

SILVERTOWN TUNNEL

Volume 8

8.34 Distribution of User Benefits

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Silvertown Tunnel

Distribution of User Benefits

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1. INTRODUCTION

1.1 Purpose of this Note

1.1.1 Section 5.5 of the Silvertown Tunnel Economic Assessment Report (Document Reference 7.8.1) presents an analysis of the spatial distribution of total user benefits at a Borough level, and Chapter 3 of the Distributional Impact Appraisal (Document Reference 7.8.4) presents an analysis of the distribution of user benefits by income group. However, RB Greenwich have stated¹ that the presentation of benefits at a Borough level makes it difficult to determine the full extent of impacts at a local level.

1.1.2 The purpose of this note is to provide more detail on the spatial distribution of user benefits resulting from the Silvertown Tunnel Scheme in order to:

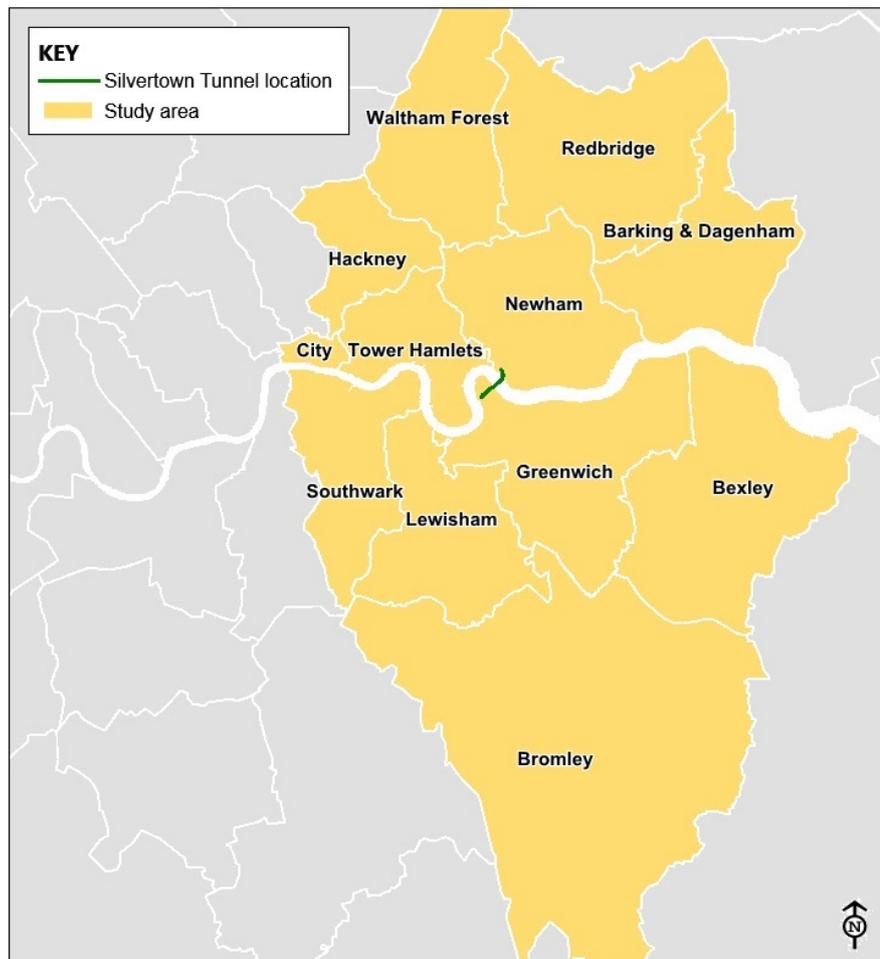
- identify the impacts of the scheme on specific neighbourhoods; and
- to understand how the distribution of benefits maps against the pattern of deprivation

1.2 Study Area and Methodology

1.2.1 This analysis covers the same study area as the user benefits analysis included in the Distributional Impacts Appraisal, shown in Figure 1.1 below.

¹ See Paragraphs 282-285 of RB Greenwich's Local Impact Report

Figure 1-1: Study Area



- 1.2.2 Highway user benefits in 2021 at transport (RXHAM)² zone level within the study area were calculated using TUBA. Benefits for non-business highway and all PT trips were aggregated by origin zone and then, given the strategic nature of the model, apportioned to Middle Layer Super Output Area (MSOA)³ level to make the data more robust than it would be at transport zone level.

² RXHAM is TfL's River Crossings Highway Assignment Model. The Zones used are typically 4 to 5 times smaller than a Ward

³ MSOAs are a geographic area similar in size to a Ward, with a population typically between 4,000 and 8,000

2. DISTRIBUTION OF NON-BUSINESS USER BENEFITS

2.1.1 This chapter presents an analysis of the distribution of non-business user benefits within the Study Area. Net user benefits are calculated by aggregating the monetary value of changes in travel time, fuel costs, vehicle running costs and costs from user charges. Further details are provided in Chapter 4 of the Economic Assessment Report.

2.1.2 Two scenarios are considered as part of this analysis:

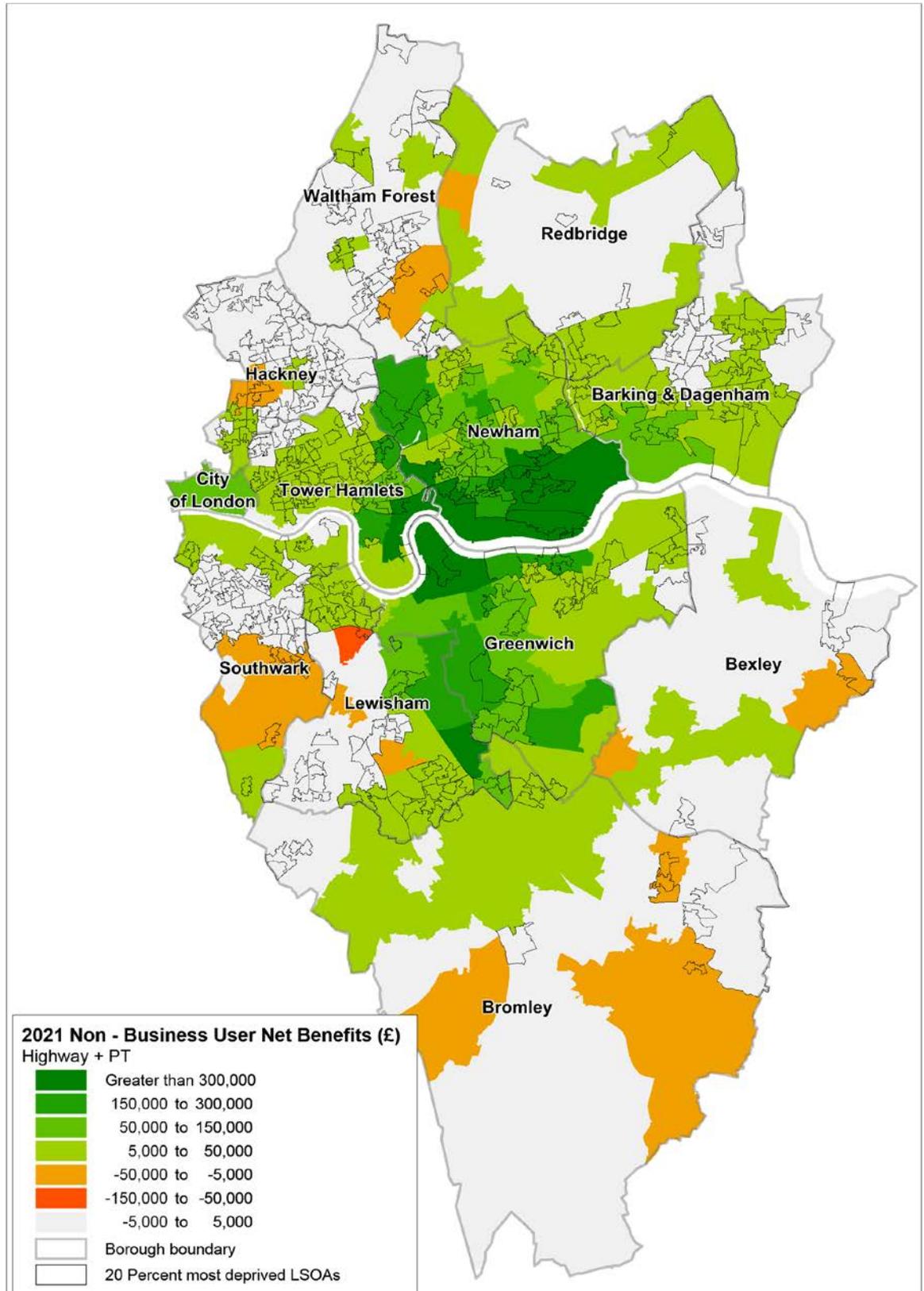
- The Assessed Case; and
- High Growth, Higher Charge Scenario. The purpose of this was to test the distribution of benefits under a scenario where growth was higher than forecast in the Assessed Case, and user charges were 20% higher in the peak and 10% higher in the off peak to manage demand to levels similar in the Assessed Case. Further details of this scenario are presented in 7.5.17 – 7.5.18 in the Transport Assessment.

2.2 Assessed Case

2.2.1 Figure 2-1 illustrates the distribution of non-business total net-user benefits in 2021 for the Assessed Case, including both highway benefits net of user charges and public transport benefits, based on the origin of journey. It should be noted that this analysis does not include reliability benefits which, as set out in Summary Tables 2 and 3 of the Economic Assessment Report, could add at least an additional 20% to total net benefits.

2.2.2 The figure shows that the vast majority of the Study Area will experience net benefits as a result of the Scheme. Almost all of the 20% most deprived areas in London within the Study Area (shown within the grey boundaries) will see net benefits from the Scheme.

Figure 2-1: Distribution of non-business total net-benefits 2021 by origin of journey – Assessed Case



2.2.3 To understand how the distribution of net-benefits maps against the profile of deprivation in the Study Area, the methodology set out in TAG A4.2 has been followed. As deprivation data is available at Lower Level Super Output Area⁴ (LSOA) level, the benefits by origin RXHAM zone were apportioned to each LSOA. LSOAs were split into five quintiles according to their level of income deprivation. The distribution of population within each income deprivation quintile was then compared against the distribution of net-user benefits.

2.2.4 Table 2-1 presents the results of this exercise. This demonstrates that:

- A greater share of the total net benefits from the Scheme (38%), relative to the size of the population (33%), accrues to the most deprived parts of the Study Area
- A smaller share of the total net benefits from the Scheme (11%), relative to the size of the population (15%), accrues to the middle deprivation cohort
- For all other cohorts, the share of total net benefits is similar to the share of population

Table 2-1: Distribution of non-business total net-benefits by IMD income domain quintile – Assessed Case

	Most deprived			Least deprived	
	0%<20%	20%<40%	40%<60%	60%<80%	80%<100%
Share of net user benefits	38%	35%	11%	7%	9%
Population 2011 %	33%	35%	15%	9%	7%

2.3 High Growth, Higher Charge Scenario

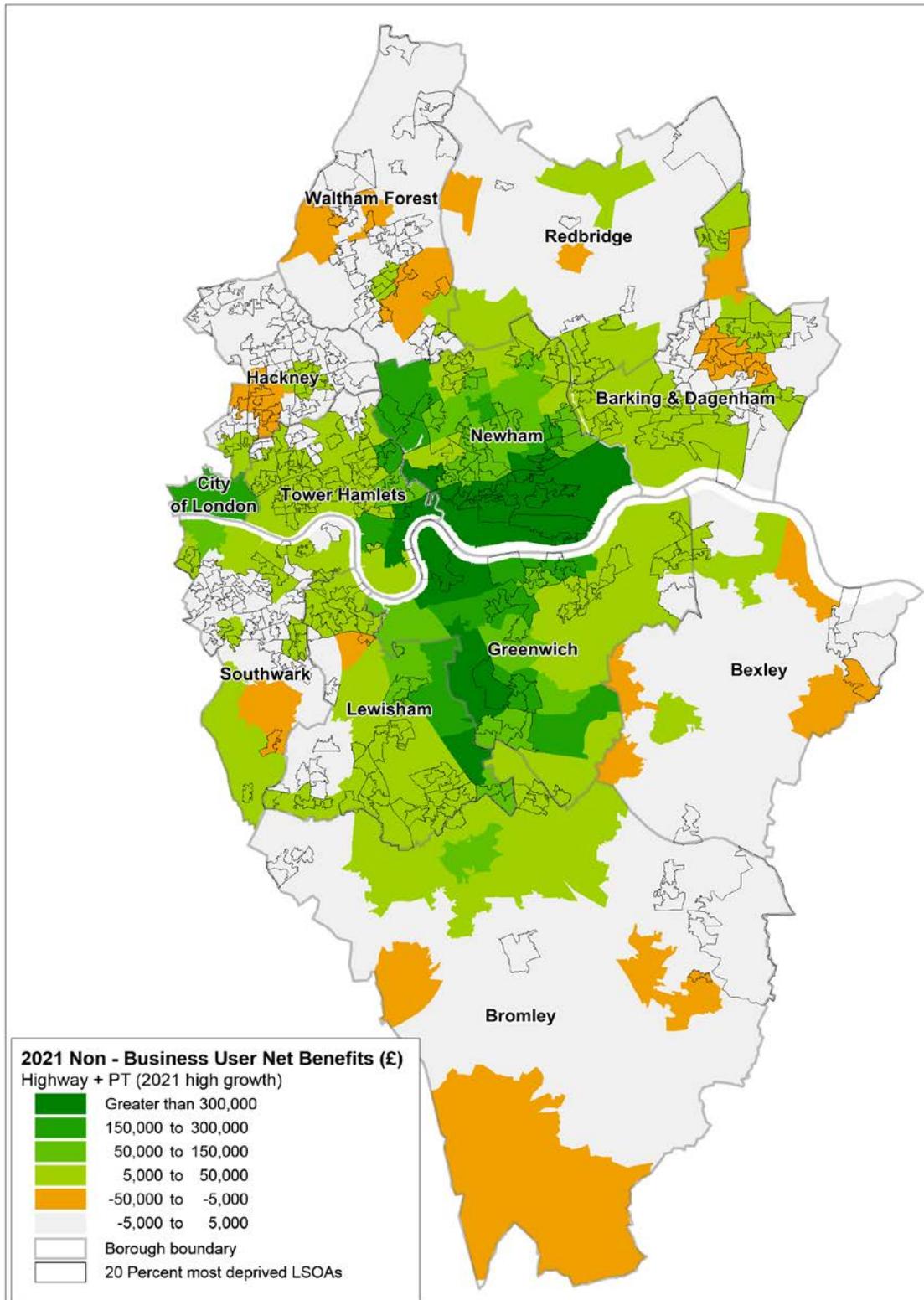
2.3.1 Figure 2-2 illustrates the distribution of non-business total net-user benefits in 2021 for the High Growth Scenario, where user charges are higher, including both highway benefits net of user charges and public transport benefits, based on the origin of journey. Again, this analysis does not include reliability benefits

2.3.2 The figure shows that there is little change in the distribution of net benefits compared to the Assessed Case, with the vast majority of the Study Area seeing net benefits as a result of the Scheme, including almost all of the most deprived areas. As set out in Table 5-20 of the Economic Assessment Report, there is a slight increase in total user benefits under this higher growth scenario, as total user

⁴ LSOAs are a small geographic area with a population typically between 1,000 and 2,000

benefits are worth slightly more than the increase in user charges. Residents of RB Greenwich are one of the largest recipients of this increase in benefits.

Figure 2-2: Distribution of non-business total net-benefits 2021 by origin of journey – High Growth, Higher Charge Scenario



2.3.3 Table 2-2 presents the distribution of benefits by deprivation quintile for the high growth, higher charge scenario. Again, there is little change in the distribution of benefits compared to the Assessed Case, with very slightly more benefit accruing to the most deprived quintile at the expense of the second most deprived quintile.

Table 2-2: Distribution of non-business total net-benefits by IMD income domain quintile – High Growth, Higher Charge Scenario

	Most deprived			Least deprived	
	0%<20%	20%<40%	40%<60%	60%<80%	80%<100%
Share of net user benefits	39%	33%	11%	7%	10%
Population 2011 %	33%	35%	15%	9%	7%

3. DISTRIBUTION OF BENEFITS OVER 60 YEAR APPRAISAL PERIOD

3.1.1 The focus of Chapters 2 is on the distribution of benefits for 2021 only. This section provides a brief summary of the distribution of benefits for the full 60-year appraisal period. This builds on the distribution of benefits presented in section 5.5 of the Silvertown Tunnel Economic Assessment Report (Document Reference 7.8.1).

3.2 Non-business benefits

3.2.1 Table 3-1 presents the distribution of non-business benefits, net of user charges, for the 60 year appraisal period. It should be noted that these benefits do not include reliability which, as set out in para 2.2.1, could increase net benefits by at least 20%. The table demonstrates that:

- LB Newham, RB Greenwich, LB Tower Hamlets and LB Lewisham will see net benefits worth over £600m from journeys with an origin in these Boroughs. The majority of these benefits are from public transport, but all four Boroughs will also see small benefits from highway journeys too.
- There is little impact on most other Boroughs, with a small amount of benefit expected to accrue to journeys that start LB Bexley, LB Southwark, LB Waltham Forest and LB Redbridge, and very small disbenefits in LB Hackney and LB Bromley.

Table 3-1: Distribution of non-business total net-benefits over 60 year appraisal period, by origin of journey

Borough	HW Non-Business Net benefit, £m	PT Bus Net benefit, £m	HW + PT Net benefit, £m	Population (16+)	Net Benefit per person per year (pounds)
Newham	£2.1	£268.9	£271.0	215,032	£1,260
Greenwich	£20.9	£155.4	£176.3	178,461	£988
Tower Hamlets	£31.6	£62.6	£94.3	191,602	£492
Lewisham	£1.4	£57.9	£59.4	196,656	£302
Bexley	£8.9	£4.7	£13.6	147,991	£92
Southwark	-£3.3	£13.6	£10.3	203,460	£51
Waltham Forest	£3.3	£1.2	£4.4	180,588	£25
Redbridge	-£3.9	£4.7	£0.8	189,457	£4

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Borough	HW Non-Business Net benefit, £m	PT Bus Net benefit, £m	HW + PT Net benefit, £m	Population (16+)	Net Benefit per person per year (pounds)
Hackney	-£6.0	£2.4	-£3.7	182,154	-£20
Bromley	-£25.3	£5.9	-£19.4	198,968	-£98

4. SUMMARY

4.1.1 This note has been developed in response to a request from RB Greenwich for further information on the spatial distribution of benefits of the Scheme. In addition to the detailed information on the distribution of benefits at a local level presented in Figures 2.1 and 2.2, the analysis demonstrates the following:

4.2 Distribution of net-benefits for non-business users in 2021

- The majority of non-business users in the Study Area will see net benefits from the Scheme, including almost all of the most deprived areas (Figure 2-1).
- Overall, a greater share of the total net benefits from the Scheme (38%), relative to the size of the population (33%), accrues to the most deprived parts of the Study Area (Table 2-1).
- Under a high growth, higher charge scenario, there is a small increase in net benefits although the distribution of these benefits does not change significantly compared to the Assessed Case (Figure 2-2).

4.3 Distribution of net-benefits for non-business users over 60 year appraisal period

- Over the 60 year appraisal period, most net benefit accrues to LB Newham, LB Tower Hamlets, RB Greenwich and LB Lewisham, with total benefits for non-business journeys that start in these Boroughs worth over £600m.
- There is little impact on most other Boroughs, with a small amount of benefit expected to accrue to journeys that start LB Bexley, LB Southwark, LB Waltham Forest and LB Redbridge, and very small disbenefits in LB Hackney and LB Bromley. However, these figures do not include reliability, which could increase benefits by 20%