

# SILVERTOWN TUNNEL

## Growth Assumptions

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## 1. INTRODUCTION

- 1.1.1 The purpose of this technical note is to summarise the data on population and employment growth that TfL has drawn on to inform its estimates of conditions in future years, and how the data has been treated as an input to the modelling. It will also consider the potential differences between data applied in the strategic transport modelling and more localised analyses, considering sites of interest where specific development is planned or expected to take place.
- 1.1.2 A summary of the future year population and employment assumptions is provided in Chapter 5 of the Transport Assessment (Document Reference 6.5). This note aims to provide more detail around the methods adopted as well as more commentary on the resulting estimates that form the inputs into the models.

## 2. GROWTH ASSUMPTIONS IN MODEL

- 2.1.1 As summarised in Chapter 5 of the Transport Assessment (Document Reference 6.5), the future year population and employment assumptions, which are based on a growth projection agreed with the GLA, form a key input into the Reference Case models for years 2021, 2031, and 2041.
- 2.1.2 These assumptions formed the primary basis of medium and long-term transport demand forecasting for TfL's public transport and highway project planning, including the Silvertown Tunnel, after the development of the Further Alterations to the London Plan (FALP) published by the GLA in March 2015.
- 2.1.3 This section provides an outline of the method that was applied, using GLA projections for each London borough as a starting point, to prepare the Reference Case population and employment forecasts for the individual zones within each borough - based on the London Transportation Studies (LTS) model zoning system, comprising 879 zones across Greater London in total (around 27 zones per borough on average).

### Starting Point

- 2.1.4 As the starting point, the GLA provided borough level population and employment forecasts for 5 yearly intervals from 2011 to 2041, thus covering the forecast years of 2021, 2031, and 2041 that were modelled to support the Silvertown Tunnel scheme.
- 2.1.5 These borough-level population and employment projections were based in part on the potential for new development in each borough:
- The population projections adopt the GLA's Strategic Housing Land Availability Assessment (SHLAA) based projection, which considers sites with spare capacity that could be developed to provide new housing. These sites are identified by various private and public bodies (including London Boroughs) for consideration by the GLA.
  - The employment projections are based in part on an assessment by the GLA of potential development sites within each borough that have the potential to support new employment.
- 2.1.6 Consequently, it can be seen in Chapter 5 of the Transport Assessment (Document Reference 6.5) that at the borough level, the greatest growth in population and employment occurs in the key boroughs where significant

regeneration is expected in the Eastern Sub Region (e.g. Newham, Greenwich, Tower Hamlets)

Allocation from borough to zone

- 2.1.7 For the purposes of the model, the next stage is to disaggregate the borough-level population and employment projections to individual LTS zones within each borough. Therefore, the borough-level employment forecasts, and the London-wide sector breakdown, both act as a borough-level constraint when undertaking the zonal disaggregation.
- 2.1.8 This disaggregation of population and employment from borough to zone level comprises two components. The first component is the *structural component* which assumes that additional population and employment will cluster in zones where significant population and employment exists at present. For example, it is reasonable to expect that additional jobs will often be created in locations that are already well served by existing transport infrastructure and/or an existing labour supply.
- 2.1.9 However, basing the forecast purely on this structural component will take no account of zones that presently have little population or employment at present, but have significant future development potential e.g opportunity areas, or sites that will be served by future committed transport investment.
- 2.1.10 Consequently, a second component, namely the *development component*, also forms part of the borough-to-zone disaggregation process. This component takes into account where development is likely to be located in future. In the case of population, this is based on the individual sites identified by the SHLAA. In the case of employment, this is based on the London Employment sites Database (LESD) which provides estimates of potential jobs and employment floorspace currently in the planning system. More information on the LESD can be found in the LESD final report.<sup>1</sup>
- 2.1.11 Each development is phased in accordance with when it is expected to be completed, for example the additional population and employment generated by a *site currently under construction* will feature in the 2021 forecasts, whilst a development proposed for a *currently contaminated brownfield site* is likely to only appear in the 2031 or 2041 forecasts.

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[https://www.london.gov.uk/sites/default/files/gla\\_migrate\\_files\\_destination/LESD%202012%20Final%20Report%20\(March%202013\).pdf](https://www.london.gov.uk/sites/default/files/gla_migrate_files_destination/LESD%202012%20Final%20Report%20(March%202013).pdf)

2.1.12 Based on historic trends, it is assumed that 30% of growth is allocated according to the structural component whilst 70% is allocated according to the development component. Consequently, the majority of employment growth is allocated to zones where new development is likely to take place.

### 3. ANALYSIS OF MODELLED GROWTH

- 3.1.1 The application of the method outlined previously ensures that the population and employment assumptions adopted in the model show that growth is greatest in locations where significant new developments are expected to take place
- 3.1.2 For the purposes of the Silvertown Tunnel scheme, detailed analysis has been undertaken to consider how individual developments are represented in the vicinity of the Scheme. In particular, an independent audit of the models by consultants Steer Davies Gleave (SDG) was undertaken, where a significant part of their audit comprised a detailed analysis of the population and employment assumptions within the Silvertown Tunnel “host” boroughs, namely the London Boroughs of Tower Hamlets, Newham, and the Royal Borough of Greenwich.
- 3.1.3 As set out in their Model Audit Report for the Reference Case model, SDG reviewed the PEIR (Preliminary Environmental Information Report) for proposed individual development sites – particularly in Newham, Greenwich, and Tower Hamlets. It concluded that the model zones showing the largest growth are those where PIER development sites identified in the PIER are located.
- 3.1.4 The Reference Case forecasts do not take into account the full development potential of each site, given that the various development proposals for each site include some aspirational plans where the probability of implementation is somewhat uncertain. On the balance of probabilities, it is expected that some aspirations will be realised in full whilst others may not materialise altogether.
- 3.1.5 This approach in the Reference Case is in accordance with DfT WebTAG guidance (Unit 3.15.5) which recommends that the Reference Case forecasts should include developments that are classified as “near certain” or at least “more than likely”, but not those that fall into the two less certain categories – namely “reasonably foreseeable” and “hypothetical”, given that there is significant uncertainty regarding whether such developments would realistically be implemented.
- 3.1.6 Furthermore, the audit undertaken by SDG has confirmed that this approach undertaken by TfL is reasonable for the purposes of Reference Case modelling. This conclusion has been accepted by all three “host” boroughs as set out in their Local Impact reports and Written Representations submitted for Deadline 1 (November 15<sup>th</sup>), as the three boroughs all

acknowledge there is a degree of uncertainty surrounding the deliverability of their development aspirations.

- 3.1.7 With regard to the less-certain development aspirations that are not included in the Reference Cases, a separate “high growth” scenario has been tested which assumes that all potential development sites will be fully built up by 2041 and hence, additionally includes developments that fall into the “reasonably foreseeable” and “hypothetical” categories. Again, the additional growth in the “high growth” scenario will primarily be concentrated on those locations where there is significant development potential.
- 3.1.8 This high growth scenario shows that the Scheme will still meet its objectives against the backdrop of additional development, albeit with a higher charge. Full details of this scenario can be found in the Traffic Forecasting Report – Sensitivity Testing (Document Reference 7.9). This illustrates that the user charge will be an effective demand management tool which can be varied if the growth in population and employment differs from the projections assumed in the Reference Case.
- 3.1.9 Whilst the audit was undertaken in most detail for the three host boroughs (RB Greenwich, LB Newham, LB Tower Hamlets) it should be noted that the growth assumptions used in the modelling for Silvertown Tunnel are shared with modelling undertaken for other schemes within TfL. Therefore, the approach to growth seen for these three boroughs is no different to that undertaken for all boroughs across Greater London, including Lewisham, Southwark, Hackney, Waltham Forest, and all other boroughs within the model’s study area. Therefore, if the analysis carried out by SDG was undertaken for the neighbouring boroughs, or indeed any borough within Greater London, it is reasonable to expect that an independent auditor would come to a conclusion similar to SDG’s conclusions for the host boroughs.
- 3.1.10 A review of the Local Impact Reports and Written Representations published by the Planning Inspectorate on November 18<sup>th</sup> has identified a small number of specific developments that could plausibly have an impact on future traffic conditions along the A200 corridor which serves the Rotherhithe Tunnel.
- 3.1.11 The developments highlighted all fall within the LB Lewisham and LB Southwark, and can be summarised as:
- Southwark Developments - Canada Water
  - Lewisham Developments:
    - Plough Way

- Oxestalls Road
- Surrey Canal Road
- Grinstead
- Convoys Wharf
- Arklow Road
- Kent and sun wharf

3.1.12 The detail provided in the LIRs is somewhat limited so it is not certain how much additional population and employment growth is expected to arise from these developments. This is particularly the case for the Canada Water proposals which LB Southwark's LIR suggests comprises a combination of the Canada Water Masterplan (British Land's mixed use development proposals around the existing Surrey Quays shopping centre), as well as LB Southwark's own housing proposals.

3.1.13 According to LB Southwark's LIR the combined developments at Canada Water are expected to generate 4500 additional homes and 2000 additional jobs, though it should be noted that some of this may replace existing land uses and so may not be fully additional. This is particularly the case for the non-residential elements of the Canada Water masterplan as it involves the redevelopment of existing retail sites including the Surrey Quays shopping centre.

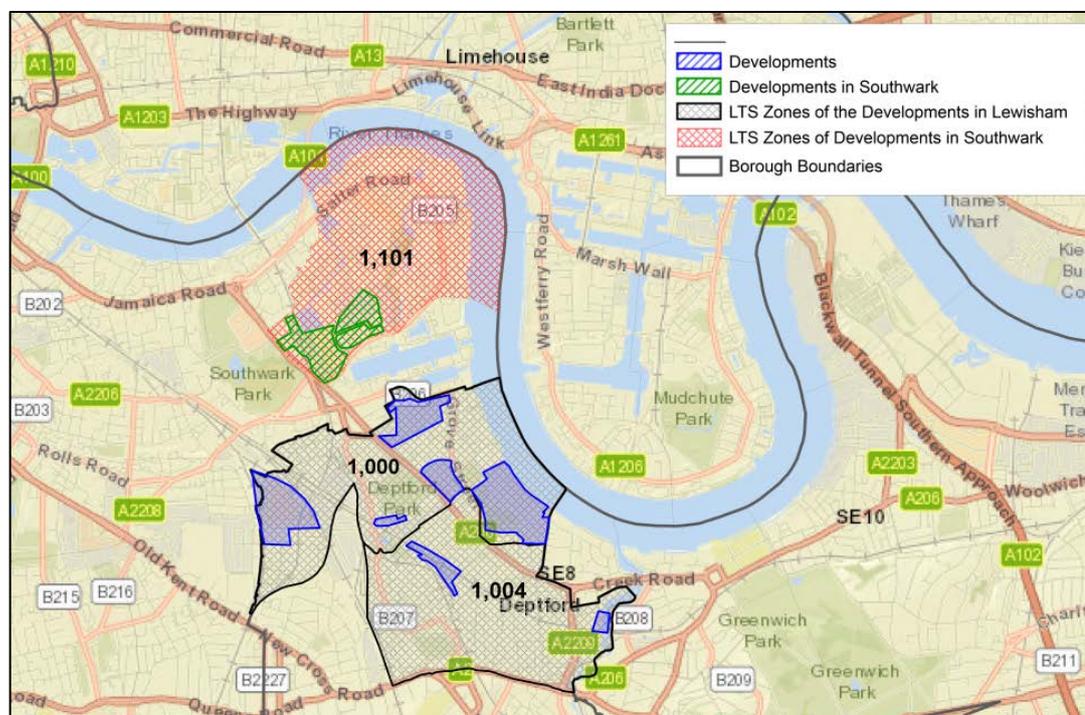
3.1.14 Furthermore, the proposals from British Land are subject to considerable uncertainty as they are not expected to submit a planning application to LB Southwark until at least mid 2017, and they are yet to undertake any traffic modelling work to understand the projected traffic impacts of their proposals. TfL expects that LB Southwark will require reassurances that any projected traffic impacts from the Canada Water Masterplan are minor before granting planning consent.

3.1.15 The uncertain nature of the Canada Water Masterplan, combined with the fact that it involves the replacement of existing commercial land use, could mean that the entire Canada Water site will result in a net increase in employment that is significantly less than the 2000 jobs mentioned in LB Southwark's LIR.

3.1.16 These potential developments in LB Lewisham and LB Southwark are confined to a small number of individual model zones. All developments that take place in Southwark are part of the LTS zone 1101 whilst the Lewisham

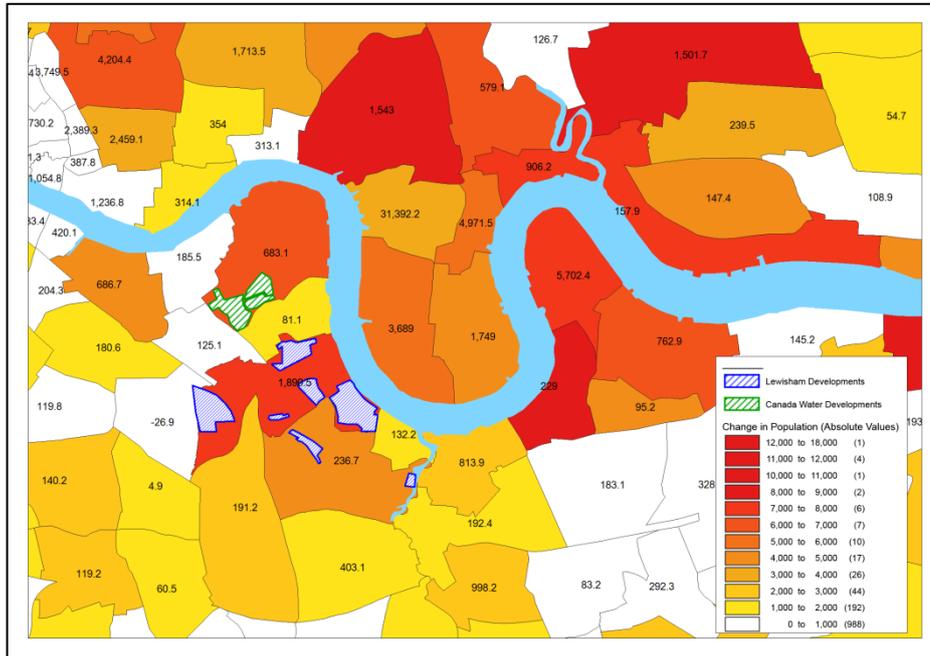
developments are mainly part of LTS zone 1000 with a small amount in zone 1004 (See Figure 1 below).

**Figure 1 LTS Zones where developments are located**



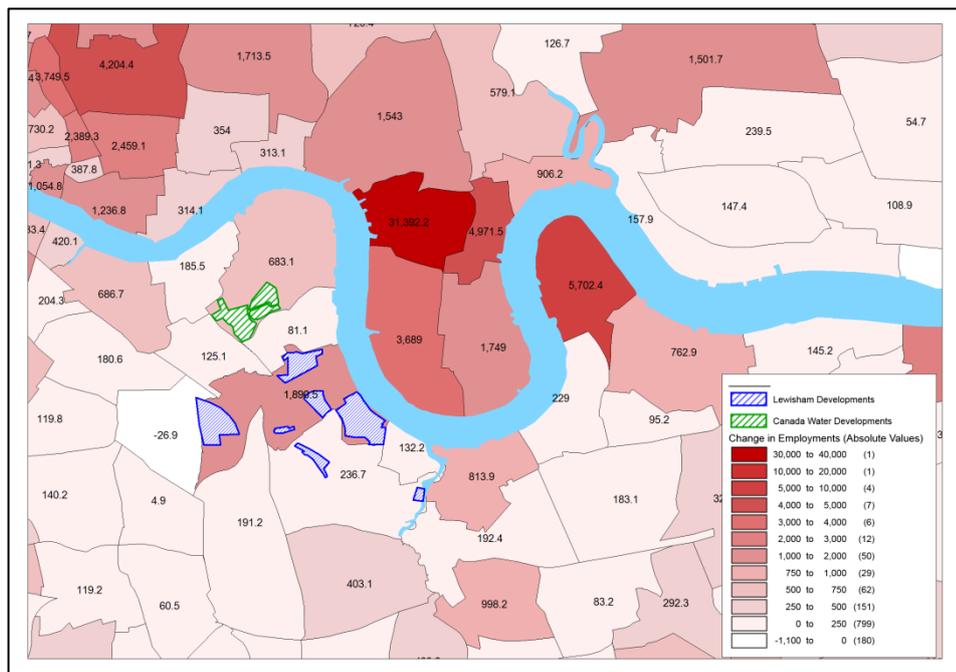
- 3.1.17 Figure 2 shows the absolute change in population between the years 2011 and 2021. It can be seen that the zones where the majority of the developments proposals take place (zones 1101 and 1000) have higher changes in population than the surrounding zones.
- 3.1.18 Zone 1000 shows one of the biggest changes in population from the zones near the crossing. This zone seeks to represent the developments in Lewisham such as the Marine Wharf which are major developments comprising new housing and so will lead to an increase in the population in this zone.
- 3.1.19 Furthermore, the assumed population growth for these zones is similar to that seen for other zones in the vicinity of the Silvertown tunnel scheme where significant development is expected. Examples include zones 4274, 4277, and 4270 on the Greenwich Peninsula and Zone 3102 in the Royal Docks Enterprise Zone. Regarding these examples, it should be noted that SDG's independent model audit explicitly considered the development proposals expected in these (and surrounding) zones and deemed that the growth assumed in the model is reasonable.

**Figure 2 Absolute change in population between 2011 and 2021 in LTS zones**



3.1.20 Figure 3 illustrates the absolute change in employment between the years 2011 and 2021. The figure shows that once again zones 1101 and 1000 show higher absolute change than those seen in the surrounding area. This reflects the significant development proposals that are expected to take place in these zones.

**Figure 3 - Absolute change in employment between 2011 and 2021 in LTS zones**



3.1.21 Looking at the changes in the key development zones in more detail, Table 1 below summarizes the change in population in those LTS zones where this development is expected and provide a comparison of the growth in these zones against the growth expected across the boroughs of Lewisham and Southwark as a whole, and also the GLA area.

3.1.22 Regarding the Canada Water proposals in LB Southwark, it can be seen that the model assumes population growth of 61.5% between the years 2011 and 2021 (around 4.9% per annum). This is significantly greater than the rate seen for LB Southwark as a whole (21.2% over 10 years, or 1.9% per annum), and even greater than the GLA average (12.0% over 10 years or 1.1% per annum). These changes demonstrate that the assumed population growth within this zone is a fair reflection of LB Southwark’s predominantly residential development proposals for the area.

3.1.23 In the case of the various development proposals within LB Lewisham the majority of the developments proposals take place in zone 1000. Again the assumed population growth (63.5% over 10 years, or 5.0% per annum) is significantly greater than the rate seen for the whole borough and the GLA average. For zone 1004, less development is expected in this zone so the rate of growth (2.4% per annum) is somewhat lower than that seen for zone 1000, but still in excess of that seen for the whole borough and the GLA area.

**Table 1 – Change in population from 2011 to 2021 in area of interest**

<b>Area</b>	<b>2011 Population</b>	<b>2021 Population</b>	<b>Change 2011-2021</b>	<b>%Change 2011-2021</b>	<b>Annual % change 2011-2021</b>
LTS Zone 1101	11,144	17,997	6,853	61.5%	4.9%
<b>LB Southwark - overall</b>	<b>289,361</b>	<b>350,651</b>	<b>61,290</b>	<b>21.2%</b>	<b>1.9%</b>
LTS Zone 1000	11,873	19,416	7,543	63.5%	5.0%
LTS Zone 1004	15,245	19,404	4,159	27.3%	2.4%
<b>LB Lewisham – overall</b>	<b>277,525</b>	<b>313,427</b>	<b>35,902</b>	<b>12.9%</b>	<b>1.2%</b>
<b>Whole GLA Area</b>	<b>8,217,475</b>	<b>9,203,293</b>	<b>985,818</b>	<b>12.0%</b>	<b>1.1%</b>

3.1.24 Table 2 below shows the corresponding changes in employment assumed between the years 2011 and 2021. In LB Lewisham, LTS zone 1000 (where most of the development proposals are expected, the assumed growth in employment (54.5% between 2011 and 2021 or 4.4% per annum) is again significantly above the whole-borough and GLA averages.

3.1.25 Regarding LB Southwark, in LTS zone 1101 i.e. where the Canada water developments are proposed, the assumed employment growth is more modest, though still in excess of the GLA average. This reflects the fact that the non-residential aspects of the proposals are, as mentioned previously, subject to some uncertainty and will replace some existing commercial activity.

**Table 2 – Change in employment from 2011 to 2021 in area of interest**

Area	2011 Employment	2021 Employment	Change 2011-2021	% Change 2011-2021	Annual % Change 2011-2021
LTS Zone 1101	6,280	6,963	683	10.9%	1.0%
<b>LB Southwark – overall</b>	<b>242,130</b>	<b>269,050</b>	<b>26,920</b>	<b>11.1%</b>	<b>1.1%</b>
LTS Zone 1000	3,469	5,360	1,891	54.5%	4.4%
LTS Zone 1004	4,153	4,389	236	5.7%	0.6%
<b>LB Lewisham – overall</b>	<b>72,722</b>	<b>79,705</b>	<b>6,983</b>	<b>9.6%</b>	<b>0.9%</b>
<b>Whole GLA Area</b>	<b>4,896,000</b>	<b>5,223,713</b>	<b>327,713</b>	<b>6.7%</b>	<b>0.7%</b>

3.1.26 It should also be noted that an increase in population and employment in these LTS zones may result in a less-than-proportionate increase in traffic demand on the local road network. This is because the developers would be expected to implement measures that encourage sustainable travel e.g. strict limits on parking provision. For example, developments such as the Lewisham getaway have noted in their transport assessment that “[...] has a restricted level of parking, both of which should minimise the need for car travel”. Also, Marine wharf notes that the development is considered acceptable in terms of traffic impacts, given the limited parking, and the reduction in parking levels in relation to the existing commercial land use.

## 4. CONCLUSIONS

- 4.1.1 The analysis presented in this note shows that model shows greatest growth in those areas where development is expected, both at a strategic level (e.g. key boroughs) as well as key locations within each borough (e.g. opportunity areas, masterplans).
- 4.1.2 The projections are compliant with both UK DfT WebTAG guidance as well as in line with GLA assessments and objectives.
- 4.1.3 This has been verified by an independent audit which involved detailed analysis of the population and employment assumptions, led by key stakeholders – in particular the development proposals expected in the boroughs of Newham, Greenwich, and Tower Hamlets
- 4.1.4 Further analysis presented in this note shows that the model has an equally good representation of the key development proposals outlined in the LIRs of LB Lewisham and LB Southwark.
- 4.1.5 It is noted that individual boroughs in particular have aspirations that exceed those projections set out in the reference case forecasts. Whilst it would be imprudent to assume that such a scenario is *most likely* to occur, it is acknowledged that growth in excess of the assumed trend is nonetheless plausible. The high growth scenario has been undertaken to allow for this.
- 4.1.6 It is therefore concluded that the Silvertown modelling considered the effects of projected developments across the RXHAM study area, including the key developments identified by LB Lewisham and LB Southwark.