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# LIVEABLE WALWORTH

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SOUTHWARK COUNCIL PROPOSAL SUPPORT DOCUMENT OCTOBER 2017



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# LIVEABLE WALWORTH

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## INITIAL PROPOSAL SUPPORT DOCUMENT

### Contents

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|  |    |
|--|----|
| Summary .....  | 4  |
| Letters of support.....                                      | 5  |
| Introduction to the Walworth Liveable Neighborhood Area..... | 6  |
| Southwark Overview .....                                     | 6  |
| Walworth Overview.....                                       | 7  |
| What we know about Walworth .....                            | 9  |
| Active travel.....   | 9  |
| TfL Street types.....  | 17 |
| Road Safety and Crime .....                                  | 18 |
| Collision Analysis .....                                     | 18 |
| Crime analysis.....  | 22 |
| Demographics .....   | 24 |
| Planning and Development .....                               | 28 |
| Air Quality.....   | 31 |
| Health data.....   | 33 |
| Objectives.....  | 35 |
| Walworth Liveable Neighbourhood programme proposal.....      | 36 |
| The Healthy Street approach.....                             | 37 |
| Pedestrians from all walks of life.....                      | 39 |
| Easy to cross.....   | 39 |
| Shade and Shelter .....                                      | 40 |
| Urban Park in the kerbside .....                             | 40 |
| Places to stop and rest .....                                | 40 |
| Not too noisy.....   | 43 |
| People choose to walk and cycle.....                         | 43 |
| Newington Estate Low Line Project.....                       | 45 |
| People feel safe .....                                       | 48 |
| Things to see and do .....                                   | 49 |
| Regeneration Project: East Street Market Phase .....         | 51 |
| People feel relaxed.....                                     | 52 |
| Community Engagement.....                                    | 53 |

|  |    |
|--|----|
| Appendices .....   | 54 |
| Appendix A – Examples of other programmes and projects demonstrating Southwark’s ability to deliver quality public realm improvements..... | 54 |
| Salisbury Row: the people’s project .....  | 54 |
| Flat Iron Square – a new urban square in the heart of Bankside.....  | 56 |
| More London – a new quarter at London Bridge .....   | 57 |
| Nunhead – “putting the village back into Nunhead” .....  | 57 |
| Camberwell Green and St George’s Circus PSiCAs .....   | 58 |
| Other projects in and around Walworth Road .....   | 58 |
| Appendix B - Background documents.....   | 63 |
| Appendix C – Healthy Street Checks.....  | 65 |
| Appendix D –proposed options plans for the southern part of Walworth Road (Project Centre report) .....                                    | 72 |
| visions from southwark living street and walworth society (july 2013).....   | 74 |
| Appendix E – Trafficmaster delays maps.....  | 75 |
| Appendix F – Traffic counts .....  | 81 |
| Appendix G – Air Quality – Source apportionment .....  | 83 |
| Source Apportionment – General Source Categories.....  | 83 |
| Source Apportionment – Road Transport Source Only .....  | 85 |
| Source Apportionment – All Source Categories .....   | 87 |

## SUMMARY

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*Liveable Walworth is a partnership between Southwark Council in conjunction with Elephant and Castle partnership<sup>1</sup>. Liveable Walworth aims to reinstate a sense of place to provide a nucleus around which both community and business can thrive a vibrant destination with much to offer, with easy access from the surrounding residential areas through active travel.*

*Walworth is vibrant town centre, dominated by traffic and numerous bus routes, in close proximity to an area of intensification which include a rich, but unsung, heritage of great significance in contrast with some of the highest levels of social deprivation on the national scale (IMD). It is both a community centre and a strategic corridor feeding in and out of the Elephant and Castle which is lacking good permeability and pleasant walking and cycling connections thorough the neighbourhood.*

*Evidence shows a very high cycle and walking potential which is not yet met and a high public transport demand that is currently poorly served. This in combination with and high population and job growth expected from new developments which needs to be supported efficiently. This combination of factors, with the addition of high pollution makes this roads, its surrounding area and side streets an area with great opportunity to improve to make the growth a good growth. We want new residents coming into the area to see a welcoming environment and an established habit of moving around by active travel or public transport to take it as an example.*

*The scheme will contribute towards a modal shift from cars to active travel and public transport; better connectivity and accessibility in the wider area; a safer neighbourhood and street environment; improved air quality; good growth and economic development. Linking with partners it will build on the investment in health (HealthyHhigh Street project), green space (Pullens, Newington Gardens, Burgess Park) with East Walworth Green links as well as the established Walk Elephant project..*

*This scheme will enable engagement with the community to identify the locations and issues that most need to be addressed. There are many initiatives already ongoing in the area and new to come if this bid comes to be successful, which would work all together to make a sustainable and pleasant neighbourhood to live and work in or visit, and prepared for the growth expected.*

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<sup>1</sup> <https://www.elephantandcastle.org.uk>

## LETTERS OF SUPPORT

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# THE WALWORTH SOCIETY

28 Sutherland Square, Southwark, London, SE17 3EQ

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**Date:** 18<sup>th</sup> October 2017

To whom it may concern,

**Re: Southwark Council: Liveable Neighbourhoods Bid - Walworth**

This is a letter of support from The Walworth Society for the Liveable Neighbourhoods bid by Southwark Council that focuses on the Walworth area.

We are pleased to be asked to give support to this project that aims to strengthen all aspects of wellbeing in the Walworth area through improvements that promote both walking and cycling themselves and which will help create more attractive routes to the public transport services that run along the Walworth Road. The Walworth Society has more than 750 members and, thanks to its strong connections with the local Living Streets and LCC groups, has always been really interested in and supportive of promoting active travel in our area.

We are delighted at the area that has been chosen by Southwark for this bid as it covers not only the Walworth Road itself but also the links to the east and west which are the walking and cycling routes into the large number of estates that sit on either side of the Walworth Road. The funding from a successful Liveable Neighbourhood bid can go a long way to improve these connections. In many cases, the thousands of people who pass daily along these streets between home and the transport connections along the Walworth Road face a poor quality public realm that is a deterrent to choosing walking. This funding will enable Southwark to work with those communities to identify the locations that most need to be addressed and make the kinds of improvements that have worked so well in our area in the past such as in the Salisbury Row Streets for People project that TfL supported a number of years before.

Southwark Council has a strong track record of working with local community groups and local elected representatives and we feel sure that, if this bid were successful, the funding would be put to good use to improve the lives of people in this part of Walworth and to meet the Liveable Neighbourhoods' objectives of encouraging walking and cycling, improving the public realm and reducing the negative impacts of car use.

We very much hope that this bid will be successful.

Yours faithfully,

Jeremy Leach, Chair, The Walworth Society

# INTRODUCTION TO THE WALWORTH LIVEABLE NEIGHBORHOOD AREA

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## SOUTHWARK OVERVIEW

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Southwark has the most ambitious regeneration programme in London being delivered through strong partnership with developers and communities. Our programme is to create 11,000 new council homes with 1,500 delivered by 2018. Walworth is at the heart of our regeneration of the Elephant and Castle and the Aylesbury Estate and while major changes are taking place, with new neighbourhoods being created we believe that heritage-led regeneration – building on what the area already has - is one of the keys to making lasting improvements and sustainable development.

Southwark won the 'Best Planning Authority Award' in the 2016/2017 London Planning Awards. This recognises the authority that has contributed the most towards supporting London's growth and success as a world city.

Southwark's main delivery partner in this area is Lendlease whose plans will deliver:

- Up to 2,988 new homes
- Over 600 new affordable homes
- At least 50 new shops and restaurants
- A brand new park connected to a vast array of other green spaces that will help restore nature in the heart of the city.
- 1,200 new trees
- Over 6,000 new jobs
- £30million investment in transport improvements
- £1.5million investment in local schools

## WALWORTH OVERVIEW

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Walworth is an inner-city area in south London with a densely built-up townscape. It developed as a village separate from Newington (now the Elephant and Castle) and has been in existence as a manor and parish since Anglo Saxon times. The road position and width, together with the building plots, widths and lines can be directly traced back to the late 18th century, with notable parts being very much intact. The Walworth Road is significant because it tells the story of an emerging working class area from the late 18th century.

Problems associated with high levels of deprivation persist for Walworth but are improving and are being tackled not only by new housing of the highest quality but by employment and training initiatives to bring prosperity, improvements to local schools, health and other facilities, improved parks and public realm and all that is needed to promote health and wellbeing.

The area is experiencing an unprecedented level of development pressure, potentially greater than any other location in London. This is from sites within the core-zone of the Liveable Neighbourhoods as well as the development of the Heygate Estate and Elephant and Castle to the north and the Aylesbury Estate to the south.

There are major regeneration initiatives currently shaping Walworth today. The Elephant and Castle Opportunity Area is just to the north and includes Elephant Park and the Walworth Road Town Centre. The Aylesbury Regeneration Area is a major regeneration masterplan located south of East Street that will significantly increase the number of people living in the area. To the east is the Old Kent Road Opportunity Area that extends across different character areas including Bricklayer's Arms roundabout. This area has the potential to support new homes and more jobs, and in part driven by the Bakerloo Line Extension, the potential for two new stations.

The area proposed is the southern part of Walworth Road, south of East Street until the junction between Camberwell Road and Albany Road. The remaining of the neighbourhood area which would need improved connection is defined West by the railway and East by the new development area. The area in the plans is indicative of where physical changes are concentrated while the area involved in the community engagement and lighter changes will be much wider, likely to be from the borough boundary to the Old Ken Road.

The study area is well connected to existing public transport routes: Bus routes that run through the estate along Thurlow Street and Albany Road. The site is also in close proximity to three tube stations; Oval, Kennington and Elephant and Castle. The area is in close proximity to existing and future walking and cycle routes which creates high potential for active travel and modal shift.

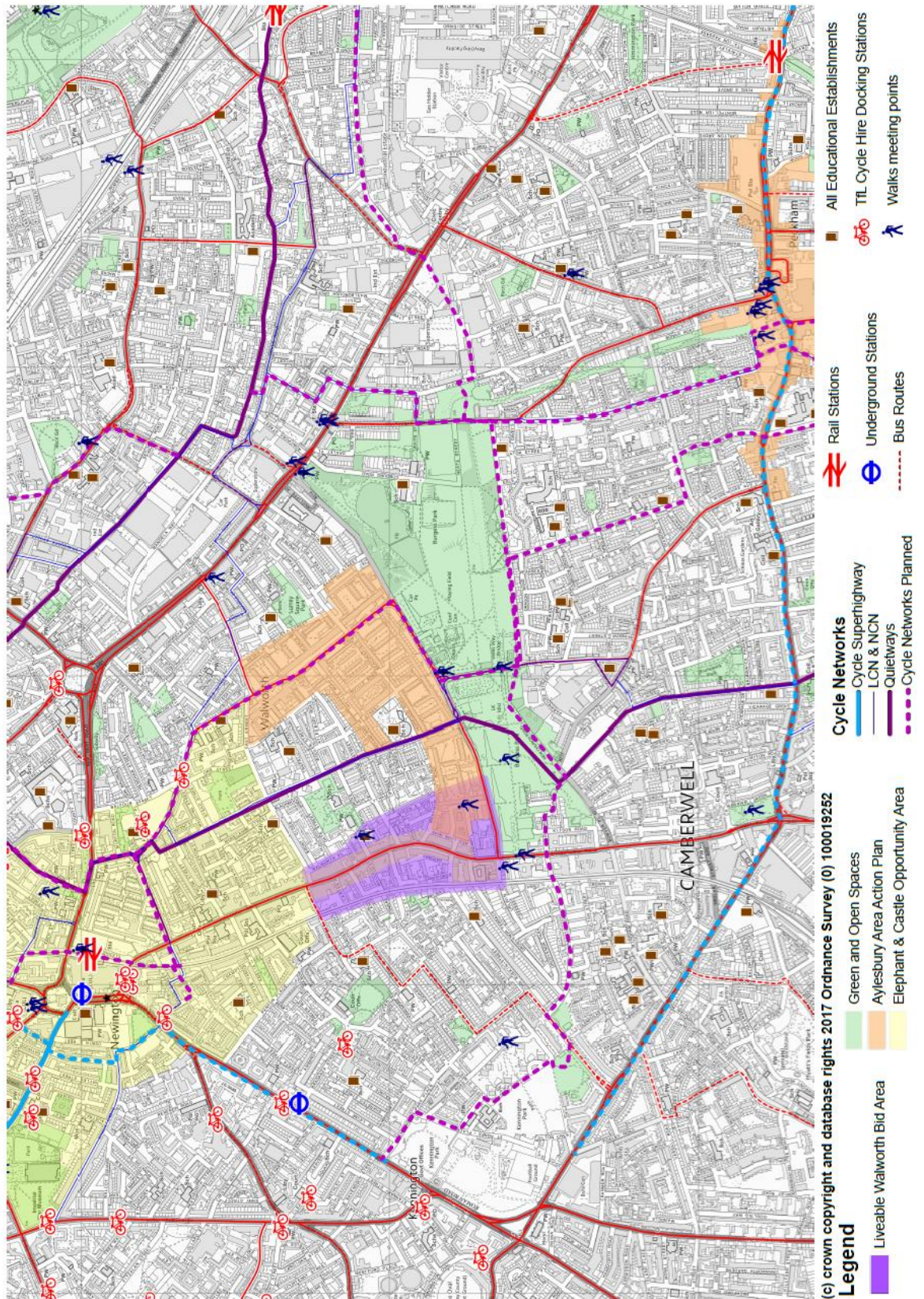


FIGURE 1. OVERVIEW MAP OF THE PROPOSED AREA FOR LIVEABLE WALWORTH (PURPLE) IN THE CONTEXT OF TRANSPORT, DEVELOPMENT AREAS AND EDUCATION



## WHAT WE KNOW ABOUT WALWORTH

### ACTIVE TRAVEL

#### WALKING

##### PEDESTRIAN ENVIRONMENT REVIEW SYSTEM (PERS)

A PERS review along the Walworth Road study area has been carried out in 2015 as part of a Public Realm scheme<sup>2</sup> to assess the quality of the existing pedestrian environment. The PERS audit process focuses on assessing the level of streetscape provision for pedestrians with particular consideration given towards the needs of more vulnerable pedestrians such as those with mobility or sensory impairment. (Figure 3)

The eastern footways from Merrow Street to Albany Road have been assessed as 'average' level in general. This is mainly due to the poor surface in the north end and effective widths toward the southern end of the section. There is also a general lack of wayfinding provision in this area. Three of the fifteen crossings were assessed as 'average' level with the rest rated good. Two of these crossings are at the Walworth Road / Albany Road junction with delay being the major factor. Poor surface quality and substandard tactile paving have also contributed to the low score.

##### WALKING POTENTIAL

TfL's data in figure 2 show that the area has a very high walking potential (darker exagons) and the future demand for pedestrian space and routes will be increasing with new developments.

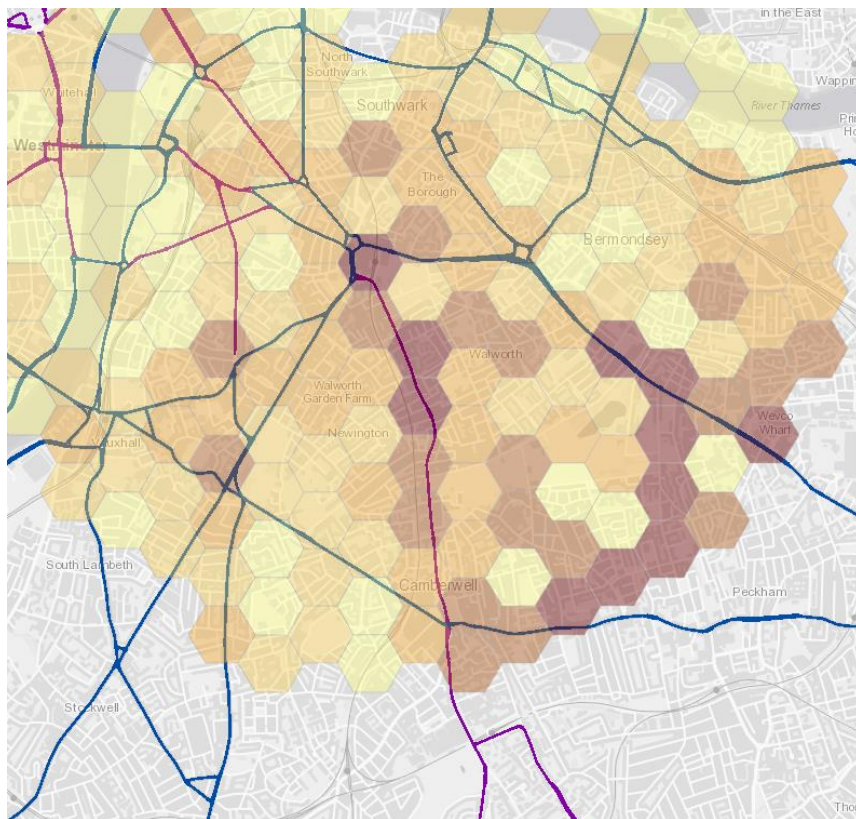


FIGURE 2. TFL'S WALKING POTENTIAL MAP

<sup>2</sup> Walworth Road Public Realm, Scoping Report, London Borough of Southwark, CONWAY AECOM.

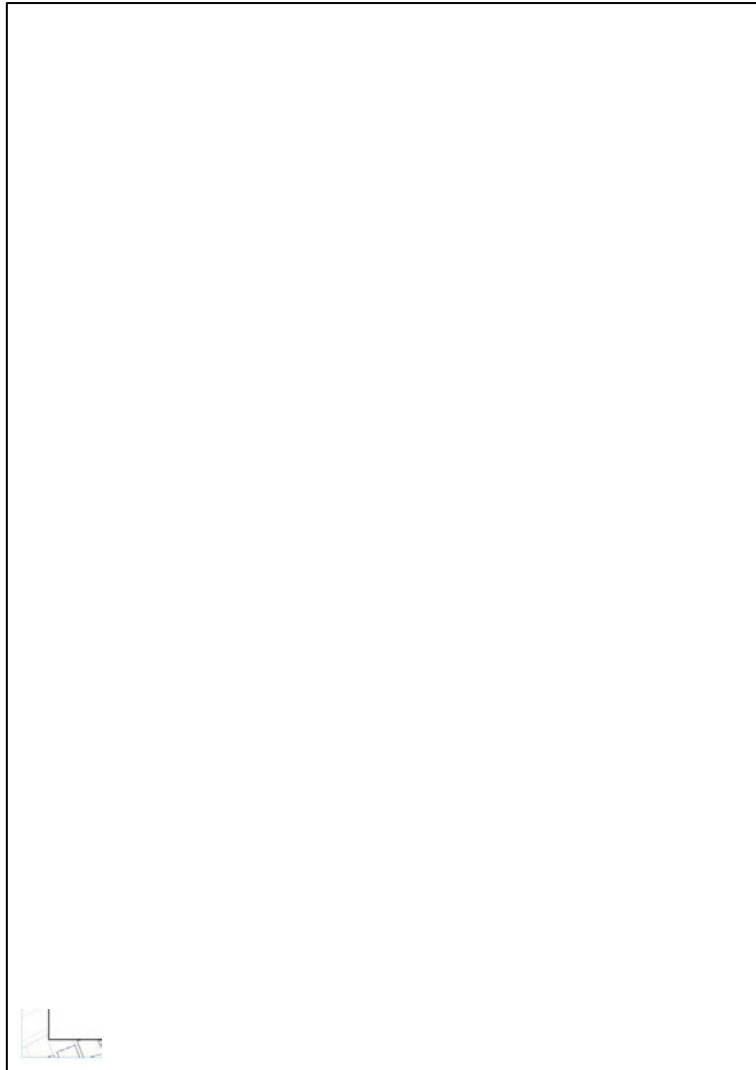


FIGURE 3. PERS RATING FOR LINKS AND CROSSINGS. SOURCE: AECOM 2015.

## CYCLING

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The map in figure 5 shows that the area is in close proximity to existing and planned cycle routes, especially in the Burgess Park area. The scheme aims to provide a cycle and pedestrian friendly and safe environment, which connects with existing and planned cycle routes included in Southwark Cycling Strategy Cycling potential. Cycle routes available around the area are the Cycle Superhighway 7 “Merton to City” which runs in Kennington Road; the planned Quietway 7 “Elephant & Castle to Crystal Palace” which runs in Portland Street and which is already part of London Cycle Network 23; the planned Southwark Spine running in Flint Street/Thurlow Walk and the planned Quietway 8 “Kennington Park to Burgess Park”.

TfL’s data in figure 4 show that the area has a very high cycling demand and the future demand for safer cycling environment will be increasing with the predicted population growth and the increasing jobs in the area.



FIGURE 4. TFL'S CYCLING DEMAND MAP. STRATEGIC CYCLING ANALYSIS 2017

A Cycling Level of Service (CLoS) was conducted in 2015 as part of the Public Realm scheme<sup>3</sup> based on the existing conditions. CLoS is based on the six design outcomes of safety, directness, coherence, comfort, attractiveness and adaptability.

TABLE 1. CYCLING LEVEL OF SERVICE 2015. AECOM

| CLoS Existing Results | Maximum (theory) | Maximum (actual) | Critical?  | Score     | %          |
|-----------------------|------------------|------------------|------------|-----------|------------|
| <b>Safety</b>         | 48               | 48               | Yes        | 17        | 35%        |
| <b>Directness</b>     | 8                | 8                | No         | 5         | 63%        |
| <b>Coherence</b>      | 6                | 6                | No         | 2         | 33%        |
| <b>Comfort</b>        | 20               | 20               | No         | 9         | 45%        |
| <b>Attractiveness</b> | 12               | 12               | No         | 6         | 50%        |
| <b>Adaptability</b>   | 6                | 6                | No         | 1         | 17%        |
| <b>TOTAL</b>          | <b>100</b>       | <b>100</b>       | <b>Yes</b> | <b>40</b> | <b>40%</b> |

<sup>3</sup> Walworth Road Public Realm, Scoping Report, London Borough of Southwark, CONWAY AECOM.

## PUBLIC TRANSPORT

The map in figure 5 shows that transport accessibility scores are very high (Between 5 and 6b), due to the high number of bus services and close proximity to E&C. Elephant & Castle is a major bus hub and Walworth Road and Camberwell oad is one of the busiest bus corridors in London, served by a significant number of bus routes. TfL's bus performance map in figure 8 shows that around the area there are performance issues which need to be taken into account.

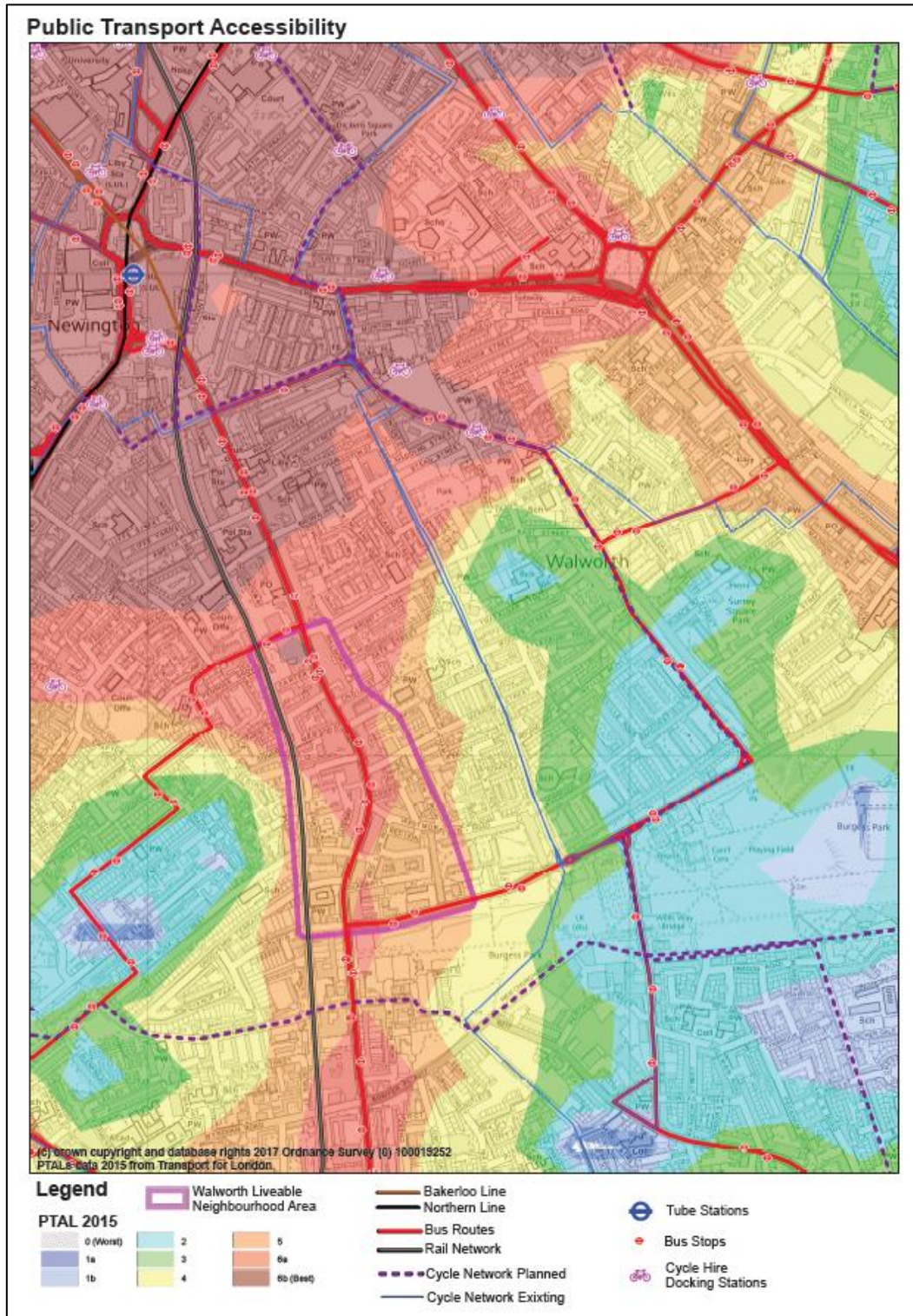


FIGURE 5. TRANSPORT ACCESSIBILITY AND CYCLE INFRASTRUCTURE MAP

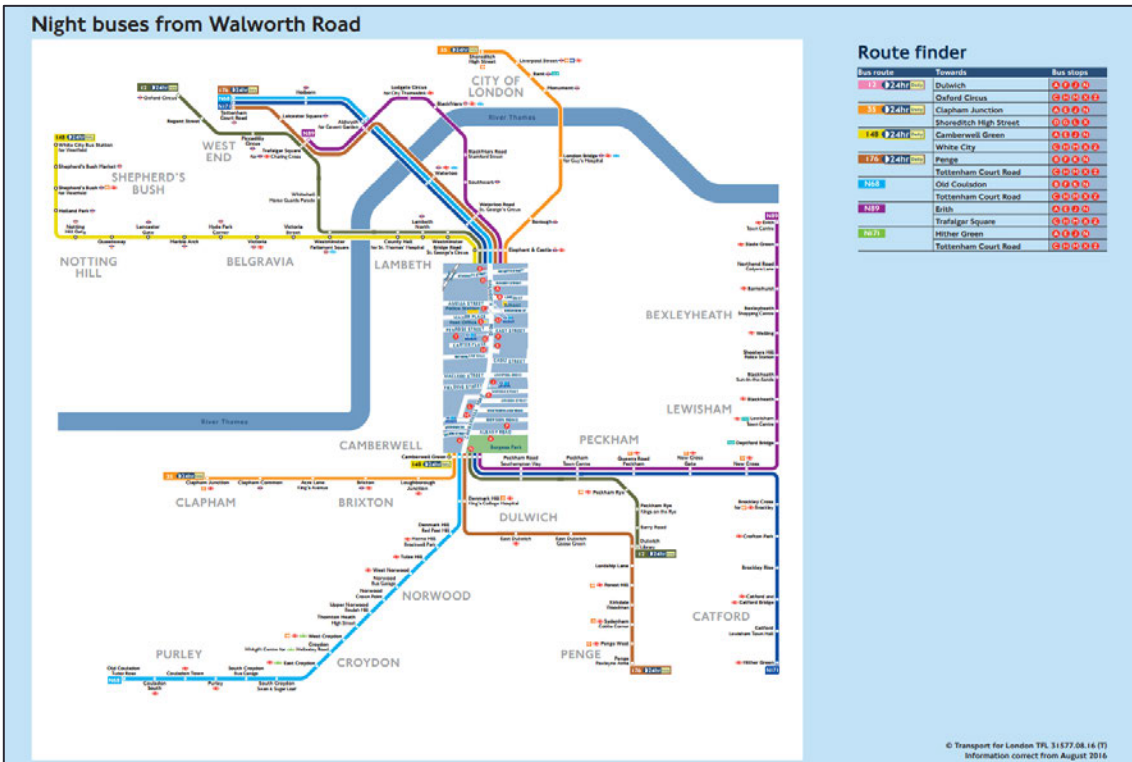
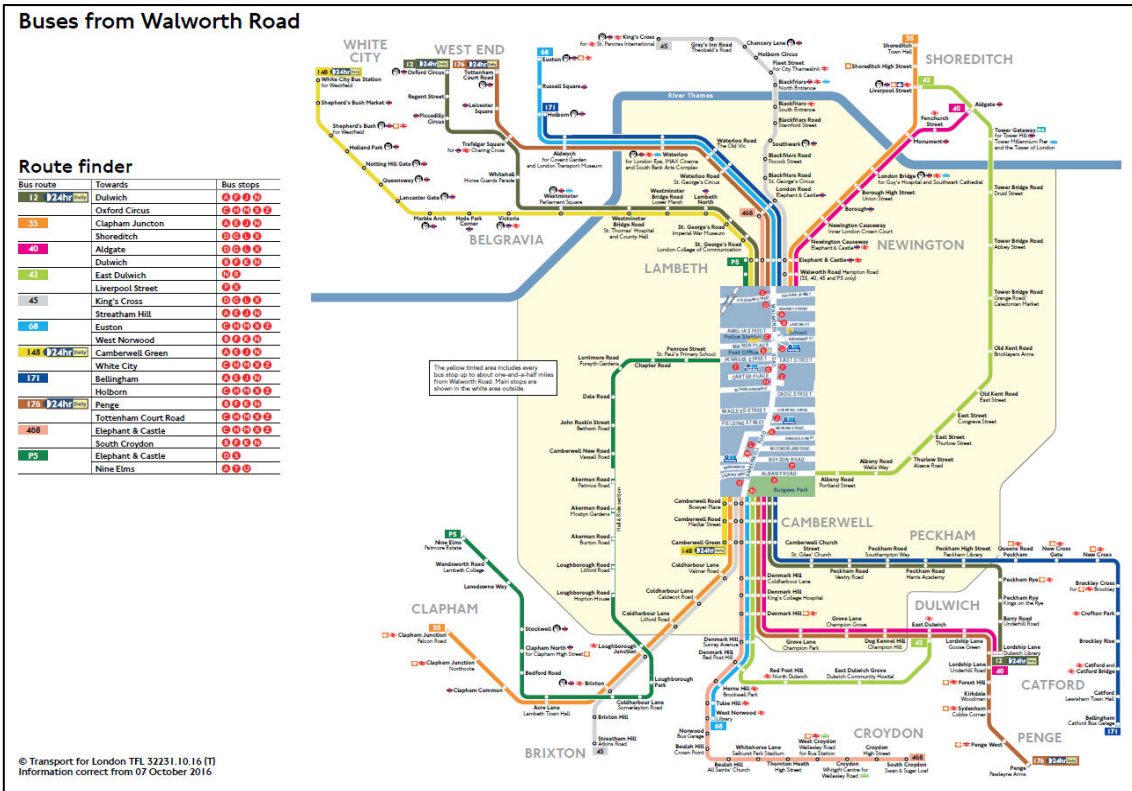


FIGURE 6. TFL BUS SERVICES FROM WALWORTH ROAD DIAGRAM. SOURCE: TFL WEBSITE

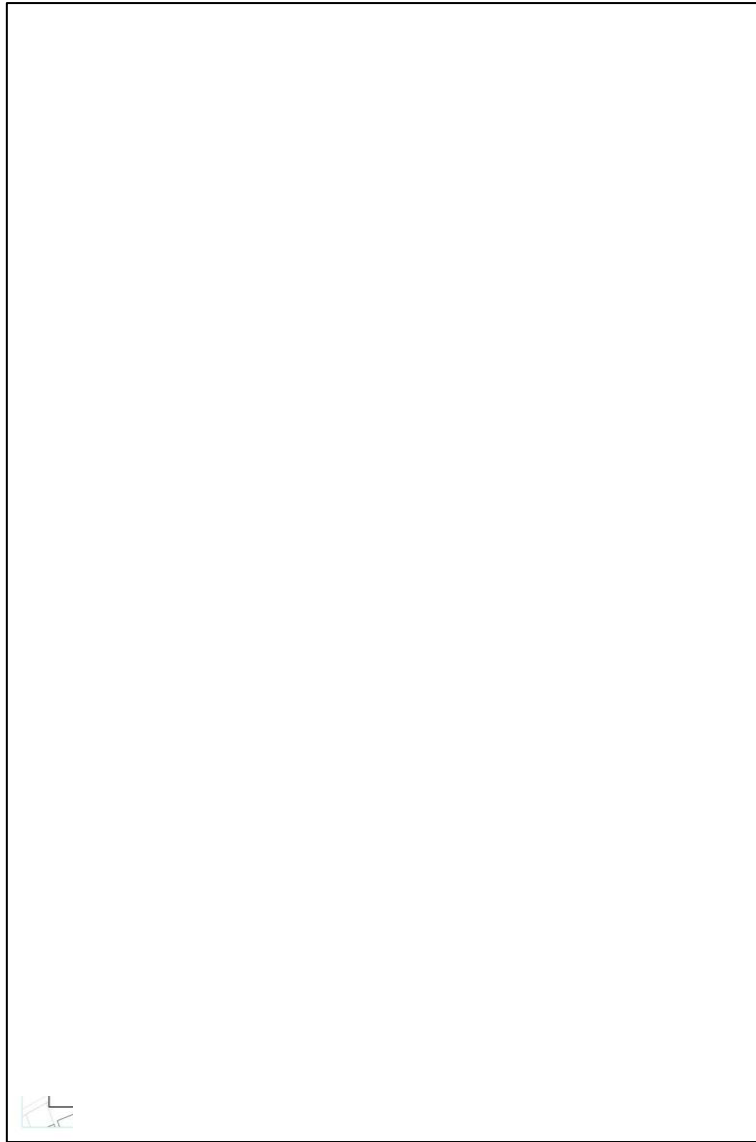


FIGURE 7. BUS INFRASTRUCTURE MAP. SOURCE: AECOM 2015 TRAFFIC ASSESSMENT

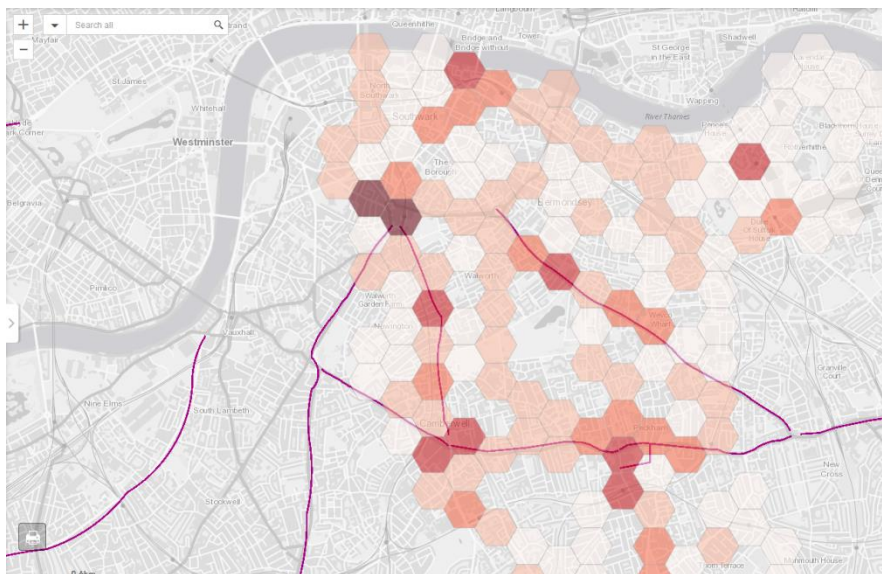


FIGURE 8. BUS PERFORMANCE MAP. TLF

## VEHICLES AND TRAFFIC

Walworth road is a busy corridor with delays non only on peak hours but through all the day and night. Figure 9 shows TrafficMaster delays data in weekday AM peak. Maps of other times and for weekend can be found in Appendix E. The Faraday Traffic Management Study performed in 2016 showed that the traffic in the neighbourhood has generally acceptable levels with some specific local issue. Merrow street has a high level of traffic with more than 1000 vehicles per day for a residential road.

The council did automated traffic counts (ATCs) in 2013 and 2015 as part of the 20mph project in Walworth Road (between Arnside Street and Merrow Street). This location has been surveyed again between 25<sup>th</sup> of September and 8<sup>th</sup> of October 2017 and the results will be available by the end of November 2017. A manual junction video survey has been undertaken as well in the same dates in 2017 at the junction with Albany Road. Other streets surveyed in 2017 are Fielding Street, Merrow Street and Liverpool Grove. ATCs have been undertaken in previous years in Albany Road, Merrow Street, Date Street and Liverpool Grove. Data about Southwark Traffic counts are available in Appendix E.



FIGURE 9. MAP OF AVERAGE DELAY. INFORMATION DERIVED FROM DATA PROVIDED BY TRAFFICMASTER OBTAINED FROM VEHICLES FITTED WITH GPS DEVICES

## PARKING AND CAR OWNERSHIP

The area is covered by three different Controlled Parking Zones which operate from 8:30 to 18:30. This allows the council to avoid overspilling parking, especially from non residents and commuters. Two car clubs bays are available in the neighbourhood and all the area is within 400m of them (5/10 minutes walk). The area doesn't have high car ownership (less than 0.45 vehicles per household in 2011) based on the Census data as shown in figure 10.

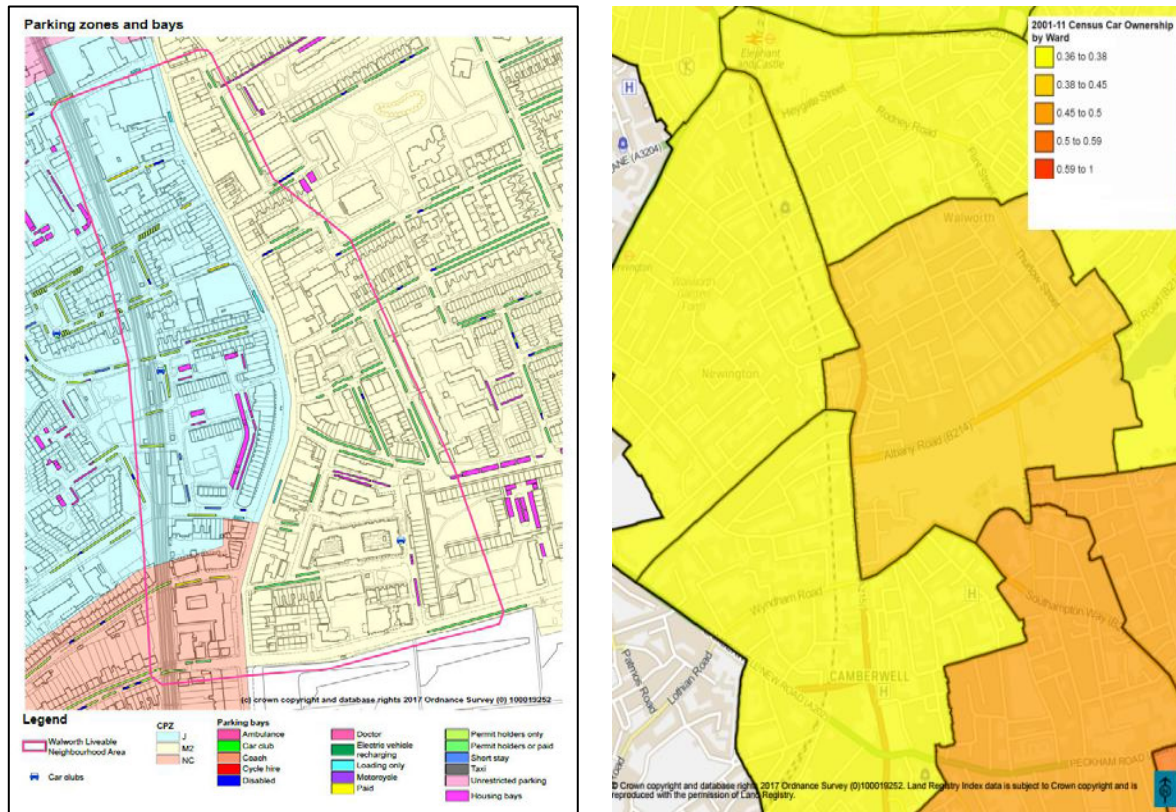


FIGURE 10. PARKING ZONES AND BAYS. - CAR OWNERSHIP (VEHICLES PER HOUSEHOLD). CENSUS 2011



## TFL STREET TYPES

The part of Walworth Road included in the proposed liveable neighbourhood includes two types of road classification: “High Road” which scores 3 in movements and 2 in places and “Core Road” which scores 3 in movements but only 1 in places. The side roads are classified as “Local Street” which score 1 in both movements and places. Albany Road is instead classified as “Connector” which scores 2 as a movement and only 1 as places. This shows that the scores which consider roads in the area as “Places” are very low which shows need for an improvement.

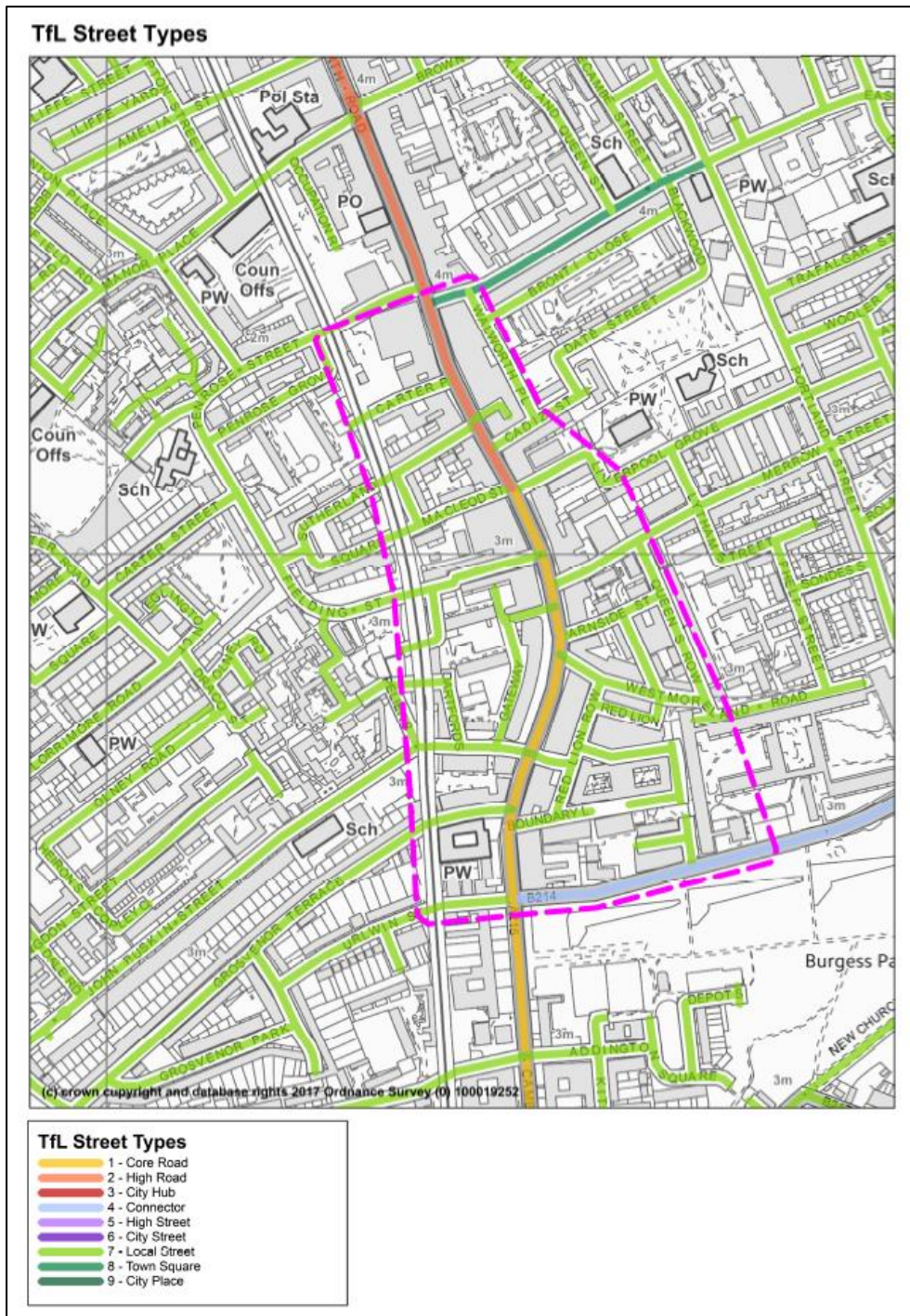


FIGURE 11. TFL STREET TYPES MAP

# ROAD SAFETY AND CRIME

## COLLISION ANALYSIS

The latest 36 months data to December 2016 shows that there have been a total of 145 collisions within and on the boundary of the proposed Liveable Neighbourhood. These collisions involved the following:

TABLE 2. COLLISIONS IN THE WALWORTH AREA. STATS 19

| 12 Months period | All | KSI | Pedestrians | Pedal Cycles | Motor cycles | Right Turn | Dark | Wet |
|------------------|-----|-----|-------------|--------------|--------------|------------|------|-----|
| 2016             | 50  | 0   | 9           | 13           | 19           | 4          | 18   | 5   |
| 2015             | 51  | 8   | 14          | 16           | 5            | 4          | 16   | 12  |
| 2014             | 44  | 0   | 5           | 25           | 0            | 4          | 10   | 7   |
| Total            | 145 | 8   | 28          | 54           | 24           | 12         | 44   | 24  |

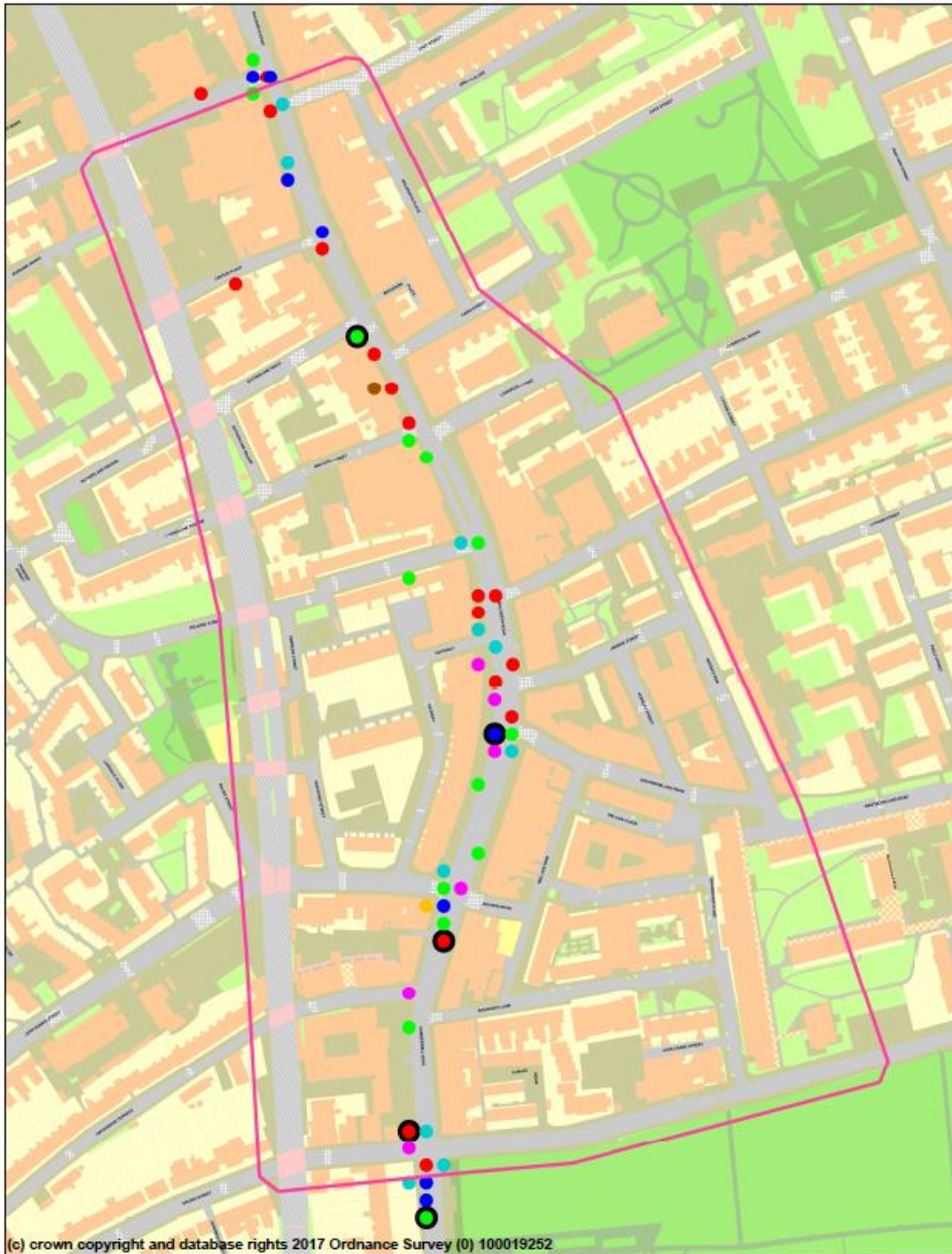
Map in figure 12 shows where the collisions form clusters, which is mainly at junctions.

The map in figure 13 shows the location of collisions from January 2014 to December 2016 by mode of travel. Collisions are concentrated in Walworth Road, with only few collision happening in side roads (Carter Place and Fielding Street).. A majority of the pedestrian collisions happened at the junction with Merrow Street and between Cadiz Street and Liverpool Grove. At this location the Walworth Road widens, increasing pedestrian crossing distance as pedestrian cross four lanes of traffic often away from the controlled facilities. Cyclist casualties are more spread across the area and the total number of collision has been increasing. There has been a steep increase of Motorcycle casualties from zero in 2014 to 19 in 2016 , while pedal cycle casualties have decreased from 25 to 13.



FIGURE 12. CLUSTERS OF COLLISIONS FROM 2014 TO 2016

People involved in road collisions from 2014 to 2016



- Legend**
- Walworth Liveable Neighbourhood Area
  - KSI
- Collisions 2014 to 2016 by Mode of Travel**
- Pedestrian
  - Pedal Cycle
  - Powered 2 Wheeler
  - Car
  - Taxi
  - Bus Or Coach
  - Goods Vehicle

FIGURE 13. PEOPLE INVOLVED IN ROAD COLLISIONS FROM 2014 TO 2016 (STATS19)

## JUNCTION ASSESSMENT

The most common cycle collision types tend to involve movements at or around junctions. A supplementary process for assessing junctions has therefore been carried out in 2015 by AECOM in order to inform scoring of the collision risk criteria in the CLoS assessment.

TABLE 3. JUNCTION ASSESSMENT SCENARIOS

| Factors needing removal or mitigation  | Possible improvements  | Further improvements  |
|--|--|---|
| RED  | AMBER  | GREEN   |
| Heavy left turn movement with high HGV mix.  | Entry treatment at side road junction.   | Left turn ban for general traffic.  |
| Opposed right turns with general traffic accelerating quickly into opportunistic gaps. | Continuation of lane across junction.<br>Right-turn protected island.          | Opposing right turn banned for general traffic.<br>Physically protected turn. |
| Left slip lane.  | Tight corner radii; pinch points removed (avoiding nearside lane of 3.2-4.0m). | Left bypass of signals.   |
| Guard-railing.   |  | Segregation of cycle movements using dedicated cycle signals.                 |
| Large junction radii.  | Bus lane of 3.0-3.2m or of 4.5m or more.                                       | Raised tables.  |
| High speed motor traffic through junction.   | 2m wide central feeder lane.   | Area-wide speed limit/reduction.  |
| Uphill gradients.  | ASLs (preferably 5m+ deep).  |   |
| Wide junction crossings.   | Signal adjustment to cycle movements.  |   |
| No clear nearside access.  |  |   |
| Multiple lanes.  |  |   |



FIGURE 14. MAP OF JUNCTION ASSESSMENT

## CRIME ANALYSIS

Many of the data about crime are represented at high level (by local authority, ward, LSOA etc). Data about crime at specific locations are also available by month and an analysis has been undertaken in the area of the proposed bid. Data from September 2016 to October 2017 show that the most common crimes in the area are violence and sexual offences, shoplifting, anti social behaviour and other forms of theft. These crimes also follow a seasonal pattern which sees crime increasing in summer when people spend more time outside their homes. These type of crimes are quite serious and are certainly a deterrent for people to walk and cycle as they might don't feel safe enough.

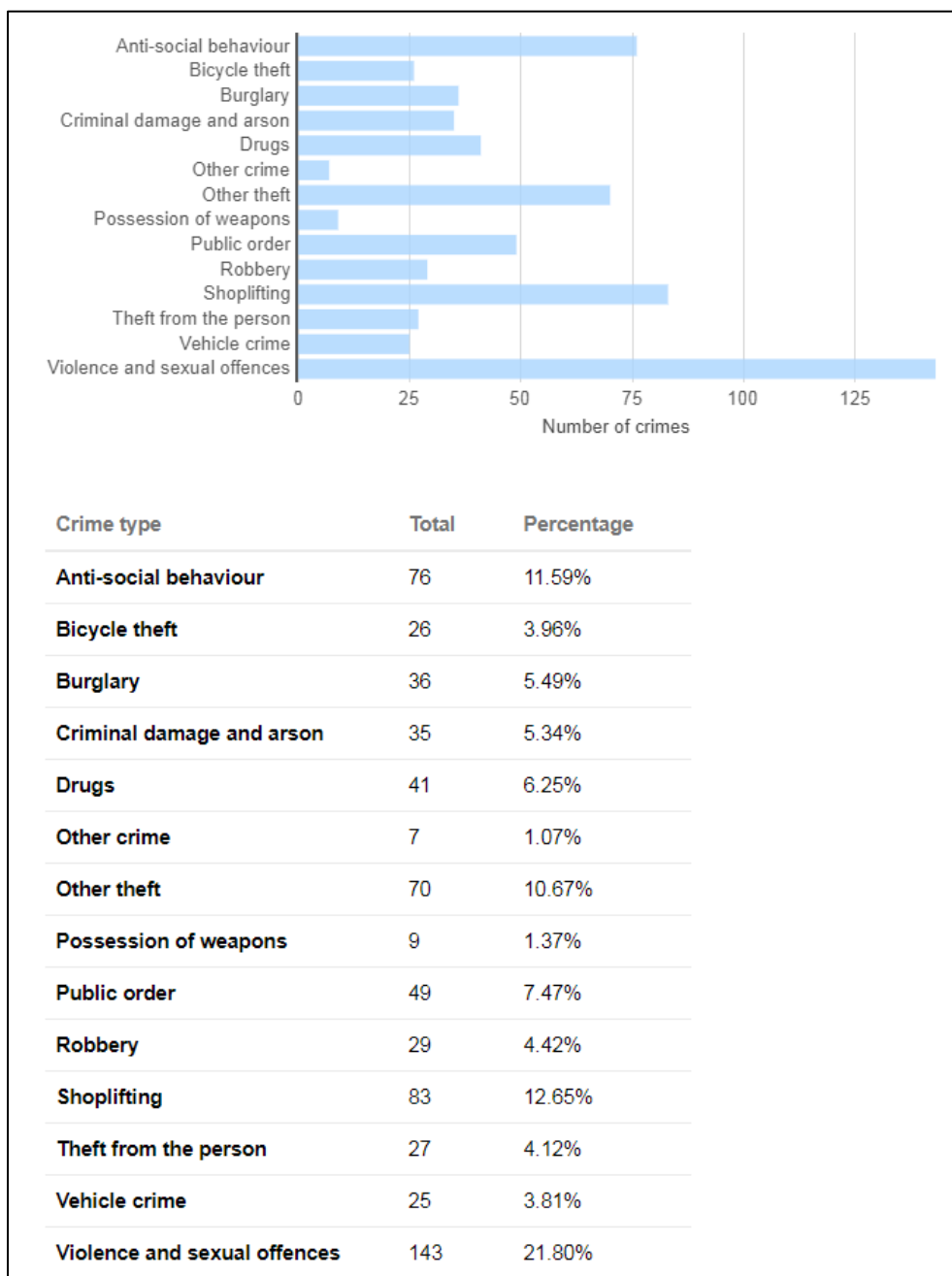


FIGURE 15. COMPARISON OF CRIME TYPES IN THE AREA BETWEEN SEPTEMBER 2016 AND AUGUST 2017.

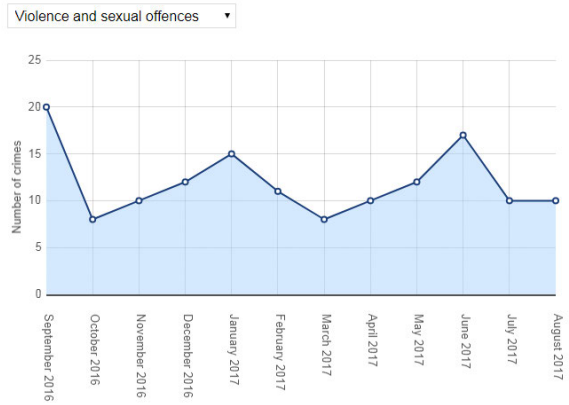
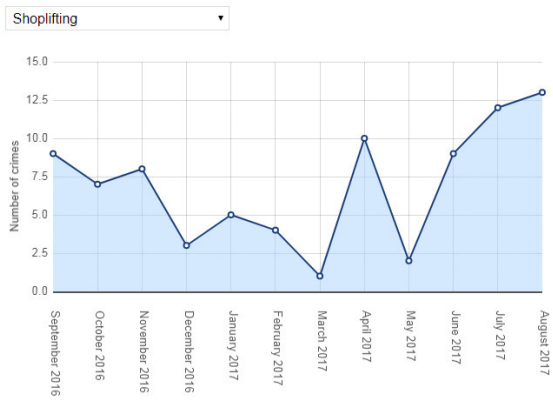
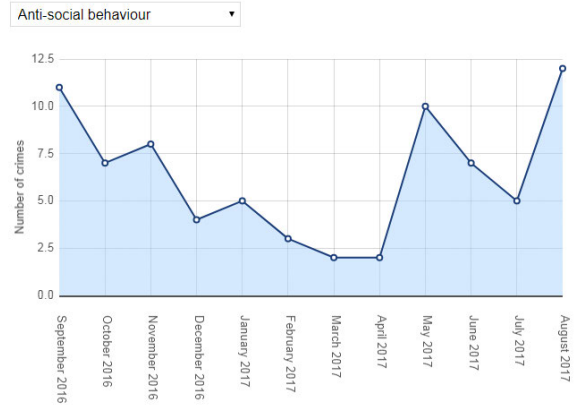
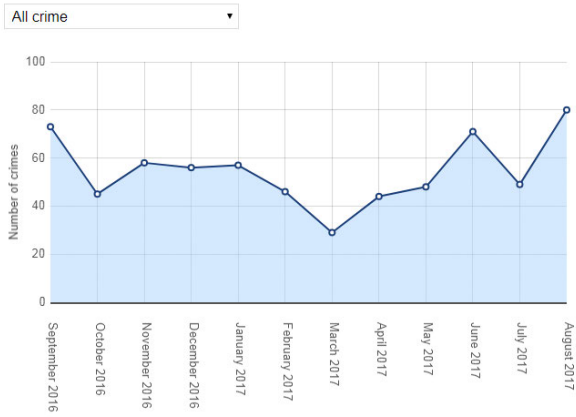


FIGURE 16. TRENDS OF MAIN CRIME TYPES IN THE AREA FROM SEPTEMBER 2016 TO AUGUST 2017

## DEMOGRAPHICS

### INDEX OF MULTIPLE DEPRIVATION

The September 2015 Department for Communities and Local Government – DCLG (2015) publication of the English Indices of Multiple Deprivation-IMD (produced through the UK Statistics Authority) has generated statistical evidence for Walworth. Walworth is an area of quite high deprivation with the London Index of Multiple Deprivation score between 25 and 35.



FIGURE 17. MAP OF INDEX OF MULTIPLE DEPRIVATION 2015



## EXPERIAN MOSAIC DATA

Mosaic UK is Experian’s system for classification of UK households which **classifies** the UK into 11 Main Groups and 61 distinct types. The Mosaic types selected for the analysis were the ones who were represented by at least 50 households, which are the following:

**Flexible workforce (392):** Self-starting young renters ready to move to follow worthwhile incomes from service sector jobs

**Metro High-Flyers (269):** Ambitious 20 and 30-somethings renting expensive apartments in highly commutable areas of major cities

**Crowded Kaleidoscope (224):** Multi-cultural households with children renting social flats in over-crowded conditions

**Inner City Stalwarts (141):** Long-term renters of inner city social flats who have witnessed many changes

**Central Pulse (129):** Entertainment-seeking youngsters renting city centre flats in vibrant locations close to jobs and night life

**New Foundations (55):** Occupants of brand new homes who are often younger singles or couples with children

**Uptown Elite (53):** High status households owning elegant homes in accessible inner suburbs where they enjoy city life in comfort

Map in figure 19 shows the distribution of households types in the area.

Another classification recently introduced recently is The Transport Classification of Londoners (TCoL) is a multi-modal customer segmentation tool developed by TfL that has been designed to categorise Londoners on the basis of the travel choices they make, and the motivations for making those decisions. The explanation of the categories is as follow and Figure 20 shows the distribution in the area:

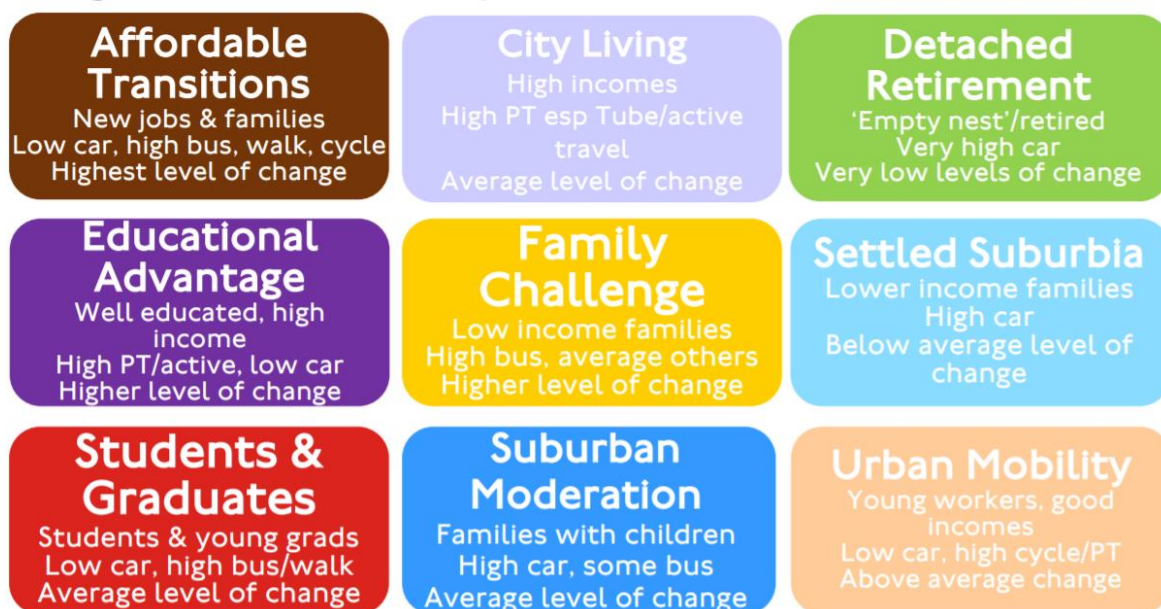


FIGURE 18. TRANSPORT CLASSIFICATION OF LONDONERS - SEGMENT SUMMARY. TFL 2017

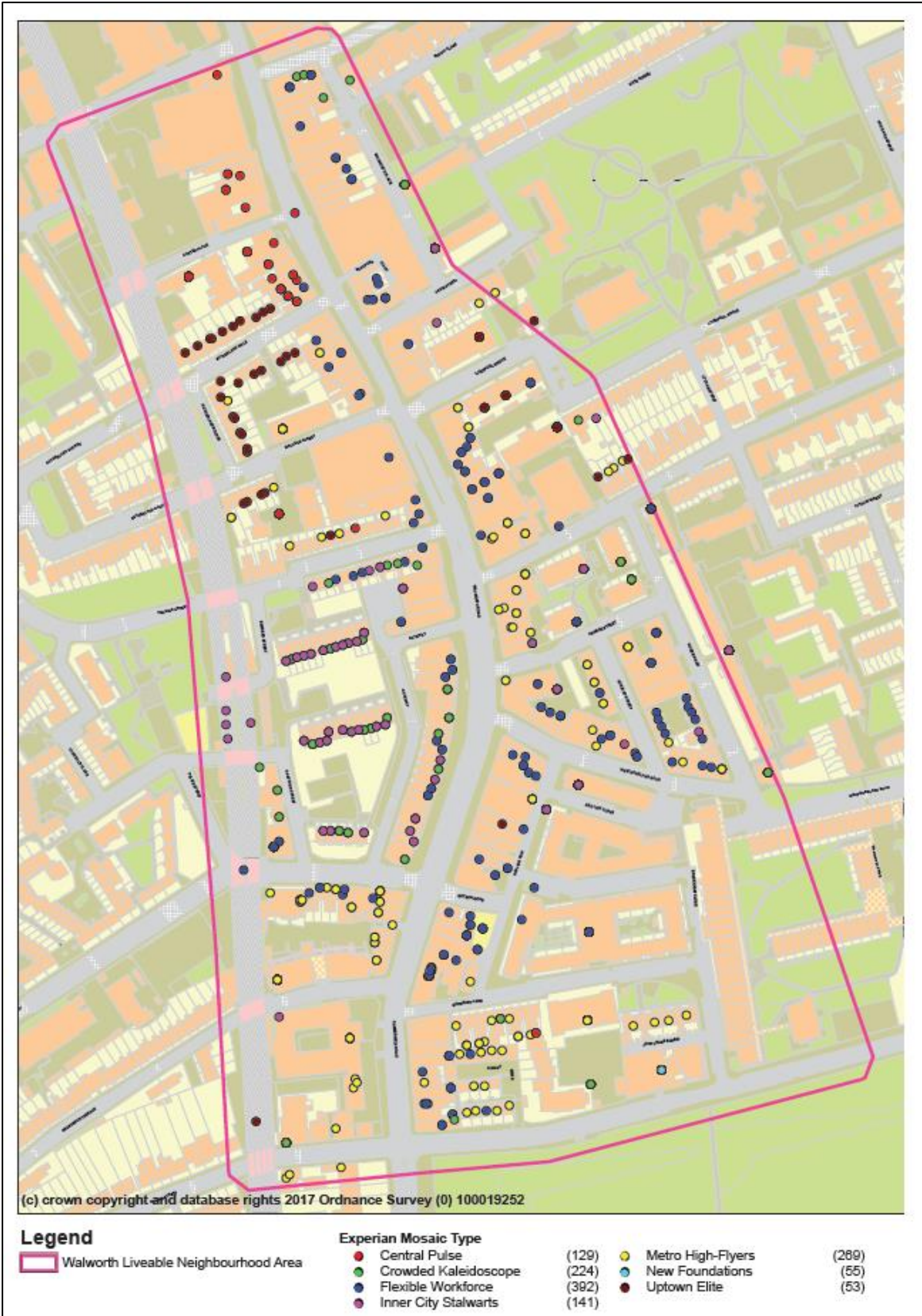


FIGURE 19. EXPERIAN MOSAIC TYPES DISTRIBUTION (7 MOST COMMON TYPES IN THE AREA)

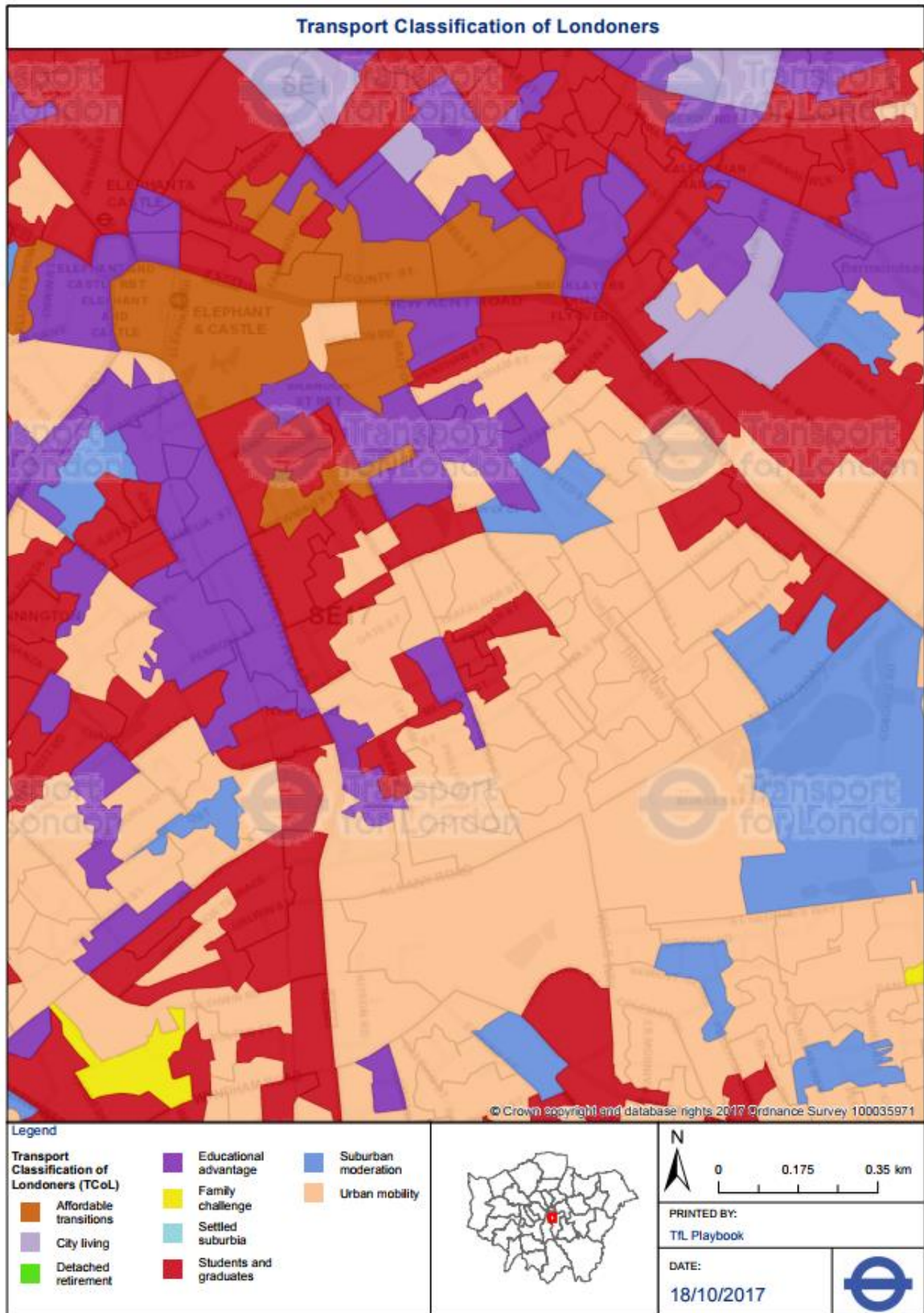


FIGURE 20. TRANSPORT CLASSIFICATION OF LONDONERS

The main categories living in the neighbourhood area are “students & graduates” and well educated people with good or high income with low car usage and high bus/public transport and walking/cycling usage which demonstrate the demand of good opportunity of active travel.

## PLANNING AND DEVELOPMENT

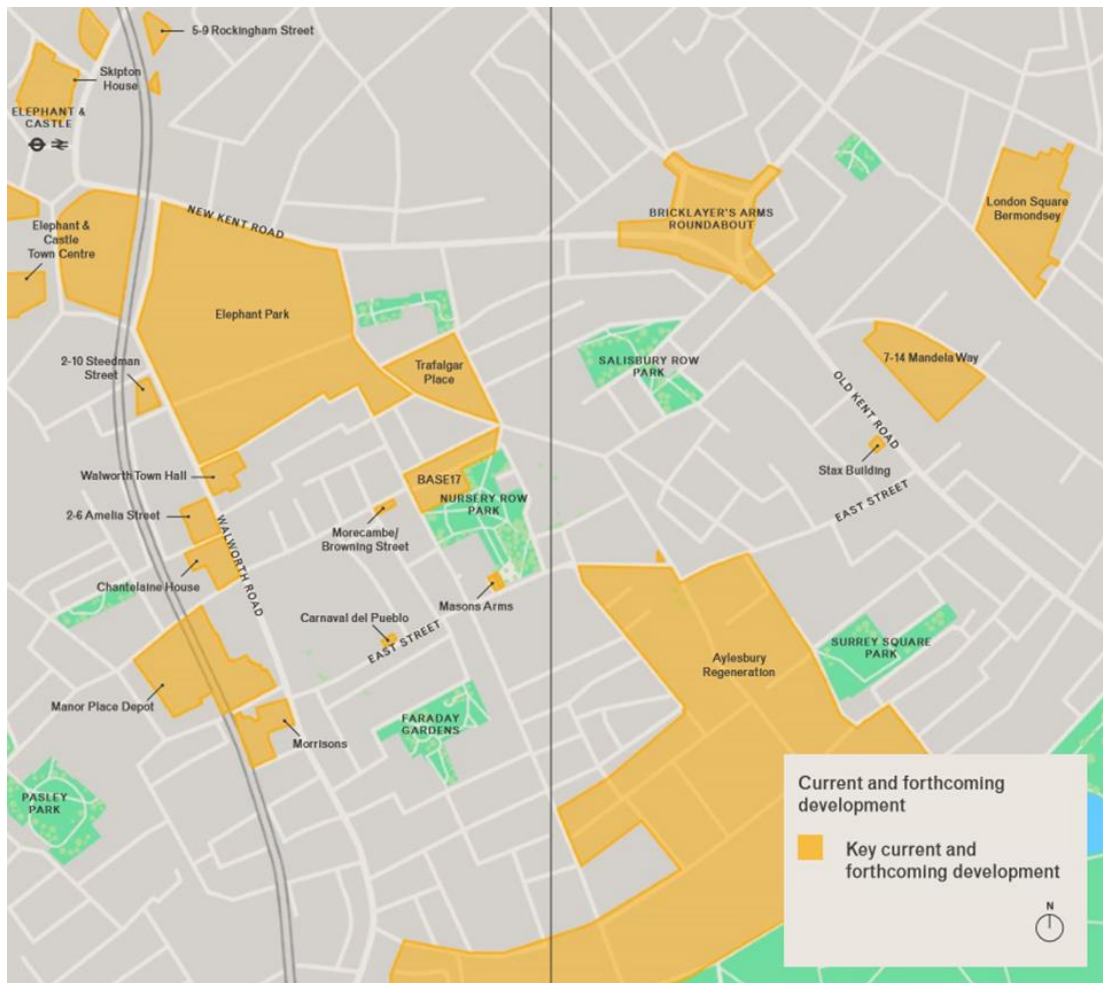


FIGURE 21. KEY CURRENT AND FORTHCOMING DEVELOPMENT

The area is bounded by areas of high development. On the East, the Aylesbury regeneration and on the north the Elephant & Castle Regeneration. The Aylesbury Estate will increase on size from 2,700 properties to 4,200. A core aim of the rejuvenated estate is to promote active travel in the form of walking and cycling and reduce reliance on car-based travel. The abandonment of the Cross-River Tram which had been intended to increase access to transport for the thousands of residents of the Aylesbury means that they are even more reliant on transport connections from the Walworth Rd as the estate is only directly served by the 343 and 42 bus routes.

The Elephant & Castle regeneration will provide 3000 new homes, over 50 shops and restaurants and a brand new park for the community.

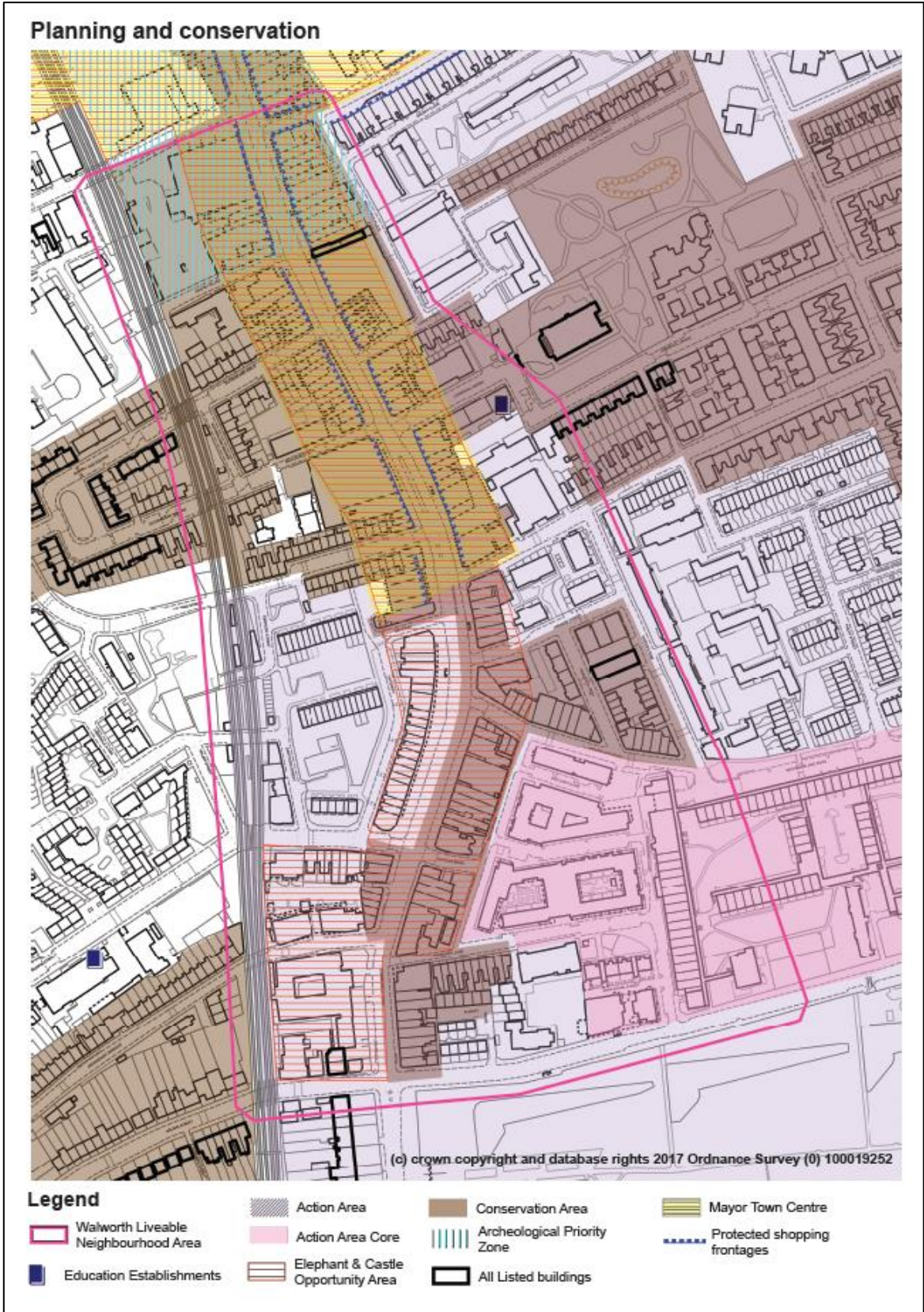


FIGURE 22. OVERVIEW OF PLANNING CONSTRAINTS AND POLICIES

There is a prevalence of retail and residential uses in the area, with some institutional and religious buildings and a few industries. Numerous schools are located around the area and some open spaces raise demands of good quality walking and cycling routes.

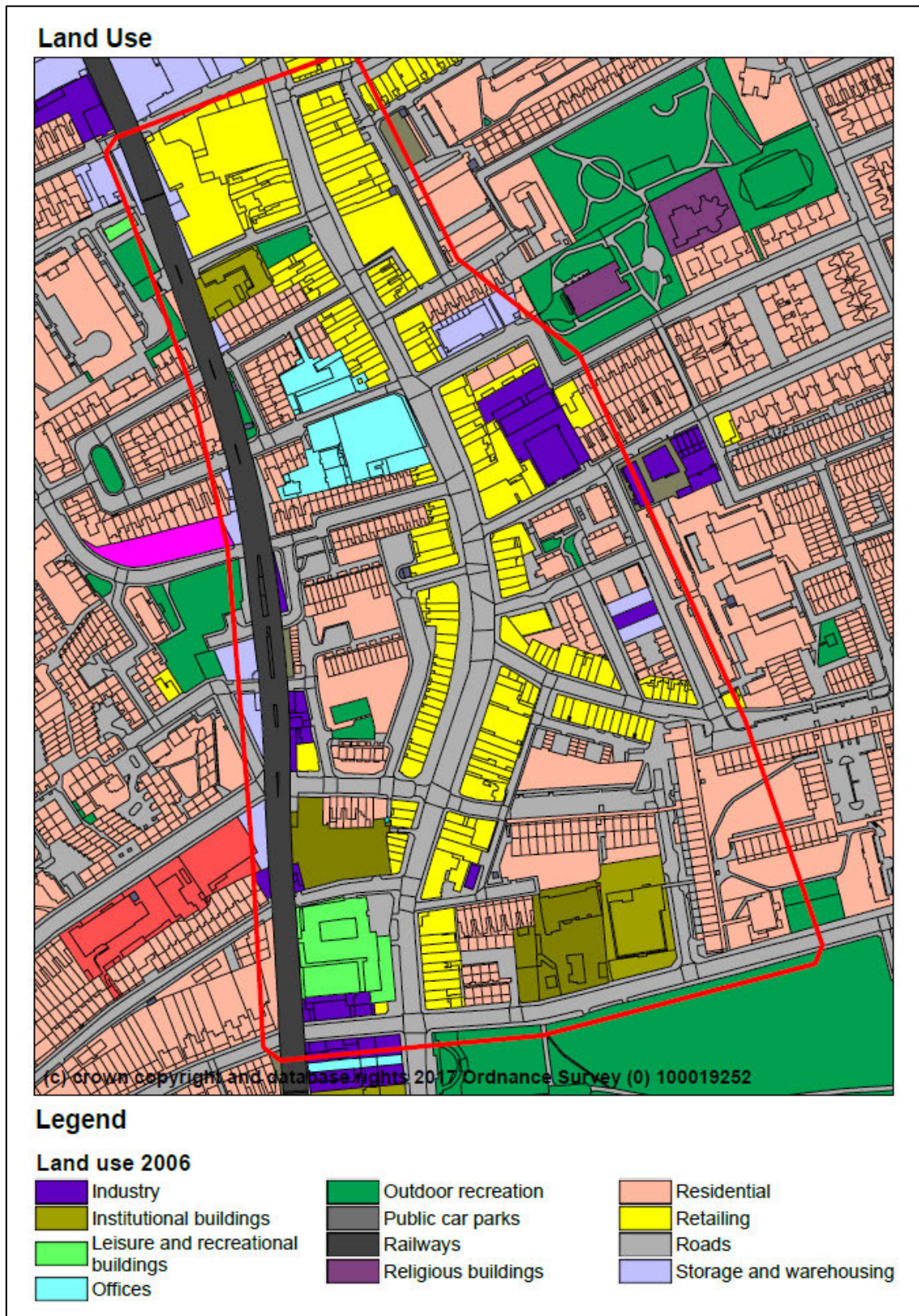


FIGURE 23. OVERVIEW OF LAND USES IN THE AREA

## AIR QUALITY

The proposed liveable neighbourhood area is part of a GLA Air Quality focus area (157 – Walworth Road / Camberwell Road / Camberwell Green). The roads in the AQ Focus Areas will benefit from the London Mayor’s Low Emission Bus Zones as some of the routes within the area use a neighbouring “Low Emission Zone”. The routes in the area are as follow:

TABLE 4. GLA AIR QUALITY FOCUS AREA BUS ROUTES

|                              |     |     |     |      |     |     |     |     |
|------------------------------|-----|-----|-----|------|-----|-----|-----|-----|
| Low Emission Zone Bus Routes | 12  | 45  | 171 | 345  | P5  |     |     |     |
| Other Bus routes             | 35  | 40  | 42  | 68   | 148 | 176 | 468 | X68 |
| Night Bus Routes             | N35 | N68 | N89 | N171 |     |     |     |     |

The Authority is monitoring NO<sub>2</sub> in Camberwell Church Street, which is just south of the scheme area. The summary of the results can be seen table 5 below the monthly results can be found in appendix G of this report.

TABLE 5. NO<sub>2</sub> AVERAGE CONCENTRATION - CAMBERWELL CHURCH STREET

| Year | Average concentration $\mu\text{g.m}^{-3}$ |
|------|--|
| 2012 | 82.48                                      |
| 2013 | 101.51                                     |
| 2014 | 95.42                                      |
| 2015 | 85.15                                      |
| 2016 | 81.45                                      |

TABLE 6. NEW ADDED LOCATIONS OF DIFFUSION TUBES IN JULY 2017

| Site ID | Location description                             | Map Reference |
|---------|--|---------------|
| SDT 106 | Post adjacent to 80 Camberwell Road              | 532409 177597 |
| SDT 107 | Lamppost 1045 - 45 adjacent to 351 Walworth Road | 532496 179101 |
| SDT 111 | Lamppost 31A - 239 Walworth Road                 | 532294 178354 |



FIGURE 24. GLA, LAEI 2013 AIR QUALITY MAPS (CONCENTRATIONS OF NO<sub>2</sub>, NO<sub>x</sub>, PM<sub>10</sub>, PM<sub>25</sub>)



## HEALTH DATA

National results show that excess weight and obesity among children are strongly associated with socio-economic status. More deprived communities tend to have higher prevalence of excess weight and obesity, and the strength of association increases between Reception and Year 6. At present 87% of Southwark schools are registered to the Healthy Schools Programme and 54% have achieved an award. This programme provides a framework for schools to assess their current practice in supporting healthy weight including strategies to promote healthy eating, physical activity, active travel and emotional wellbeing. Obesity in Reception is significantly higher than the Southwark average in Faraday, East Walworth and Camberwell Green wards. Excess weight in Reception is significantly higher than the Southwark average in Faraday, East Walworth and Camberwell Green wards. This supports the need for improvements and increase of active travel in this neighbourhood.

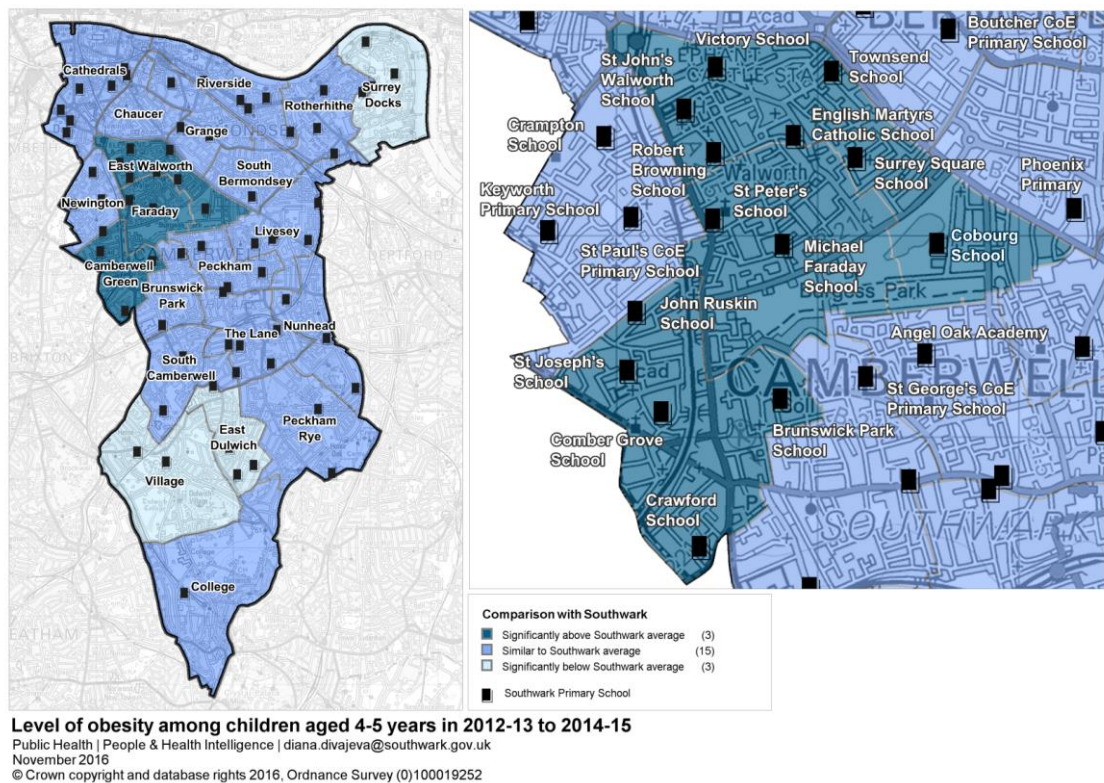


FIGURE 25. LEVEL OF OBESITY AMONG CHILDREN COMPARED WITH SOUTHWARK AVERAGE AND SCHOOLS INCLUDED IN AREAS ABOVE AVERAGE

DATA SOURCE: NATIONAL LN  
Southwest Public Health  
August 2017  
© Crown copyright and d

DATA SOURCE:  
Southwest P  
August 2017  
© Crown cop

FIGURE 26. PREVALENCE OF EXCESS WEIGHT IN RECEPTION AND YEAR 6 BY PRIMARY SCHOOL AND BY WARD OF RESIDENCE

The liveable Walworth area has an excess weight higher than the national average and many schools in the area have levels significantly higher than average.

## OBJECTIVES

The following table will explain how the scheme will contribute towards the liveable neighbourhood objectives while the following section will explain in more details the different concurrent projects and how they will fit into the healthy street approach.

TABLE 7. HOW THE LIVEABLE NEIGHBOURHOOD OBJECTIVES WILL BE MET

| Liveable neighbourhood objectives   | How these objectives will be met  |
|---|---|
| <i>Increasing the number of trips made by walking, cycling and public transport, and improving local connections by these modes</i> | <p>Improving the walkability through the delivery of the 'Elephant Link's programme. This includes the Low Line, green links programme</p> <p>Creating a stronger relationship to the town centre of Walworth Road to the green space of Burgess Park.</p> <p>Provision of 'Santander' cycle hire docking stations along the Walworth Road expanding the scheme to the area.</p>  |
| <i>Reducing motor traffic dominance, and increasing the active use of streets and public spaces</i>                                 | <p>Making improvements on the public realm through the healthy street approach;#</p> <p>Behaviour change events and projects such as Beat the street.</p>   |
| <i>Creating safer neighbourhood environment, including reducing road danger and improving personal security</i>                     | <p>Improve surface quality;<br/>review nearside lane width;<br/>slowing traffic down;</p>   |
| <i>Improving the efficiency and safety of freight movement</i>  | <p>Expanding on the Walworth Road Waste trial – timed collection.</p> <p>Working with partners in the East Street Market to improve recycling and consolidate deliveries and waste collection. Some of the actions proposed in their Delivery and Servicing Plan include:</p> <ul style="list-style-type: none"> <li>• Invite local businesses to join a 'framework directory' so that market traders can utilise their supply chains.</li> <li>• Invest in cargo bikes to transport goods locally.</li> <li>• Build awareness about 'foodmiles' and the wider impact of sourcing goods from afar.</li> <li>• Review the double yellow line provision and location of market pitches/ parking bays at the junctions of King and Queen St, Blackwood Road, Morcambe St, Portland St and Brandon St to improve sightlines for traffic and pedestrians.</li> </ul> |

|  |   |
|--|---|
| <i>Improving air quality to create more attractive neighbourhoods for people</i>           | Reduce traffic emission by reducing traffic through modal shift;<br><br>Introducing more green infrastructure;<br><br>Reduce exposure to pollution introducing walking links in residential roads.  |
| <i>Ensuring neighbourhoods have good connections to public transport</i>                   | Improving walking links to Kennington Station to the west via Amelia Street   |
| <i>Delivering outcomes across a wider area rather than individual streets or junctions</i> | Establishing active travel behaviour within surrounding residential communities leading to more active lives.<br><br>Connecting with existing and planned walking and cycle routes and transport hubs to link residential areas to jobs and town centres. |
| <i>Improving the quality and resilience of the public realm</i>                            | Improving the public realm through the streetscape strategy   |

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## WALWORTH LIVEABLE NEIGHBOURHOOD PROGRAMME PROPOSAL

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Liveable Walworth aims to reinstate a sense of place easy accessible. The scheme will contribute towards a modal shift from cars to active travel and public transport; better connectivity and accessibility in the wider area; a safer neighbourhood and street environment; improved air quality; good growth and economic development.

The area that has been chosen covers not only the Walworth Road itself but also the links to the large number of estates that sit on either side of the Walworth Road and all the other routes and destinations. This scheme will enable engagement with the community to identify the locations and issues that most need to be addressed.

There are many initiatives already ongoing in the area and new to come if this bid comes to be successful, which would work all together to make a sustainable and pleasant neighbourhood to live and work in or visit, and prepared for the growth expected.



FIGURE 27. ON-GOING SOUTHWARK PROJECTS IN THE HISTORIC CENTRE OF WALWORTH

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### THE HEALTHY STREET APPROACH

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The Healthy Streets Approach provides a framework for putting human health and experience at the heart of planning the city. It uses ten evidence-based indicators, shown below in Figure 1, to assess the experience of being on London's streets. Good performance against each indicator means that individual streets are appealing places to walk, cycle and spend time. Improvements against all the indicators across the city's streets will radically transform the day-to-day experience of living in London.<sup>4</sup>

Performing the healthy street check on the southern part of Walworth Road included in the area, the score obtained is 22.

The healthy streets check table with breakdown of scoring is available in Appendix A.

Detailed healthy street checks will be performed in each street that during the duration of the scheme will need any intervention.

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<sup>4</sup> TfL – Lucy Saunders

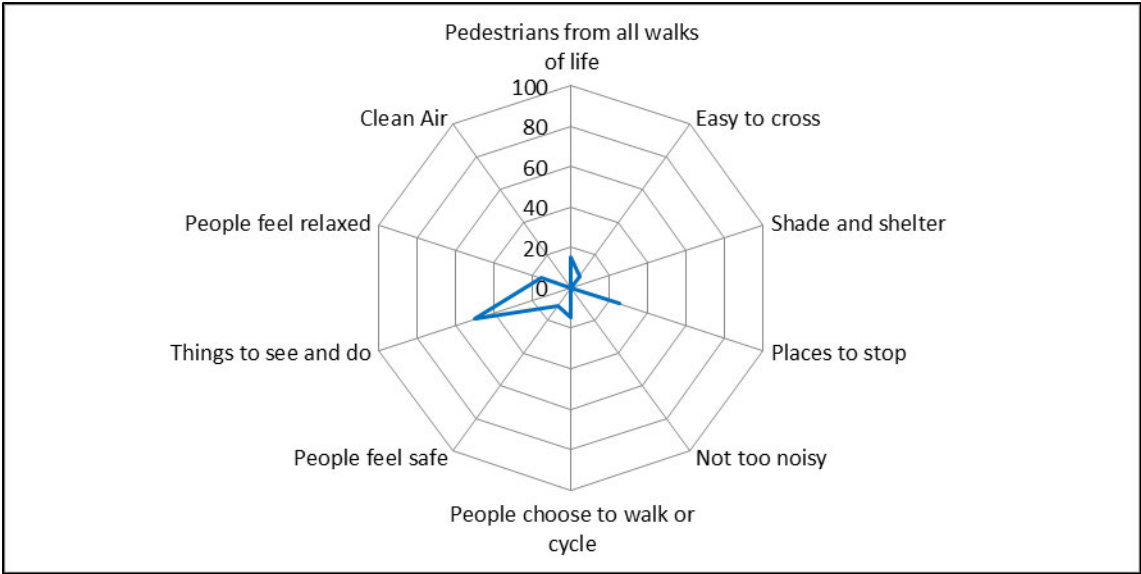


FIGURE 28. THE TEN HEALTHY STREET INDICATORS IN THE SOUTHERN PART OF WALWORTH ROAD.

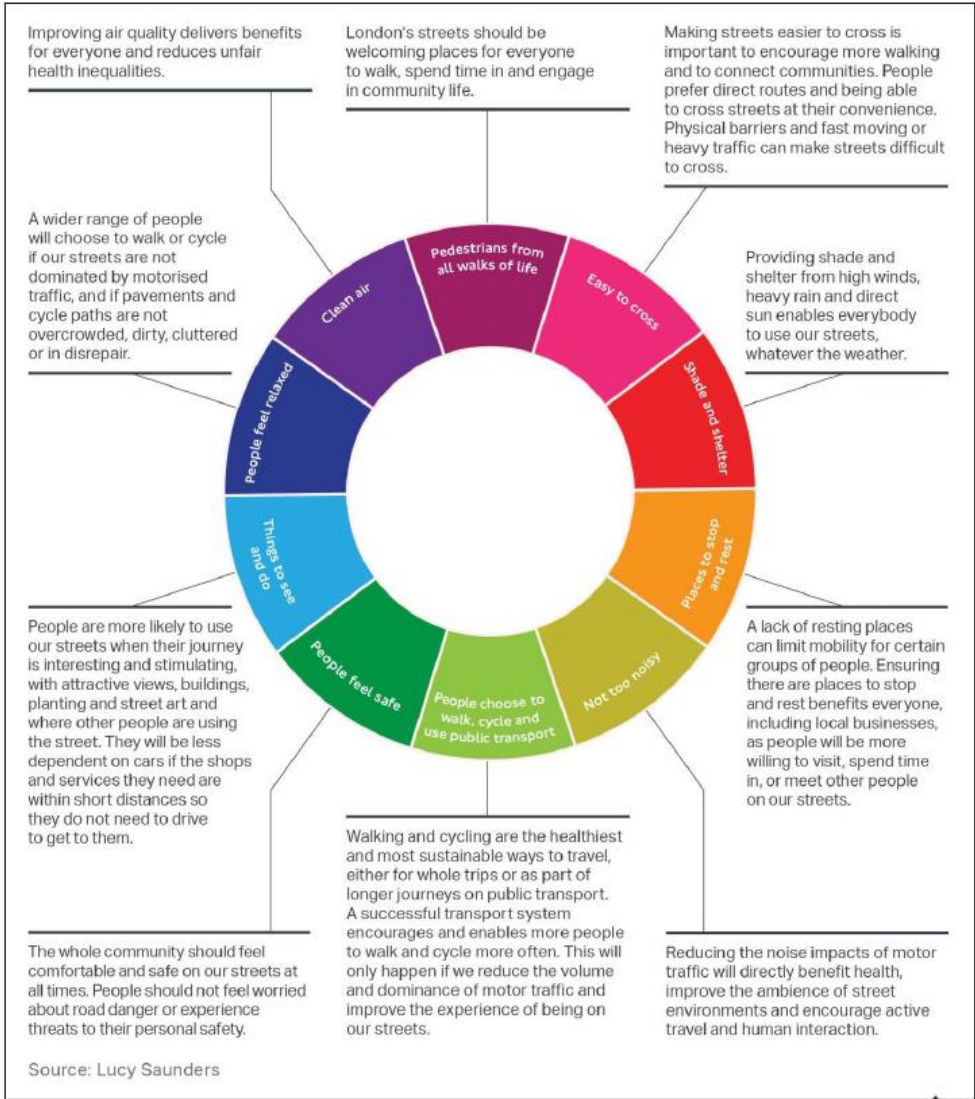


FIGURE 29. THE HEALTHY STREET APPROACH. LUCY SAUNDERS

## PEDESTRIANS FROM ALL WALKS OF LIFE

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### BEAT THE STREET

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Beat the Street is an award-winning intervention that encourages entire communities to walk, cycle and scoot more by transforming their town into a giant game. Beat the Street supports children and adults - including those with physical and mental health conditions – to increase their activity levels leading to long-term health benefits - a family orientated intervention. Residents are taken through a 7-week game (scientifically ideal time for people to develop a habit) which raises activity levels and makes them feel part of their community. People score points and win prizes by walking, cycling or running from point to point and tapping a registered and activated Beat the Street cards or fob on sensors (Beat Boxes) which are placed on lamp posts across the dedicated routes where the game is being played. Residents are then supported into longer term activity via communication and signposting to local activities such as Parkrun, zumba classes, healthy eating group etc.. . Through events and specific Twitter and Facebook pages to inform people of what is happening. Players are surveyed at baseline, end of the game and again at the end of the twelve moth programme with reports supplied.

In 2017, Beat the Street was delivered in 18 towns and cities throughout the UK with London boroughs such as Hounslow, Southall, Newham, Tower Hamlets, Waltham Forest and Hackney all successfully completing the programme, with many rolling it out in

As Walworth is an area with the high levels of childhood obesity, where change is coming and where private car ownership will be reducing there are good opportunities to attract funding to ensure the legacy of the programme is maintained.

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### EASY TO CROSS

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#### COLOURFUL CROSSINGS

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Southwark has already experience of creating useful pieces of arts which will make the public realm more attractive. As part of the London Design Festival, Southwark did a temporary art intervention which has been welcomed positively by the public and made crossings fun, capturing the attention and attract people to cross on the dedicated space.



FIGURE 30. COLOURFUL CROSSINGS DESIGN NEAR THE TATE MODERN.

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## SHADE AND SHELTER

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### Urban Park in the kerbside

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We will take inspiration from a project undertaken in Barcelona (Passeig De St Joan Boulevard), where they transformed a wide footpath with ambitious greening (SUDS), creating a park-like atmosphere.

These would create a greener, better quality environment and provide shade and shelter and a place to stop, rest and relax.



FIGURE 31. PARK IN THE KERBSIDE IN BARCELONA - PASSEIG DE ST JOAN BOULEVARD

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## PLACES TO STOP AND REST

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### HEALTHY HIGH STREET

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Southwark is part of the Healthy High Streets partnership which aims to tackle London's obesogenic food environment by generating evidence and learnings about how to positively influence London's high streets as well as how to effectively engage businesses in this process. The project is supported by Public Health England, Guy's and St Thomas' Charity and Battersea Power Station Foundation.

This project will run an Innovation Challenge to generate consumer-facing solutions, working with partners across London, including the private sector, social entrepreneurs and charities.

This will include ideas from businesses to encourage active travel such as free tap water, pram parking, awards or discounts etc..



The benefits expected to be achieved from delivery of this project, by March 2018, are:

- To have developed enhanced partnerships across London - achieving a concerted focus on obesity and recognising that positively changing the obesogenic environment is a priority for Londoners
- To have generated a number of innovative, place-based and sustainable solutions capable of scaling or being replicated to make the high street environment healthier
- To have generated research about what works both in terms of positively impacting on the high street environment but also in terms of engaging with local businesses
- To have continued to raise the profile of childhood obesity and the obesogenic high street environment in London
- To have positively impacted on the awareness and knowledge of both the public and high street retailers about the issue of obesity, the causes in London and what can be done to tackle it
- To have used the findings to influence at a policy and local level – ensuring that tackling the obesogenic environment is a high and achievable priority across the system.

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#### ST PETER'S CHURCH YARD AND LIVERPOOL GROVE/WALWORTH ROAD JUNCTION

St Peter's Church is a grade 1 listed building designed by Sir John Soane and built in 1823. A monkey enclosure was housed in the church grounds in the early part of the 20<sup>th</sup> century. The church's grounds connect to Faraday Gardens and provide a natural cut through to the school and Portland Street, and the Aylesbury Estate which is currently undergoing significant redevelopment. The church yard and parks also offer opportunities to sit and relax, although are currently underutilised. The church also hosts a café (currently unoccupied) and community space, Inspire, which also remains underutilised through a lack of local knowledge.



FIGURE 32. NEW *PASSAGEWAYS* AT THE WALWORTH ROAD/LIVERPOOL GROVE JUNCTION AND AT THE ENTRANCES TO ST PETER'S CHURCH YARD, CREATING VISUAL INTEREST INTO LIVERPOOL GROVE AND INTO THE CHURCH YARD

There is strong community support for permanent measures to improve the area with the project driven by local community, including the St Peter's Church, the Walworth Society, Southwark Living Streets and active residents, with a series of community events and consultations held, with the latest being in October 2015.

An early delivery of this physical intervention would be to trial to form part of the existing community engagement in creating a more permanent and extended design for the area.

#### THE PROPOSED TRIAL INCLUDES:

- Commission, design and deliver new *passageways* at the Walworth Road/Liverpool Grove junction and at the entrances to St Peter's Church yard, creating visual interest into Liverpool Grove and into the church yard. The designs will draw on the history of the area and the church architecture.
- Paint the silhouette of the church on Liverpool Grove using Volvo's luminous paint (appears at night) complemented by lighting measures in and around the church <http://www.volvocars.com/uk/about/our-innovations/lifepaint>.
- Commission and delivery of a moveable, curated sculptural works that will act as a visual path/activity, raising awareness of the church and its history – specifically the monkey enclosure – leading into St Peter's Church Yard and to the back of the church and the entrance closer to Portland Street.

#### KEY OUTCOMES OF THE TRIAL WILL INCLUDE:

- Improving the street layout and reducing car priority
- Creating places people enjoy being in and passing through
- Increasing the number of pedestrians coming from Walworth Grove/Liverpool Grove junction and using the church yard
- Increasing the number of pedestrians coming from the entrance close to Portland Street
- Increasing the dwell time in the church yard

#### HOW THE TRIAL MEETS THE HEALTHY STREET PRINCIPLES:

- The pilot supports greater levels of activity from all ages and abilities> there is currently lack of awareness about the green spaces and pocket parks that surround Walworth Road and are an unusual characteristic of the Walworth area. By creating interest on Walworth Road and drawing people into the church yard, this trial encourages exploration of the surrounding green spaces and walking routes.
- The trial raises awareness of a number of existing safe walking routes. By improving permeability into the church yard from Liverpool Grove and raising awareness from Walworth Road the trial will improve perceptions of safety and feeling comfortable to be within the church yard.
- The trial offers a quiet place to walk through, sit in and to explore the networks of pocket parks behind Walworth Road. The passageways also offer the potential of noise reduction if placed in another setting.
- The physical changes to the Walworth Road/Liverpool Junction and installation of a passageway will improve the safety of the crossing. The changes proposed to the road layout and suspension of parking will significantly improve the street environment.
- The church yard and surrounding parks offer a natural resting area to Walworth Road. The trial will increase the awareness of these green spaces and improve the wayfinding from Walworth Road.

- There are a number of seats within St Peter’s Church yard and within the park. By increasing awareness and wayfinding to these existing areas people will be encouraged to stop, rest, dwell longer and enjoy the public spaces.
- The installation on Walworth Road/Liverpool Grove junction will improve the street environment by creating a sense of the unexpected and stimulating and engaging people. This history of the church and the surrounding area will be presented in a fun and imaginative way.
- The trial provides alternative options for walking and cycling, raising awareness of the car free routes around this area. The widening of the footway on the Walworth Road/Liverpool Grove junction and the removal of car parking bays will also create a more relaxed pedestrian environment.

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## NOT TOO NOISY

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### EAST STREET MARKET DELIVERY AND SERVICING PLAN

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Working with partners in the East Street Market to improve recycling and consolidate deliveries and waste collection. Some of the actions proposed in their Delivery and Servicing Plan include:

- Invite local businesses to join a ‘framework directory’ so that market traders can utilise their supply chains.
- Invest in cargo bikes to transport goods locally.
- Build awareness about ‘foodmiles’ and the wider impact of sourcing goods from afar.

Review the double yellow line provision and location of market pitches/ parking bays at the junctions of King and Queen St, Blackwood Road, Morcambe St, Portland St and Brandon St to improve sightlines for traffic and pedestrians

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## PEOPLE CHOOSE TO WALK AND CYCLE

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### WALKING LINKS – WALK ELEPHANT

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Walk Elephant is a community initiative to improve walking routes across the Elephant and Castle. The initiative seeks to build on the success of the East Walworth green links project which has created a high quality route which connects the town centre with Burgess Park.

Many think of the Elephant and Castle as a busy traffic junction but it is so much more. There are so many hidden gems and oases in the Elephant and Castle, and this project seeks to link them all together, to create safe and enjoyable walking routes which people can ramble through on their way to work, the shops or home.

Improvements might include new crossings, landscaping, artworks, wayfinding, tree planting, or planters.

New York has a High Line and the Elephant and Castle has a Low Line. A key thread which weaves through the area is the railway viaduct and a new walking route alongside the arches called the Low Line. The Low Line idea was conceived by Southwark resident David Stephens and is gaining real momentum. Walk Elephant will promote a series of Low Line projects which will open up a new walking route through the area to connect with Bankside to the north and Camberwell to the south.

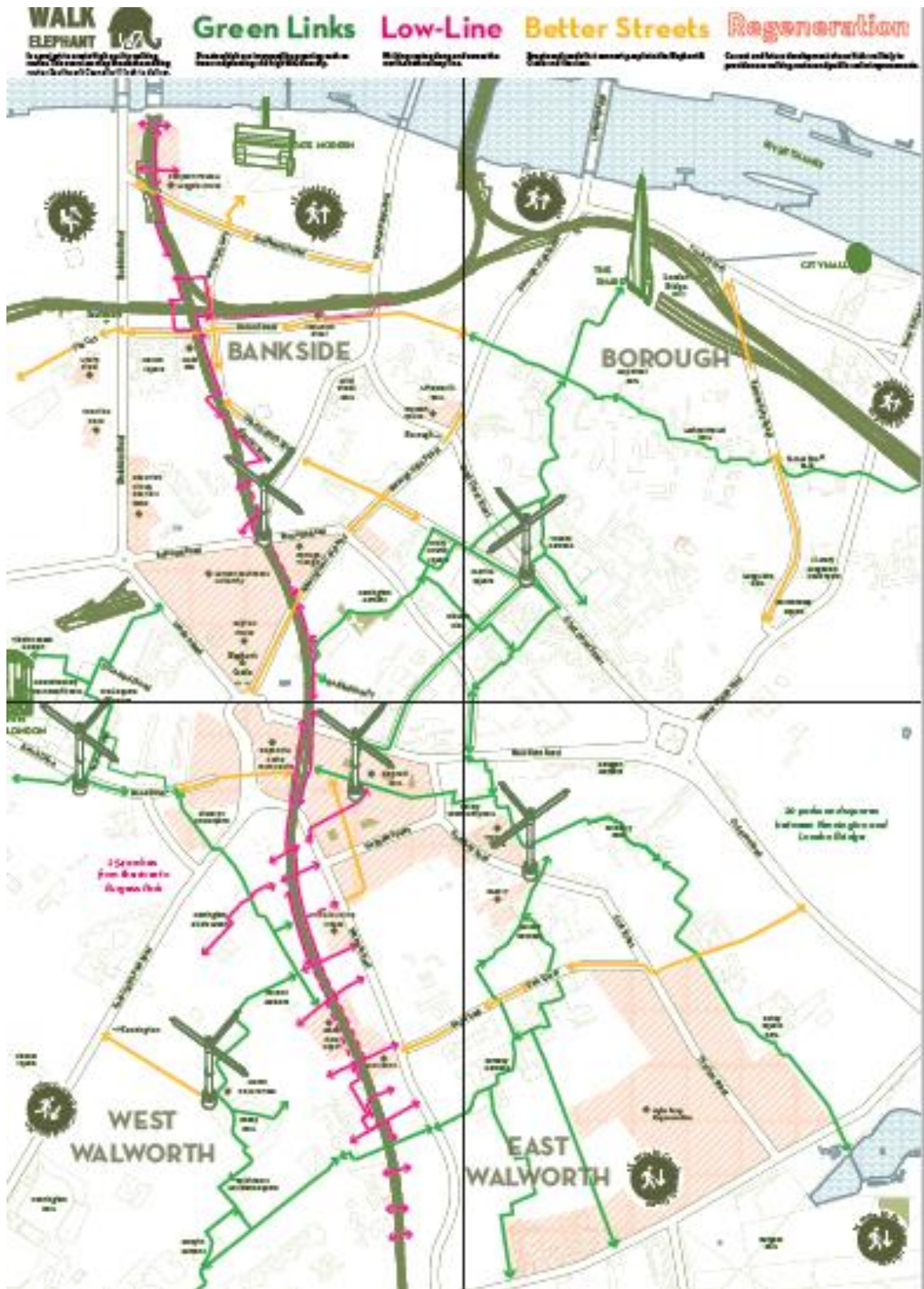


FIGURE 33. WALK ELEPHANT LINKS

## LOW LINE

Linking existing nodes of activity and enterprise, the Low Line offers an opportunity to develop, test and refine an approach to investing in the rail arches and their adjacent spaces and streets that can be replicated across large parts of the capital. The idea for the Low Line came from a Landscape Institute ideas competition called a 'High Line for London'. A local resident submitted an entry highlighting how the heritage and routes that run along the viaduct could be more productively used and enjoyed. Since then the Low Line is being written into planning policy

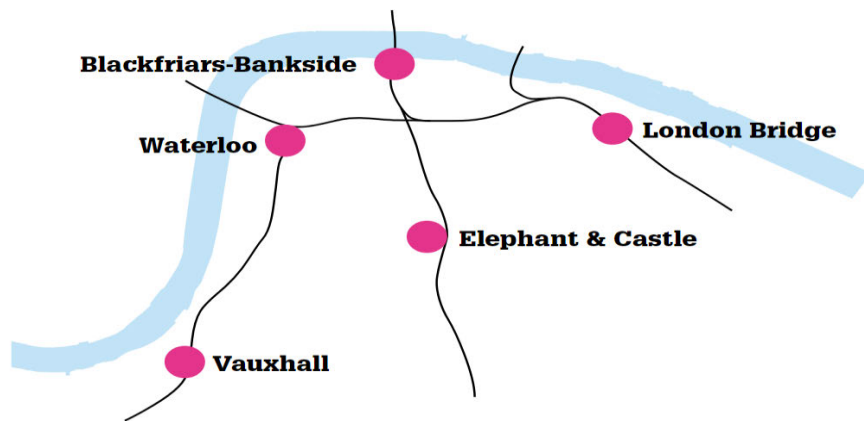


FIGURE 34. LOW LINE ROUTES OVERVIEW. BETTER BANKSIDE

### Newington Estate Low Line Project (PARTNERS: WS, LBS, HE)

This Walworth Society project through the Newington Estate aims to open up a short section of fencing that is part of an industrial estate and completely blocks the flow of the Low Line in this location. When this route is opened it will improve significantly access along the railway line for a large number of residents who live in the local area, thus revealing the impressive structures and the idea and purpose of the Low Line project. It will also encourage the generation of new ideas for more public uses for the railway arches.

The project will also open up a narrow local route into the Low Line it which is currently underused and abused. This new strip of land will be planted and looked after by an adjacent gardening group, who have carried out similar highly successful community garden projects.

Southwark partnerships with the BIDs, Network Rail and local communities are delivering Low Line projects – walking and cycling routes following the railway viaducts that cross the borough - with the first section successfully opening at Spare Street, in Walworth, with affordable workspace secured through planning agreement (see Section 6).



FIGURE 35. THE FENCING BLOCKING THE LOW LINE. © THE WALWORTH SOCIETY 2017.



FIGURE 36. PROPOSED IMPROVEMENTS WITH THE OPENING UP OF THE LOW LINE, IMPROVEMENTS TO THE FENCING AND PLANTING IN THE ADJACENT AREA. © THE WALWORTH SOCIETY 2017.

### CYCLE HIRE EXPANSION

Southwark is planning to extend the TfL’s cycle hire scheme in the area which would encourage people who do not currently see cycling as an option or do not own a bike to consider active travel as an option to move around the area. This would connect the area to Burgess Park, other town centres and to main destinations in Central London. Cycle hire is also important as it could be used as a trial by people who are unsure about cycling and encourage them to make a modal shift. The council has been working towards an expansion of the scheme and already identified some feasible locations.



### COMMUNITY AND RESEARCH PROJECT: WALWORTH LADDERS (PARTNER WS)

A Walworth Society project to bring Walworth’s Heritage to life experienced through walking through Walworth’s railway arches (east to west) or parallel to the railway via the emerging Low Line (north to south), an initiative included in the New Southwark Plan. The Dover and Chatham Railway line (1862) runs parallel with the Walworth Road and every residential community in west Walworth walks to the Walworth Road and its shops and public transport links by crossing under this railway line.

The so called ‘Walworth Ladders’ are where the railway intersects with the roads that run east-west from the Walworth Road. We propose to celebrate the history of each railway arch with enamelled panels telling a story about the history of that particular area. For example from the north, there is the railway bridge over the Walworth Road where the late 19<sup>th</sup> century Elephant and Castle, the so-called Piccadilly Circus of the South could be depicted.

Further south there is the site of the Walworth Manor, the site of the Royal Zoological Gardens, the historic Walworth village centre, the late 19<sup>th</sup> century civic improvements by the Parish of St Mary Newington Vestry at the site of the Manor Place Depot, baths and coroners court, late 18<sup>th</sup> century Walworth Garden and then finally in the south at John Ruskin Street, you have the site of the Walworth Road Railway Station (Locally known as the 'Shute' 1862-1916).



FIGURE 37. DEPICTING WALWORTH HISTORY THROUGH THE RAILWAY ARCHES – WALWORTH FESTIVAL 22ND JUL 2017© THE WALWORTH SOCIETY 2017.



FIGURE 38. COMMUNITY ENGAGEMENT FROM OUR HERITAGE CHAMPION, COUNCILLOR ELEANOR KERSLAKE – WALWORTH FESTIVAL 22ND JUL 2017© THE WALWORTH SOCIETY 2017.

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## PEOPLE FEEL SAFE

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### CRP – WALKING PROJECT –IMPROVING LIGHTING

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As part of the broader initiative Walk Elephant and through the Central London Sub-Regional Transport Partnership (CLSRTP), Cross River Partnership (CRP) has delivered an innovative lighting project to promote walking in Southwark.

CRP, the London Borough of Southwark, Southwark Living Streets, and the Newington Estate Residents Association have worked together to design and install a colourful, dynamic lighting scheme at the Steadman Street entrance of the Newington Estate. This project builds on CRP's pioneering work using lighting to overcome railway viaduct barriers to walking and movement, the Light at the End of the Tunnel.

The lighting scheme has been designed to encourage walking between bus connections on Walworth Road and Kennington tube station.

FIGURE 39. CROSS RIVER PARTNERSHIP LIGHTING SCHEME TO PROMOTE WALKING IN SOUTHWARK

Link to the project: <https://crossriverpartnership.org/news/lighting-scheme-to-promote-walking-in-southwark-switches-on/>

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### FARADAY TMS OUTCOMES:

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Southwark did a Traffic Management Study in the Faraday area in 2016. From this study we have identified that the movements of vehicles in this ward are at an acceptable level. However, the council is in contact with the schools within the Faraday Ward to discuss the possibility of consolidating their servicing through a joint Travel Plan and how they can reduce freight movements in the area. Other areas that have been identified that could be improved within the study area is the introduction of shared space on Liverpool Grove, Trafalgar Street, Wooler Street and Alysebury Road. The council wants to look at how the traffic movement on Merrow Street can be improved to avoid vehicles exiting Sondes Street onto Portland Street. A map with traffic counts in the area is available in Appendix F.



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## THINGS TO SEE AND DO

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### WALWORTH HERITAGE ACTION ZONE (*CONCURRENT BID*)

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Southwark Council is currently bidding for funding from Historic England to create a Walworth Heritage Action Zone.



FIGURE 40. WALWORTH VILLAGE HAZ

A significant number of heritage assets were identified throughout Walworth and, in particular, along the length of the Walworth Road. The work by the Walworth Society in 2015 led to the designation of the Walworth Road as a conservation area.



FIGURE 41. HAZ LOCATION PLAN SHOWING THE OTHER HERITAGE ASSETS: ARCHAEOLOGICAL EVENTS, MONUMENTS AND LISTED BUILDINGS.

There are Georgian fragments of both housing and notable pleasure gardens, productive orchards and flower nurseries that refer to Walworth’s more gentrified and prosperous history, with single and short terraces of houses set within gardens and fields. It is, however, primarily a story of a shopping and trading street. East Street market is one of the oldest markets in London and has existed in various iterations since the 16th century. Walworth was once an important civic centre with a fascinating social history, but its situation on a busy arterial road and the demise of its railway station has affected its identity in comparison to other villages. Walworth has potential to make greater use of its heritage to support its social, economic and environmental needs.

THE PROPOSAL HAS THE FOLLOWING OVER-ARCHING AIMS:

- To use the heritage of Walworth as a catalyst to support economic growth
- To protect the special character and social vitality of Walworth from large-scale development pressure that threatens to subsume it.
- To formulate one overall vision for sustainable growth in Walworth, which is managed in a manner that is sensitive to the historic environment and enhances the sense of place, understanding, knowledge and enjoyment for all people.
- Formulate a strategy that is capable of delivery within three to five years, to balance imminent development pressure.
- Work with our consortium to champion the special character of Walworth and engage with residents, retailers and local businesses to reinforce a sense of place.

This could be an opportunity to work together to create walking and cycling routes across the area which are not only a way to connect with the main roads, shops and transport but also routes to discover hidden heritage and make the routes interesting to walk around which would incentive active travel. The action plan for the HAZ will be agreed and implemented by the HAZ Working Group comprising Southwark Council, Historic England, Walworth Society, Southwark and Lambeth Archaeological Excavation Committee (SLAEC), Cuming Museum, the Museum of London (MOL), London South Bank University (LSBU), Lendlease, Notting Hill Housing (NHH) and Creation Trust.



FIGURE 42. KENNEDY'S SAUSAGE SHOP, CURRENTLY ON THE HERITAGE AT RISK REGISTER

REGENERATION PROJECT: GATEWAY ESTATE CANOPY WORKS

Southwark’s Improving Local Retail Environment (ILRE) programme is focused on supporting investment in and around the council’s strategic regeneration areas and town centres. This includes shopping parades on the fringes of the council’s regeneration programme that provide or could, with support, provide valued services for local communities, but might not directly benefit from regeneration funded initiatives and may struggle in competition with new or revitalised shopping areas and town centres. The Gateway Estate at the southern has council capital funding.

THE KEY DESIRED OUTCOMES OF THE PROGRAMME ARE:

- To support and spread the uplift and investment in strategic regeneration areas and on the fringes of town centres within Southwark.
- To improve local business environments that would otherwise be unlikely to receive investment
- To retain existing businesses
- To attract new businesses to vacant premises
- To create and champion incubator and pop-up uses in our high streets
- To increase the number of local employment opportunities
- To engage local businesses and traders (owners and occupiers of premises) in the scheme, resulting in local 'ownership'
- To encourage the establishment and capacity of local business networks
- To increase commercial activity
- To increase public safety and reduce fear of crime
- To improve the provision of local amenities (i.e. a broad range of shops and services to meet the needs of local communities) for existing new and emerging communities.

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## REGENERATION PROJECT: EAST STREET MARKET PHASE 2

There are opportunities to improve the existing fabric and public realm of the East Street Market area. A significant opportunity is to address the entrances to the market, both on Walworth Road and on Dawes Street. The gateway at Walworth Road provides a particular potential for restoration of historic buildings, improvements to shopfronts, improving the layout of the market and adding impactful signage to attract footfall.

A second Southwark Improving Local Retail Environment (ILRE) programme is available. The GLA awarded £175,000 from the Mayor's High Street Funding for Phase 1 of the East Street works which has been used to invest in new market stalls, gazebos and barrows to brighten up the market and strengthen its identity as one of the oldest street markets in London. New branding has been developed which will be rolled out along the stretch of the market. This branding will celebrate the diversity and history whilst creating a more inviting place for shoppers.

Phase 2 of East Street works is funded from Southwark's ILRE programme. £300,000 is being spent on market entrances and building frontage improvements, catenary signage, lighting and wayfinding to create a more prominent welcome to East Street Market and enhanced shopping experience. There are many heritage opportunities for enhancing the vibrant East Street Market and the project will deliver 18 new improved shop fronts.

These works will enhance East Street Market, support the traders and improve the relationship of the market to the surrounding shops. We will improve and restore shopfronts to enhance the high street environment and support businesses, this includes new signage, awnings, new shopfronts and restoration of pilasters. We are also working to refurbish and occupy vacant units along East Street.

EAST WALWORTH GREEN LINKS

The council is supporting the community project called “ East Walworth Green Links” which aims to create green links and walking routes between Elephant & Castle and Burgess Park which fits into our aim of connecting the town centre with the park to support physical activity, leisure activities, active travel and better air quality and green infrastructure.

**Park facilities and features:**

**Elephant Park**  
 \_ Natural meadow, native and mature trees  
 \_ Rain gardens and water features  
 \_ Play areas and picnic spots  
 \_ Pavilion and café

**Victory Community Park**  
 \_ Playground  
 \_ Nature garden  
 \_ Semi-wild area with fruiting and native species  
 \_ Sports area  
 \_ World plant border

**Sallsbury Row Park**  
 \_ Play area with trampoline and ball court  
 \_ Wildlife area  
 \_ Lee's Memorial – reflective space  
 \_ Youth shelter and peace garden  
 \_ Community orchard and veg garden

**Nursery Row Park**  
 \_ Play areas  
 \_ Wildflower meadow and community orchard  
 \_ Viewing hill – panoramic  
 \_ Seating area near East Street  
 \_ Volunteer workdays – monthly

**Surrey Square Park**  
 \_ Large meadows with native flowers  
 \_ Wildlife area  
 \_ Peter Martin community garden  
 \_ Natural play areas  
 \_ Ball court and trim trail

**Burgess Park**  
 \_ Chumleighwalled garden, playground and café  
 \_ Sports pitches and community sports centre  
 \_ Fishing and bird life lake with picnic areas  
 \_ Tennis courts; BMX track; outdoor gyms  
 \_ History trail; community food garden

**East Walworth Green Links**

Created by the 5 parks friends groups, the East Walworth Green Links is an alternative way of travelling between The Elephant & Castle and Burgess Park, visiting the smaller parks on the way. For those on foot or bike, and not forgetting the wildlife, the green link offers safety, quietness, greenery, cleaner air and relaxed travel.  
**Try it – you will be amazed.**



**Volunteering:**

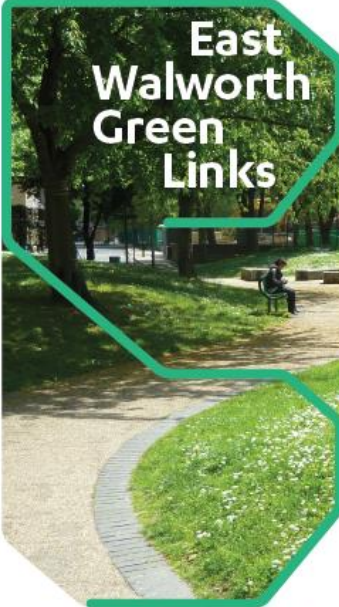
We always need volunteers to help keep the parks healthy and looking great. Please get in touch if you can offer some time or could look after a small part of your local park.

Contact details for each park are referenced overleaf.

**Southwark Council  
Parks Department**

The parks team works with the local community groups to oversee the day to day running of the parks, the improvement of facilities on offer and increase amenity and biodiversity value. All parks hold the 'Green Flag Award' 2016

[parks@southwark.gov.uk](mailto:parks@southwark.gov.uk)



**A quiet, safe and green way to travel between the parks in East Walworth**



FIGURE 43. EAST WALWORTH GREEN LINKS LEAFLET.

## COMMUNITY ENGAGEMENT

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Our approach to engagement has a strong focus on communication and consultation, but moves beyond these to more active and meaningful engagement on how the council delivers services, change, and policy. The four key strands of our engagement are:

- **Communicate** – where we provide high quality, comprehensive information in a range of formats so that residents can choose the best option for them.
- **Consult** – when we ask you to tell us what you think about something, by completing questionnaires, online surveys or feedback forms, attending forums or one-off focus groups and we listen to what you tell us before we take any action.
- **Decide together** – where we work closely with residents to share ideas and options and together decide what we are going to do.
- **Act together** – where we work with our partner organisations on shared

We have constantly engaged with the community in the past and continuing doing that. There are many active community groups which often collaborate with the council in projects, such as Southwark Living Streets and the Walworth Society.

At the moment there is a consultation going on about walking links for the project “Walk Elephant” which is using commonplace: <https://walkelephant.commonplace.is/about>.

Further, we have recently engaged residents in borough wide consultations such as the Cycling Strategy and the Kerbside Strategy. As a result we have a record of useful comments and suggestions about their roads and aspirations.

## APPENDICES

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### APPENDIX A – EXAMPLES OF OTHER PROGRAMMES AND PROJECTS DEMONSTRATING SOUTHWARK'S ABILITY TO DELIVER QUALITY PUBLIC REALM IMPROVEMENTS.

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#### SALISBURY ROW: THE PEOPLE'S PROJECT

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Salisbury Row is a neighbourhood located between the Bricklayers Arms roundabout and Elephant & Castle in Southwark. For residents who live in the terraces of houses around Salisbury park, streets dominated by traffic were an intrusive fact of life. An attitude survey in 2007 highlighted the need for reducing vehicle speed (70%), a desire for greener streets (63%) and streets with pedestrian and cyclist priority (62%). Dependence on the car for local journeys was increasing, as were volumes of traffic. Streets were closed in an attempt to limit those travelling at high speed looking for shortcuts.

#### THE PEOPLE'S PROJECT

The Salisbury Row project builds on the enthusiasm and commitment of the community and epitomises the objectives that underscore the Mayor's Transport Strategy and Southwark Council's transport policies for achieving more accessible and sustainable travel patterns with streets as social spaces. Transport for London (TfL) contributed £1.75 million to the scheme implementation through the then Area Based Schemes (now Major Schemes) LIP funding and Southwark Council contributed £160,000 overall. Working in close partnership with TfL and the community, Southwark Council commissioned Mouchel in 2007 to progress the design solutions and facilitate consultation. The work was completed in 2010 by FM Conway, the appointed contractors. All members of the team have been committed to the revitalisation of the area in a way that fully responds to community goals. Engagement from the outset involved innovative techniques to ensure that the views of individuals and user groups were heard. Challenging the ABS guidelines, a 'design for real' approach was used during early meetings to enable the community to put forward their ideas. Children's art events, attitude surveys, walkabouts, workshops and exhibitions were organised. In October 2010 fifty children and adults came together for a community planting day.

#### THE VISION

The vision that emerged was a slow-speed, greened environment which would reduce traffic dominance and promote local, sustainable transport. It recognised the role that established local assets could play in a more integrated environment where car and community co-exist whilst the prime purpose of the local 'living' environment is respected. It was a vision focused on accessibility, safety and quality. Design solutions within this integrated whole included carefully planned one-way systems, partial road closures, sensible traffic calming solutions and shared spaces. These closures transformed streets into an extension of Salisbury Park. A new community Square has been created. The Park has become more inviting and is widely used by the community, to exercise and play, and as a valuable cycle and walking route. The 'play street' outside the Townsend Primary School entrance creates a doorstep play space for the local children. It supports the school travel plan by encouraging children and parents to walk to school. Pedestrian activity during morning peak has increased 379% and car travel to school has reduced from 26% to 9% with a 7% rise in children walking.

## AN EXCELLENT RESULT

These 11 connecting residential streets have been transformed into safe, sustainable, social, slow-speed streets but more importantly this has tangibly become a place where people are meeting, playing, walking, cycling, exercising and living. This investment into the environment and the lives of local people has produced a dramatic shift in behaviour. Compared to 2007 surveys, 2010 has seen a 58% reduction in vehicle travelling over 20mph and a 71% overall reduction in traffic. The improvements have increased peak morning pedestrian numbers across all the streets by 83%. The feedback from the 2010 attitude survey is further evidence to these changes:

- + 68% of people think that their street is an attractive environment, up from 40%,
- + 71% of people think it is now pleasant for them and their family to walk around the neighbourhood, up from 53%,
- + 49% of respondents view their cycling routes as good to very good, up from 23%,
- + 50% of people consider the road safety levels good or very good, up from 27%, and
- + 72% of people rate the pavements as good or very good, up from 32%.

As a result, this project established more accessible and sustainable travel patterns with streets as social spaces in Salisbury Row.



Before: an unwelcoming approach to school on Townsend Street



After: a safe, colourful pedestrian-friendly play street



Before: Mason Street divides the green space at Crosslet Street junction



After: the park is connected with an active travel route

FIGURE 44. SALYSBURY ROAD'S PROJECT. WALWORTH SOCIETY, SOUTHWARK'S LIVING STREETS 2011

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## FLAT IRON SQUARE – A NEW URBAN SQUARE IN THE HEART OF BANKSIDE

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**Delivery Partners:** Southwark Council and the Greater London Authority

Designed by the Stirling Prize winning architects, Witherford Watson Mann, a new urban square was created in 2013 at a cost of £474,000 as part of the Bankside Urban Forest programme. A road was closed to connect a parade of shops to a former council toilet block which has been transformed into a café with a large green oak timber frame which houses a wild flower green roof.

The project has created a new public open space in an area with a rapidly increasing population, providing a high quality environment for both pedestrians and cyclists, framed by landmark green roof with 100 sqm of bluebells, wild flowers, ferns and ivy.



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## MORE LONDON – A NEW QUARTER AT LONDON BRIDGE

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Historically the north Southwark riverside area suffered from high unemployment and under investment. The council supported developers More London through an extensive masterplanning exercise and 10 year planning process to deliver the the vision for an employment-led regeneration of the area.

In August 1999, planning permission was granted for the development of a masterplan to transform the derelict and blighted riverside in north Bermondsey into 185,000sqm of office and retail space, creating in excess

of 20,000 jobs. As part of the planning agreement an innovative section 106 agreement was signed which created a number of conditions and obligations to ensure that local residents were able to access the new opportunities through physical interventions around the site, economic initiatives, and social outreach programmes.

The section 106 agreement which has enabled the delivery of a new £15m cultural attraction, and a number of off-site projects including a £4m world class park, in excess of £7m of public realm projects, regenerated 5 local parks and piazzas, refurbished 8 railway bridges and 2 listed buildings, a skate plaza, home zone, and a number of of employment and community programmes.

To maximise the chances of local residents accessing the new jobs created by the development, the section 106 agreement funded the delivery of a programme of workplace co-ordinators (WPCs) who assist in placing local people in the construction jobs and end-use jobs created by the development. The Building London Creating Futures (BLCF) programme which has run since 1999 has created 388 local jobs, assisted 815 people from BME communities, and delivered 935 training qualifications. More London was one of the first sites to host a WPC, and was used as a valuable resource for transnational activity.

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## NUNHEAD – “PUTTING THE VILLAGE BACK INTO NUNHEAD”

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**Delivery partners** - Southwark Council and the GLA’s Outer London Fund

The objective was a sensitive and sustainable approach with a creative strategy for stimulating the economy in an area where there is no capacity for large scale development. Through existing renewal programmes (Improving Local Retail Environments and Housing Area Renewal) the council, local businesses and the local community worked together to deliver small-scale interventions which meet our joint objectives. By ensuring that these objectives are enshrined in policy ensures that they have a suitable weight, ensuring that there is a collective vision. **The result was that by working jointly with local traders, businesses, arts organisations and the wider community, we have delivered a programme of works over the next five years to achieve the vision for Nunhead.**

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## CAMBERWELL GREEN AND ST GEORGE'S CIRCUS PSICAS

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**Budget - £450,000**

In 2011-12 the council delivered two PSiCA schemes (Partnership Schemes in Conservation Areas) in St. George's Circus and Camberwell Green Conservation Areas. The scheme was aimed at two conservation areas that had suffered from lack of, or inappropriate, investment from private owners. The St George's Circus Conservation Area was on the council's 'at risk' register and the Camberwell Green Conservation Area had suffered from a number of changes that were having a cumulative impact on the character of the area. From an early stage the council took the strategic decision to explore a more direct method of delivery in this case. Instead of the 'traditional' route of inviting owners to apply for a grant and encourage them to complete the works to

the desired standard through grant administration the council decided to combine these two schemes and procure the combined project directly. EH supported this direct delivery approach and offered the council a regional capacity grant to cover professional fees associated with design and project management for the combined project.

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## OTHER PROJECTS IN AND AROUND WALWORTH ROAD

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There are a variety of projects at different stages of development in and around the Walworth Road the cumulative effect of these will enhance and be enhanced by a Liveable Neighbourhood project. Generally supported by the Council (LBS) and one or more of the following partners

the Walworth Society (WS)

London South Bank University (LSBU)

Historic England (HE)

Southwark Departments for Transport, Leisure, Parks, Libraries, Public Health, Economic Development

### RESEARCH AND COMMUNITY PROJECT: COMMUNITY GROWING BID (partners WS)

The Walworth Society has just been told that it has been successful in a funding application from the north Southwark charity, United St Saviour's, to pay for someone to work 2.5 days a week over a two-year period on supporting interest in community growing in the Walworth area. The funding is for a total of £32,000. The funding will cover mapping what people are doing currently, supporting local residents' groups that wish to set up projects and help to make these and existing projects more sustainable. In consideration of Walworth's great history of pleasure gardens and production gardens, this could be a project which, if part funded by Historic England, could really explore this element of Walworth's heritage.

## RESEARCH PROJECTS: THE LOST VILLAGES AND COMMONS OF WALWORTH (partners WS, LBS, NHH)

These Walworth Society projects aim to create historic markers and relevant artwork and therefore awareness about the location and centre of the historic Walworth village centre (mentioned in the Domesday Book), where East Street and Penrose Street meet the Walworth Road. Given the proposed development on Newington Causeway, there is also the opportunity to delineate the former 'lost' village of Newington and its landmarks which have been demolished as the Elephant and Castle has become more prominent. The Society would also mark the lost Lorrimore Common which is now located in and around Pasley Park. Walworth Society also propose a project with Notting Hill Housing (NHH) to work with the Southwark Council Archive to open and catalogue a series of boxes of leases relating to the history of Walworth Common and to use this primary research to help to mark and disseminate the findings through the presence of a garden or historical marker and events.

The output of this project would include markers in the public realm of these locations as well as walks between them. Walworth Society is committing two months of a researcher's time to go through these archive boxes and write up the research, and to contribute to the cost of the events and the markers (50 days in-kind funding).

## LISTING PROJECT: 'ENRICHING THE LIST': CONTRIBUTIONS TO THE NATIONAL INITIATIVE AND REVIEW AND SUBMISSION OF REVISED LISTING DESCRIPTIONS ACROSS HAZ (partners: LBS, WS, LSBU,)

From June 2016, through the 'Enriching the List' initiative, Historic England has invited everybody to share their knowledge and photographs of the nationally important, protected historic places on the National Heritage List for England (NHLE). This means that list entries for any asset type can also include useful crowd-sourced information and photographs. With the Walworth Society and the London South Bank University (LSBU) our project will deliver 'Enriching the List' entries for all our listed heritage assets within the HAZ. We will also provide up-dated enhanced list descriptions within the HAZ zone, setting out more clearly what specifically is protected as part of the listing.

In the early 1990s, Southwark working with English Heritage participated in a review of all our historic places on the national list. This was a joint EH research and listing departments project and resulted in Southwark now having list entries that are relatively up-to-date on a national scale. Preliminary and informal discussions with the HE listing and research teams in preparation for this bid (our thanks to Susie Barson and Patience Trevor) suggest that there is scope to build on the 1990s review and look in more depth at build types (e.g. post-war structures, public art) across the HAZ area and whether there are any gaps in the current listings. We would also look at what types of protection best serves the buildings in our care, whether listing is always best or whether certain types of building (e.g. private houses) are best served by management within a conservation area. We would also look at whether our work could contribute to the HE listing team's new post-modernist project.

Our project involves the Walworth Society members working with London South Bank University and Southwark Council officers to further up-date the Historic England listing for buildings in the Walworth HAZ. It will engage local people and developers to explore what they understand and value architecturally about the area and the Walworth conservation areas. A prototype for this project was carried out by the Walworth Society in 2015 when the Walworth Road panorama - a 17m long depiction of the Walworth Road - was displayed in the grade I listed St Peter's Church, so that people could take a 'walk along the road' and talk and record their impressions and ideas (Fig 8, 23 and 24). The Walworth Society learned a lot about what people valued about the specific area in terms of heritage and use (particular terraces and buildings) and about what aspects of the road that they would like to see improved (shop fronts, postwar architecture and windows). The aim of this project is

to use the method described to further explore other aspects of the HAZ and to take the giant panoramas on tour to other locations such as Southwark Council offices in Tooley St, Newington Library (temporary use), Elephant Square and the new Walworth Square when it opens. Designed well, the panoramas could be reusable and also be taken into local schools as the starting point for workshops about local heritage in local schools.



FIGURE 45. LISTED BUILDINGS IN THE HAZ: HARKERS STUDIO – QUEENS ROW



FIGURE 46. A SECTION OF THE WALWORTH ROAD PANORAMA © THE WALWORTH SOCIETY 2017.



FIGURE 47. WALWORTH ROAD PANORAMA IN ST PETER'S CHURCH: RECORDING WHAT IS IMPORTANT TO PEOPLE IN WALWORTH © THE WALWORTH SOCIETY 2017.

#### REGENERATION PROJECT: 9A WALWORTH ROAD (LBS)

Southwark has council capital funding to improve the local retail environment. This project will restore two heritage shopfronts.

#### LISTING AND RESTORATION PROJECT: THE FORMER LABOUR HQ BUILDING, 140 WALWORTH ROAD (LBS, LL, WS)

This project aims to remove the former Labour HQ building, 140 Walworth Road from the Southwark Heritage at Risk watch-list. Working with Lendlease we would aim to undertake a condition survey of the building. This property with nos., 142, 150 and 152 forms part of a grade II listed terrace built by Francis Hurlblatt in 1793-9. Until recently it was remodelled as a unified composition for the Labour Party Headquarters.

In 2010 the council undertook significant public realm and traffic improvements to Walworth Road. In the last week, outline designs have been drawn up for phase 2 of this improvement scheme, which will address the northern and southern sections of the road. Given that there are several properties of interest in relation to the proposed HAZ status that are located within the scope of these improvement works, an additional £500k, of S106 funds, has been allocated in order to specifically address the public realm directly outside these potential HAZ properties. The first property identified for these works is 140 Walworth Road.

#### HERITAGE AT RISK PROJECT/VACANCY TO HOUSING PROJECT: STRATEGIC ASSESSMENT AND CONDITION SURVEY OF FIRE-DAMAGED 'THE PROMENADE', 75-91 CAMBERWELL ROAD WITH A POSITIVE STRATEGY TO BRING IT BACK INTO USE FOR RESIDENTIAL.

The Promenade (also called Bethel Place) is an unlisted early 19<sup>th</sup> century terrace with late 19<sup>th</sup> century retail. The terrace stands on the gateway into Walworth, at the junction between Walworth and Camberwell. The houses were converted in the 1890s by extending into the front gardens to make a row of very grand and lofty identical Victorian shop units named 'The Promenade' on the 1893 Goad Map. The impetus for building may have been the completion of new streets of housing filling Walworth Common (after 1851) and around the canal. A mini- town centre emerged with shops on both sides of the roads including Williams Place (1875). The Promenade is significant because of its height and decorative stone and timber shop fronts. The extra height accommodated access to the raised ground floor of the Georgian properties behind meaning that the shop fronts have an impressive presence on the street and tower above most other shop spaces on the Walworth Road. One of the retail units retains its original ceiling light-well which is a key heritage feature. If we could reintroduce this heritage feature it would improve the quality of all the retail spaces on the terrace.

The council may need to serve an urgent works notice on parts of this terrace that have an absent owner and have been damaged by fire. Working with our empty homes team we need to carry out a condition survey and develop a strategy for the long-term future of the terrace and unlock the upper floors for housing. The whole parade is in a declining condition, with unsympathetic alterations on the upper levels. We will look to address this and also tackle the shopfronts working with the individual owners. We will seek to repair the shopfronts and bring the commercial units back into use.

In 2010 the council undertook significant public realm and traffic improvements to Walworth Road. In the last week, outline designs have been drawn up for Phase 2 of this improvement scheme, which will address the northern and southern sections of the road. Given that the Promenade is located within the scope of these improvement works, an additional £500k, of S106 funds, has been allocated in order to specifically address the public realm directly outside these properties. The area around 75-91 Camberwell Road generally could benefit from this.



FIGURE 48. THE PROMENADE SHOPFRONTS AND GEORGIAN TERRACE ON CAMBERWELL ROAD.

## APPENDIX B - BACKGROUND DOCUMENTS

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Mayor's Transport Strategy

<https://www.london.gov.uk/what-we-do/transport/our-vision-transport/draft-mayors-transport-strategy-2017>

Healthy Street Approach

<http://content.tfl.gov.uk/healthy-streets-for-london.pdf>

Southwark Transport Plan 2011, Sustainable Transport Supplementary Planning Document 2010, Cycling Strategy 2015

<http://www.southwark.gov.uk/planning-and-building-control/planning-policy-and-transport-policy/transport-planning?chapter=2>

Draft Kerbside Strategy 2017

[https://consultations.southwark.gov.uk/environment-leisure/kerbside-strategy/supporting\\_documents/Southwark%20Draft%20Kerbside%20Strategy.pdf](https://consultations.southwark.gov.uk/environment-leisure/kerbside-strategy/supporting_documents/Southwark%20Draft%20Kerbside%20Strategy.pdf)

Health and Wellbeing Strategy 2015-2020

<http://moderngov.southwark.gov.uk/documents/s51406/Appendix%201%20Health%20and%20Wellbeing%20Strategy%202015%20-%202020.pdf>

Southwark Air Quality Action Plan 2017

<http://www.southwark.gov.uk/environment/air-quality/strategies-plans-and-reports>

Walworth Road Conservation Area Appraisal

<http://moderngov.southwark.gov.uk/documents/s60695/Appendix%203%20Walworth%20Road%20Raft%20Conservation%20Area%20Appraisal.pdf>

Larcom Street Conservation Area Appraisal

[http://www.2.southwark.gov.uk/download/downloads/id/9527/larcom\\_street](http://www.2.southwark.gov.uk/download/downloads/id/9527/larcom_street)

Liverpool Grove Conservation Area Appraisal

<http://moderngov.southwark.gov.uk/documents/s33853/Liverpool%20Grove%20Appraisal%20-%20Appendix%201.pdf>

Elephant and Castle Supplementary Planning Document (and supporting documents)

<https://www.southwark.gov.uk/planning-and-building-control/planning-policy-and-transport-policy/supplementary-planning-documents-spd/spd-by-area?chapter=6>

Walworth Road Vitality Viability and Vulnerability Study (December 2014); economic and Ethic Study

[www.2.southwark.gov.uk/download/downloads/id/14537/walworth\\_road\\_study](http://www.2.southwark.gov.uk/download/downloads/id/14537/walworth_road_study)

Southwark living street project "Reclaiming the streets"

<https://southwarklivingstreets.files.wordpress.com/2008/07/salisburyrowprojectsummary-10feb11.pdf>

Walworth Road Historic Area Assessment, (Revision B) 23rd August 2015. Compiled by the Walworth Society.

<http://walworthsociety.co.uk/attachments/article/151/WalworthRoad-HistoricAreaAssessment-02Sep15.pdf>

What Walworth Wants: Proposals by 'We made That', Graphic Design by 'Maddison Graphic', Cost Advice from Stockdale. Funded by Mayor's High Street Fund and London Borough of Southwark.  
[http://www.wemadethat.co.uk/pdfs/What\\_Walworth\\_Wants\\_low\\_res.pdf](http://www.wemadethat.co.uk/pdfs/What_Walworth_Wants_low_res.pdf)

Vision for the Southern Section of the Walworth Road SE17, July 2013, Southwark Living Streets, the Walworth Society, Gateway T&RA, St Peter's Walworth.



## APPENDIX C – HEALTHY STREET CHECKS

| Healthy Streets Indicator |  |  |  |  |  |  |  | Factor         | Indicator         | Critical*  | Basic CLoS (score=0)  | Good CLoS (score=1)   | Highest CLoS (score=2)  | Score   |  |     |
|---------------------------|--|--|--|--|--|--|--|----------------|-------------------|--|---|---|---|---|--|-----|
|                           |  |  |  |  |  |  |  | Safety         | Mode              |  |   |   |   |   |  |     |
|                           |  |  |  |  |  |  |  | Collision Risk | Walking /Cycling  | Left/right hook at junctions                       | Heavy streams of turning traffic cut across main cycling or walking stream  | Side road junctions frequent and/or untreated<br>Conflicting movements at major junctions not separated                           | Use of entry treatments.<br>Conflicting movements are separated at major junctions with dedicated stages          | Side roads closed or footway is continuous<br>. All conflicting streams separated in time and space at signalised junctions.                      | 0  | x 3 |
|                           |  |  |  |  |  |  |  |                | Cycling           | Collision alongside or from behind                 | Nearside lane in range 3.2 to 3.9m  | Cyclists in nearside traffic lanes (<3.2 or >3.9m) or effective width of 1.5m   | Cyclists effective width of at least 2m wide  | Cyclists separated from motorised traffic   | 0  | x 3 |
|                           |  |  |  |  |  |  |  |                | Walking           | Trip hazard  | Non contrasting level difference of greater than 20mm   | Many trip hazards   | Few trip hazards  | No trip hazards, level clear surface  | 1  | x 3 |
|                           |  |  |  |  |  |  |  |                | Cycling           | Kerbside activity or risk of collision with door   | Cycle lanes <1.5m alongside parking/loading with no buffer  | Frequent kerbside activity / effective width for cyclists of 1.5m   | Less frequent kerbside activity / effective width for cyclists of 2m  | No kerbside activity / No interaction between cyclists and vehicles parking or loading  | 1  | x 3 |
|                           |  |  |  |  |  |  |  |                | Walking           | Kerbside activity or risk of crossing conflict     | Formal crossing more than 400m apart where more than 3 lanes to cross. No gaps in parking and loading on desire lines if less than 3 lanes. | Formal crossing >200m<400m where 3 or more lanes are present. Formalised loading/parking with crossing gaps if less than 3 lanes. | Formal crossing >100m<200m where 3 or more lanes are present. Crossing gaps on desire lines if less than 3 lanes. | Formal crossing <100m apart where 3 or more lanes are present. Single lane crossing with median strips if less than 3 lanes.                      | 1  | x 3 |
|                           |  |  |  |  |  |  |  |                | Walking / Cycling | Other vehicle fails to give way or disobey signals |   |   | Poor visibility, no continuity across junctions and unclear priority  | Clear continuity through junctions, good visibility, priority clear for all users, visual priority for cyclists and pedestrians across side roads | Cycle priority at signalised junctions; visual priority for cyclists and pedestrians across side roads | 0   |

|                   |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |   |   |     |
|-------------------|--|--|--|--|--|--|--|--|--|-------------------|--|--|--|--|---|---|-----|
|                   |  |  |  |  |  |  |  |  |  | Walking           | Standard of crossing facility  | Uncontrolled crossing of multiple lanes with no gaps in traffic. | Uncontrolled crossing of multiple lanes. Lack of priority. | Signalised crossing where appropriate or implied priority                    | Countdown with signalised crossing, priority with unsignalised      | 0   | x 3 |
|                   |  |  |  |  |  |  |  |  |  | Walking / Cycling | Speed of traffic (where cyclists are not separated or pedestrians crossing uncontrolled)     | 85th percentile greater than 30mph                               | 85th percentile greater than 25mph                         | 85th percentile 20-25mph   | 85th percentile less than 20mph                                     | 2   | x 3 |
|                   |  |  |  |  |  |  |  |  |  | Walking /Cycling  | Total volume of traffic (where cyclists are not separated or pedestrians cross uncontrolled) | >1,000 PCU / hour at peak  | 500 - 1,000 PCU / hour at peak                             | 200 - 500 PCU/ hour at peak  | <200 PCU / hour at peak   | 0   | x 3 |
|                   |  |  |  |  |  |  |  |  |  | Cycling           | Interaction with HGVs  | Frequent, close interaction                                      | Frequent interaction                                       | Occasional interaction   | No interaction  | 0   | x 3 |
|                   |  |  |  |  |  |  |  |  |  | Walking /Cycling  | Risk/fear of crime   |  | High risk: 'ambush spots', loitering, poor maintenance     | Low risk: area is open, well designed and maintained                         | No fear of crime: high quality streetscene and pleasant interaction | 1   |     |
|                   |  |  |  |  |  |  |  |  |  | Walking /Cycling  | Lighting   |  | Long stretches of darkness                                 | Short stretches of darkness  | Street lit thoroughly   | 1   |     |
|                   |  |  |  |  |  |  |  |  |  | Walking /Cycling  | Impact of highway design on behaviour  |  | Layout encourages aggressive behaviour                     | Layout controls behaviour throughout   | Layout encourages civilised behaviour: negotiation and forgiveness  | 0   |     |
|                   |  |  |  |  |  |  |  |  |  | Walking /Cycling  | Isolation  |  | Street is far from other activity, for most of the day     | Street is close to activity, for all of the day                              | Street always overlooked  | 1   |     |
| <b>Directness</b> |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |   |   |     |
|                   |  |  |  |  |  |  |  |  |  | Journey Time      | Cycling  | Ability to maintain own speed on links                           |  | Cyclists travel at speed of slowest vehicle ahead (including other cyclists) | Cyclists can usually pass other vehicles (including cyclists)       | Cyclists can always pass other vehicles               | 0   |
|                   |  |  |  |  |  |  |  |  |  | Walking           | Crossing speed   |  |  | 1.2m/s   | 0.8m/s  | Invitation to cross extended beyond design thresholds | 0   |



|  |  |  |  |  |  |  |  |  |  |                  |   |  |   |   |   |  |   |
|--|--|--|--|--|--|--|--|--|--|------------------|---|--|---|---|---|--|---|
|  |  |  |  |  |  |  |  |  |  | Walking /Cycling | Density of high quality walking or cycling environment other routes |  | Network density mesh width >400m  | Network density mesh width 250-400m                   | Network density mesh width <250m  |  | 0 |
|  |  |  |  |  |  |  |  |  |  | Wayfinding       | Signing   |  | Basic direction signing (pedestrians and cyclists follow road signs and markings) | Some cycle and pedestrians specific direction signing | Consistent signing of range of routes and destinations at decision points |  | 1 |

**Comfort**

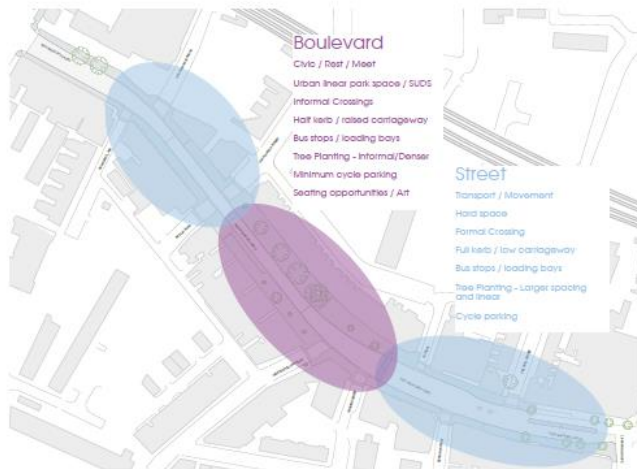
|  |  |  |  |  |  |  |  |  |  |                                     |         |  |   |  |   |   |   |        |
|--|--|--|--|--|--|--|--|--|--|-------------------------------------|---------|--|---|--|---|---|---|--------|
|  |  |  |  |  |  |  |  |  |  | Surface quality                     | Cycling | Defects : non cycle friendly ironworks, raised/sunken covers/gullies                         | Major defects                                     | Many minor defects                                     | Few minor defects                                   | Smooth, high-grip surface   | 0 | x<br>3 |
|  |  |  |  |  |  |  |  |  |  | Surface quality                     | Walking | Defects : non flush tables, misleading tactile information, cracked paving                   | Major defects                                     | Many minor defects                                     | Few minor defects                                   | Smooth consistent surface   | 0 | x<br>3 |
|  |  |  |  |  |  |  |  |  |  | Surface material                    | Cycling | Construction   |   | Hand-laid asphalt or unstable blocks/sets              | Machine laid asphalt concrete or HRA; smooth blocks | Machine laid asphalt concrete; smooth and firm blocks undisturbed by turning vehicles | 1 |        |
|  |  |  |  |  |  |  |  |  |  | Surface material                    | Walking | Construction   |   | Unmade   | Asphalt   | Level blocks or slabs   | 2 |        |
|  |  |  |  |  |  |  |  |  |  | Effective width without conflict    | Cycling | Clear nearside space in secondary position or motor vehicle speed/volume in primary position | Secondary: <1.5m Primary: high motor vehicle flow | Secondary: 1.5-2.0m Primary: medium motor vehicle flow | Secondary: 1.5-2.0m Primary: low motor vehicle flow | Secondary: >2m Primary: no overtaking by motor vehicles                               | 0 | x<br>3 |
|  |  |  |  |  |  |  |  |  |  | Effective width without obstruction | Walking | Clear continuous walking spaces free of obstructions and                                     | <1.4m width                                       | 1.4m-2m (if PCL D or E triggers next category)         | 2m-3m (if PCL D or E triggers next category)        | >3m (if PCL D or E triggers next category)  | 0 | x<br>3 |

|                       |  |  |  |  |  |                              |                  |  |  |  |  |   |   |
|-----------------------|--|--|--|--|--|------------------------------|------------------|--|--|--|--|---|---|
|                       |  |  |  |  |  | furniture                    |                  |  |  |  |  |   |   |
|                       |  |  |  |  |  | Gradient                     | Walking /Cycling | Uphill gradient over 100m  |  | >5 per cent  | 3-5 per cent   | <3 per cent   | 3 |
|                       |  |  |  |  |  | Deflections                  | Cycling          | Pinch points caused by horizontal deflections                          |  | (Remaining) lane width <3.2m                                       | (Remaining) lane width >4.0m or <3m (low motor vehicle flow)             | Traffic is calmed so no need for horizontal deflections   | 0 |
|                       |  |  |  |  |  | Shade Shelter                | Walking          | Cover/exposure   |  | Street exposed   | Cover providing shade <50m apart   | Route tree lined  | 0 |
|                       |  |  |  |  |  | Undulations                  | Cycling          | Vertical deflections   |  | Round top humps  | Sinusoidal humps   | No vertical deflections   | 0 |
|                       |  |  |  |  |  | Rest                         | Walking          | Resting points   |  | >100m  | 50m to 100m  | <50m  | 0 |
| <b>Attractiveness</b> |  |  |  |  |  |                              |                  |  |  |  |  |   |   |
|                       |  |  |  |  |  | Impact of cycling on walking | Walking /Cycling | Shared use   |  | Cyclists on footway space less than 3m                             | Pedestrian priority with civilised mixed interaction enabled             | Pedestrian priority with suggested route for cyclists   | 0 |
|                       |  |  |  |  |  | Diversity                    | Walking          | Conditions for pleasant interaction                                    |  | Single activity area.  | Mixed use properties   | Different uses and users at different times. Social interaction encouraged through street design choices. | 1 |
|                       |  |  |  |  |  | Greening                     | Walking /Cycling | Green infrastructure or sustainable materials incorporated into design |  | No greening element  | Some greening elements   | Full integration of greening elements   | 1 |
|                       |  |  |  |  |  | Minimise street clutter      | Walking /Cycling | Signage required to support highway layout                             |  | Large amounts of regulatory signage to conform with complex layout | Moderate amount of signage, particularly around junctions                | Minimal signage, eg for wayfinding purposes only  | 1 |
|                       |  |  |  |  |  | Secure cycle parking         | Cycling          | Ease of access to secure cycle parking on- and off-street              |  | No additional secure cycle parking                                 | Minimum levels of cycle parking provided (i.e. to London Plan standards) | Cycle parking is provided to meet future demand and is of good quality and securely                       | 1 |

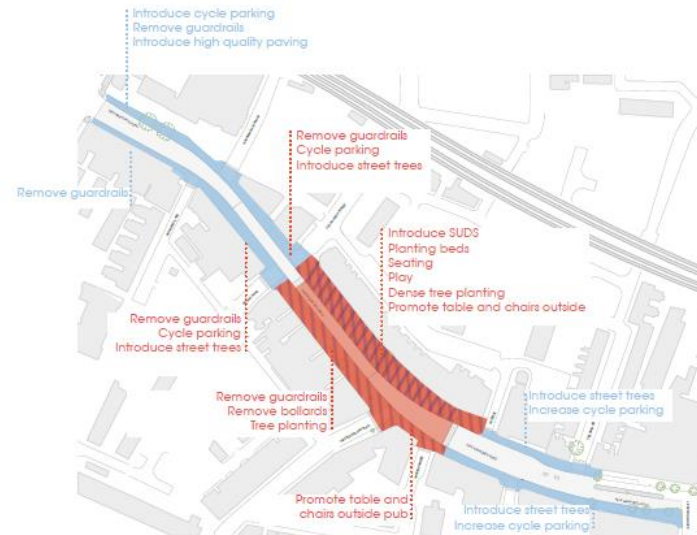




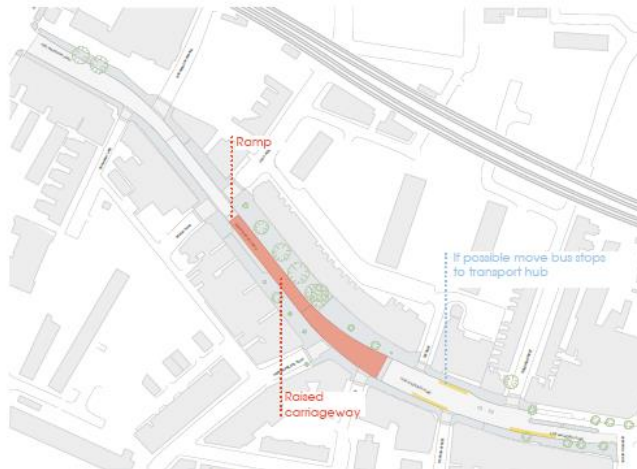
APPENDIX D –PROPOSED OPTIONS PLANS FOR THE SOUTHERN PART OF WALWORTH ROAD (PROJECT CENTRE REPORT)



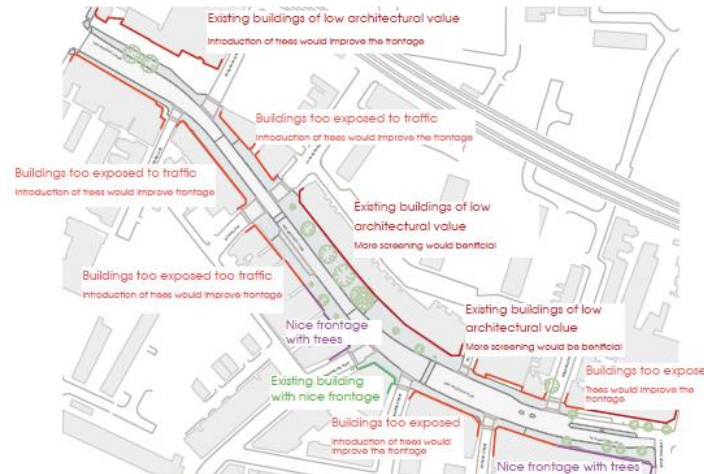
High Level Character Areas - Principles



Character Areas - Opportunities

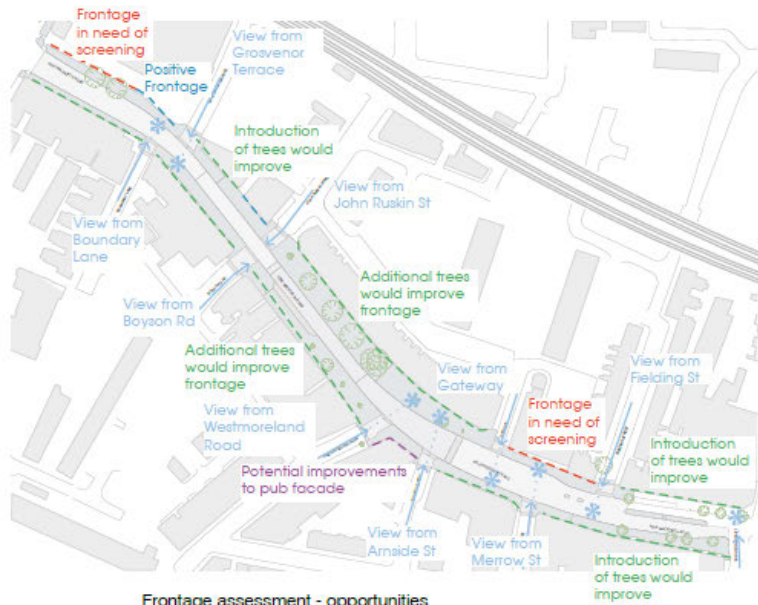


Transport principles



Building facades assessment - opportunities

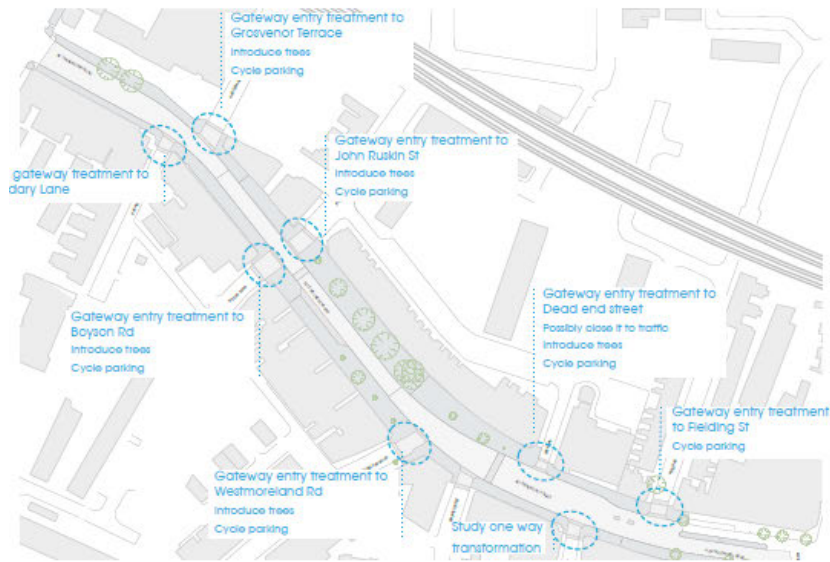




Frontage assessment - opportunities



Tree planting strategy



Side Streets gateway assessment - opportunities

VISIONS FROM SOUTHWARK LIVING STREET AND WALWORTH SOCIETY (JULY 2013)



# APPENDIX E – TRAFFICMASTER DELAYS MAPS

Trafficmaster Delays



**Legend**

- Walworth
- Liveable
- Neighbourhood Area

**Weekday (Mon-Fri) AM Peak Average Delay (Minutes per Kilometer)**

- >1.5
- 1 to 1.5
- 0.5 to 1
- 0.25 to 0.5
- < 0.25

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 "Information derived from data provided by TrafficMaster obtained from vehicles fitted with GPS devices"  
 "TL Road Space Management – Outcome, Insight & Analyse team"

Trafficmaster Delays



**Legend**

- Walworth
- Liveable
- Neighbourhood Area

**Weekday (Mon-Fri) PM Peak Average Delay (Minutes per Kilometer)**

- >1.5
- 1 to 1.5
- 0.5 to 1
- 0.25 to 0.5
- < 0.25

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 "TL Road Space Management – Outcome, Insight & Analyse team"

**Trafficmaster Delays**



**Legend**

- Walworth
- Liveable
- Neighbourhood Area

**Weekday (Mon-Fri) Inter-Peak Average Delay (Minutes per Kilometer)**

- >1.5
- 1 to 1.5
- 0.5 to 1
- 0.25 to 0.5
- <0.25

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**Trafficmaster Delays**



**Legend**

- Walworth
- Liveable
- Neighbourhood Area

**Weekday (Mon-Fri) Night Average Delay (Minutes per Kilometer)**

- > 1.5
- 1 to 1.5
- 0.5 to 1
- 0.25 to 0.5
- < 0.25

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Trafficmaster Delays



**Legend**

- Walworth
- Liveable
- Neighbourhood Area

**Saturday AM Peak Average Delay (Minutes per Kilometer)**

- > 1.5
- 1 to 1.5
- 0.5 to 1
- 0.25 to 0.5
- < 0.25

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Trafficmaster Delays



**Legend**

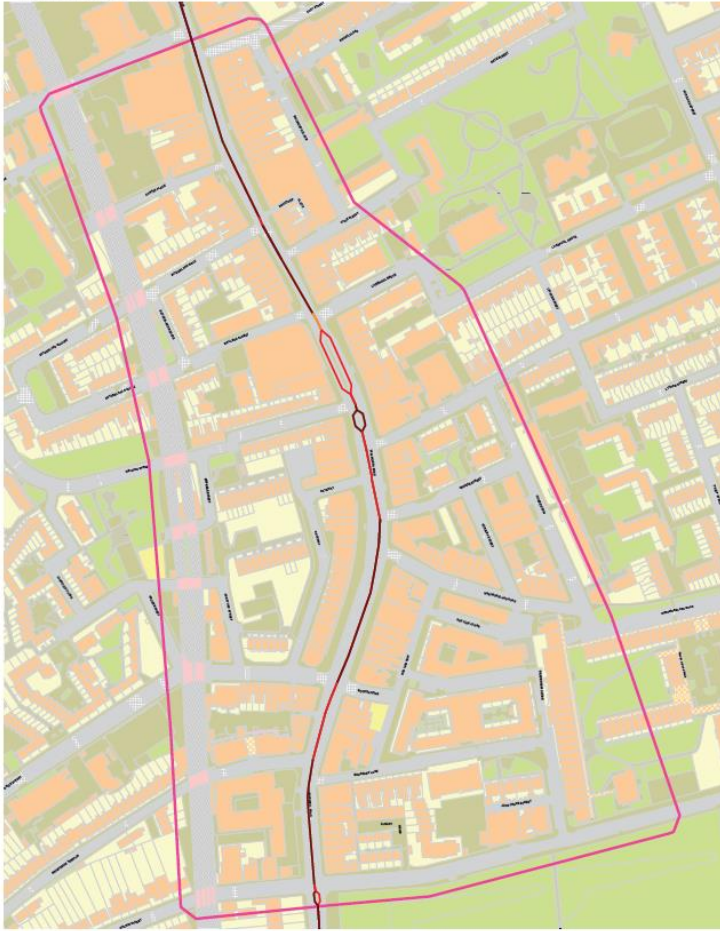
- Walworth
- Liveable
- Neighbourhood Area

**Saturday PM Peak Average Delay (Minutes per Kilometer)**

- > 1.5
- 1 to 1.5
- 0.5 to 1
- 0.25 to 0.5
- < 0.25

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Trafficmaster Delays



**Legend**

- Walworth
- Liveable
- Neighbourhood Area

**Saturday Inter-Peak Average Delay (Minutes per Kilometer)**

- > 1.5
- 1 to 1.5
- 0.5 to 1
- 0.25 to 0.5
- < 0.25

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 "TfL Road Space Management - Outcomes, Insight & Analysis team"

Trafficmaster Delays



**Legend**

- Walworth
- Liveable
- Neighbourhood Area

**Saturday Night Average Delay (Minutes per Kilometer)**

- > 1.5
- 1 to 1.5
- 0.5 to 1
- 0.25 to 0.5
- < 0.25

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 "Information derived from data provided by TrafficMaster obtained from vehicles fitted with GPS devices"  
 "TfL Road Space Management - Outcomes, Insight & Analysis team"

Trafficmaster Delays



**Legend**

- Walworth
- Liveable
- Neighbourhood
- Area

**Sunday AM Peak Average Delay (Minutes per Kilometer)**

- > 1.5
- 1 to 1.5
- 0.5 to 1
- 0.25 to 0.5
- < 0.25

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Trafficmaster Delays



**Legend**

- Walworth
- Liveable
- Neighbourhood
- Area

**Sunday PM Peak Average Delay (Minutes per Kilometer)**

- > 1.5
- 1 to 1.5
- 0.5 to 1
- 0.25 to 0.5
- < 0.25

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Trafficmaster Delays



**Legend**

- Walworth
- Liveable
- Neighbourhood
- Area

**Sunday Inter-Peak Average Delay (Minutes per Kilometer)**

- > 1.5
- 1 to 1.5
- 0.5 to 1
- 0.25 to 0.5
- < 0.25

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Trafficmaster Delays



**Legend**

- Walworth
- Liveable
- Neighbourhood
- Area

**Sunday Night Average Delay (Minutes per Kilometer)**

- > 1.5
- 1 to 1.5
- 0.5 to 1
- 0.25 to 0.5
- < 0.25

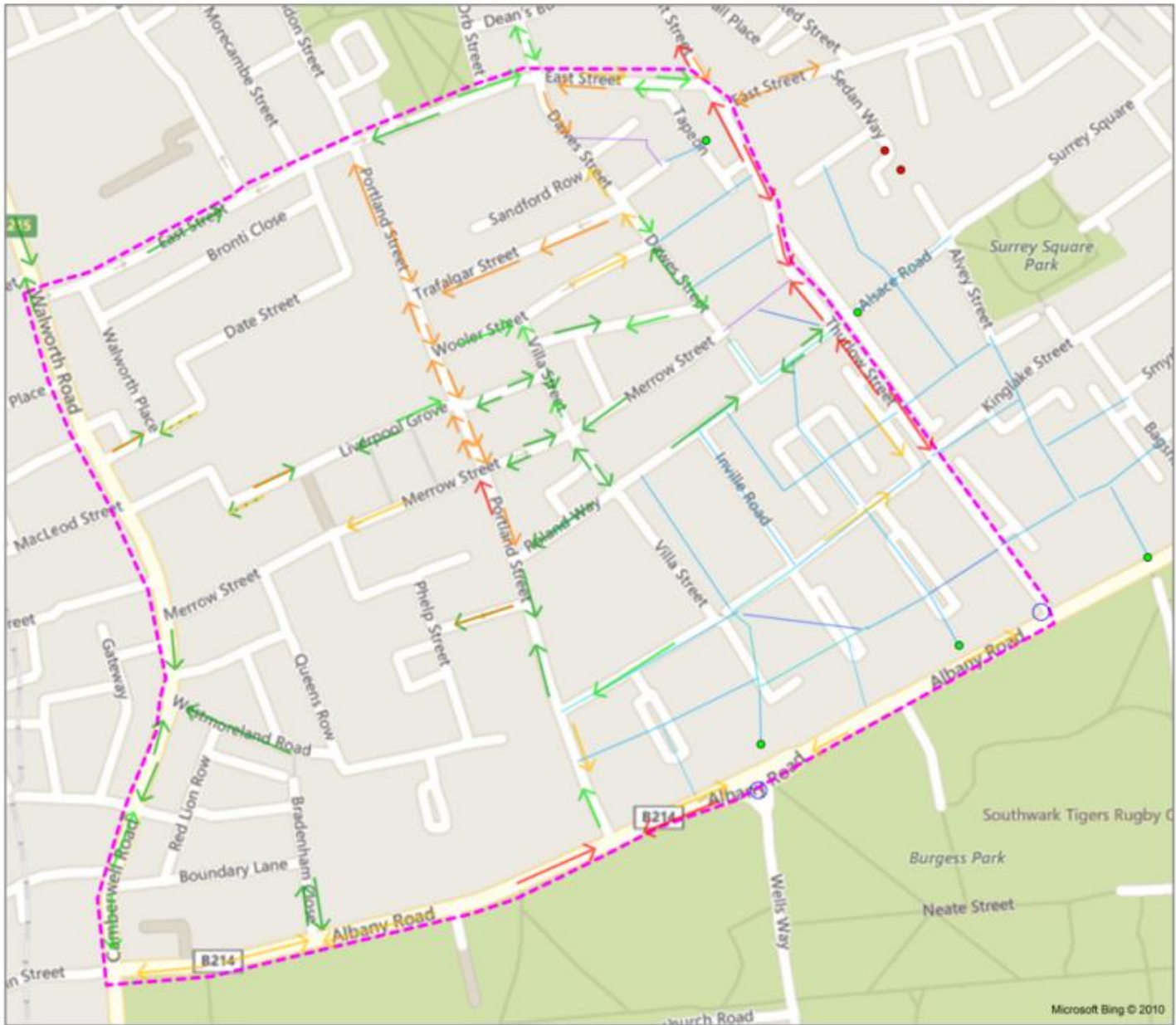
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 "Information derived from data provided by Trafficmaster obtained from vehicles fitted with GPS devices"  
 "TfL Road Space Management – Outcomes, Insight & Analysis team"



APPENDIX F – TRAFFIC COUNTS

| ROAD            | DIRECTION | MONTH   | YEAR | TOTAL FLOW | PEDAL & MOTORCYCLE | CAR  | LARGER VEHICLES | AVERAGE SPEED | _85TH_SPEED | EASTING   | NORTHING  |
|-----------------|-----------|---------|------|------------|--------------------|------|-----------------|---------------|-------------|-----------|-----------|
| Walworth Road   | S         | MAY     | 2013 | 7867       | 353                | 6439 | 1075            | 20.9          | 26.6        | 532446.73 | 177937.54 |
| Walworth Road   | N         | MAY     | 2013 | 9762       | 870                | 7693 | 1295            | 18.7          | 24.8        | 532446.73 | 177937.54 |
| Walworth Road   | N         | NOV     | 2015 | 9458       | 981                | 7339 | 1138            | 18.3          | 23.9        | 532446.73 | 177937.54 |
| Walworth Road   | S         | NOV     | 2015 | 8836       | 647                | 7279 | 910             | 20.3          | 26.2        | 532446.73 | 177937.54 |
| Albany Road     | W         | APR     | 2010 | 5757       | 195                | 4914 | 669             | 25.7          | 30.6        | 532654.39 | 177697.5  |
| Albany Road     | E         | APR     | 2010 | 6452       | 231                | 5514 | 725             | 26.5          | 31.1        | 532654.39 | 177697.5  |
| Liverpool Grove | W         | APR     | 2012 | 161        | 19                 | 135  | 7               | 15.1          | 18.8        | 532632.54 | 178136.53 |
| Liverpool Grove | E         | APR     | 2012 | 785        | 51                 | 594  | 140             | 18.8          | 23.3        | 532632.54 | 178136.53 |
| Cadiz Street    | E         | SEP/OCT | 2012 | 377        | 3                  | 342  | 32              | 12.1          | 15.2        | 532460.44 | 178184.84 |
| Cadiz Street    | W         | SEP/OCT | 2012 | 229        | 1                  | 180  | 48              | 13.1          | 16.6        | 532460.44 | 178184.84 |
| Merrow Street   | W         | SEP/OCT | 2012 | 1261       | 66                 | 1089 | 106             | 16.1          | 19.7        | 532558.87 | 178027.35 |
| Merrow Street   | E         | SEP/OCT | 2012 | 913        | 69                 | 776  | 68              | 15            | 18.3        | 532558.87 | 178027.35 |
| Merrow Street   | E         | SEP/OCT | 2012 | 1072       | 76                 | 882  | 116             | 16.8          | 20.1        | 532630    | 178065    |
| Merrow Street   | W         | SEP/OCT | 2012 | 1621       | 106                | 1368 | 147             | 16.4          | 19.9        | 532630    | 178065    |

# Faraday Street Study Area Traffic Counts



- Legend**
- Faraday Street Movement Study Area
  - Traffic Flows AM + PM (Data 2015 and 2013)
    - 750 to 1,100
    - 250 to 750
    - 100 to 250
    - 50 to 100
    - 0 to 50
  - Average Daily traffic Flows (Data 2012)
    - 250 to 750
    - 100 to 250
  - Proposed Road by Type
    - One way road
    - Proposed delivery/drop off access only
    - Proposed pedestrian community spines
    - Proposed road
    - Proposed shared surface
  - Junction Upgrades Proposed
  - Road Terminations by Type
    - Existing
    - Proposed



APPENDIX G – AIR QUALITY – SOURCE APPORTIONMENT

SOURCE APPORTIONMENT – GENERAL SOURCE CATEGORIES

| Source Type     | Grid Reference | NO <sub>x</sub> Emissions tonnes/year |      | NO <sub>x</sub> Emissions % |      | PM <sub>10</sub> Emissions tonnes/year |      | PM <sub>10</sub> Emissions % |      | PM <sub>2.5</sub> Emissions tonnes/year |      | PM <sub>2.5</sub> Emissions % |      |
|-----------------|----------------|---------------------------------------|------|-----------------------------|------|--|------|------------------------------|------|---|------|-------------------------------|------|
|                 |                | 2013                                  | 2020 | 2013                        | 2020 | 2013                                   | 2020 | 2013                         | 2020 | 2013                                    | 2020 | 2013                          | 2020 |
| Aviation        | 532500 178500  | 0.00                                  | 0.00 |                             |      | 0.00                                   | 0.00 |                              |      | 0.00                                    | 0.00 |                               |      |
|                 | 532500 177500  | 0.00                                  | 0.00 |                             |      | 0.00                                   | 0.00 |                              |      | 0.00                                    | 0.00 |                               |      |
|                 | 532500 176500  | 0.00                                  | 0.00 |                             |      | 0.00                                   | 0.00 |                              |      | 0.00                                    | 0.00 |                               |      |
| River           | 532500 178500  | 0.00                                  | 0.00 |                             |      | 0.00                                   | 0.00 |                              |      | 0.00                                    | 0.00 |                               |      |
|                 | 532500 177500  | 0.00                                  | 0.00 |                             |      | 0.00                                   | 0.00 |                              |      | 0.00                                    | 0.00 |                               |      |
|                 | 532500 176500  | 0.00                                  | 0.00 |                             |      | 0.00                                   | 0.00 |                              |      | 0.00                                    | 0.00 |                               |      |
| Rail            | 532500 178500  | 0.00                                  | 0.00 |                             |      | 0.00                                   | 0.00 |                              |      | 0.00                                    | 0.00 |                               |      |
|                 | 532500 177500  | 0.00                                  | 0.00 |                             |      | 0.00                                   | 0.00 |                              |      | 0.00                                    | 0.00 |                               |      |
|                 | 532500 176500  | 1.33                                  | 1.05 | 2.1                         | 3.2  | 0.02                                   | 0.01 | 0.3                          | 0.3  | 0.02                                    | 0.01 | 0.7                           | 0.6  |
| Other           | 532500 178500  | 0.09                                  | 0.12 | 0.1                         | 0.5  | 0.31                                   | 0.42 | 4.4                          | 8.7  | 0.28                                    | 0.38 | 7.5                           | 20.7 |
|                 | 532500 177500  | 0.12                                  | 0.13 | 0.2                         | 0.6  | 0.37                                   | 0.42 | 7.4                          | 11.2 | 0.34                                    | 0.39 | 12.5                          | 23.3 |
|                 | 532500 176500  | 0.08                                  | 0.08 | 0.1                         | 0.3  | 0.24                                   | 0.27 | 4.7                          | 5.7  | 0.22                                    | 0.25 | 9.3                           | 13.3 |
| NRMM            | 532500 178500  | 17.07                                 | 0.78 | 25.3                        | 3.2  | 1.73                                   | 0.04 | 24.5                         | 0.9  | 1.62                                    | 0.04 | 43.1                          | 2.2  |
|                 | 532500 177500  | 9.49                                  | 2.49 | 18.3                        | 10.4 | 0.91                                   | 0.15 | 18.6                         | 4.0  | 0.86                                    | 0.14 | 31.7                          | 8.5  |
|                 | 532500 176500  | 2.40                                  | 1.72 | 3.9                         | 5.3  | 0.22                                   | 0.11 | 4.4                          | 2.4  | 0.21                                    | 0.10 | 8.8                           | 5.6  |
| C&D Dust        | 532500 178500  | 0.00                                  | 0.00 |                             |      | 0.32                                   | 0.00 | 4.6                          | 0.0  | 0.03                                    | 0.00 | 0.9                           | 0.0  |
|                 | 532500 177500  | 0.00                                  | 0.00 |                             |      | 0.16                                   | 0.05 | 3.3                          | 1.2  | 0.02                                    | 0.00 | 0.6                           | 0.3  |
|                 | 532500 176500  | 0.00                                  | 0.00 |                             |      | 0.04                                   | 0.04 | 0.7                          | 1.0  | 0.00                                    | 0.00 | 0.2                           | 0.2  |
| Domestic Gas    | 532500 178500  | 6.13                                  | 7.54 | 9.1                         | 31.1 | 0.08                                   | 0.10 | 1.1                          | 2.0  | 0.08                                    | 0.10 | 2.1                           | 5.2  |
|                 | 532500 177500  | 5.80                                  | 6.07 | 11.2                        | 25.2 | 0.07                                   | 0.08 | 1.5                          | 2.0  | 0.07                                    | 0.08 | 2.7                           | 4.6  |
|                 | 532500 176500  | 6.70                                  | 6.50 | 10.8                        | 20.1 | 0.08                                   | 0.08 | 1.6                          | 1.8  | 0.08                                    | 0.08 | 3.5                           | 4.4  |
| Commercial Gas  | 532500 178500  | 6.41                                  | 4.35 | 9.5                         | 18.0 | 0.10                                   | 0.07 | 1.4                          | 1.4  | 0.10                                    | 0.07 | 2.6                           | 3.6  |
|                 | 532500 177500  | 10.45                                 | 6.97 | 20.1                        | 28.9 | 0.16                                   | 0.11 | 3.2                          | 2.8  | 0.16                                    | 0.11 | 5.8                           | 6.3  |
|                 | 532500 176500  | 13.26                                 | 8.84 | 21.4                        | 27.3 | 0.20                                   | 0.13 | 3.9                          | 2.9  | 0.20                                    | 0.13 | 8.3                           | 7.2  |
| D&C Other Fuels | 532500 178500  | 0.62                                  | 0.35 | 0.9                         | 1.4  | 0.05                                   | 0.02 | 0.7                          | 0.5  | 0.02                                    | 0.02 | 0.6                           | 0.8  |
|                 | 532500 177500  | 0.70                                  | 0.35 | 1.3                         | 1.5  | 0.10                                   | 0.05 | 2.1                          | 1.3  | 0.08                                    | 0.04 | 2.9                           | 2.4  |
|                 | 532500 176500  | 0.52                                  | 0.22 | 0.8                         | 0.7  | 0.06                                   | 0.02 | 1.1                          | 0.5  | 0.03                                    | 0.02 | 1.4                           | 0.9  |

|                   |               |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------|---------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| Industry          | 532500 178500 | 0 00  | 0 00 | #N/A | #N/A | 0 00 | 0 00 |      |      | 0 00 | 0 00 |      |      |
|                   | 532500 177500 | 0 00  | 0 00 | #N/A | #N/A | 0 00 | 0 00 |      |      | 0 00 | 0 00 |      |      |
|                   | 532500 176500 | 0 00  | 0 00 | #N/A | #N/A | 0 00 | 0 00 |      |      | 0 00 | 0 00 |      |      |
| Resuspension      | 532500 178500 | 0 00  | 0 00 | #N/A | #N/A | 1 72 | 1 77 | 24 3 | 36 8 | 0 06 | 0 06 | 1 7  | 3 5  |
|                   | 532500 177500 | 0 00  | 0 00 | #N/A | #N/A | 1 12 | 1 15 | 22 7 | 30 5 | 0 04 | 0 04 | 1 5  | 2 5  |
|                   | 532500 176500 | 0 00  | 0 00 | #N/A | #N/A | 1 50 | 1 54 | 29 1 | 33 2 | 0 05 | 0 06 | 2 3  | 3 0  |
| Motorcycle        | 532500 178500 | 0 22  | 0 11 | 0 3  | 0 5  | 0 07 | 0 06 | 0 9  | 1 1  | 0 04 | 0 03 | 1 1  | 1 6  |
|                   | 532500 177500 | 0 12  | 0 06 | 0 2  | 0 3  | 0 04 | 0 03 | 0 7  | 0 8  | 0 02 | 0 02 | 0 8  | 1 0  |
|                   | 532500 176500 | 0 18  | 0 10 | 0 3  | 0 3  | 0 06 | 0 05 | 1 1  | 1 0  | 0 04 | 0 03 | 1 5  | 1 4  |
| Taxi              | 532500 178500 | 1 22  | 0 46 | 1 8  | 1 9  | 0 12 | 0 08 | 1 7  | 1 6  | 0 09 | 0 04 | 2 3  | 2 3  |
|                   | 532500 177500 | 0 75  | 0 28 | 1 4  | 1 2  | 0 08 | 0 05 | 1 5  | 1 3  | 0 05 | 0 03 | 1 9  | 1 5  |
|                   | 532500 176500 | 1 78  | 0 66 | 2 9  | 2 0  | 0 17 | 0 11 | 3 4  | 2 4  | 0 12 | 0 06 | 4 9  | 3 2  |
| Petrol Car        | 532500 177500 | 2 66  | 0 91 | 3 9  | 3 8  | 0 60 | 0 54 | 8 5  | 11 3 | 0 28 | 0 25 | 7 5  | 13 8 |
|                   | 532500 176500 | 2 29  | 0 81 | 4 4  | 3 4  | 0 51 | 0 46 | 10 3 | 12 1 | 0 24 | 0 21 | 8 8  | 12 7 |
|                   | 532500 178500 | 2 94  | 1 06 | 4 7  | 3 3  | 0 69 | 0 61 | 13 3 | 13 1 | 0 32 | 0 28 | 13 3 | 15 3 |
| Diesel Car        | 532500 178500 | 5 23  | 3 71 | 7 7  | 15 3 | 0 56 | 0 52 | 8 0  | 10 9 | 0 36 | 0 28 | 9 6  | 15 4 |
|                   | 532500 177500 | 4 37  | 3 21 | 8 4  | 13 3 | 0 49 | 0 46 | 9 9  | 12 1 | 0 32 | 0 25 | 11 6 | 14 7 |
|                   | 532500 176500 | 6 09  | 4 37 | 9 8  | 13 5 | 0 63 | 0 59 | 12 2 | 12 8 | 0 40 | 0 32 | 16 5 | 17 1 |
| Van and mini bus  | 532500 177500 | 3 43  | 1 90 | 5 1  | 7 8  | 0 46 | 0 35 | 6 5  | 7 3  | 0 29 | 0 18 | 7 8  | 9 8  |
|                   | 532500 176500 | 2 32  | 1 34 | 4 5  | 5 6  | 0 31 | 0 24 | 6 4  | 6 5  | 0 20 | 0 13 | 7 4  | 7 5  |
|                   | 532500 178500 | 3 28  | 1 86 | 5 3  | 5 7  | 0 42 | 0 33 | 8 2  | 7 1  | 0 27 | 0 17 | 11 1 | 9 1  |
| TfL Bus           | 532500 178500 | 15 19 | 1 37 | 22 5 | 5 6  | 0 52 | 0 44 | 7 4  | 9 2  | 0 28 | 0 20 | 7 3  | 10 8 |
|                   | 532500 177500 | 9 88  | 0 85 | 19 0 | 3 5  | 0 32 | 0 28 | 6 5  | 7 3  | 0 17 | 0 12 | 6 2  | 7 3  |
|                   | 532500 176500 | 14 71 | 3 23 | 23 7 | 10 0 | 0 46 | 0 41 | 9 0  | 8 8  | 0 24 | 0 19 | 10 2 | 10 2 |
| Other Bus / Coach | 532500 177500 | 1 84  | 0 72 | 2 7  | 3 0  | 0 06 | 0 05 | 0 8  | 1 0  | 0 03 | 0 02 | 0 9  | 1 3  |
|                   | 532500 176500 | 0 73  | 0 28 | 1 4  | 1 2  | 0 03 | 0 02 | 0 5  | 0 6  | 0 02 | 0 01 | 0 6  | 0 6  |
|                   | 532500 178500 | 2 89  | 1 16 | 4 7  | 3 6  | 0 08 | 0 07 | 1 6  | 1 4  | 0 05 | 0 03 | 2 1  | 1 8  |
| Rigid HGV         | 532500 177500 | 1 24  | 0 30 | 1 8  | 1 2  | 0 05 | 0 04 | 0 7  | 0 8  | 0 03 | 0 02 | 0 7  | 1 1  |
|                   | 532500 176500 | 1 08  | 0 26 | 2 1  | 1 1  | 0 04 | 0 04 | 0 9  | 1 0  | 0 02 | 0 02 | 0 9  | 1 1  |
|                   | 532500 178500 | 0 93  | 0 22 | 1 5  | 0 7  | 0 03 | 0 03 | 0 6  | 0 6  | 0 02 | 0 01 | 0 8  | 0 7  |
| Artic HGV         | 532500 177500 | 6 19  | 1 60 | 9 2  | 6 6  | 0 32 | 0 30 | 4 5  | 6 2  | 0 17 | 0 14 | 4 4  | 7 6  |
|                   | 532500 176500 | 3 88  | 0 99 | 7 5  | 4 1  | 0 21 | 0 19 | 4 3  | 5 1  | 0 11 | 0 09 | 4 0  | 5 4  |
|                   | 532500 178500 | 4 97  | 1 31 | 8 0  | 4 0  | 0 24 | 0 22 | 4 7  | 4 8  | 0 13 | 0 10 | 5 3  | 5 6  |
| Electric Car      | 532500 177500 | 0 00  | 0 00 |      |      | 0 00 | 0 01 | 0 0  | 0 1  | 0 00 | 0 00 | 0 0  | 0 1  |

|              |               |       |       |       |       |      |      |       |       |      |      |       |       |
|--------------|---------------|-------|-------|-------|-------|------|------|-------|-------|------|------|-------|-------|
|              | 532500 176500 | 0.00  | 0.00  |       |       | 0.00 | 0.00 | 0.0   | 0.1   | 0.00 | 0.00 | 0.0   | 0.1   |
|              | 532500 178500 | 0.00  | 0.00  |       |       | 0.00 | 0.01 | 0.0   | 0.1   | 0.00 | 0.00 | 0.0   | 0.1   |
| Electric LGV | 532500 177500 | 0.00  | 0.00  |       |       | 0.00 | 0.01 | 0.0   | 0.2   | 0.00 | 0.00 | 0.0   | 0.2   |
|              | 532500 176500 | 0.00  | 0.00  |       |       | 0.00 | 0.01 | 0.0   | 0.2   | 0.00 | 0.00 | 0.0   | 0.2   |
|              | 532500 178500 | 0.00  | 0.00  |       |       | 0.00 | 0.01 | 0.0   | 0.2   | 0.00 | 0.00 | 0.0   | 0.2   |
| Total        | 532500 177500 | 67.54 | 24.22 | 100.0 | 100.0 | 7.06 | 4.82 | 100.0 | 100.0 | 3.76 | 1.83 | 100.0 | 100.0 |
|              | 532500 176500 | 51.95 | 24.10 | 100.0 | 100.0 | 4.91 | 3.78 | 100.0 | 100.0 | 2.71 | 1.68 | 100.0 | 100.0 |
|              | 532500 178500 | 62.06 | 32.38 | 100.0 | 100.0 | 5.14 | 4.64 | 100.0 | 100.0 | 2.41 | 1.85 | 100.0 | 100.0 |

### SOURCE APPORTIONMENT – ROAD TRANSPORT SOURCE ONLY

| Source Type<br>(Road Transport<br>Only) |               | NO <sub>x</sub> Emissions<br>(tonnes/<br>year) - 2013 | NO <sub>x</sub> Emissions<br>(tonnes/<br>year) - 2020 | NO <sub>x</sub><br>Emissions<br>(%) - 2013 | NO <sub>x</sub><br>Emissions<br>(%) - 2020 | PM <sub>10</sub><br>Emissions<br>(tonnes/<br>year) - 2013 | PM <sub>10</sub> Emissions<br>(tonnes/<br>year) - 2020 | PM <sub>10</sub><br>Emissions<br>(%) - 2013 | PM <sub>10</sub><br>Emissions<br>(%) - 2020 | PM <sub>2.5</sub><br>Emissions<br>(tonnes/<br>year) - 2013 | PM <sub>2.5</sub><br>Emissions<br>(tonnes/<br>year) - 2020 | PM <sub>2.5</sub><br>Emissions<br>(%) - 2013 | PM <sub>2.5</sub><br>Emissions<br>(%) - 2020 |
|---|---------------|---|---|--|--|---|--|---|---|--|--|--|--|
| Motorcycle                              | 532500 178500 | 0.22  | 0.11  | 0.6  | 1.0  | 0.07  | 0.06   | 2.4   | 2.3   | 0.04   | 0.03   | 2.6  | 2.6  |
|   | 532500 177500 | 0.12  | 0.06  | 0.5  | 0.8  | 0.04  | 0.03   | 1.8   | 1.8   | 0.02   | 0.02   | 2.0  | 2.0  |
|   | 532500 176500 | 0.18  | 0.10  | 0.5  | 0.7  | 0.06  | 0.05   | 2.1   | 2.0   | 0.04   | 0.03   | 2.2  | 2.2  |
| Taxi                                    | 532500 178500 | 1.22  | 0.46  | 3.3  | 4.2  | 0.12  | 0.08   | 4.5   | 3.2   | 0.09   | 0.04   | 5.5  | 3.6  |
|   | 532500 177500 | 0.75  | 0.28  | 3.0  | 3.5  | 0.08  | 0.05   | 3.7   | 2.7   | 0.05   | 0.03   | 4.6  | 3.0  |
|   | 532500 176500 | 1.78  | 0.66  | 4.7  | 4.7  | 0.17  | 0.11   | 6.2   | 4.5   | 0.12   | 0.06   | 7.5  | 4.9  |
| Petrol Car                              | 532500 178500 | 2.66  | 0.91  | 7.1  | 8.2  | 0.60  | 0.54   | 21.9  | 22.6  | 0.28   | 0.25   | 18.0   | 21.6   |
|   | 532500 177500 | 2.29  | 0.81  | 9.0  | 10.0                                       | 0.51  | 0.46   | 25.2  | 25.8  | 0.24   | 0.21   | 20.7   | 24.4   |
|   | 532500 176500 | 2.94  | 1.06  | 7.8  | 7.6  | 0.69  | 0.61   | 24.6  | 25.0  | 0.32   | 0.28   | 20.3   | 23.6   |
| Diesel Car                              | 532500 178500 | 5.23  | 3.71  | 14.0                                       | 33.5                                       | 0.56  | 0.52   | 20.4  | 21.9  | 0.36   | 0.28   | 23.1   | 24.0   |
|   | 532500 177500 | 4.37  | 3.21  | 17.2                                       | 39.7                                       | 0.49  | 0.46   | 24.0  | 25.7  | 0.32   | 0.25   | 27.5   | 28.2   |
|   | 532500 176500 | 6.09  | 4.37  | 16.1                                       | 31.3                                       | 0.63  | 0.59   | 22.5  | 24.4  | 0.40   | 0.32   | 25.2   | 26.4   |
| Van and mini<br>bus                     | 532500 178500 | 3.43  | 1.90  | 9.2  | 17.1                                       | 0.46  | 0.35   | 16.6  | 14.7  | 0.29   | 0.18   | 18.7   | 15.4   |
|   | 532500 177500 | 2.32  | 1.34  | 9.1  | 16.6                                       | 0.31  | 0.24   | 15.5  | 13.7  | 0.20   | 0.13   | 17.5   | 14.3   |
|   | 532500 176500 | 3.28  | 1.86  | 8.7  | 13.3                                       | 0.42  | 0.33   | 15.2  | 13.7  | 0.27   | 0.17   | 16.8   | 14.1   |

|                       |               |       |       |       |       |      |      |       |       |      |      |       |       |
|-----------------------|---------------|-------|-------|-------|-------|------|------|-------|-------|------|------|-------|-------|
| TfL Bus               | 532500 178500 | 15.19 | 1.37  | 40.8  | 12.3  | 0.52 | 0.44 | 18.9  | 18.6  | 0.28 | 0.20 | 17.6  | 16.9  |
|                       | 532500 177500 | 9.88  | 0.85  | 38.9  | 10.5  | 0.32 | 0.28 | 15.9  | 15.5  | 0.17 | 0.12 | 14.8  | 14.0  |
|                       | 532500 176500 | 14.71 | 3.23  | 39.0  | 23.1  | 0.46 | 0.41 | 16.6  | 16.9  | 0.24 | 0.19 | 15.5  | 15.8  |
| Non-TfL Bus and Coach | 532500 178500 | 1.84  | 0.72  | 4.9   | 6.5   | 0.06 | 0.05 | 2.1   | 2.0   | 0.03 | 0.02 | 2.2   | 2.0   |
|                       | 532500 177500 | 0.73  | 0.28  | 2.9   | 3.4   | 0.03 | 0.02 | 1.3   | 1.2   | 0.02 | 0.01 | 1.3   | 1.2   |
|                       | 532500 176500 | 2.89  | 1.16  | 7.6   | 8.3   | 0.08 | 0.07 | 3.0   | 2.7   | 0.05 | 0.03 | 3.2   | 2.8   |
| Rigid HGV             | 532500 178500 | 1.24  | 0.30  | 3.3   | 2.7   | 0.05 | 0.04 | 1.7   | 1.7   | 0.03 | 0.02 | 1.7   | 1.7   |
|                       | 532500 177500 | 1.08  | 0.26  | 4.3   | 3.2   | 0.04 | 0.04 | 2.1   | 2.1   | 0.02 | 0.02 | 2.2   | 2.1   |
|                       | 532500 176500 | 0.93  | 0.22  | 2.5   | 1.6   | 0.03 | 0.03 | 1.1   | 1.1   | 0.02 | 0.01 | 1.2   | 1.1   |
| Artic HGV             | 532500 178500 | 6.19  | 1.60  | 16.6  | 14.4  | 0.32 | 0.30 | 11.6  | 12.4  | 0.17 | 0.14 | 10.6  | 11.9  |
|                       | 532500 177500 | 3.88  | 0.99  | 15.3  | 12.3  | 0.21 | 0.19 | 10.4  | 10.9  | 0.11 | 0.09 | 9.4   | 10.3  |
|                       | 532500 176500 | 4.97  | 1.31  | 13.2  | 9.4   | 0.24 | 0.22 | 8.7   | 9.2   | 0.13 | 0.10 | 8.1   | 8.7   |
| Electric Car          | 532500 178500 | 0.00  | 0.00  |       |       | 0.00 | 0.01 | 0.0   | 0.2   | 0.00 | 0.00 | 0.0   | 0.2   |
|                       | 532500 177500 | 0.00  | 0.00  |       |       | 0.00 | 0.00 | 0.0   | 0.3   | 0.00 | 0.00 | 0.0   | 0.2   |
|                       | 532500 176500 | 0.00  | 0.00  |       |       | 0.00 | 0.01 | 0.0   | 0.2   | 0.00 | 0.00 | 0.0   | 0.2   |
| Electric LGV          | 532500 178500 | 0.00  | 0.00  |       |       | 0.00 | 0.01 | 0.0   | 0.3   | 0.00 | 0.00 | 0.0   | 0.3   |
|                       | 532500 177500 | 0.00  | 0.00  |       |       | 0.00 | 0.01 | 0.0   | 0.3   | 0.00 | 0.00 | 0.0   | 0.3   |
|                       | 532500 176500 | 0.00  | 0.00  |       |       | 0.00 | 0.01 | 0.0   | 0.3   | 0.00 | 0.00 | 0.0   | 0.3   |
| Total                 | 532500 178500 | 37.22 | 11.08 | 100.0 | 100.0 | 2.76 | 2.39 | 100.0 | 100.0 | 1.57 | 1.17 | 100.0 | 100.0 |
|                       | 532500 177500 | 25.41 | 8.08  | 100.0 | 100.0 | 2.02 | 1.78 | 100.0 | 100.0 | 1.15 | 0.88 | 100.0 | 100.0 |
|                       | 532500 176500 | 37.76 | 13.95 | 100.0 | 100.0 | 2.78 | 2.42 | 100.0 | 100.0 | 1.58 | 1.20 | 100.0 | 100.0 |

SOURCE APPORTIONMENT – ALL SOURCE CATEGORIES

| Source Type                      |                 | NO <sub>x</sub> Emissions (tonnes/year) - 2013 | NO <sub>x</sub> Emissions (tonnes/year) - 2020 | NO <sub>x</sub> Emissions (%) - 2013 | NO <sub>x</sub> Emissions (%) - 2020 | PM <sub>10</sub> Emissions (tonnes/year) - 2013 | PM <sub>10</sub> Emissions (tonnes/year) - 2020 | PM <sub>10</sub> Emissions (%) - 2013 | PM <sub>10</sub> Emissions (%) - 2020 | PM <sub>2.5</sub> Emissions (tonnes/year) - 2013 | PM <sub>2.5</sub> Emissions (tonnes/year) - 2020 | PM <sub>2.5</sub> Emissions (%) - 2013 | PM <sub>2.5</sub> Emissions (%) - 2020 |
|----------------------------------|-----------------|--|--|--------------------------------------|--------------------------------------|---|---|---------------------------------------|---------------------------------------|--|--|--|--|
| Household and Garden             | 532,500,178,500 | 0.01   | 0.02   | 0.0                                  | 0.1                                  | 0.00  | 0.00  | 0.0                                   | 0.0                                   | 0.00   | 0.00   | 0.0                                    | 0.0                                    |
|                                  | 532,500,177,500 | 0.02   | 0.02   | 0.0                                  | 0.1                                  | 0.00  | 0.00  | 0.0                                   | 0.0                                   | 0.00   | 0.00   | 0.0                                    | 0.0                                    |
|                                  | 532,500,176,500 | 0.02   | 0.02   | 0.0                                  | 0.1                                  | 0.00  | 0.00  | 0.0                                   | 0.0                                   | 0.00   | 0.00   | 0.0                                    | 0.0                                    |
| Small Waste and Accidental Fires | 532,500,178,500 | 0.07   | 0.10   | 0.1                                  | 0.4                                  | 0.30  | 0.41  | 4.3                                   | 8.4                                   | 0.28   | 0.38   | 7.4                                    | 20.6                                   |
|                                  | 532,500,177,500 | 0.09   | 0.11   | 0.2                                  | 0.4                                  | 0.36  | 0.42  | 7.4                                   | 11.1                                  | 0.34   | 0.39   | 12.5                                   | 23.3                                   |
|                                  | 532,500,176,500 | 0.06   | 0.07   | 0.1                                  | 0.2                                  | 0.24  | 0.27  | 4.7                                   | 5.7                                   | 0.22   | 0.25   | 9.3                                    | 13.3                                   |
| Agriculture                      | 532,500,178,500 | 0.00   | 0.00   |                                      |                                      | 0.00  | 0.00  |                                       |                                       | 0.00   | 0.00   |  |  |
|                                  | 532,500,177,500 | 0.01   | 0.01   | 0.0                                  | 0.0                                  | 0.00  | 0.00  | 0.0                                   | 0.0                                   | 0.00   | 0.00   | 0.0                                    | 0.0                                    |
|                                  | 532,500,176,500 | 0.00   | 0.00   |                                      |                                      | 0.00  | 0.00  |                                       |                                       | 0.00   | 0.00   |  |  |
| STW                              | 532,500,178,500 | 0.00   | 0.00   |                                      |                                      | 0.00  | 0.00  |                                       |                                       | 0.00   | 0.00   |  |  |
|                                  | 532,500,177,500 | 0.00   | 0.00   |                                      |                                      | 0.00  | 0.00  |                                       |                                       | 0.00   | 0.00   |  |  |
|                                  | 532,500,176,500 | 0.00   | 0.00   |                                      |                                      | 0.00  | 0.00  |                                       |                                       | 0.00   | 0.00   |  |  |
| WTS                              | 532,500,178,500 | 0.00   | 0.00   |                                      |                                      | 0.01  | 0.01  | 0.2                                   | 0.3                                   | 0.00   | 0.00   | 0.0                                    | 0.1                                    |
|                                  | 532,500,177,500 | 0.00   | 0.00   |                                      |                                      | 0.00  | 0.00  |                                       |                                       | 0.00   | 0.00   |  |  |
|                                  | 532,500,176,500 | 0.00   | 0.00   |                                      |                                      | 0.00  | 0.00  |                                       |                                       | 0.00   | 0.00   |  |  |
| Landfill                         | 532,500,178,500 | 0.00   | 0.00   |                                      |                                      | 0.00  | 0.00  |                                       |                                       | 0.00   | 0.00   |  |  |
|                                  | 532,500,177,500 | 0.00   | 0.00   |                                      |                                      | 0.00  | 0.00  |                                       |                                       | 0.00   | 0.00   |  |  |
|                                  | 532,500,176,500 | 0.00   | 0.00   |                                      |                                      | 0.00  | 0.00  |                                       |                                       | 0.00   | 0.00   |  |  |
| NRMM Construction                | 532,500,178,500 | 16.01  | 0.01   | 23.7                                 | 0.0                                  | 1.67  | 0.00  | 23.6                                  | 0.0                                   | 1.57   | 0.00   | 41.7                                   | 0.1                                    |
|                                  | 532,500,177,500 | 7.98   | 1.40   | 15.4                                 | 5.8                                  | 0.83  | 0.09  | 17.0                                  | 2.5                                   | 0.78   | 0.09   | 28.9                                   | 5.2                                    |
|                                  | 532,500,176,500 | 1.88   | 1.34   | 3.0                                  | 4.1                                  | 0.20  | 0.09  | 3.8                                   | 1.9                                   | 0.18   | 0.08   | 7.6                                    | 4.5                                    |
| NRMM Industry                    | 532,500,178,500 | 1.06   | 0.77   | 1.6                                  | 3.2                                  | 0.06  | 0.04  | 0.8                                   | 0.9                                   | 0.05   | 0.04   | 1.4                                    | 2.1                                    |

|                        |                 |       |      |      |      |      |      |     |     |      |      |     |     |
|------------------------|-----------------|-------|------|------|------|------|------|-----|-----|------|------|-----|-----|
|                        | 532,500,177,500 | 1.50  | 1.09 | 2.9  | 4.5  | 0.08 | 0.06 | 1.6 | 1.5 | 0.08 | 0.05 | 2.8 | 3.2 |
|                        | 532,500,176,500 | 0.53  | 0.38 | 0.9  | 1.2  | 0.03 | 0.02 | 0.5 | 0.4 | 0.03 | 0.02 | 1.1 | 1.0 |
| C&D Dust               | 532,500,178,500 | 0.00  | 0.00 |      |      | 0.32 | 0.00 | 4.6 | 0.0 | 0.03 | 0.00 | 0.9 | 0.0 |
|                        | 532,500,177,500 | 0.00  | 0.00 |      |      | 0.16 | 0.05 | 3.3 | 1.2 | 0.02 | 0.00 | 0.6 | 0.3 |
|                        | 532,500,176,500 | 0.00  | 0.00 |      |      | 0.04 | 0.04 | 0.7 | 1.0 | 0.00 | 0.00 | 0.2 | 0.2 |
| Domestic Gas           | 532,500,178,500 | 6.13  | 7.54 | 9.1  | 31.1 | 0.08 | 0.10 | 1.1 | 2.0 | 0.08 | 0.10 | 2.1 | 5.2 |
|                        | 532,500,177,500 | 5.80  | 6.07 | 11.2 | 25.2 | 0.07 | 0.08 | 1.5 | 2.0 | 0.07 | 0.08 | 2.7 | 4.6 |
|                        | 532,500,176,500 | 6.70  | 6.50 | 10.8 | 20.1 | 0.08 | 0.08 | 1.6 | 1.8 | 0.08 | 0.08 | 3.5 | 4.4 |
| Commercial Gas         | 532,500,178,500 | 6.41  | 4.35 | 9.5  | 18.0 | 0.10 | 0.07 | 1.4 | 1.4 | 0.10 | 0.07 | 2.6 | 3.6 |
|                        | 532,500,177,500 | 10.45 | 6.97 | 20.1 | 28.9 | 0.16 | 0.11 | 3.2 | 2.8 | 0.16 | 0.11 | 5.8 | 6.3 |
|                        | 532,500,176,500 | 13.26 | 8.84 | 21.4 | 27.3 | 0.20 | 0.13 | 3.9 | 2.9 | 0.20 | 0.13 | 8.3 | 7.2 |
| Domestic other Fuels   | 532,500,178,500 | 0.13  | 0.16 | 0.2  | 0.7  | 0.01 | 0.01 | 0.1 | 0.1 | 0.01 | 0.01 | 0.2 | 0.4 |
|                        | 532,500,177,500 | 0.20  | 0.17 | 0.4  | 0.7  | 0.06 | 0.03 | 1.3 | 0.9 | 0.06 | 0.03 | 2.2 | 1.9 |
|                        | 532,500,176,500 | 0.07  | 0.06 | 0.1  | 0.2  | 0.02 | 0.01 | 0.3 | 0.2 | 0.02 | 0.01 | 0.7 | 0.5 |
| Commercial other Fuels | 532,500,178,500 | 0.49  | 0.18 | 0.7  | 0.8  | 0.04 | 0.02 | 0.6 | 0.4 | 0.02 | 0.01 | 0.5 | 0.5 |
|                        | 532,500,177,500 | 0.49  | 0.18 | 0.9  | 0.8  | 0.04 | 0.02 | 0.9 | 0.5 | 0.02 | 0.01 | 0.7 | 0.5 |
|                        | 532,500,176,500 | 0.45  | 0.17 | 0.7  | 0.5  | 0.04 | 0.02 | 0.7 | 0.3 | 0.02 | 0.01 | 0.7 | 0.4 |
| Industry Part A        | 532,500,178,500 | 0.00  | 0.00 |      |      | 0.00 | 0.00 |     |     | 0.00 | 0.00 |     |     |
|                        | 532,500,177,500 | 0.00  | 0.00 |      |      | 0.00 | 0.00 |     |     | 0.00 | 0.00 |     |     |
|                        | 532,500,176,500 | 0.00  | 0.00 |      |      | 0.00 | 0.00 |     |     | 0.00 | 0.00 |     |     |
| Industry Part B        | 532,500,178,500 | 0.00  | 0.00 |      |      | 0.00 | 0.00 |     |     | 0.00 | 0.00 |     |     |
|                        | 532,500,177,500 | 0.00  | 0.00 |      |      | 0.00 | 0.00 |     |     | 0.00 | 0.00 |     |     |
|                        | 532,500,176,500 | 0.00  | 0.00 |      |      | 0.00 | 0.00 |     |     | 0.00 | 0.00 |     |     |
| Aviation               | 532,500,178,500 | 0.00  | 0.00 |      |      | 0.00 | 0.00 |     |     | 0.00 | 0.00 |     |     |
|                        | 532,500,177,500 | 0.00  | 0.00 |      |      | 0.00 | 0.00 |     |     | 0.00 | 0.00 |     |     |
|                        | 532,500,176,500 | 0.00  | 0.00 |      |      | 0.00 | 0.00 |     |     | 0.00 | 0.00 |     |     |
| Passenger Shipping     | 532,500,178,500 | 0.00  | 0.00 |      |      | 0.00 | 0.00 |     |     | 0.00 | 0.00 |     |     |
|                        | 532,500,177,500 | 0.00  | 0.00 |      |      | 0.00 | 0.00 |     |     | 0.00 | 0.00 |     |     |



|                     |                 |      |      |     |      |      |      |      |      |      |      |      |      |
|---------------------|-----------------|------|------|-----|------|------|------|------|------|------|------|------|------|
|                     | 532,500,176,500 | 0 00 | 0 00 |     |      | 0 00 | 0 00 |      |      | 0 00 | 0 00 |      |      |
| Commercial Shipping | 532,500,178,500 | 0 00 | 0 00 |     |      | 0 00 | 0 00 |      |      | 0 00 | 0 00 |      |      |
|                     | 532,500,177,500 | 0 00 | 0 00 |     |      | 0 00 | 0 00 |      |      | 0 00 | 0 00 |      |      |
|                     | 532,500,176,500 | 0 00 | 0 00 |     |      | 0 00 | 0 00 |      |      | 0 00 | 0 00 |      |      |
| Rail Freight        | 532,500,178,500 | 0 00 | 0 00 |     |      | 0 00 | 0 00 |      |      | 0 00 | 0 00 |      |      |
|                     | 532,500,177,500 | 0 00 | 0 00 |     |      | 0 00 | 0 00 |      |      | 0 00 | 0 00 |      |      |
|                     | 532,500,176,500 | 1 33 | 1 05 | 2 1 | 3 2  | 0 02 | 0 01 | 0 3  | 0 3  | 0 02 | 0 01 | 0 7  | 0 6  |
| Rail Passengers     | 532,500,178,500 | 0 00 | 0 00 |     |      | 0 00 | 0 00 |      |      | 0 00 | 0 00 |      |      |
|                     | 532,500,177,500 | 0 00 | 0 00 |     |      | 0 00 | 0 00 |      |      | 0 00 | 0 00 |      |      |
|                     | 532,500,176,500 | 0 00 | 0 00 |     |      | 0 00 | 0 00 |      |      | 0 00 | 0 00 |      |      |
| Resuspension        | 532,500,178,500 | 0 00 | 0 00 |     |      | 1 72 | 1 77 | 24 3 | 36 8 | 0 06 | 0 06 | 1 7  | 3 5  |
|                     | 532,500,177,500 | 0 00 | 0 00 |     |      | 1 12 | 1 15 | 22 7 | 30 5 | 0 04 | 0 04 | 1 5  | 2 5  |
|                     | 532,500,176,500 | 0 00 | 0 00 |     |      | 1 50 | 1 54 | 29 1 | 33 2 | 0 05 | 0 06 | 2 3  | 3 0  |
| Motorcycle          | 532,500,178,500 | 0 22 | 0 11 | 0 3 | 0 5  | 0 07 | 0 06 | 0 9  | 1 1  | 0 04 | 0 03 | 1 1  | 1 6  |
|                     | 532,500,177,500 | 0 12 | 0 06 | 0 2 | 0 3  | 0 04 | 0 03 | 0 7  | 0 8  | 0 02 | 0 02 | 0 8  | 1 0  |
|                     | 532,500,176,500 | 0 18 | 0 10 | 0 3 | 0 3  | 0 06 | 0 05 | 1 1  | 1 0  | 0 04 | 0 03 | 1 5  | 1 4  |
| Taxi                | 532,500,178,500 | 1 22 | 0 46 | 1 8 | 1 9  | 0 12 | 0 08 | 1 7  | 1 6  | 0 09 | 0 04 | 2 3  | 2 3  |
|                     | 532,500,177,500 | 0 75 | 0 28 | 1 4 | 1 2  | 0 08 | 0 05 | 1 5  | 1 3  | 0 05 | 0 03 | 1 9  | 1 5  |
|                     | 532,500,176,500 | 1 78 | 0 66 | 2 9 | 2 0  | 0 17 | 0 11 | 3 4  | 2 4  | 0 12 | 0 06 | 4 9  | 3 2  |
| PetrolCar           | 532,500,178,500 | 2 66 | 0 91 | 3 9 | 3 8  | 0 60 | 0 54 | 8 5  | 11 3 | 0 28 | 0 25 | 7 5  | 13 8 |
|                     | 532,500,177,500 | 2 29 | 0 81 | 4 4 | 3 4  | 0 51 | 0 46 | 10 3 | 12 1 | 0 24 | 0 21 | 8 8  | 12 7 |
|                     | 532,500,176,500 | 2 94 | 1 06 | 4 7 | 3 3  | 0 69 | 0 61 | 13 3 | 13 1 | 0 32 | 0 28 | 13 3 | 15 3 |
| DieselCar           | 532,500,178,500 | 5 23 | 3 71 | 7 7 | 15 3 | 0 56 | 0 52 | 8 0  | 10 9 | 0 36 | 0 28 | 9 6  | 15 4 |
|                     | 532,500,177,500 | 4 37 | 3 21 | 8 4 | 13 3 | 0 49 | 0 46 | 9 9  | 12 1 | 0 32 | 0 25 | 11 6 | 14 7 |
|                     | 532,500,176,500 | 6 09 | 4 37 | 9 8 | 13 5 | 0 63 | 0 59 | 12 2 | 12 8 | 0 40 | 0 32 | 16 5 | 17 1 |
| ElectricCar         | 532,500,178,500 | 0 00 | 0 00 |     |      | 0 00 | 0 01 | 0 0  | 0 1  | 0 00 | 0 00 | 0 0  | 0 1  |
|                     | 532,500,177,500 | 0 00 | 0 00 |     |      | 0 00 | 0 00 | 0 0  | 0 1  | 0 00 | 0 00 | 0 0  | 0 1  |

|              |                 |       |       |       |       |      |      |       |       |      |      |       |       |
|--------------|-----------------|-------|-------|-------|-------|------|------|-------|-------|------|------|-------|-------|
|              | 532,500,176,500 | 0.00  | 0.00  |       |       | 0.00 | 0.01 | 0.00  | 0.01  | 0.00 | 0.00 | 0.00  | 0.01  |
| Petrol LGV   | 532,500,178,500 | 0.04  | 0.03  | 0.01  | 0.01  | 0.01 | 0.01 | 0.01  | 0.01  | 0.00 | 0.00 | 0.01  | 0.02  |
|              | 532,500,177,500 | 0.02  | 0.02  | 0.00  | 0.01  | 0.00 | 0.00 | 0.01  | 0.01  | 0.00 | 0.00 | 0.01  | 0.01  |
|              | 532,500,176,500 | 0.03  | 0.02  | 0.01  | 0.01  | 0.01 | 0.01 | 0.01  | 0.01  | 0.00 | 0.00 | 0.01  | 0.01  |
| Diesel LGV   | 532,500,178,500 | 3.40  | 1.87  | 5.0   | 7.7   | 0.45 | 0.35 | 6.4   | 7.2   | 0.29 | 0.18 | 7.7   | 9.7   |
|              | 532,500,177,500 | 2.30  | 1.32  | 4.4   | 5.5   | 0.31 | 0.24 | 6.3   | 6.3   | 0.20 | 0.12 | 7.3   | 7.3   |
|              | 532,500,176,500 | 3.25  | 1.83  | 5.2   | 5.7   | 0.42 | 0.32 | 8.1   | 7.0   | 0.26 | 0.17 | 11.0  | 9.0   |
| Electric LGV | 532,500,178,500 | 0.00  | 0.00  |       |       | 0.00 | 0.01 | 0.00  | 0.02  | 0.00 | 0.00 | 0.00  | 0.02  |
|              | 532,500,177,500 | 0.00  | 0.00  |       |       | 0.00 | 0.01 | 0.00  | 0.02  | 0.00 | 0.00 | 0.00  | 0.02  |
|              | 532,500,176,500 | 0.00  | 0.00  |       |       | 0.00 | 0.01 | 0.00  | 0.02  | 0.00 | 0.00 | 0.00  | 0.02  |
| LT Bus       | 532,500,178,500 | 15.19 | 1.37  | 22.5  | 5.6   | 0.52 | 0.44 | 7.4   | 9.2   | 0.28 | 0.20 | 7.3   | 10.8  |
|              | 532,500,177,500 | 9.88  | 0.85  | 19.0  | 3.5   | 0.32 | 0.28 | 6.5   | 7.3   | 0.17 | 0.12 | 6.2   | 7.3   |
|              | 532,500,176,500 | 14.71 | 3.23  | 23.7  | 10.0  | 0.46 | 0.41 | 9.0   | 8.8   | 0.24 | 0.19 | 10.2  | 10.2  |
| Coach        | 532,500,178,500 | 1.84  | 0.72  | 2.7   | 3.0   | 0.06 | 0.05 | 0.8   | 1.0   | 0.03 | 0.02 | 0.9   | 1.3   |
|              | 532,500,177,500 | 0.73  | 0.28  | 1.4   | 1.2   | 0.03 | 0.02 | 0.5   | 0.6   | 0.02 | 0.01 | 0.6   | 0.6   |
|              | 532,500,176,500 | 2.89  | 1.16  | 4.7   | 3.6   | 0.08 | 0.07 | 1.6   | 1.4   | 0.05 | 0.03 | 2.1   | 1.8   |
| Artic        | 532,500,178,500 | 1.24  | 0.30  | 1.8   | 1.2   | 0.05 | 0.04 | 0.7   | 0.8   | 0.03 | 0.02 | 0.7   | 1.1   |
|              | 532,500,177,500 | 1.08  | 0.26  | 2.1   | 1.1   | 0.04 | 0.04 | 0.9   | 1.0   | 0.02 | 0.02 | 0.9   | 1.1   |
|              | 532,500,176,500 | 0.93  | 0.22  | 1.5   | 0.7   | 0.03 | 0.03 | 0.6   | 0.6   | 0.02 | 0.01 | 0.8   | 0.7   |
| Rigid        | 532,500,178,500 | 6.19  | 1.60  | 9.2   | 6.6   | 0.32 | 0.30 | 4.5   | 6.2   | 0.17 | 0.14 | 4.4   | 7.6   |
|              | 532,500,177,500 | 3.88  | 0.99  | 7.5   | 4.1   | 0.21 | 0.19 | 4.3   | 5.1   | 0.11 | 0.09 | 4.0   | 5.4   |
|              | 532,500,176,500 | 4.97  | 1.31  | 8.0   | 4.0   | 0.24 | 0.22 | 4.7   | 4.8   | 0.13 | 0.10 | 5.3   | 5.6   |
| Total        | 532,500,178,500 | 67.54 | 24.22 | 100.0 | 100.0 | 7.06 | 4.82 | 100.0 | 100.0 | 3.76 | 1.83 | 100.0 | 100.0 |
|              | 532,500,177,500 | 51.95 | 24.10 | 100.0 | 100.0 | 4.91 | 3.78 | 100.0 | 100.0 | 2.71 | 1.68 | 100.0 | 100.0 |
|              | 532,500,176,500 | 62.06 | 32.38 | 100.0 | 100.0 | 5.14 | 4.64 | 100.0 | 100.0 | 2.41 | 1.85 | 100.0 | 100.0 |