.8 is likely to be an increase in the number of users as a direct result of higher densities and more intense use of existing facilities.

6.8.8: Access to Local Amenities and Employment and Social Inclusion

Previous sections have discussed how the increases in accessibility can allow the town centres to become centres for the development of housing and employment nodes, which is in line with current planning policy. This policy may also extend to other facilities which residents wish to access, such as sports and leisure centres.

Some facilities can be located near to the Tram route in order to ensure they are accessible from large parts of the Borough, and it is current policy to locate these where they are served by public transport. The facilities outlined in 6.8 are all likely to serve a wider catchment area than a walking catchment and hence the additional accessibility provided by the Tram will broaden the catchment available to these facilities. The Tram can improve the accessibility of such facilities in the future, and may help guide policy decisions on where future facilities should be located.

6.9 Parks and green spaces

6.9.1: Pollution from Public Transport on Uxbridge Road

The EIA has a study area of 100m either side of the Tram route for noise pollution assessment, so it is the parks within this boundary that could be judged to be affected by the changes in noise pollution. The following Parks (in whole or part) are located within 100m of the Tram route:

- Southall Park
- Acton Park
- Ealing Common

Other parks and gardens near to the route that could also be affected are:

- Walpole Park
- Haven Green
- Brent River Park
- Deans Gardens

The effect of pollution on parks and open spaces is judged to be a marginal benefit overall given the expected decreases in noise pollution and air emissions associated with Trams as opposed to the other public transport, and through the reduction in pollution from other traffic as a result in the expected decrease in overall traffic levels in 2011 that will occur as a result of the Tram as opposed to the 2011 traffic levels expected if the Tram does not go ahead. However, as stated above, the results of the EIA will confirm the extent to which this will occur.

6.9.2: Image of Uxbridge Road

The impact on parks and open spaces could be to increase their relative appeal and hence should encourage new users and entice existing users to dwell longer. The parks most likely to be affected are Southall, Walpole, Ealing Common and Acton Park.

6.9.3: Traffic Impact on alternative routes

The parks that are mentioned in 6.9.1 are largely neighbourhood parks and serve a relatively locally based catchment area and as such do not fulfil the role of larger 'destination' parks such as Hyde Park, Regent's Park or Richmond Park. As such they are unlikely to generate vehicular traffic and people are more likely to walk or cycle to their local parks. As such the potential increases in traffic on alternative routes are unlikely to have a significant impact on park users.

6.9.4: Impact on Green or Other Public Space

The Tram may, depending on the land-take of the route, result in the loss of some green space, pathway or road space. This has an impact in relation to the role the Borough will play in the planning and design of the Tram alongside TfL, ensuring that the best interests of the Borough are served in relation to minimising the loss of green space or public realm.

However, there are advantages to be gained from this, in that there could be the potential for road space to be re-aligned to pedestrian use. A more sustainable transport system may also reduce the need to create additional car parking along the route. The Tram may also give the opportunity for the upgrading or replacement of the street furniture along the Tram route. These present the potential for improving or enhancing the quality of the urban environment. Such opportunities must be designed to the highest quality and must reflect the local character. In a small number of locations demolition of certain buildings may also release additional land for use as new urban spaces. Such opportunities must be designed to the highest quality and must reflect the local character. Some of these spaces could be used for small neighbourhood pocket parks or play spaces.

6.9.5: Reliability of Public Transport Service

The degree to which the improvements to the public transport services affect parks and green spaces is dependent on the mode share of public transport, and the Tram in particular. Enhanced reliability is part of the reason for encouraging mode shift to Tram.

This mode shift is only likely to occur in those Parks where public transport is regarded as a means of access, namely the Parks classified in the Plan for the Environment as Regional, Metropolitan or District Parks. The Parks within 5 minutes walk of a Tram stop that are classified as this are Walpole Park and Brent River Park. The Tram can be regarded to improve the quality of the journey of those people who use public transport to access these facilities, and encourage more people to do so in the future rather than other modes such as the car.

6.9.6: Parking and implications for service delivery

Any reduction of parking on Uxbridge Road will only affect those Parks that are on, or very close to, the Tram route, and for which the car is regarded as a potential means of access. These are those referred to in 6.9.5, namely Brent River Park and Walpole Park. The changes in parking arrangements caused

by the Tram could mean parking difficulties for some users, but this is dependent on the amount of car parking provided near to these parks.

As a result the overall loss of parking on the Uxbridge Road is likely to be of minor disbenefit to users of Walpole and Brent River Parks, though this cannot be quantified until the parking arrangements and changes are confirmed as part of the schemes design process.

6.9.7: Speed, reliability, ride quality and image to promote Regeneration, Densification, Intensification

The implications for the parks identified in 6.9.1 are likely to be an increase in the number of users as a direct result of higher densities and more intense use of existing facilities. This could be considered a benefit if new users are attracted to these open spaces whilst using other facilities in the town centres, such as Southall Park, Acton Park or Haven Green, which are near to town centres.

6.9.8: Accessibility to local amenities and employment and social inclusion

Previous sections have discussed how the increases in accessibility can allow the town centres to become centres for the development of housing and employment nodes, which is in line with current planning policy. This policy may also extend to other facilities which residents wish to access, such as parks.

Planning policy seeks to locate these facilities in order to reduce the need to travel and to enhance the town centres. However, some facilities need to be located in local areas, and have a local catchment, and would be primarily supported by a walk-in catchment. The parks listed in 6.9.1, except for Brent river Park and Walpole Park all fall into this category and the benefit of greater accessibility on these is likely to be marginal. Increases in accessibility therefore would be of benefit to Walpole and Brent River Parks.

6.10 Cemeteries

6.10.1: Pollution from Public Transport on Uxbridge Road

The EIA has a study area of 100m either side of the Tram route for noise pollution assessment, so it is the cemeteries within this boundary that could be judged to be affected by the changes in noise pollution. The following cemeteries are located within 100m of the Tram route:

- Kensington & Chelsea Cemetery
- City of Westminster Hanwell Cemetery

The effect of pollution on visitors to cemeteries is judged to be a marginal benefit overall given the expected decreases in noise pollution and air emissions associated with Trams. There will also be a potential disbenefit during the construction stage, where noise and air pollution could affect people visiting the cemeteries. Again, the extent to which this will occur will be investigated in the EIR.

It is noted that neither of the above cemeteries fall under the direct responsibility of the London Borough of Ealing and that the five cemeteries for which the Council does have responsibility are not adjacent to the Tram route.

6.10.2: Reliability of Public Transport Service

The degree to which the improvements to the public transport services affect cemeteries is dependent on the mode share of public transport, and the Tram in particular. Enhanced reliability is part of the reason for encouraging mode shift to Tram.

This mode shift is only likely to occur amongst visitors to cemeteries where the 207/607 buses are currently used as a transport mode. These cemeteries are judged to be those within 5 minutes walk of a Tram stop, namely the Kensington & Chelsea Cemetery and the City of Westminster Hanwell Cemetery.

6.10.3: Reduced parking and implications for service delivery

The changes in parking arrangements caused by the Tram could mean parking difficulties for some visitors. Any loss of parking on the Uxbridge Road is likely to be of marginal disbenefit, though this cannot be quantified until the parking arrangements and changes are confirmed as part of the scheme's design process.

6.10.4: Accessibility to local amenities and employment and social inclusion

The two cemeteries within our study area do not serve a local catchment and indeed both serve a catchment outside of the borough.

As both of the cemeteries are in Hanwell, we can use the TfL Saturn model interpeak data for Hanwell to estimate the impact on access to the cemeteries. Given that many of the visitors are likely to originate outside the borough, we concentrate on the wider West London impact on accessibility as opposed to concentrating on the Borough of Ealing alone.

The introduction of the tram will have the greatest impact on public transport users, with an increase from 19% to 25% in the proportion of people who can access Hanwell in the Interpeak period in under 60 minutes.

For car users the impact is more modest with a small increase in the proportion of car users who can access Hanwell in under 20 minutes from 63% to 61%. The overall impact of the tram is likely to be a marginal positive for visitors to the cemeteries.

6.11 Business Rates

The Business Rates Service is provided in the Town Hall Annex, adjacent to the Uxbridge Road.

6.11.1: Parking and implications for service delivery

There is no parking along the Uxbridge Road near the Town Hall, so the Tram will not affect parking near to the Business Rates Office – which is provided on Springbridge Road. The greatest impact that is likely to be incurred is during the construction phase and care will need to be taken to ensure that access is maintained at all times for all users. There is an online Business Rates Payment Service, which offers an alternative for the majority of potential visitors to the Business Rates Office.

7. Impact of WLT on Housing and Environmental Health

This section covers the council's responsibilities relating to Housing and Environmental Health. Under this broad umbrella, Ealing has specific responsibility for a number of distinct elements, including the following:

- supply of affordable housing
- pollution control
- enforcing health and safety legislation

The introduction of the Tram is likely to have a variety impact on a number of services provided by the council under this heading.

7.1 Supply of affordable housing

The supply of affordable housing is one of the council's key objectives and indeed is the number 1 objective of the council's housing policy. Given the scarcity of land and the high cost of redevelopment, the Council prioritises its resources to those most in need. The current target for affordable housing is for 50% of each development of 15 units or more to be given over to affordable housing. The annual average output of housing is expected to be in the order of 656 units. The focus is on prioritising high quality, high density developments and maximising use of air space. The direct provision of housing services has been handed over to an Arms Length Management Organisation (ALMO), Ealing Homes.

7.1.1: Speed, reliability, ride quality and image to promote Regeneration, Densification, Intensification

This also allows car parking to be reduced and densities to be maximised. These policies of intensification and the use of high densities in town centres and near to public transport modes supports elements of the current Town Centre Strategies and the Plan for the Environment, as well as elements of the wider policy context found in documents such as the London Plan. The implications for the supply of affordable housing are obvious. If there is an increase in the supply of housing as a result of higher densities and more intense use of scarce development opportunities, then given the 50% affordable housing requirement there is a direct increase in the supply of affordable housing in the borough.

7.1.2: Land values and accessibility

It is possible that certain locations, such as Ealing town centre, will experience an uplift in the property market and property values. Any further increase in property prices may price more people out of the property market and therefore put further pressure on demand for affordable housing.

7.1.3: Higher densities at interchanges

The Tram provides additional public transport capacity which may allow sites to be developed at a higher density, through allowing more 'trips' than the bus, and reducing the need for parking. Higher densities on sites allow more social housing units to be provided than perhaps could be in 2011 with continued reliance on a bus-based public transport system.

7.1.4: Accessibility to local amenities and employment and social inclusion

Previous sections have discussed how the increases in accessibility can allow the town centres to become centres for the development of housing and employment nodes, which is in line with current planning policy.

The introduction of the Tram will see an increase in accessibility for a number of neighbourhood renewal areas, such as South Acton and Windmill Park (located to the west of Ealing Hospital). This may lead to better access to jobs for its residents, along with easier access to services and amenities. The wider accessibility of town centres that will be available with the Tram (as reported in this document) may be expected to benefit employment seekers, by widening the choice of employment within a given travel time.

7.2 Pollution Control

The council has responsibility for pollution control covering areas such as air quality, water quality, asbestos, noise and radiation. Full details of the implications of the Tram in terms of pollution will be given in the EIA.

7.2.1: Pollution on Uxbridge Road

The impact of lower levels of pollution is especially import given the potential intensification and regeneration of certain areas which may exacerbate pressures on the environment.

7.2.2: Traffic levels on alternative routes

There are a number of different alternative routes which are forecast to experience higher levels of traffic as a result of the introduction of the Tram. In these areas, specific pollution control interventions will need to be considered as part of a package of mitigating measures aimed at minimising the impact of increased traffic on these key diversionary routes. The impact of pollution will be identified in the EIA.

7.3 Enforcing Health and Safety Legislation

The council are responsible for the enforcement of health and safety legislation covering shops, offices, restaurants, hotels and wholesale warehouses in the borough.

7.3.1: Impacts of changes in road space for other users on the enforcement of health and safety legislation

There may be a minor residual impact on Health and Safety inspectors as a result of reduced space for other highway users. The greatest impact is likely to be felt on locations on or near the actual Tram route, where the added restriction on car parking will also affect inspectors seeking to visit employers. The overall impact is considered to be relatively marginal in the context of the service provision across the whole borough.

8. Social Services

This section explores the potential positive and negative impacts of the Tram on the delivery of social services within the Borough. As the services provided by Social Services are largely provided outside of any council facilities, in the form of outreach and transport services, the concentration of our analysis will largely be on the delivery of those services which are directly supplied to residents. The analysis will therefore focus on the following three services:

- Home services and family support
- Mobile meal service
- Community transport

With regard to the three services above, the most significant concern pertains to additional time required to deliver these services due to the increased levels of displaced traffic on certain areas. This could potentially lead to longer journey times for users of these services and ultimately increase the costs of providing the service. Since the specific routes taken depend on the service recipients, who change over time, the precise impacts cannot be foreseen. Some general impacts are described below.

8.1 Homes Services and Family Support

The council provides some 900,000 hours of home care assistance annually, some 700,000 of which are provided by the private sector and this proportion may be increased further in the future.

8.1.1: Traffic Impacts on alternative routes

The majority of home services and family support is provided by carers and social workers who use private motor vehicles to access clients. The traffic impacts on routes near to the Uxbridge Road is likely to have a moderate to small knock on effect on the delivery of these services. The private service providers will need to include these projected increases into their service delivery planning. However, the distribution of time benefits and disbenefits is not universal across the borough and some routes will benefit, while others suffer. It may prove possible for service providers to adapt their service delivery patterns around the projected impacts of the Tram.

8.1.2: Traffic danger on diversionary routes

The increased traffic along certain key diversionary routes will be partially mitigated by reduced traffic on other routes, but will nonetheless increase the potential levels of traffic danger as a result of high traffic levels. This is less likely to impact upon Home Services and Family Support in comparison to services such Education.

8.1.3: Capacity for other road users along Tram corridor

There may be a residual impact on the provision of home and family services on the Tram route, but this is likely to be relatively marginal in the context of the overall provision of services in the borough.

8.2 Mobile Meals Service

The Mobile Meals Service is provided by Sodexho under contract to the council. The service is provided at varying frequency to clients and varies from daily to weekly, depending on a needs assessment.

8.2.1: Traffic Impacts on alternative routes

The Mobile Meals Service is delivered using private vehicles. The traffic impacts of the Tram on roads across the Borough is likely to have a moderate to small knock on effect on the delivery of these services in terms of the time taken to make deliveries or the speed these vehicles can operate at. The private service providers will need to include these projected increases into their service delivery planning. However, the distribution of time benefits and disbenefits is not universal across the borough and some routes will benefit, while others suffer. It may prove possible for service providers to adapt their service delivery patterns around the projected impacts of the Tram. Without detailed information of the individual Mobile Meal routes, it is not possible to come to a definitive conclusion, but as the majority of the significant traffic changes are restricted to the Tram corridor along the Uxbridge Road, and the Mobile meals service is distributed through the whole of the Borough, the overall impact is expected to be minimal.

8.2.2: Traffic danger on diversionary routes

The increased traffic along certain key diversionary routes will be partially mitigated by reduced traffic on other routes, but will nonetheless increase the potential levels of traffic danger as a result of high traffic levels. This is not expected to have an appreciable impact upon the Mobile Meals Service.

8.2.3: Capacity for other road users along Tram corridor

There may be some impact on the provision of the Mobile Meals Service on the Tram route, but this is likely to be relatively marginal in the context of the overall provision of services in the borough.

8.2.4: Parking and implications for service delivery

It is possible that the introduction of the Tram will lead to some difficulties for service providers making deliveries to locations along the route of the Tram, though this mainly applies to town centres where there is shared running. Access will still be possible as the Tramway can accommodate short-term deliveries through provision of loading bays. In the overall context of the borough, the likely impact on the provision of this service is expected to be marginal.

8.3 Community Transport Service

Community Transport Services in Ealing are largely provided by a not-for-profit social enterprise called Ealing Community Transport, which was originally established in 1979 and now employs some 600 people offering a range of community services from Community Transport to Waste and Recycling. The service operates primarily from Greenford and Acton and neither location lies on the route of the Tram. ECT do have small facilities along the route at Ealing, Hanwell and Southall, but these are relatively minor

locations for ECT and as such any impact on these locations is unlikely to have a significant impact on the delivery of Community Transport Services across the Borough.

8.3.1: Traffic Impacts on alternative routes

The Community Transport Service is delivered using a fleet of specially adapted minibuses operating from a number of locations across the borough. The traffic impacts on alternative routes is likely to have a moderate to small knock on effect on the delivery of these services. ECT will need to include these projected increases into their service delivery planning. However, the distribution of time benefits and disbenefits is not universal across the borough and some routes will benefit, while others suffer. It may prove possible for ECT to adapt their service delivery patterns around the projected impacts of the Tram. Again, without detailed information of the individual routes, it is not possible to come to a definitive conclusion of the scale of impact on the service, but as the majority of the significant traffic changes are restricted to the Tram corridor along the Uxbridge Road, and the Community transport Service is distributed through the whole of the Borough, the overall impact is expected to be minimal.

8.3.2: Traffic danger on diversionary routes

The increased traffic along certain key diversionary routes will be partially mitigated by reduced traffic on other routes, but will nonetheless increase the potential levels of traffic danger as a result of high traffic levels. This is not expected to have an appreciable impact upon the Community Transport Service.

8.3.3: Reliability of Public Transport

Essentially the users of the CTS are not in a position to switch to alternative methods, and so the improvements in reliability to public transport is unlikely to have a benefit on these users.

8.3.4: Capacity for other road users along Tram corridor

There may be a residual impact on the provision of the Community Transport Service on the Tram route, but this is likely to be relatively marginal in the context of the overall provision of services in the borough.

8.3.5: Parking and implications for service delivery

It is likely that the introduction of the Tram will lead to some difficulties collecting passengers along the route of the Tram. Service bays should be designed into the scheme wherever possible, but it is clear that there will be some locations, such as Tram only or public transport only corridors, where access will be severely curtailed. Service providers will have to find alternative access to those clients affected. In the overall context of the borough, the likely impact on the provision of this service is expected to be marginal.

9. Environmental Services

9.1: Street Trading and Licensing

Some parts of the Borough – specifically in Southall – host street trading, both legal and illegal. The Tram may have an impact on where this occurs, and therefore on its management as well as location.

9.1.1: Access for Businesses and Services

In some parts of the Borough, mainly Southall, the running of the Tram may have an effect on the location of street trading, which operates both on a licensed and unlicensed basis. The Tram, and the highway space it would take up, may force the relocation of some of this street trading, or a reduction in the number of street traders, due to the added pressure on the highway.

The street traders add vibrancy to Southall and add to its vibrancy and culture, so any reduction in its street trading may be unwelcome to the local people and businesses.

However, those responsible for street trading suggest that there are a number of street traders that operate unregulated, in restrictive places. There was a feeling that the Tram may present the opportunity to better manage the street trading operators, and prevent unlicensed trading.

The extent to which street trading would be affected, and the specific areas where this would occur, cannot be confirmed until the scheme design is finalised.

Appendices

Appendix 1: Stakeholder Interviews

As part of the research, we met with the following Council Officers (their area of responsibility is shown in brackets):

- John Birch (Executive Director)
- Steve Cody (Social Services)
- Mike Donnellan (Transport Strategy)
- Marc Dorfman (Regeneration and Major Projects)
- Sarah Harper (Conservation and Urban Design)
- Iain Hook (Services to the Community)
- Aileen Jones (Development Control)
- Dick Johns (Planning Policy)
- Earl Mackenzie (Waste and Recycling)
- Cate Maybury (Education)
- Ian Nicholls (West London Business Alliance)

In addition, we also met with John Cudmore, Leader of Ealing Council.

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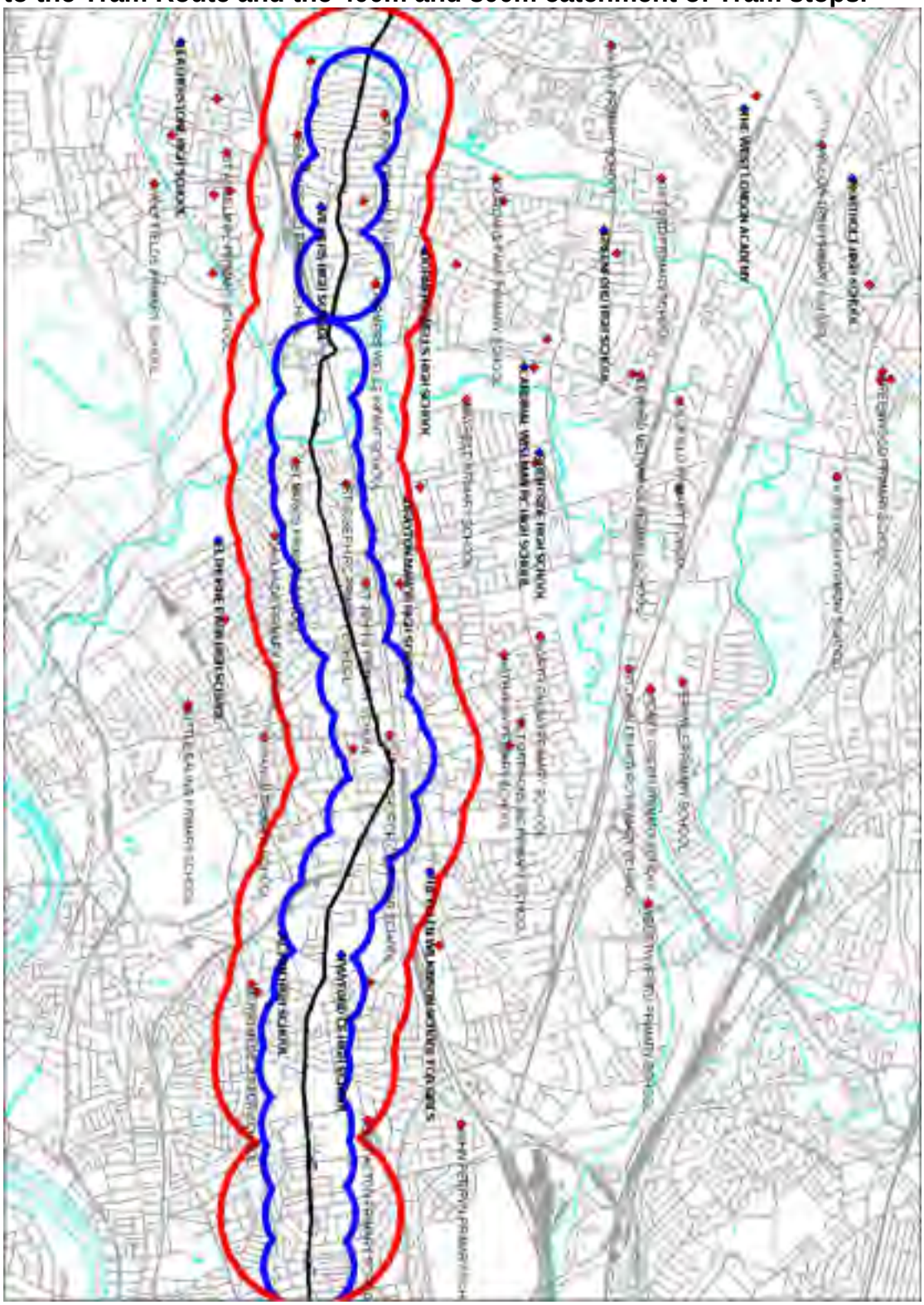
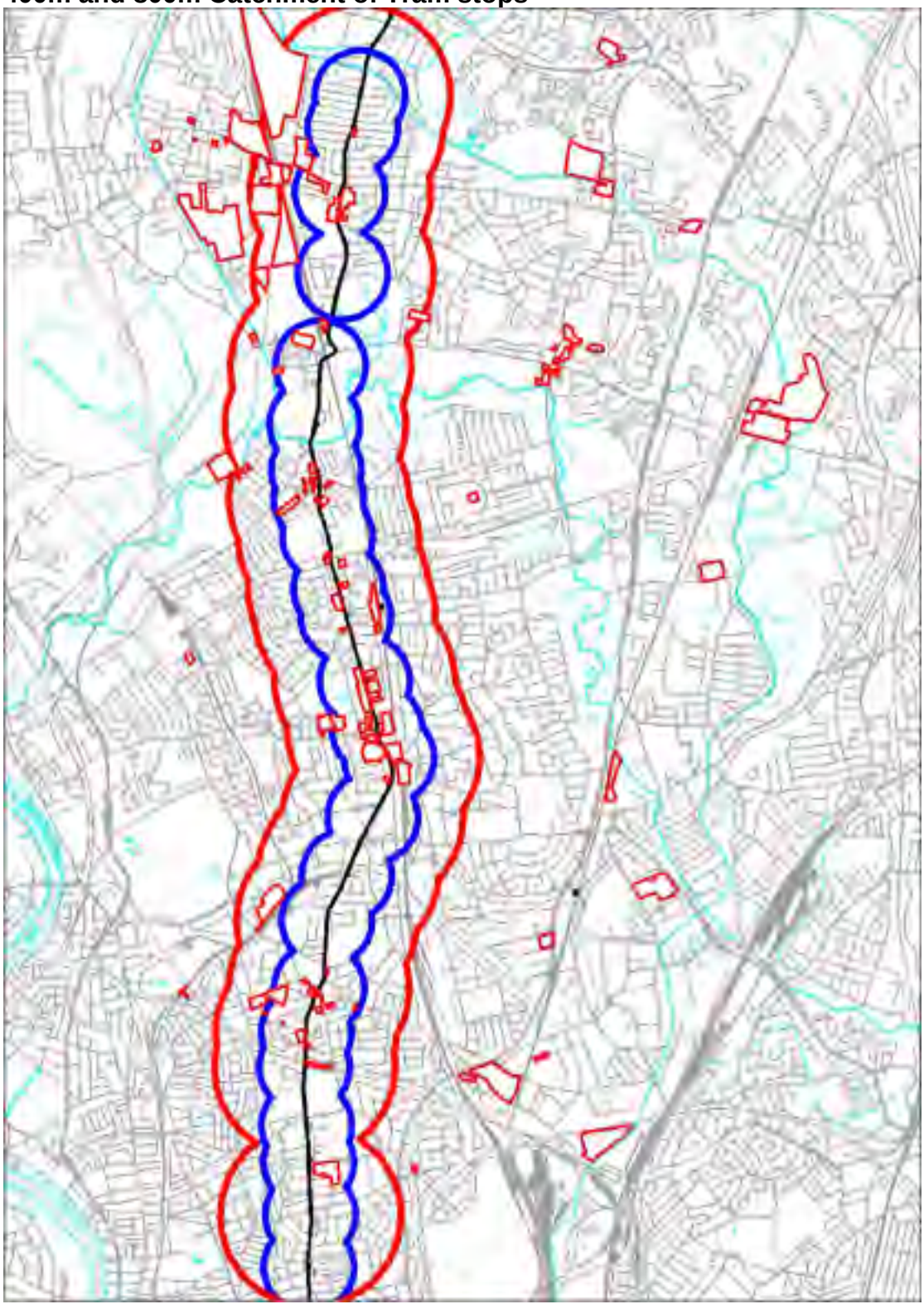
www.ealing.gov.uk
www.tfl.gov.uk
www.municipalyearbook.co.uk

Appendix 3: Maps

Map Showing the Location of Primary and Secondary Schools in relation to the Tram Route and the 400m and 800m catchment of Tram stops.



Map Showing Development Sites in relation to the Tram Route and the 400m and 800m Catchment of Tram stops



Appendix 4: Traffic Impact on various Locations and Routes in the Borough

Appendix 5: The Impact Matrix