

Third Croydon Local Implementation Plan

Appendix A

Summary Evidence Base



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1) Local Policies and Strategies

These are the local and borough policy and strategy documents and plans that will influence or complement the Local Implementation Plan and vice versa.

Corporate Plan 2018-2022 – ‘Ambitious for Croydon’

The key relevant themes in the Draft Corporate Plan include:

- Transport and environment –
 - Reliable public transport system that ensures safe and convenient travel
 - Easy, accessible, safe and reliable, making it more convenient to travel between Croydon’s local places
 - Less reliance on cars, more willingness to use public transport
- Creating jobs and growing the economy - Increase the number of businesses in the borough and support existing business for sustainable economic growth
- A healthier Croydon – improving the health of residents

A Transport Vision for Croydon: Moving towards a more liveable place

The Council adopted this direction of travel document in 2015. The Vision provides a focus for our plans and actions and sets out how people will move in a growing Croydon over a 20 year period. Its approach is fivefold:

- Increasingly connected - enhancing national and international links and ensuring Croydon is a place that is easy to get to and through.
- Better places – turning challenges into opportunities such as switching the many short car trips to walking and cycling; enhancing Croydon’s important places such as using the planning system to guide development to the most accessible places and investment in urban realm schemes.
- Safer and calmer – reducing road user casualties such as through training and education and 20mph speed limits.
- Mixed Modality – achieving a walking and cycling environment with the aim for a more liveable city; reducing the need to own a car.
- A Healthy City – ensuring clean air is enjoyed by all by widening travel choices and ensuring active travel is available to all.

Croydon’s Community Strategy 2016-21

The vision and key relevant outcomes from Croydon’s Community Strategy are:

- Connected - a place that is well connected, easy to get to and around, and supported by infrastructure that enables people to easily come together; with one of the best digital, communications and transport networks in the country.
- Sustainable - a place that sets the pace amongst London boroughs on promoting environmental sustainability and where the natural environment forms the arteries and veins of the borough.

Croydon Local Plan 2018

The recently adopted Croydon Local Plan 2018 identifies 11 Strategic Objectives. The most relevant for this LIP are:

- A Place of Opportunity:
 - Strategic Objective 1 – establish Croydon as the premier business location in South London and the Gatwick Diamond.
 - Strategic Objective 4 – reduce social, economic and environmental deprivation, particularly where it is spatially concentrated, by taking priority measures to reduce unemployment, improve skills and education and renew housing, community and environmental conditions.
- A Place with a Sustainable Future:
 - Strategic Objective 8 – improve accessibility, connectivity, sustainability and ease of movement to, from and within the Borough.

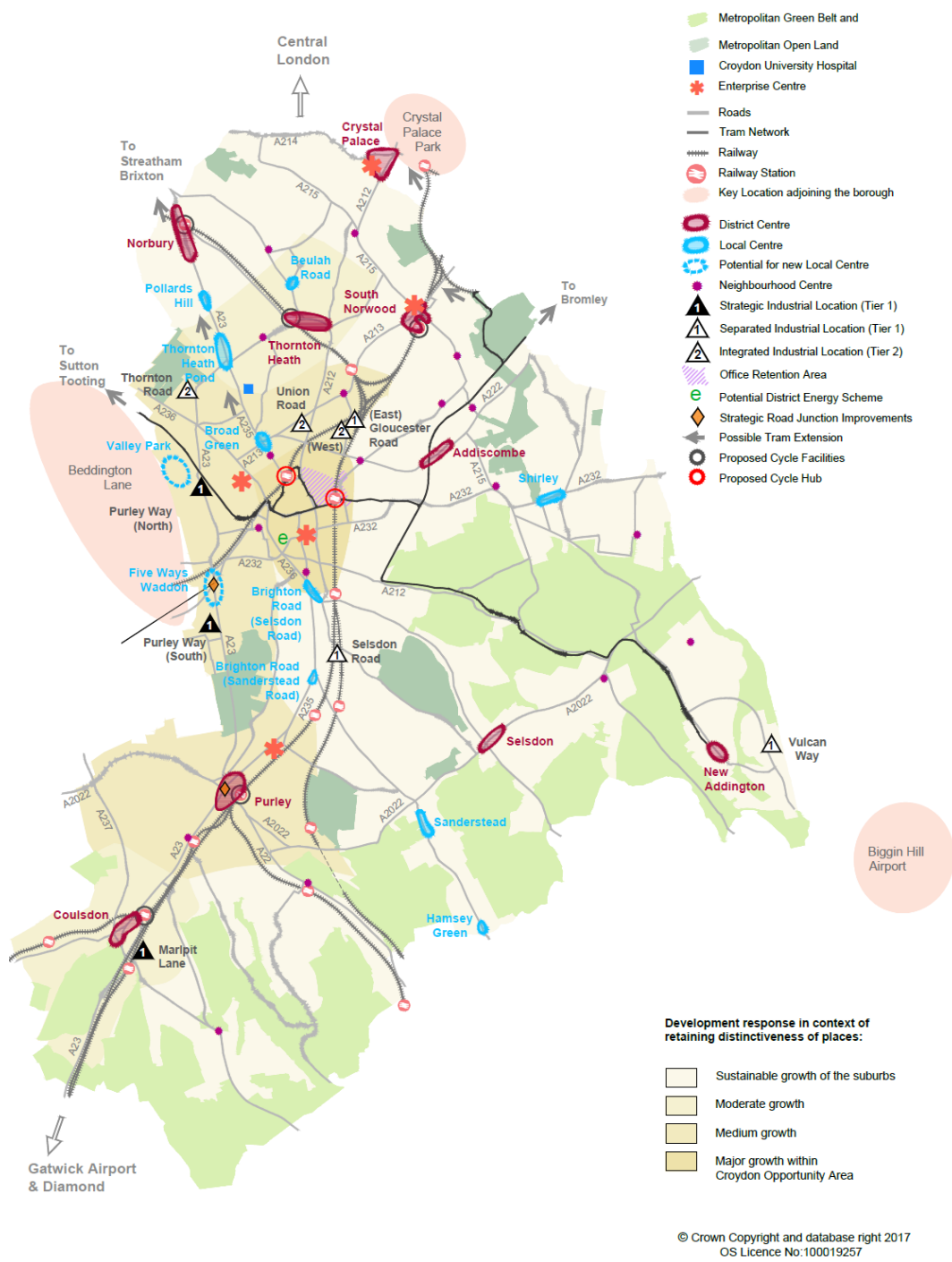


Figure A1: Key Borough Diagram [Source: Local Plan]

Croydon Opportunity Area Planning Framework (OAPF)

The Croydon Opportunity Area Planning Framework [OAPF]¹ was adopted in 2013, it covers Croydon Metropolitan Centre and guides development over the 20 year period to 2031. The main objectives of the OAPF are to:

¹ <https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/opportunity-areas/opportunity-areas/croydon-opportunity>

- Support the development of new homes
- Plan the delivery of the social infrastructure necessary to accommodate new residents
- Promote the redevelopment and renewal of the retail core
- Plan for the revival of prominent high streets
- Encourage the location of new office/commercial space around New Town and East Croydon
- Plan for, and enable the, delivery of new and improved streets and amenity spaces.
- Promote high quality architecture and built form
- Ensure enhanced transport and parking capacity

Croydon Growth Zone Strategy

The Croydon Opportunity Area (COA) is now referred to as the 'Growth Zone' and it provides the delivery framework for transport and other infrastructure measures for Croydon Opportunity Area. This will run for an initial 16 years and seeks to support delivery of the OAPF objectives, specifically:

- 23,594 new jobs
- A further 5,097 jobs during the construction phase
- At least 10,000 new homes
- The wholesale renewal of the retail core ensuring the metropolitan centre is an attractive place to live, work and invest

The value of developments and associated infrastructure works in central Croydon is estimated to be over £5.25 billion and the Council is providing over £300 million of funding, known as the Growth Zone programme for transport, public realm and social infrastructure to enable and support this growth. Much of the funding will be spent on improvements to public transport and enhancement to the streets to encourage more walking and cycling. In addition, the Growth Zone will ensure a range of schemes are put in place to reduce the impact of the construction using measures such as implementing construction & logistics plans, providing HGV holding areas, using technology to manage and regulate the flow of construction traffic entering the town centre, enhanced signing and wayfinding measures and promoting electric and environmentally friendly vehicles.

The projects and programmes being funded through the Growth Zone are detailed in the Delivery Plan for this LIP3.

Draft London Plan 2018

The Draft London Plan (minor amendments 2018) sets out new housing and growth targets for Croydon and requires the Borough to deliver 14,500 new homes and 10,500 new jobs in the Growth Zone between 2019 and 2041.²

The 10 year net target set in the Draft London Plan for Housing Completions for Croydon between 2019 and 2029 is 29,490 with an annualised average target of 2,949 per year.

Croydon Transport Investment Strategy

The Croydon Transport Investment Strategy (CTIS) was developed to support the Croydon Local Plan 2018; in particular, Strategic Objective 8: To improve accessibility, connectivity, sustainability and ease of movement to, from and within the borough.

The CTIS also supports the Growth Zone designation overlaying the Croydon Opportunity Area; and the Council's 'Transport Vision: Moving Towards a more Liveable Place'. The CTIS identifies a series of integrated strategic transport packages intended to transform travel and support growth across the borough and beyond. The CTIS outlines how Croydon, with its partner organisations, aims to build and enhance Croydon's transport network to support a borough that is well-connected, accessible and sustainable for all in the community by 2037, catalysing economic growth, social inclusion, a decrease in deprivation, improvements to the environment, and supporting health and wellbeing, population growth and future opportunities.

² <https://www.london.gov.uk/what-we-do/planning/london-plan/new-london-plan/download-draft-london-plan-0> Table2.1

2) Borough Context

Demographics

Demographically Croydon is young borough with 95,000 residents aged 17 or under, the highest number in London. It is also an ageing population with over 50,000 residents aged 65 and above, this figure is expected to increase by 41% by 2031. In contrast the population aged between 20 and 64 will have increased by just 2.5%.³

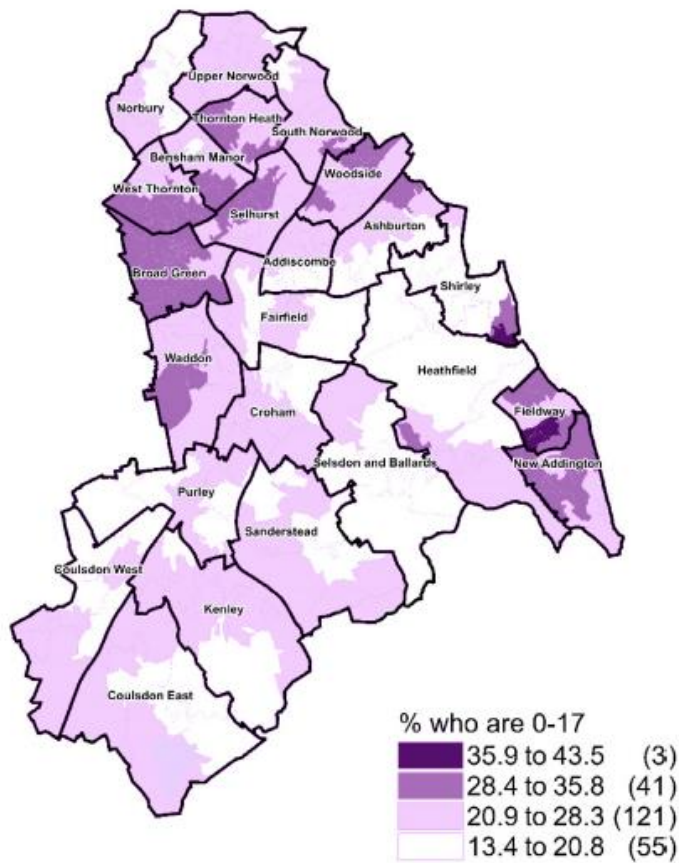
Croydon has a diverse population with 52% Black, Asian and Minority Ethnic (BAME) population⁴. This proportion is expected to rise to 55.6% by 2025. The younger population is more diverse than the older population. Over 100 different languages are spoken in the Borough.

As shown in figures A2 and A3, the younger population is more concentrated in the north and New Addington, whereas the older population is more concentrated in the south and east of the borough.

³ <https://www.croydon.gov.uk/sites/default/files/articles/downloads/DRAFT%20Corporate%20Plan%202018-22.pdf> Page 6

⁴ GLA 2018 Ethnic Group Projections

% OF POPULATION WHO ARE 0-17, CROYDON 2015



All maps source: 2016 Mid year estimates, ONS

Figure A2: Percentage of population aged 0-17 borough distribution

Figure A3: Percentage of population aged 65+ borough distribution

[Source: Annual Report of the Croydon Director of Public Health 2017]

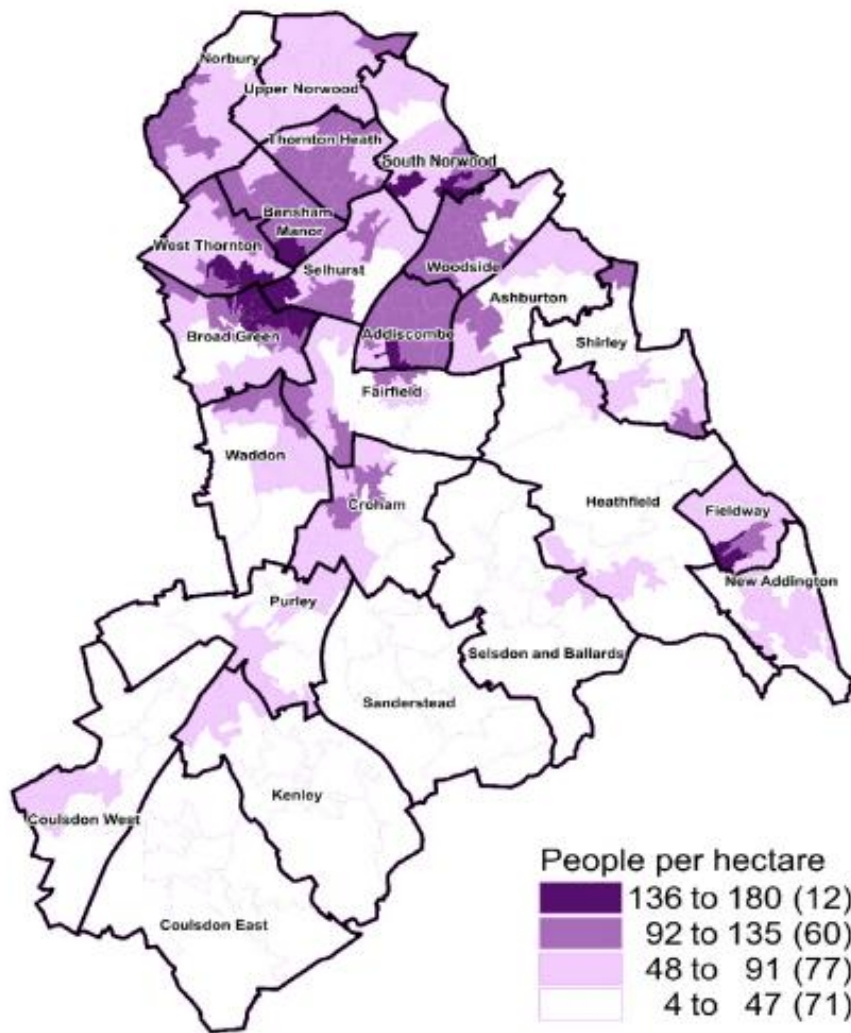


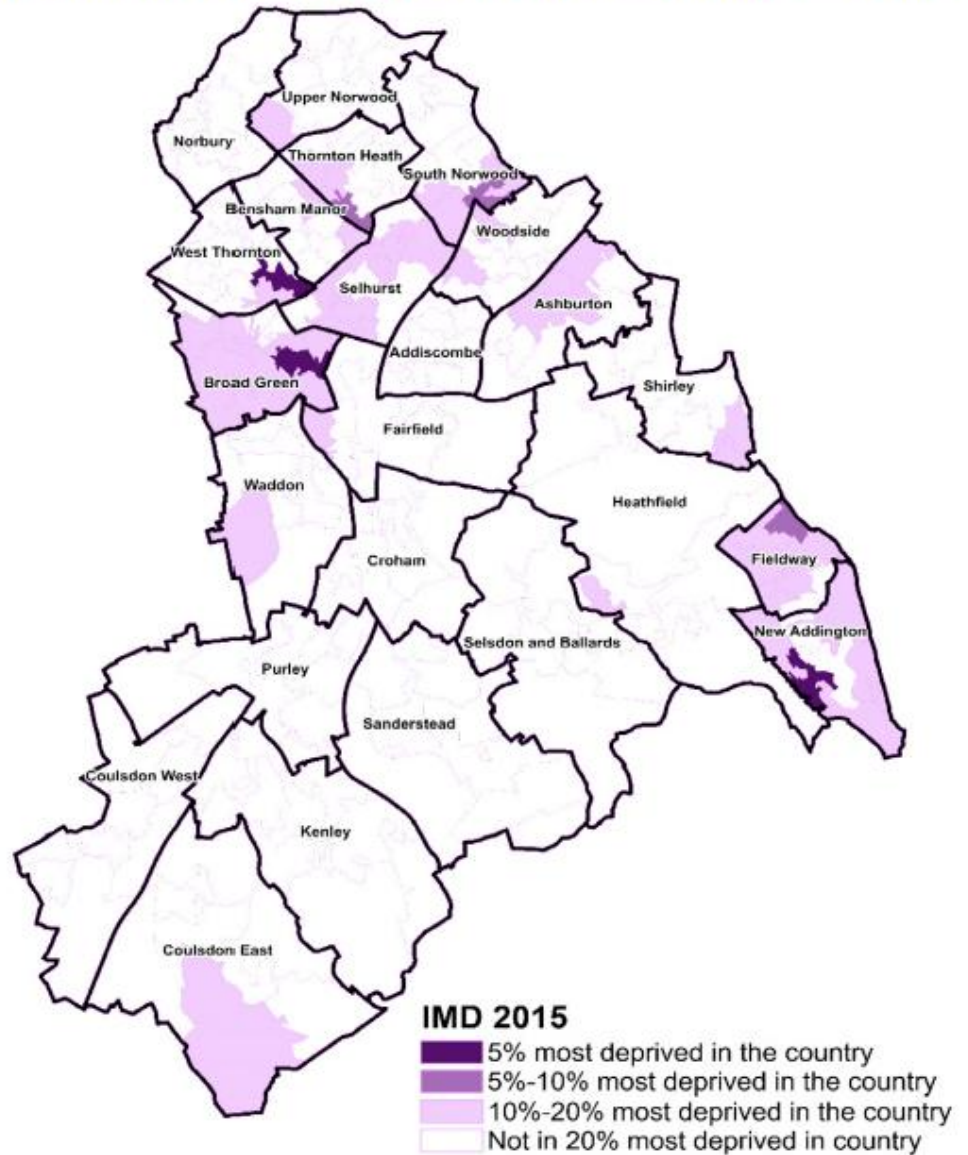
Figure A4: Population density in 2015 [Source: Local Plan]

Deprivation and Healthy Inequality

Deprivation levels are higher in the north of the Borough with the exception of New Addington, see figure A5.

Life expectancy is linked to deprivation. Male life expectancy increases by 10.6 years on a 30 minute bus journey between Selhurst in the north and Selsdon in the south, see figure A6.

INDICES OF DEPRIVATION 2-15 CROYDON LOWER SUPER OUTPUT AREAS (LSOA)

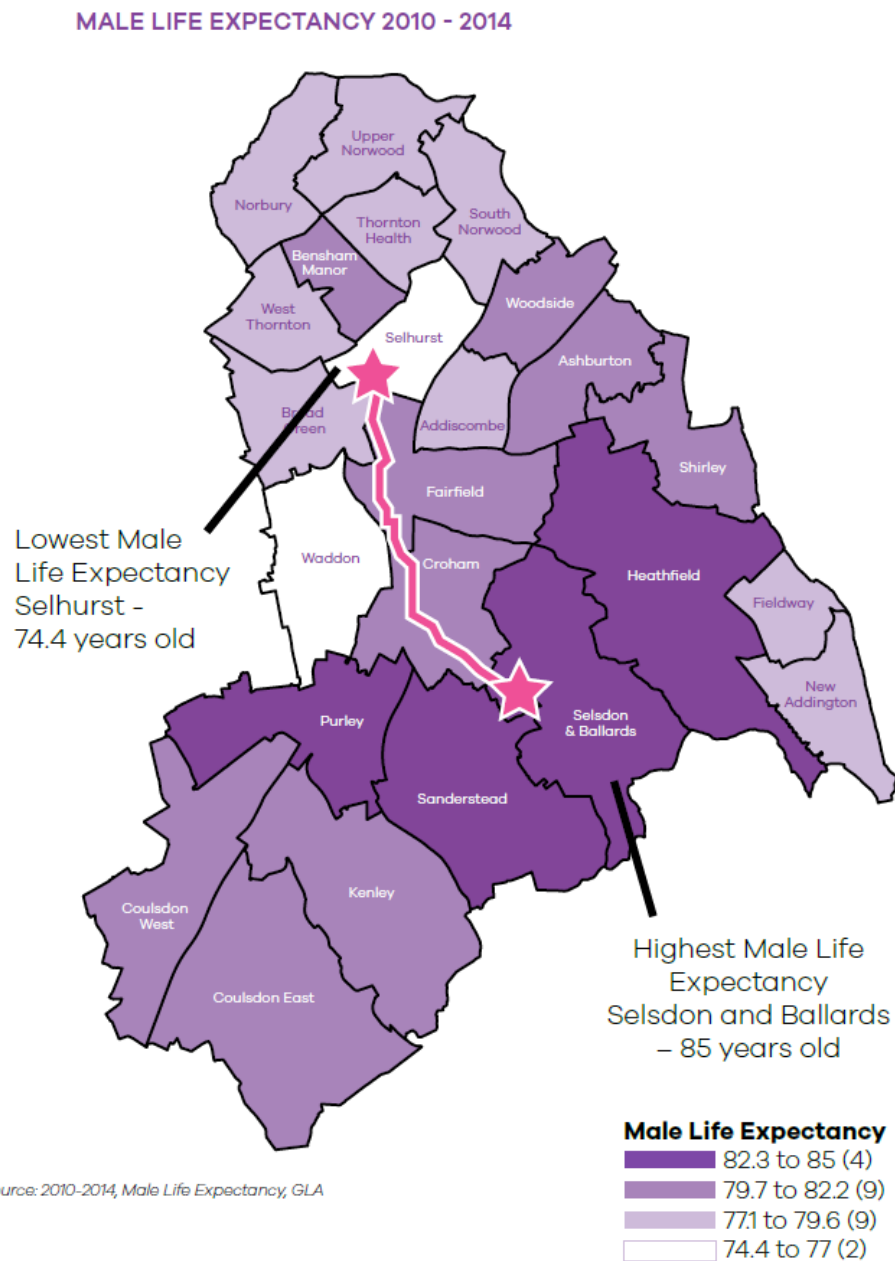


Source: 2015 Indices of Deprivation, Department of Communities and Local Government

Figure A5: Deprivation in Croydon relative to the rest of England

[Source: 2015 Indices of Deprivation, Department of Communities and Local Government]

Figure A6: Male Life Expectancy 2010-2014 (difference between lowest and highest in the Borough). [Source: Annual Public Health Director's Report 2017]



Economy

Croydon Town Centre is one of London's Metropolitan Centres and is the only Outer London Borough with significant office-based employment. Croydon has the 5th largest financial centre in London with over 4000 people employed and is the fastest

growing tech economy in London. Croydon is a major retail centre with more shops than anywhere else in London apart from the West End with a large out of town retail offer on Purley Way. Retail provides more than 15,000 jobs. However, Croydon faces strong competition from other centres such as Bromley, Kingston and Bluewater.

It is a major location for employment with 141,000 jobs in the borough although there are 11,000 fewer jobs than in 2007. It has the largest stock of offices outside the West End, City and Canary Wharf. However, there is a large quantity of older office stock which is obsolete and poor quality. Some of this will be demolished as part of the Westfield/Whitgift centre redevelopment and some are being converted to residential units to meet much needed housing. Croydon competes against more recent office developments in Docklands, Redhill and surrounding boroughs.

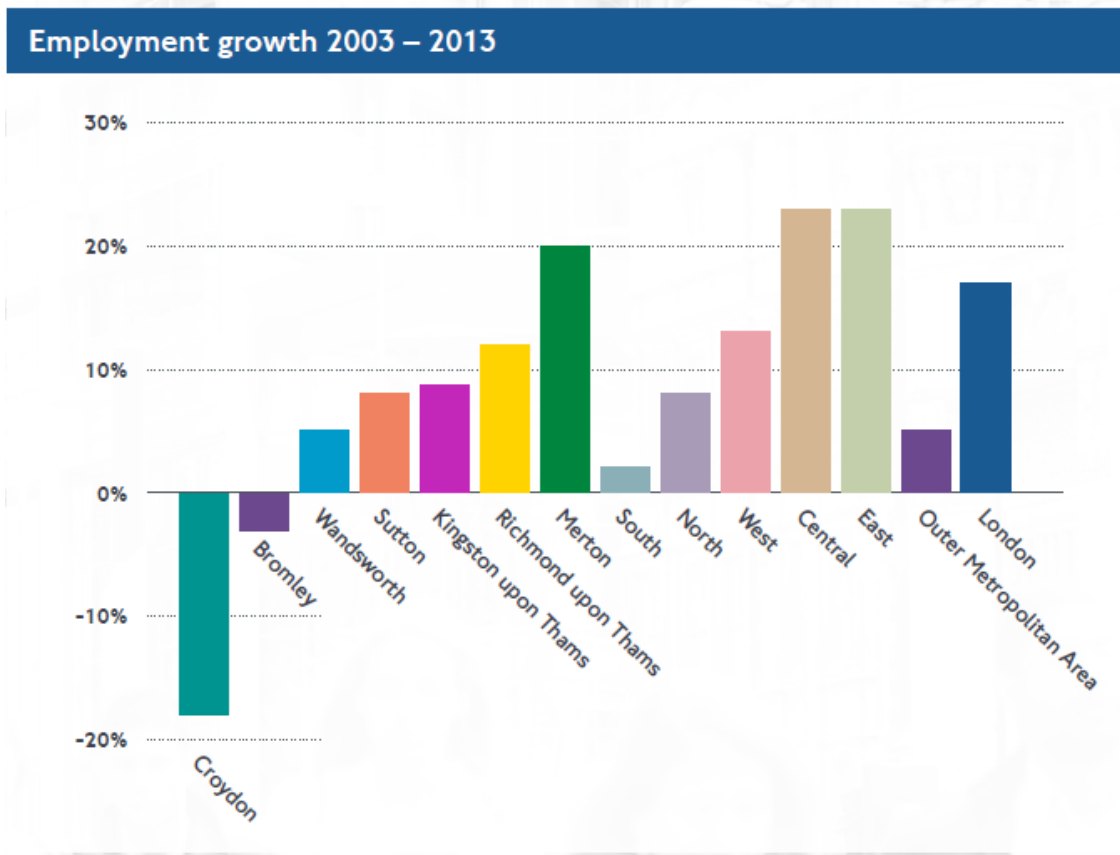
Overall Croydon has the 5th highest proportion of economically active population across London although the unemployment rate has been increasing over the last three years. Some demographic groups are more likely to be out of work and/or on benefits than others including the over 55s, BAME groups, people with disabilities and women. There are geographical variations with people more likely to be out of work and/or on benefits in the north of the Borough and in areas such as New Addington. Over 20% of Croydon's residents are in low paid work and over 25% of jobs in Croydon are low waged, leading to average annual pay in Croydon being lower than London as a whole.

Much of the employment growth in Croydon has taken place in areas with lower levels of public transport accessibility which has implications for future travel patterns and of people being able to access jobs by sustainable means of transport.

As a result of the loss of jobs in Croydon town centre there has also been an increase in commuting flows to other areas, particularly to Bromley, Sutton and Central London, as Croydon's residents have found jobs in other locations to replace those lost in the Borough⁵.

⁵ South London Sub-Regional Transport Plan – Page 38

Figure A7: Employment growth changes for south London boroughs [Source: South London Sub-regional Transport Plan 2016; page 26]



3) Transport Context

Public Transport

There are 17 rail stations in the borough, of these ten have more than one million entries and exits each year.

Table A1: Croydon's busiest rail stations [Source: Office of Rail and Road]

Station	Entries and exits 2016/17 [million]	Step free accessibility
East Croydon	22.6	Yes
West Croydon	5.5	Partially
Norwood Junction	4.4	No
Norbury	3.5	Yes
Thornton Heath	3.4	Yes
Purley	3.0	Yes
Selhurst	1.5	No
Coulsdon South	1.3	No
South Croydon	1.1	No
Sanderstead	1.0	Yes

The map below [Figure A8] shows the access to public transport across the borough. In general the north and centre of the borough is well served by public transport but large areas to the south and east of the borough are poorly served.

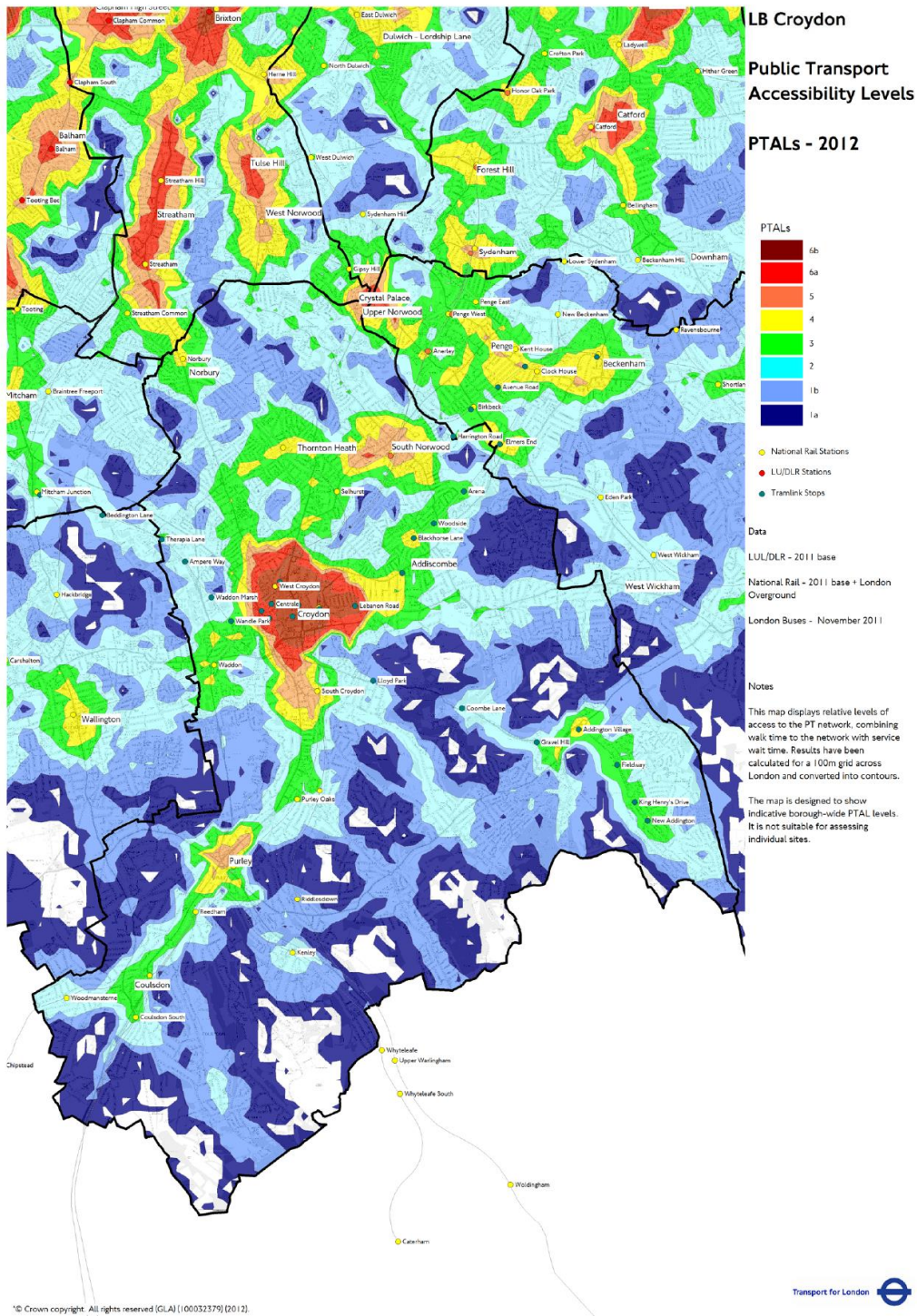


Figure A8: Public Transport Accessibility Level [PTAL] map [Source: TfL]

Road Network and Street Types

There are 777km of roads in the borough, of which 77km are 'A' roads including TfL Road Network. Figure X below shows the 'Street Type' map of the Borough according to the movement and place function matrix originally set out in the previous Mayor's Roads Task Force. The diagram reveals that the vast majority of

streets are M1/P1 meaning they are 'Local Streets'. The M3/P1 or 'Core Roads' corresponds with the TfL road network and the Borough's main 'A' roads. The M2/P2 and M2/P3 streets correspond with pedestrianised North End and George Street outside East Croydon Station.

Traffic volumes

As revealed in figure A9 below the highest flows of traffic observed on Croydon's road network are on the A23 TLRN corridor along the west side of the Borough, as well as on the Ring Road around the Metropolitan Centre including the A232 Croydon Flyover, Roman Way and Wellesley Road.

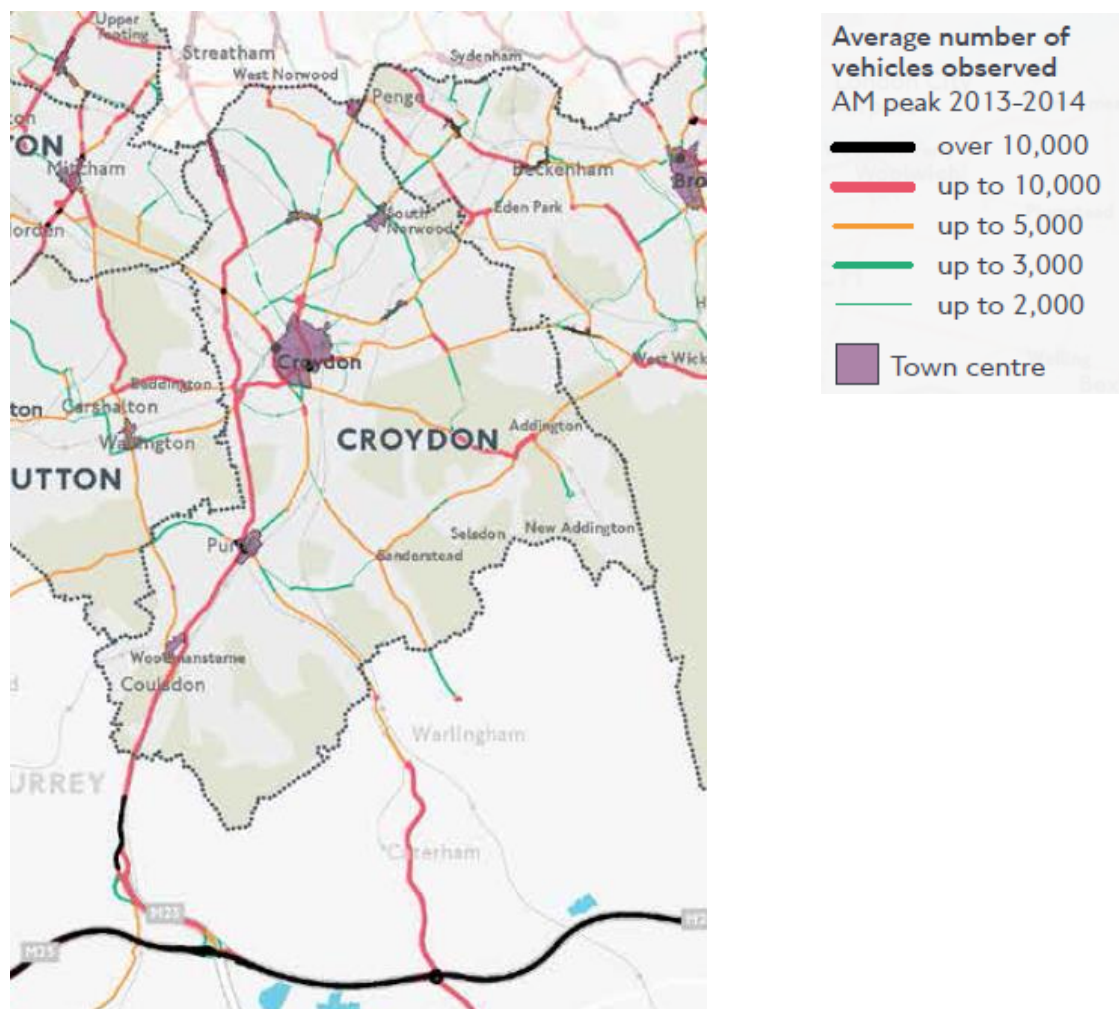


Figure A9: Average number of vehicles observed on roads through Croydon AM peak 2013-14
 [Source: South London Sub-regional Transport Plan 2016 Update; page 106]

The table below shows the change in traffic volume on the A roads over the 2007-2016 period.

Table A2: Traffic volume in Thousand Vehicle Kilometres [Source: DfT]

Type of Traffic	2007	2016	% change
Cycles	3,994	6,213	+55
Motorcycles	10,246	10,616	+4
Cars	496,356	437,040	-12
Buses/coaches	13,157	11,310	-14
LGVs	78,706	77,922	-1
HGVs	23,503	18,989	-19

The most noticeable feature is the significant increase in cycle traffic albeit from a low base.

Car ownership

According to the 2011 Census 66.5% of Croydon households had access to a car or van which represents a 5% reduction compared to 2001 but is still higher than London as a whole (58%). However recent data provided by TfL from the DVLA shows that there has been a dramatic increase in the number of vehicles licensed to addresses within the Borough. Figure A10 shows that the number of vehicles licensed to an address in Croydon has increased from 132,572 in 2001 to 148,256 in 2016 with an increase of almost 10,000 vehicles alone in the three years up to 2016

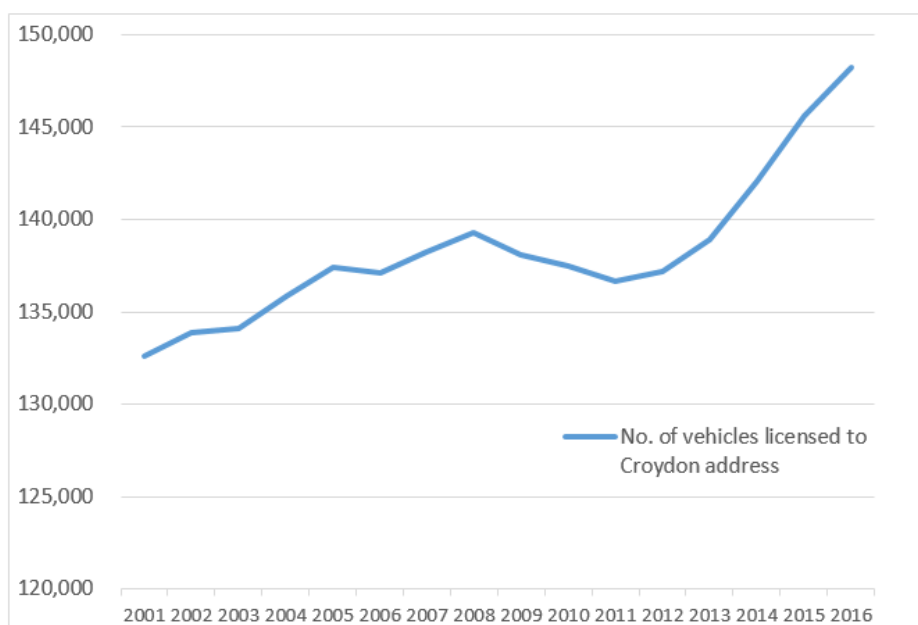
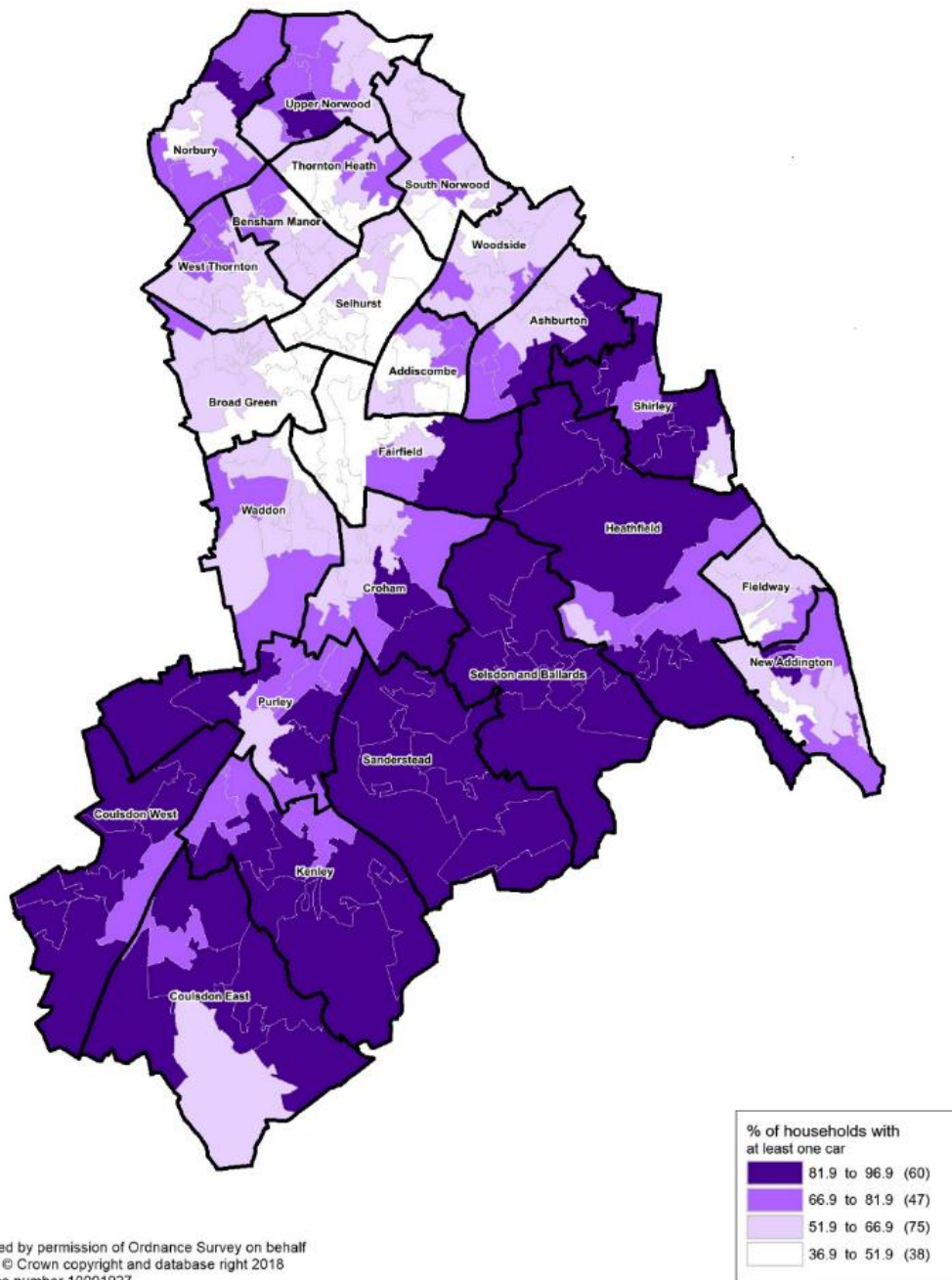


Figure A10: Number of Vehicles Licensed to Croydon addresses 2001-2016 (Source: TfL & DVLA)

There is a distinct variation in car ownership across the borough as figure A11 shows, with much higher levels of ownership in the south and east of the Borough.

Figure A11: Car ownership by household [Source: Census 2011]

**% of households with at least one car
2011 Census**

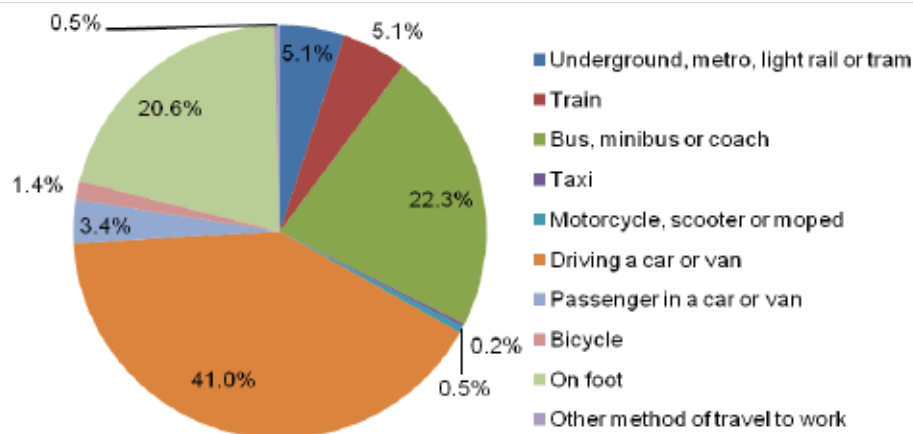


Travel to Work

Croydon has the largest within borough commuter flows in London and the census data for 2011 for method of travel to work is shown in figures A12 and A13 below. It reveals that the general journey to work movement pattern is still dominated by the car for those that live and work in the Borough but is especially the case for those who live outside the Borough but work in Croydon.

According to the 2011 Census, 54.8% of the 88,300 people who were recorded as working in Croydon in 2011 also lived in Croydon. However this group only accounts for 34.4% of the 140,600 Croydon residents whose place of work was recorded in the 2011 Census. The main methods of transport to work varied between those who lived and worked in Croydon, those who lived in Croydon but worked outside of the borough, and those who lived outside of the borough but worked in Croydon. Most of those people who worked in Croydon and also lived within the borough drove to work in a car or van; caught a bus, minibus or coach; or walked to work as shown in figure A12 below.

Figure A12: Method of travel to work for those who live & work in Croydon [Source: ONS 2011 Census]



The method of travel to work for workers commuting in from outside of the borough was slightly different as can be seen from figure A13. Nearly half of these workers drove to work in a car or van. Considerably more workers used trains to commute in and far fewer walked to work, which is to be expected with the longer journey times likely to be involved

Figure A13: Method of travel to work for those who live outside of the Borough and work in Croydon
 [Source: ONS 2011 Census]

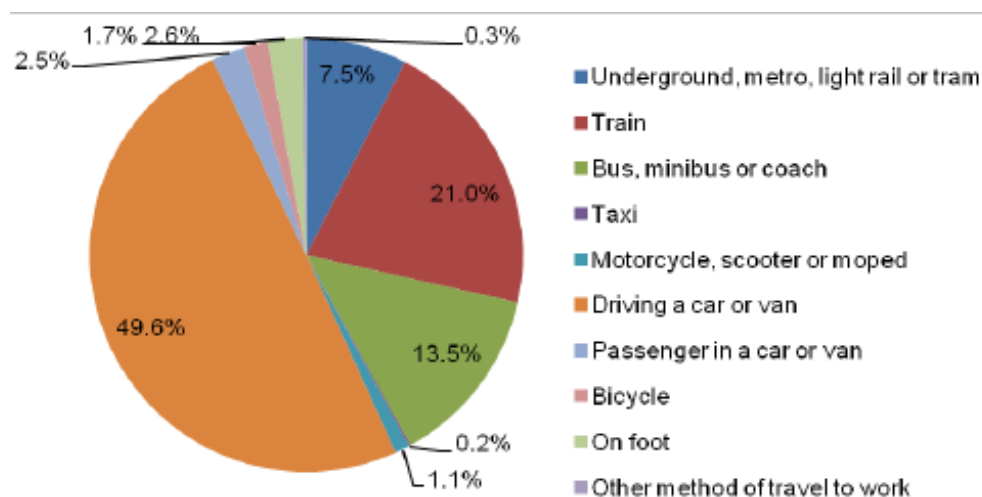


Figure A14: Main places of work for residents who work outside of the Borough [Source: ONS 2011 Census]

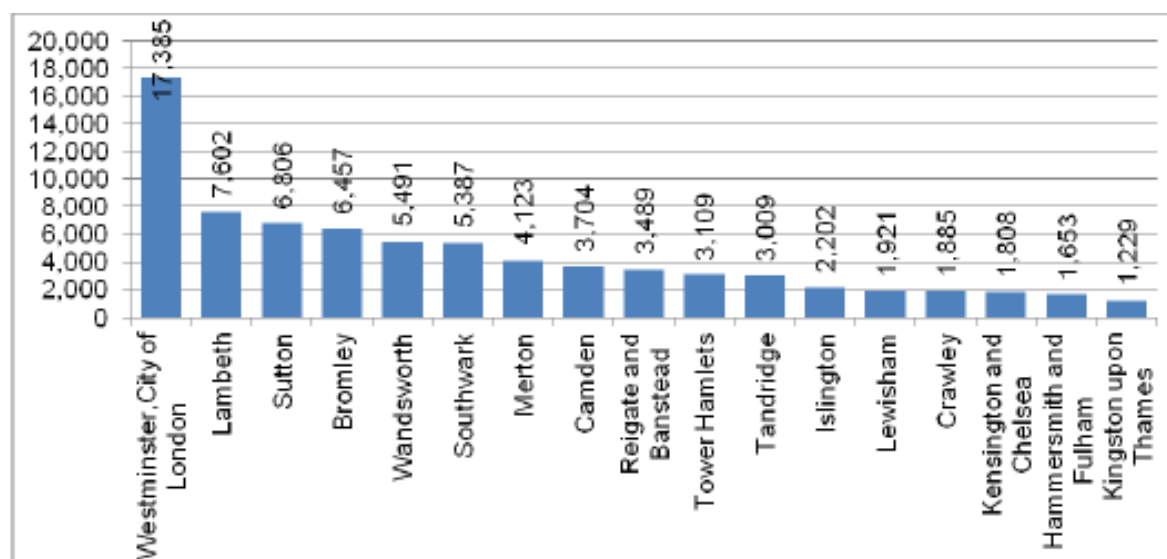
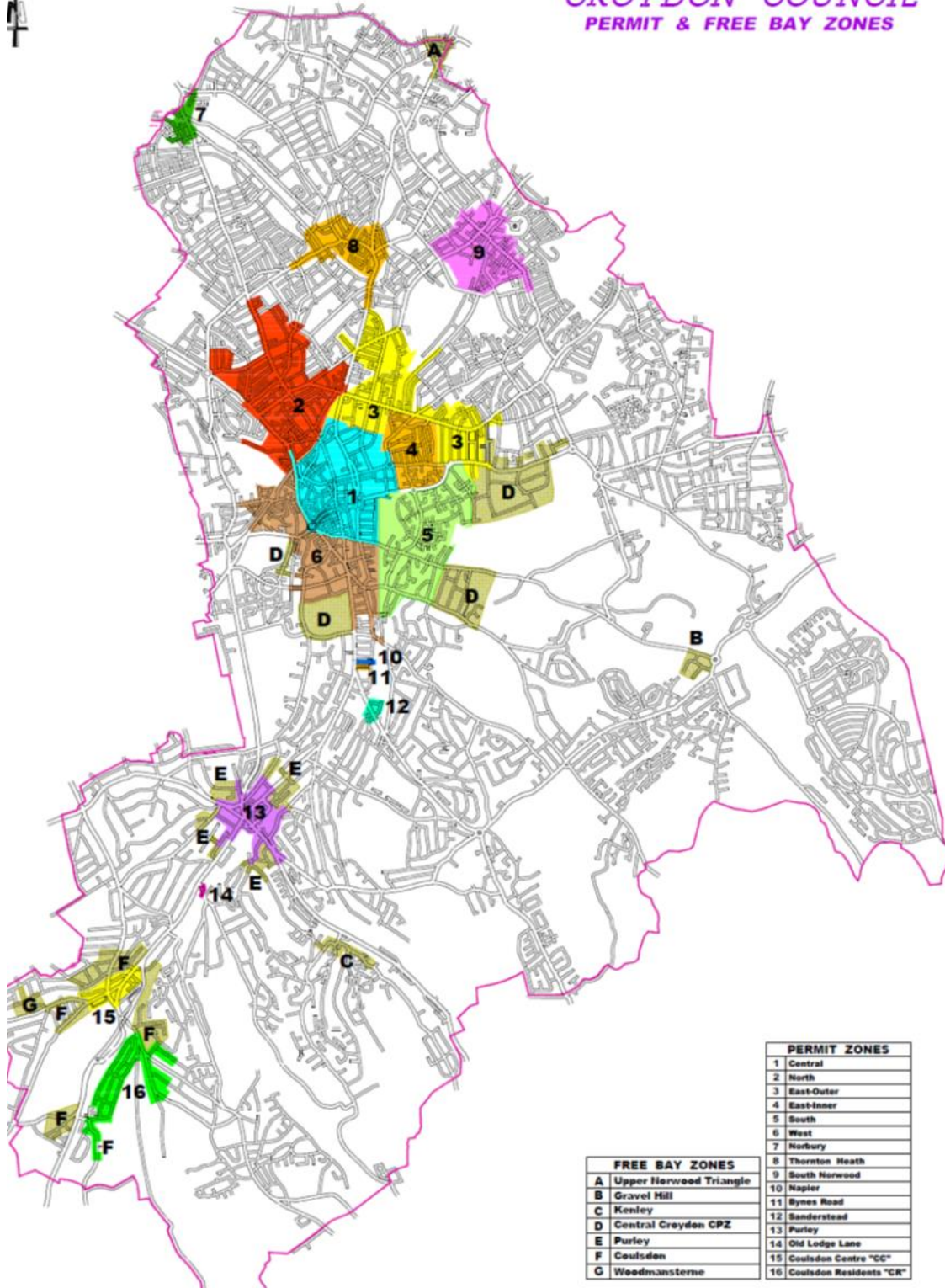


Figure A15: Changes in Croydon Borough level commuting movements 2001-2011 [Source: South London Sub-regional Transport Plan, 2016 Update; page 38]



CROYDON COUNCIL

PERMIT & FREE BAY ZONES



PERMIT ZONES

1	Central
2	North
3	East-Outer
4	East-Inner
5	South
6	West
7	Norbury
8	Thornton Heath
9	South Norwood
10	Napier
11	Bynes Road
12	Sanderstead
13	Purley
14	Old Lodge Lane
15	Coulston Centre "CC"
16	Coulston Residents "CR"

FREE BAY ZONES

A	Upper Norwood Triangle
B	Gravel Hill
C	Kensley
D	Central Croydon CPZ
E	Purley
F	Coulston
G	Woodmansterne

4) Outcome 1 Healthy Streets & Active Travel

Challenges and opportunities evidence

Active Travel by Croydon Residents

In Croydon, the proportion of residents regularly undertaking travel by active methods (walking and cycling) is lower than the London average. According to TfL's 2017 London Travel Demand Survey between 2014 and 2016 the proportion of Croydon residents undertaking at least 20 minutes of active travel a day required to stay healthy is only 26%. For cycling for non-leisure purposes only 4.1% of the Croydon adult population cycle once a month compared to 8.7% for the London average.⁶ Croydon compares poorly with neighbouring London boroughs and has both the lowest cycling and walking rates of all South London boroughs as can be seen in Table A3.

Table A3: Mode share comparison of neighbouring boroughs 2014-2016

[TfL 2017 Travel in London Report 10]

Borough	Public transport	Walk	Cycle	Total
Lambeth	39.2%	32.8%	4.7%	76.7%
Lewisham	34.4%	30.8%	2.7%	67.8%
Merton	27.1%	28.1%	2.6%	57.8%
Croydon	24.6%	22.7%	0.7%	48.0%
Sutton	20.5%	23.5%	1.7%	45.7%
Bromley	21.0%	22.8%	1.3%	45.1%

Table A4 reveals that not only does Croydon have the lowest cycle mode share of all London boroughs but we are also the only borough where it has decreased since 2006.

Table A4: Change in cycling mode share in South London boroughs 2006-2016

Borough	2006 cycle mode share	2016 cycle mode share	Change in cycle mode share
Croydon	1%	0.7%	-30%
Merton	1.3%	2.6%	+100%
Sutton	0.8%	1.7%	+113%
Kingston	1.7%	3%	+76%
Richmond	3.1%	6.2%	+100%

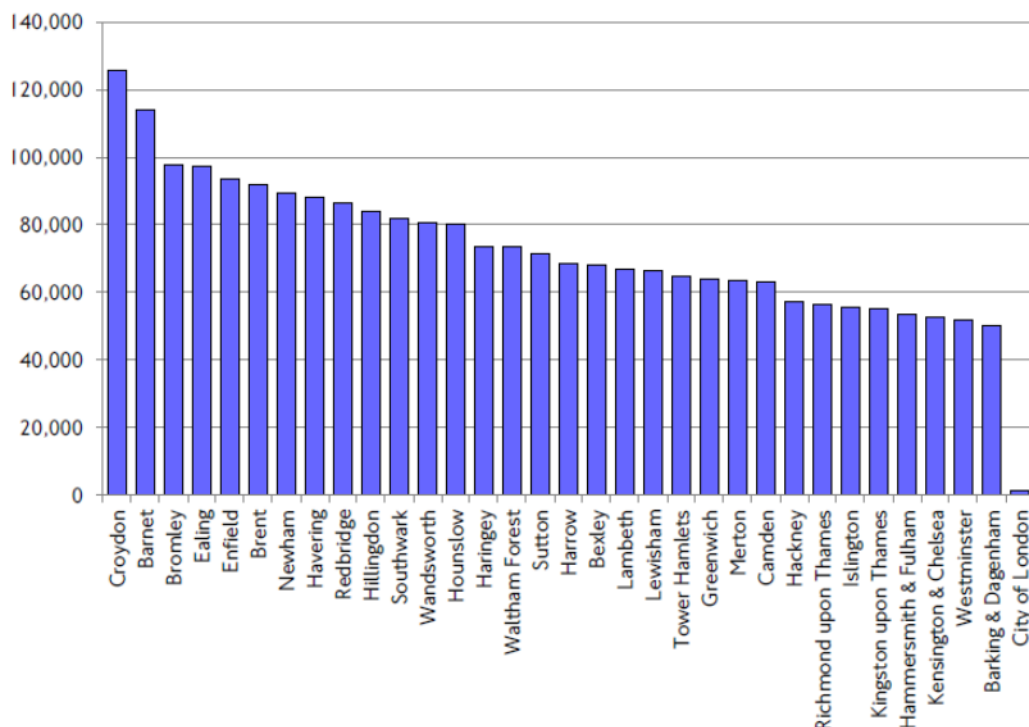
⁶ [https://files.datapress.com/sport/dataset/borough-physical-activity-and-sport-profiles-2017/2017-04-18T08:55:33.28/Borough%20Profile%20-%20Croydon%20\(Feb%202017\).pdf](https://files.datapress.com/sport/dataset/borough-physical-activity-and-sport-profiles-2017/2017-04-18T08:55:33.28/Borough%20Profile%20-%20Croydon%20(Feb%202017).pdf) - Page 13

There are two key factors that suggest Croydon has huge potential to dramatically increase the level of active travel amongst its residents. The first is that the typical weekday car journey into Croydon Metropolitan Centre is only 5km, a distance most people could easily cycle.⁷ The second is that TfL have estimated that there are 400,000 trips potentially cycleable trips made in Croydon yet there are just 6,000 cycle trips currently made per day⁸. For walking, currently 222,100 trips are undertaken but an additional 125,600 potential additional walking stages could be made, the highest in London as shown in Figure A17. 29,000 of these are to or from the Croydon Metropolitan Centre. Combined with walking trips associated with accessing public transport TfL estimate that there are nearly 180,000 potentially walkable trips and stages by Croydon residents, the highest figure in London as shown in Figure x⁹.

The analysis undertaken by TfL looking at demographic propensity to walk and cycle, and the type of trips being made reveals the areas of Croydon that have the greatest potential for active travel. Figures A19, A20 and A21 shown in the next few pages suggest that the key target areas should be in and around the Growth Zone, the areas to the north of the Growth Zone and area to the south along the A23 corridor to Purley. These locations overlap with the areas of largest growth and development in the next decade.

Figure A17: Potentially walkable stages by borough of origin/destination

[Source: TfL Analysis of Walking Potential 2016; page 41]



⁷ Croydon Cycling Strategy 2018

⁸ <http://content.tfl.gov.uk/analysis-of-walking-potential-2016.pdf>

⁹ <http://content.tfl.gov.uk/analysis-of-cycling-potential-2016.pdf>

Figure A18: Potentially walkable trips and stages by borough of residence

[Source: TfL Analysis of Walking Potential 2016; page 48]

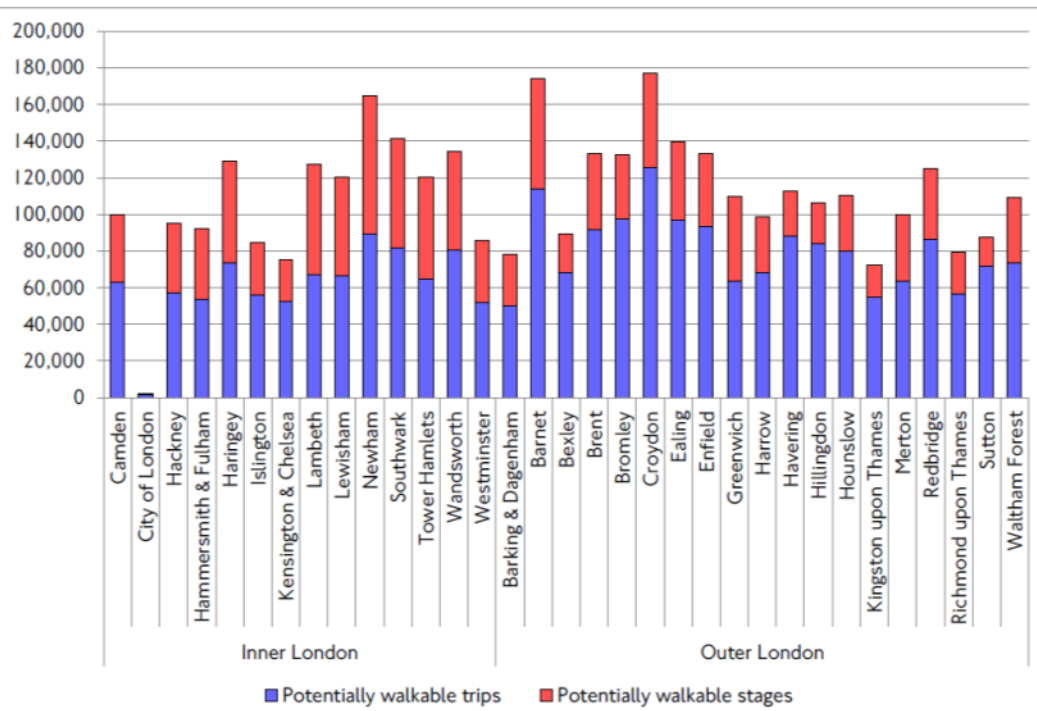


Figure A19: Active travel potential in Croydon vs future demand

[Source: TfL South London Sub-regional Transport Plan 2016 Update]

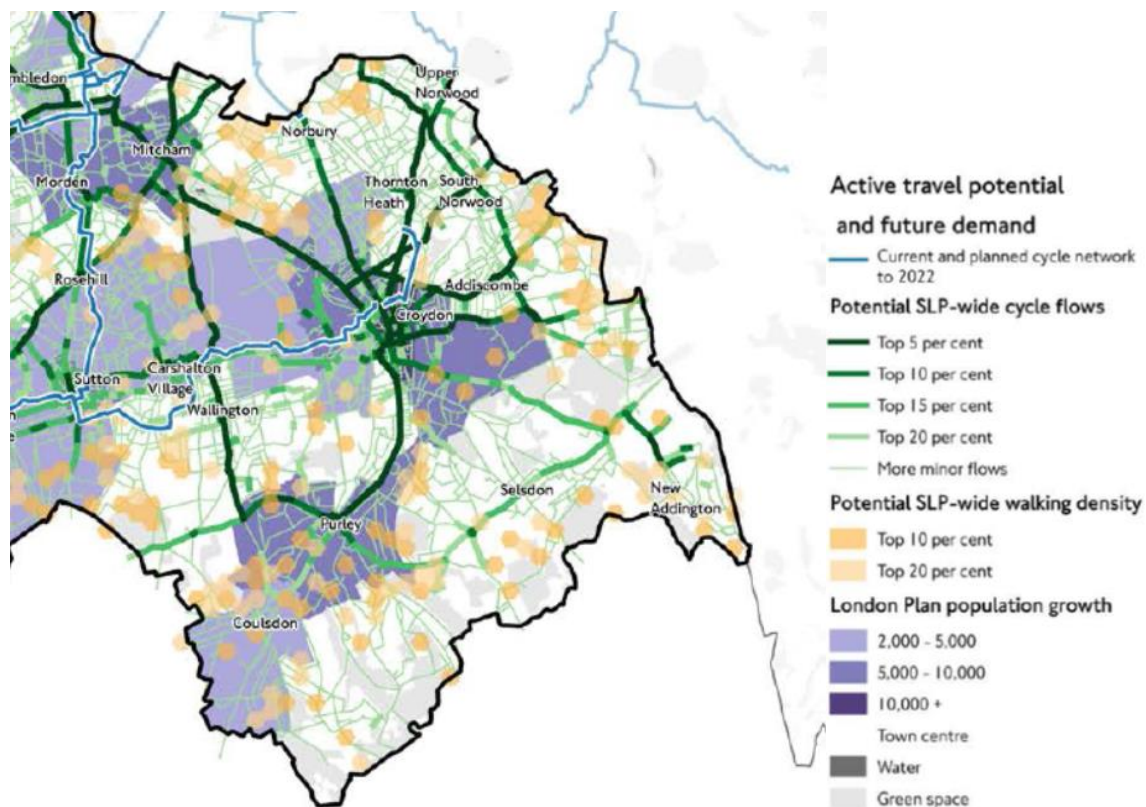


Figure A20: Areas of greatest cycling potential

[Source: TfL Playbook/LTDS 2010-2015]

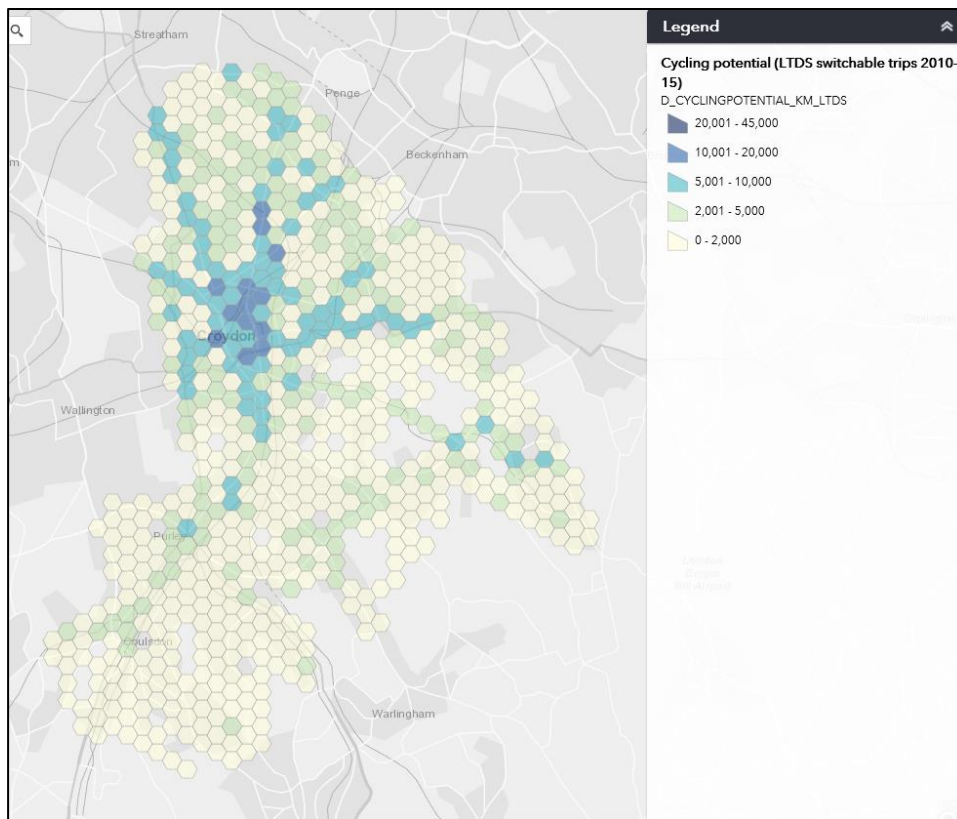


Figure A21 – Areas of greatest walking potential

[Source: TfL Playbook/LTDS 2010-2015]

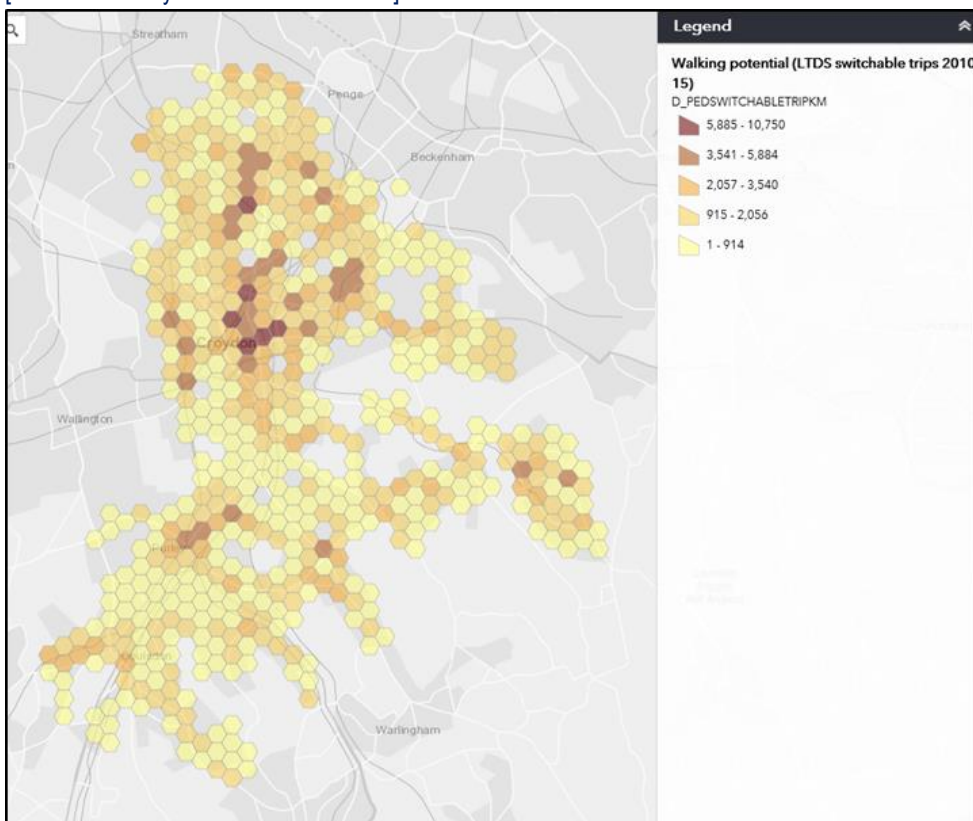
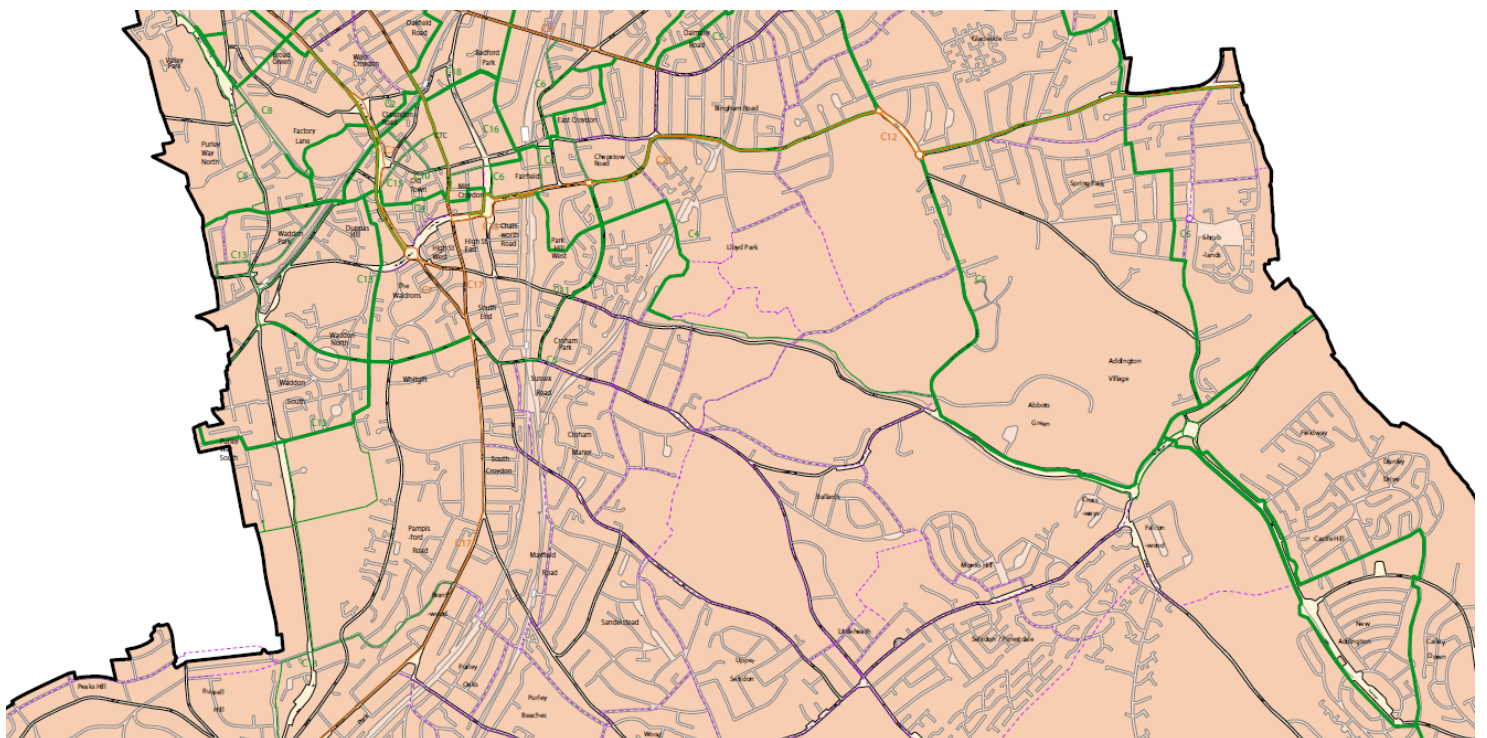
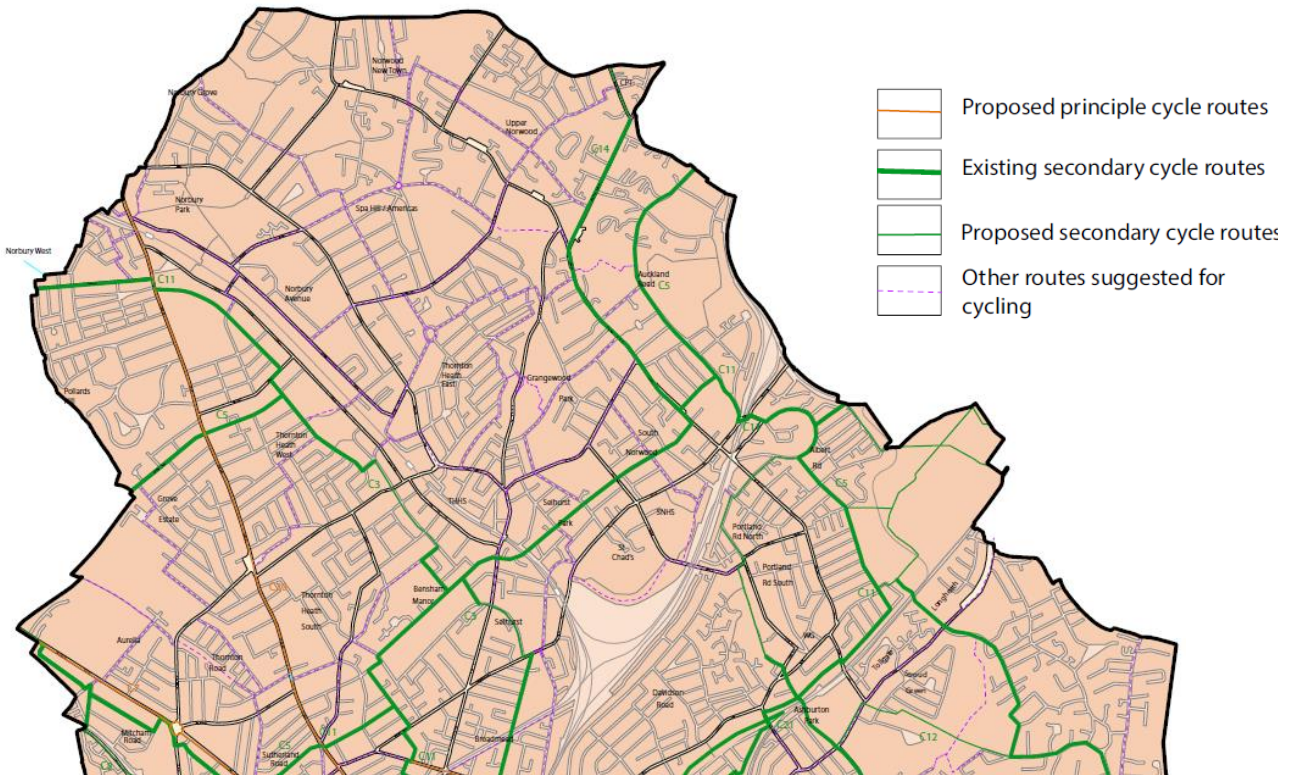
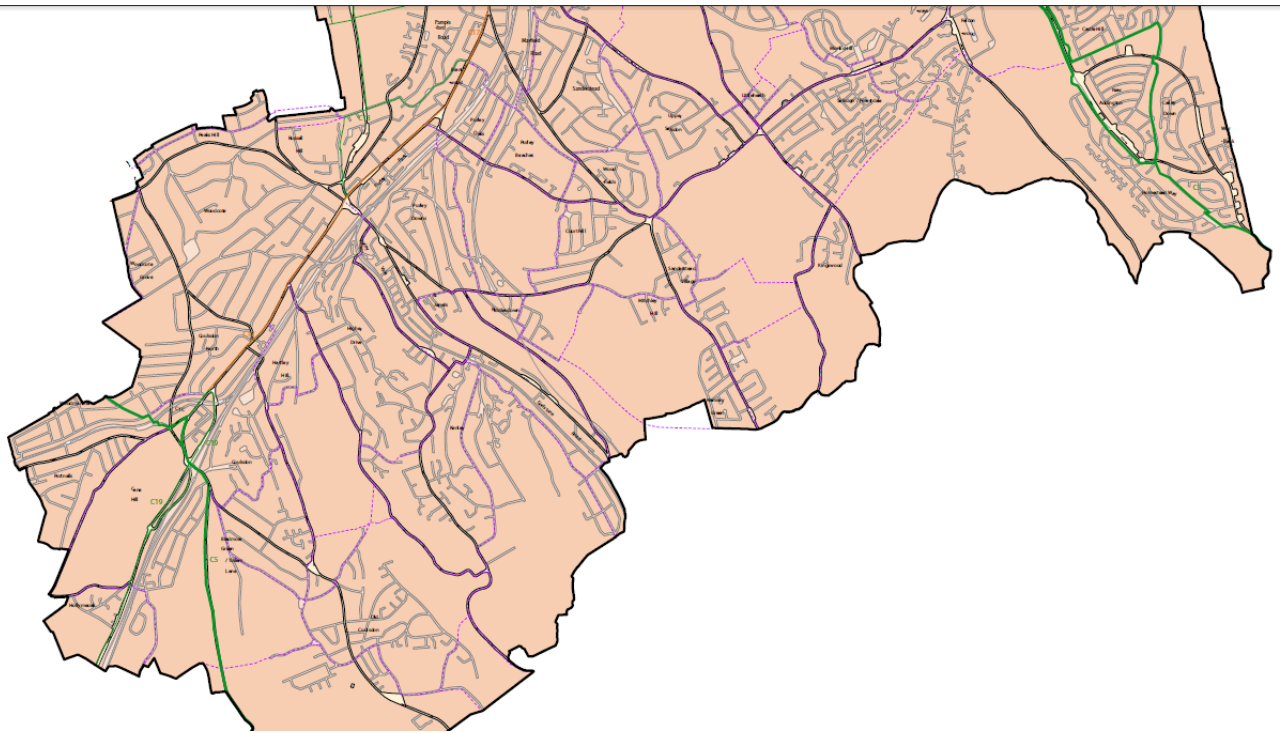


Figure A22 a, b, c – Croydon Borough Cycle Network





5) Outcome 2 Safe & Secure

Challenges and opportunities evidence

The average KSI for 2005-2009 is 141 with a target of 49. The graph below shows that Croydon is broadly on track to meet this target however the changes to the way the Metropolitan Police count road casualties means that this is unlikely to remain the case.

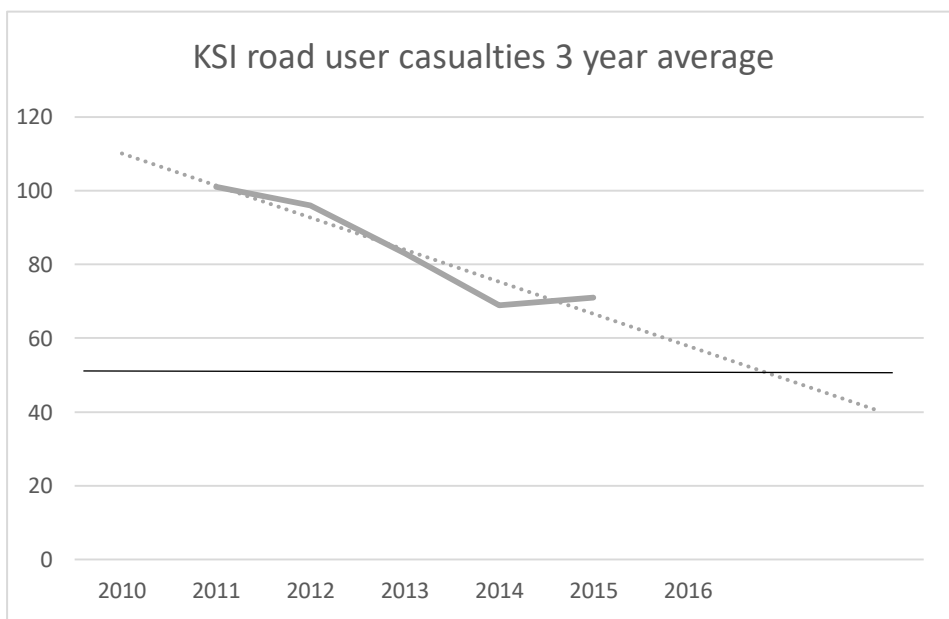
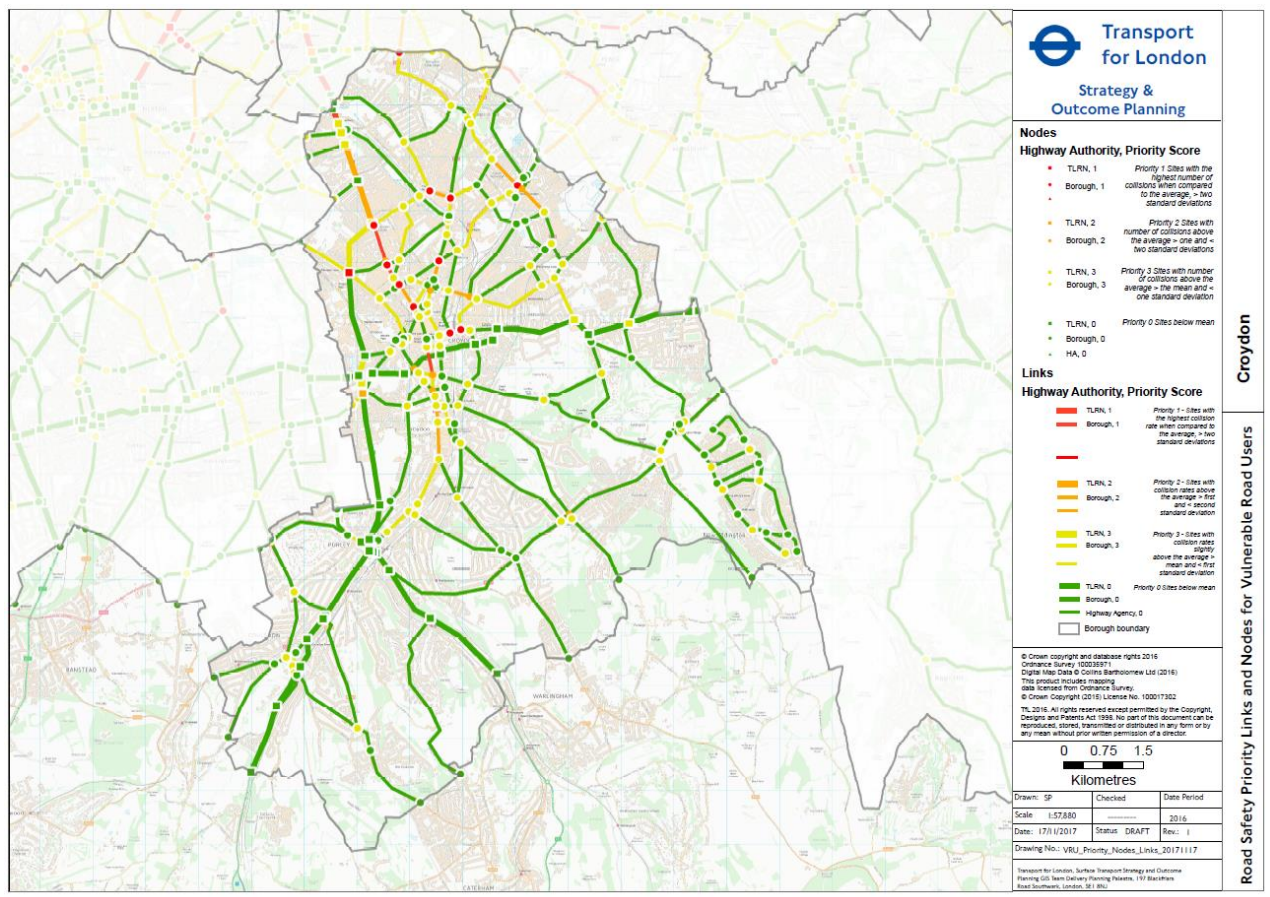


Figure A22: KSI casualties [Source: TfL]

The map in Figure A23 below provides an overview of personal injury collisions across the Borough (2014-2016). It is noticeable that many of the collisions are on the main road network particularly along the A23 and along the London Road in particular. The other main roads in and around Croydon Metropolitan Centre also have a high proportion of the Borough's personal injury collisions.

The map below shows the priority link and junctions for vulnerable road users (pedestrians, cyclists and powered 2 wheelers). Again it is noticeable that the London Road corridor is identified as a priority and the north of the Borough has a much higher incidence of priority 1 and 2 sites and links than the south of the Borough. This is likely to be reflective of the lower levels of active travel and higher levels of driving in the south compared to the north of the Borough.

Figure A24: Priority Junctions and Links for Vulnerable Road User Collisions [Source: TfL]

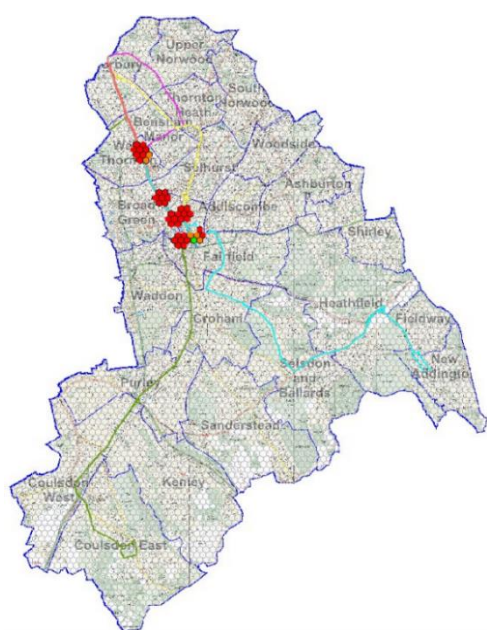


The figures above show a clear pattern of vulnerable road user casualties on the main road network in the centre and north of the borough.

Crime

British Transport Police have produced data for crime on buses and trains, trams and stations, see figures A25 & A26. The maps show particular crime hotspots in central Croydon and areas to the north of the town centre and around South Norwood/Norwood Junction with smaller pockets around Thornton Heath and Fieldway / New Addington.

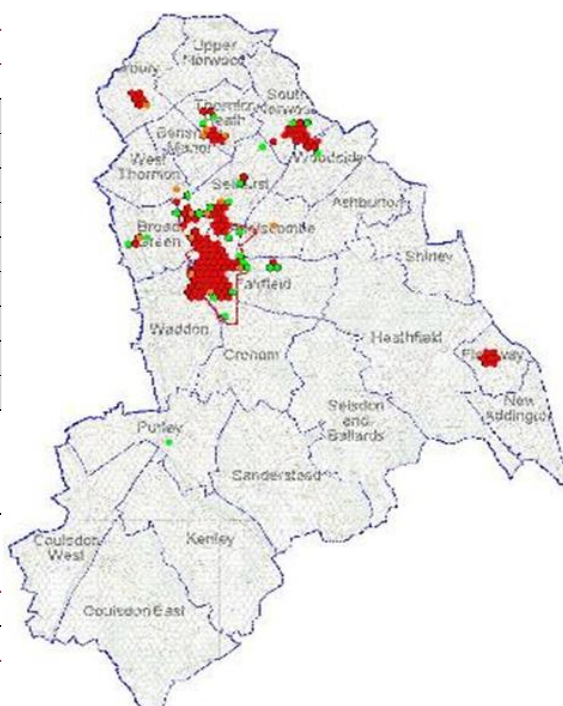
Figure A25: Crime Plots on Buses [source: Croydon Strategic Assessment, 2016]



BTP (train tram and station)			
Offence	Total offences	1075	
	Violence	316 (29.40%)	
	Disorder	303 (28.19%)	
	Theft	203 (18.88%)	
	Fraud	113 (10.51%)	
	Criminal Damage	61 (5.67%)	
	Drugs Offences	40 (3.72%)	
	Sexual Offences	26 (2.42%)	
	Burglary	7 (0.65%)	
	Robbery	6 (0.56%)	
	Location	Hot spot	445 (41.40%) East Croydon 75 (6.89%) Norwood Junction 60 (5.58%) West Croydon 49 (4.56%) Norbury
		Secondary hot spots	364 (33.86%) On train 156 (14.51%) Platform 100 (9.30%) On tram
Times		Peak	82 (7.63%) 18:00 to 19:00
		Focus	487 (45.30%) 13:00 to 20:00
Days	Hot	196 (18.23%) Wednesday 185 (17.21%) Friday	

Figure A26: Crime plots on trains, trams and stations [Source: Croydon Strategic Assessment 2016]

BTP (train tram and station)	
Offence	
Total offences	1075
Violence	316 (29.40%)
Disorder	303 (28.19%)
Theft	203 (18.88%)
Fraud	113 (10.51%)
Criminal Damage	61 (5.67%)
Drugs Offences	40 (3.72%)
Sexual Offences	26 (2.42%)
Burglary	7 (0.65%)
Robbery	6 (0.56%)
Location	
Hot spot	445 (41.40%) East Croydon
	75 (6.89%) Norwood Junction
	60 (5.58%) West Croydon
	49 (4.56%) Norbury
Secondary hot spots	364 (33.86%) On train
	156 (14.51%) Platform
	100 (9.30%) On tram
Times	
Peak	82 (7.63%) 18:00 to 19:00
Focus	487 (45.30%) 13:00 to 20:00
Days	
Hot	196 (18.23%) Wednesday
	185 (17.21%) Friday



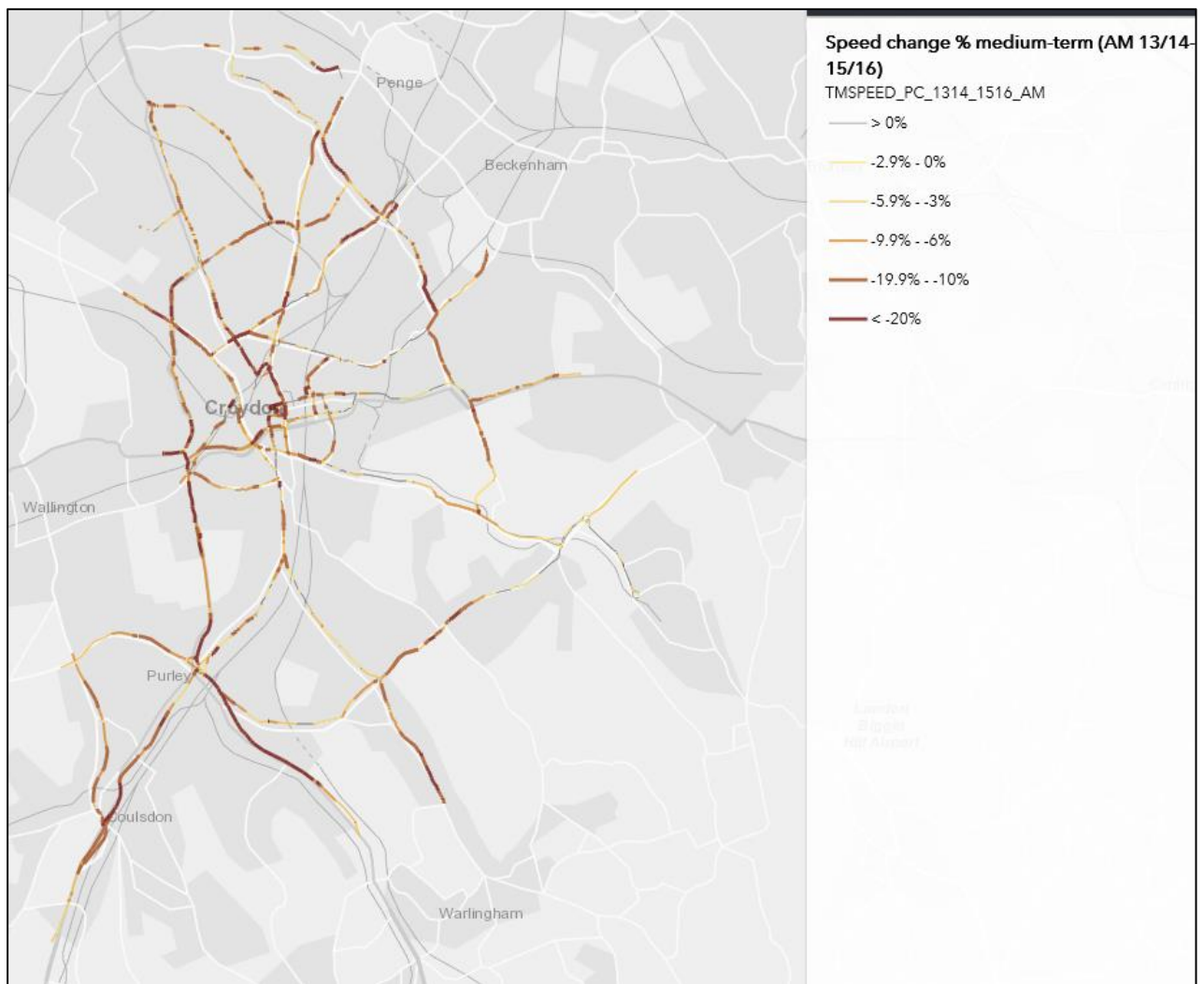
6) Outcome 3 Efficient Streets & Reduced Traffic

Challenges and opportunities evidence

Traffic congestion

For Croydon the most significant delays are generally on the main road network in and around the town centre, as shown below in Figure A27. Across the South London sub region traffic delay increased by 9% in the morning peak period between 2007/8 and 2013.

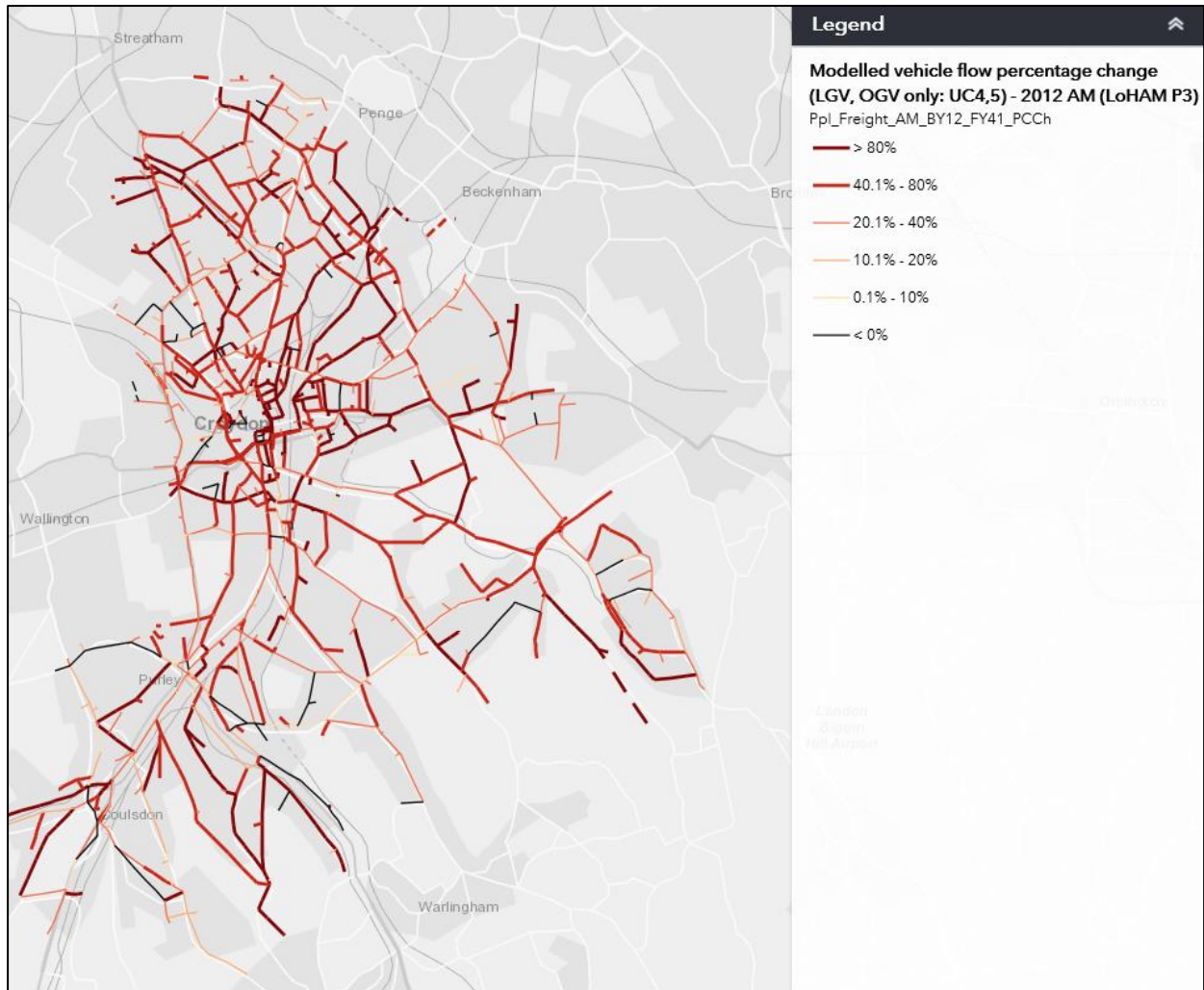
Figure A27: Road Performance – Speed change % Medium-term (AM 13/14 – 15/16)



Freight & Deliveries

Freight movement forms a significant component of traffic flows on Croydon's road network with demand generated by Croydon town centre and the extensive retail and business park areas in the west of the borough. The Borough also has many Local and District Centres whose businesses rely on deliveries being made on-street by a multitude of suppliers. LGVs and HGVs comprise about 17% of traffic volume with HGVs alone forming 3% of traffic volume although the amount of HGV traffic has decreased over the last 10 years or so.

Figure A28 - Transport Modelling – Modelled freight flow (2012 – 2041 AM)



Car Clubs

Car clubs can contribute to traffic reduction by reducing individual car ownership and usage. By supporting car free developments in appropriate locations and setting maximum car parking standards for new developments, car club membership and usage can be encouraged. Croydon is at an early stage in establishing a car club network with about 30 car club vehicles available. Figure A29 below shows current car club locations. With the concentration of growth in Croydon Opportunity Area which is well served by public transport there is the opportunity for new developments to be car free complemented by expansion of the car club network. Our Local Plan policy is to require provision of car club bays as part of new developments and that half of these should have electric charging points.

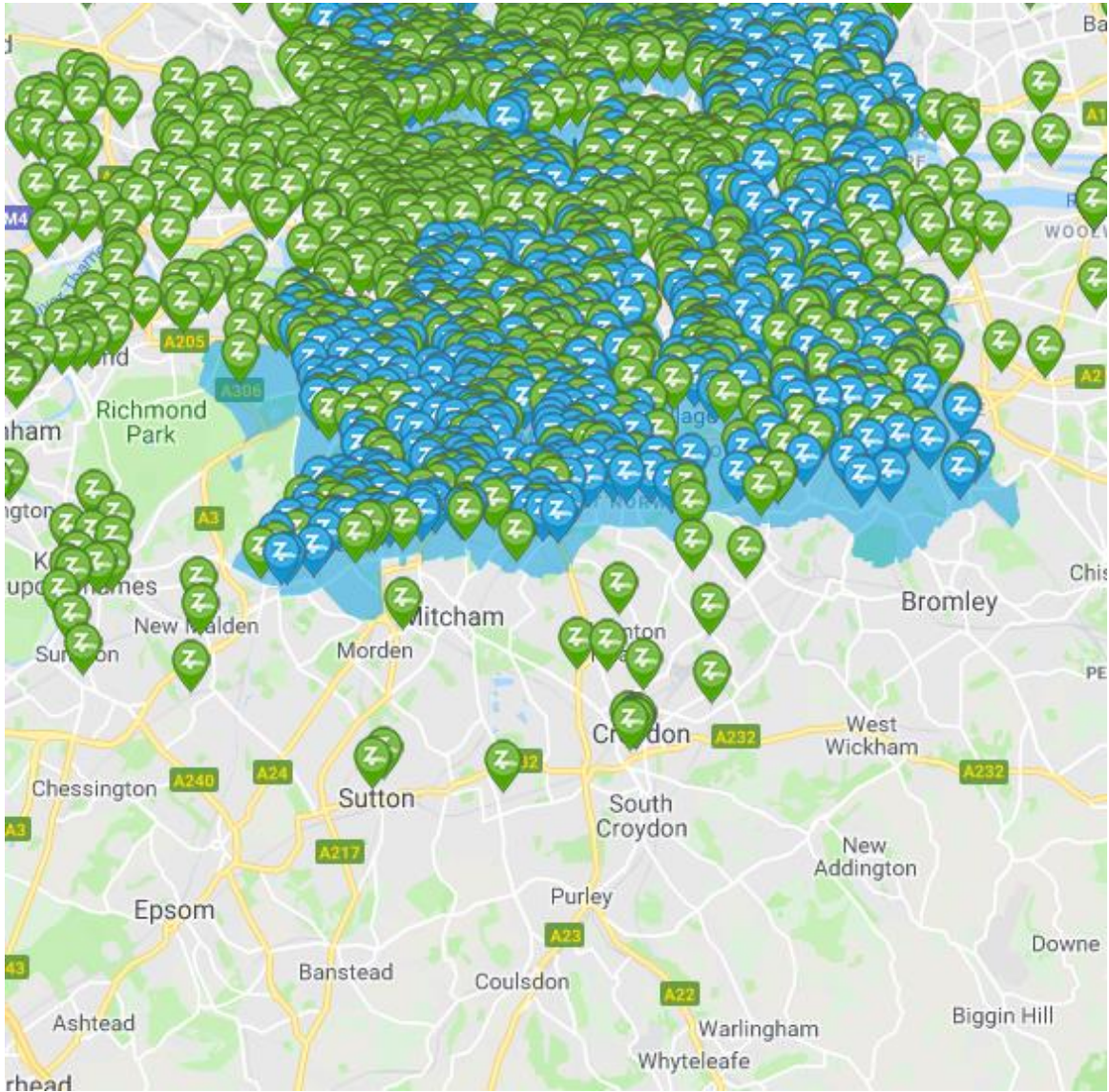


Figure A29: Zipcar bays (green) and Zipcar Flex vehicle (blue) locations in South London
[Source: www.zipcar.co.uk]

7) Outcome 4 Green and Clean

Challenges and opportunities evidence

In Croydon an Air Quality Management Area (AQMA) has been declared for the whole of the borough. The AQMA has been declared for the following pollutants: Nitrogen dioxide because we are failing to meet the EU annual average limit for this pollutant at some of our monitoring stations and modelling indicates it is being breached at a number of other locations.

An Air Quality Focus Area is a location that has been identified as having high levels of pollution and human exposure. There are five focus areas in the borough. These are:

- London Road, Norbury
- Purley Cross and Russell Hill
- Thornton Heath / Brigstock Road/ High Street / Whitehorse Lane
- London Road between Thornton Heath Pond and St James Road
- Wellesley Road

Hospital admissions for asthma amongst Croydon children aged 0-9 years old was the worst in London in 2017. ¹⁰

With the planned growth in Croydon town centre (about 50 major schemes over the next 5 years) there is a particular concern in relation to emissions from construction traffic. The air quality priorities are:

- Tackling emissions from construction sites and construction vehicles through compliance with the Town Centre Construction Logistics Plan.
- Tackling emissions due to servicing and freight vehicles – 17% of transport emissions are from vehicles associated with delivery and servicing.
- To reduce exposure to air pollution and to raise awareness for residents and those who work in Croydon – it has been estimated that up to 40% of pollution in Croydon is from outside London and Europe so actions to reduce pollution in Croydon are limited.

¹⁰ <https://www.croydon.gov.uk/democracy/dande/policies/health/annual-public-health-report> Page 27

Figure A30: Modelled map of annual mean NO₂ concentrations and Air Quality Focus Areas (from the LAEI 2013)

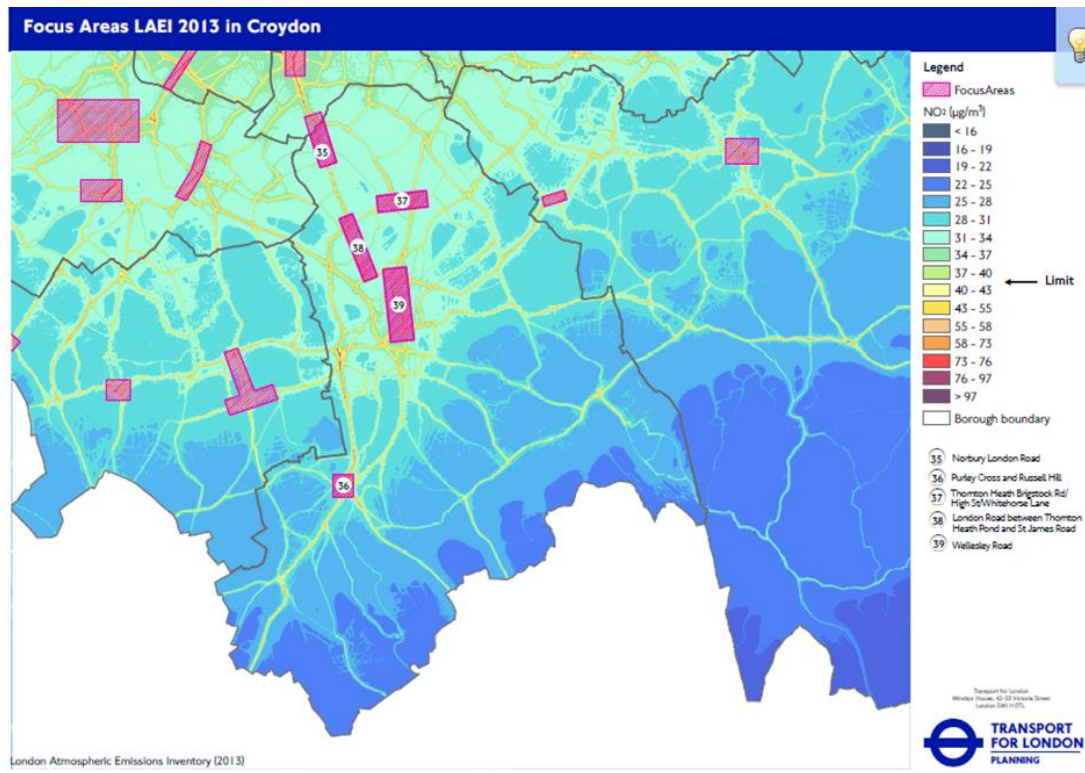


Figure A31: Modelled map of annual mean PM₁₀ (from the LAEI 2013)

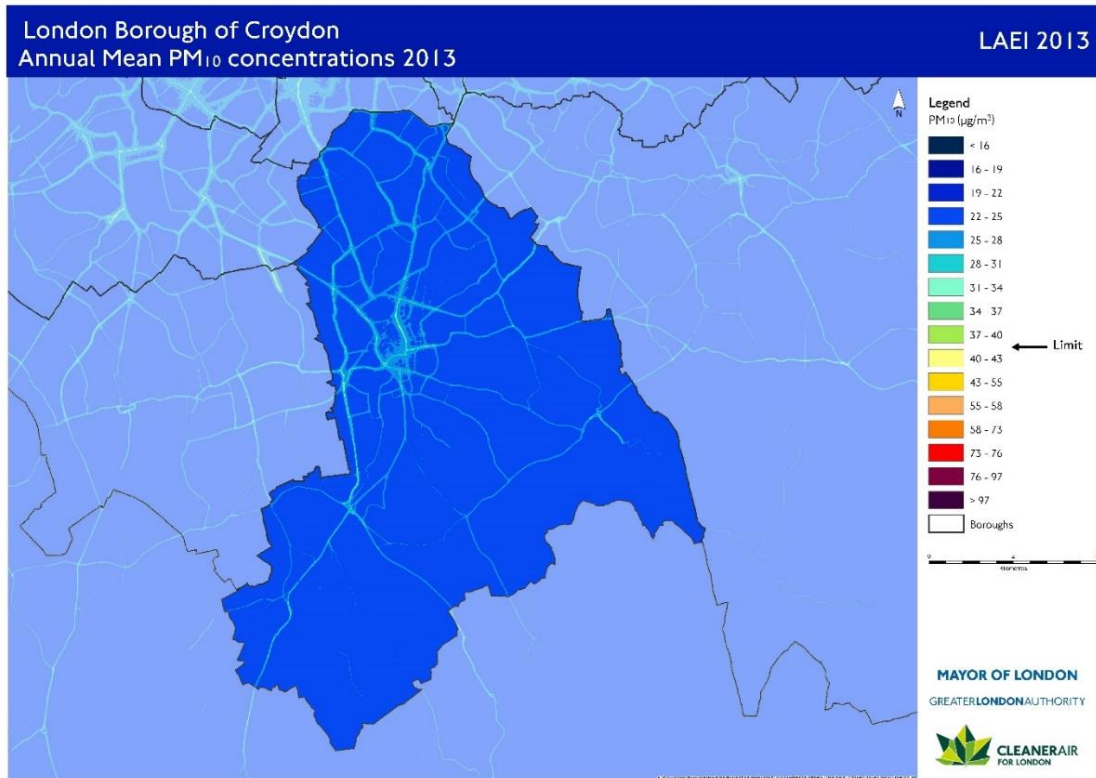


Figure A32: NOx Emissions by source and vehicle type (from the LAEI 2013)

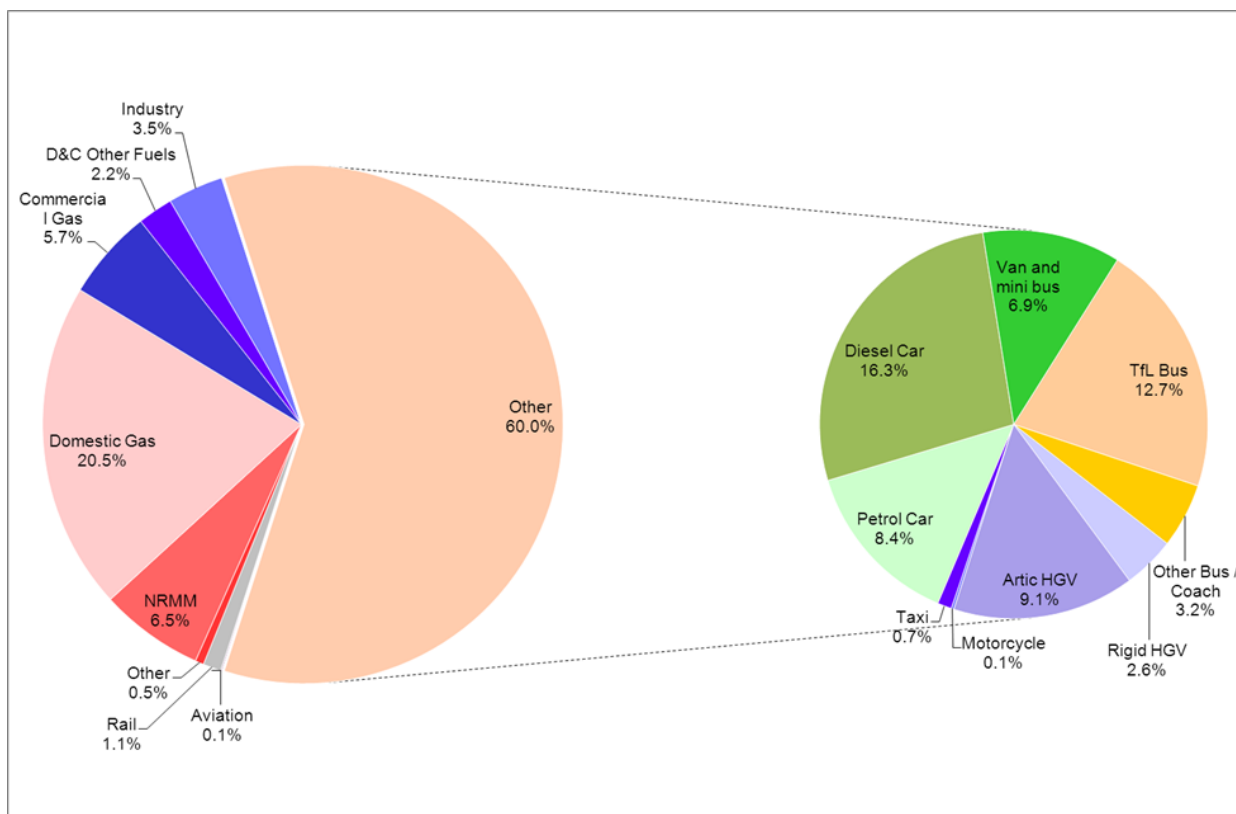
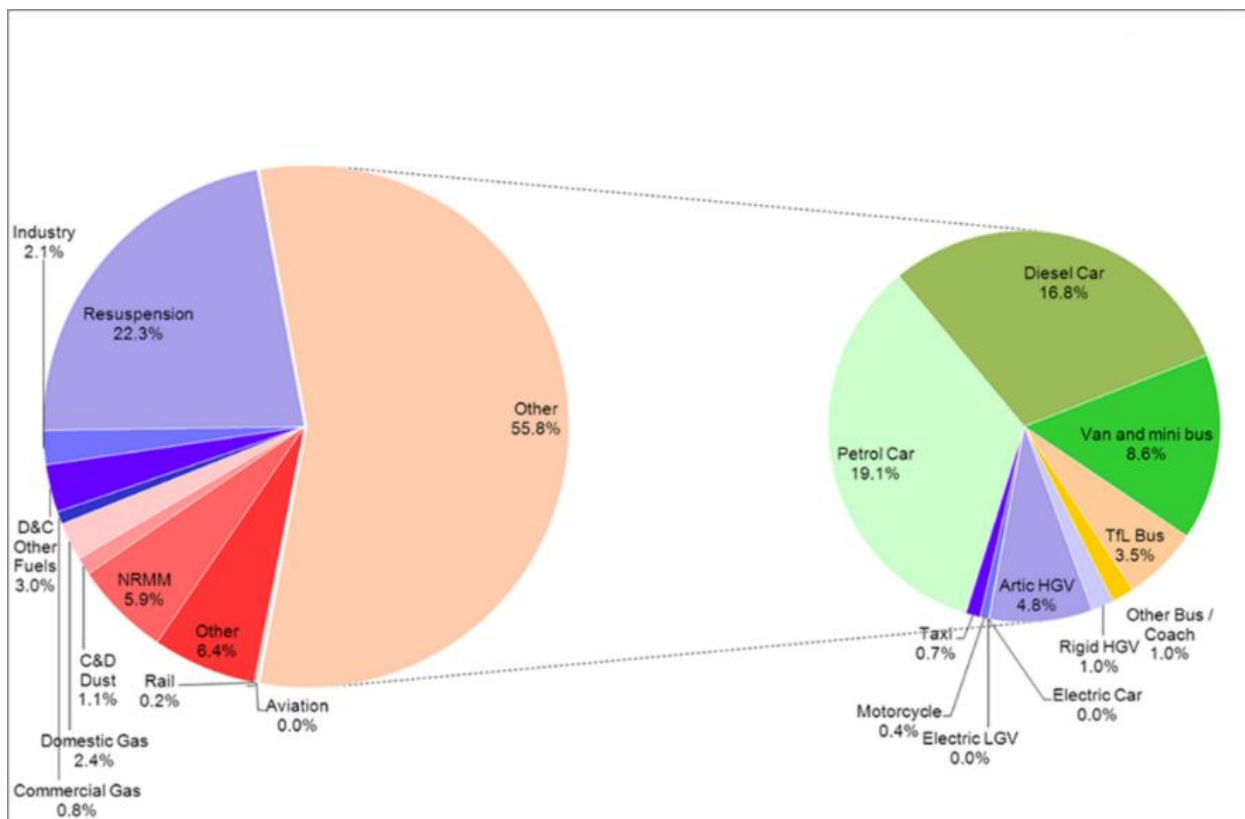


Figure A33: PM10 Emissions by source and vehicle type (from the LAEI 2013)



Climate Change

Road transport produces 24% of total carbon dioxide emissions in Croydon. However the total emissions from road transport has decreased consistently since 2005. Cars emit about one third of road transport carbon dioxide emissions and the challenge is to reduce car use and continuing the move away from fossil fuel powered private vehicles.

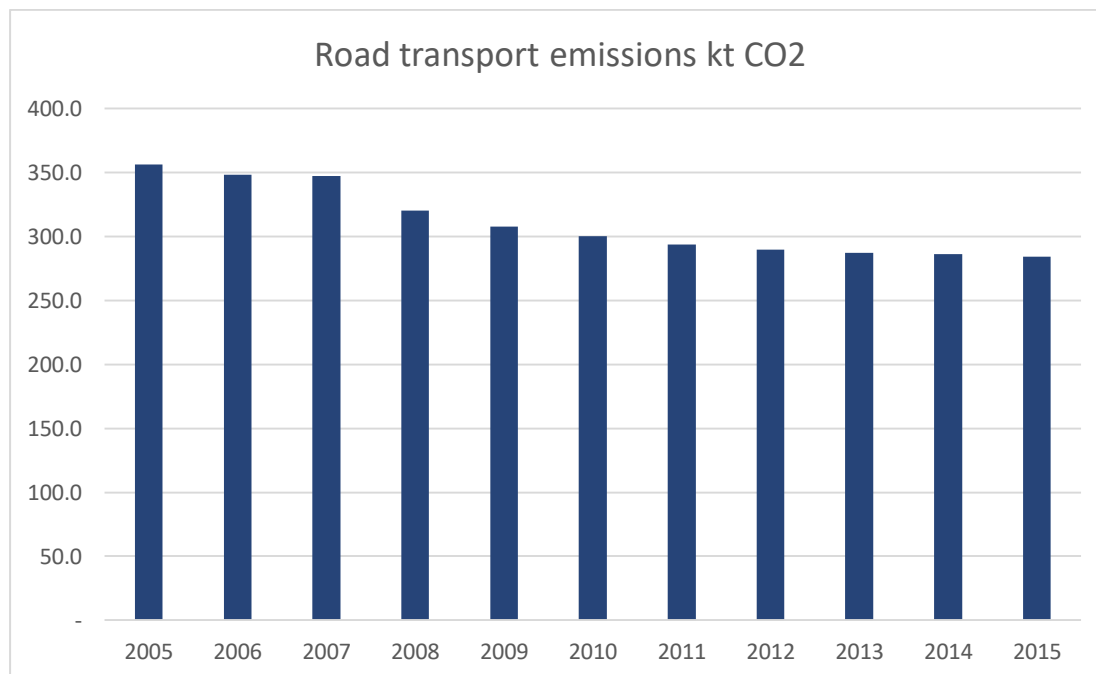


Figure A34 Carbon emissions [Source: DfBEIS]

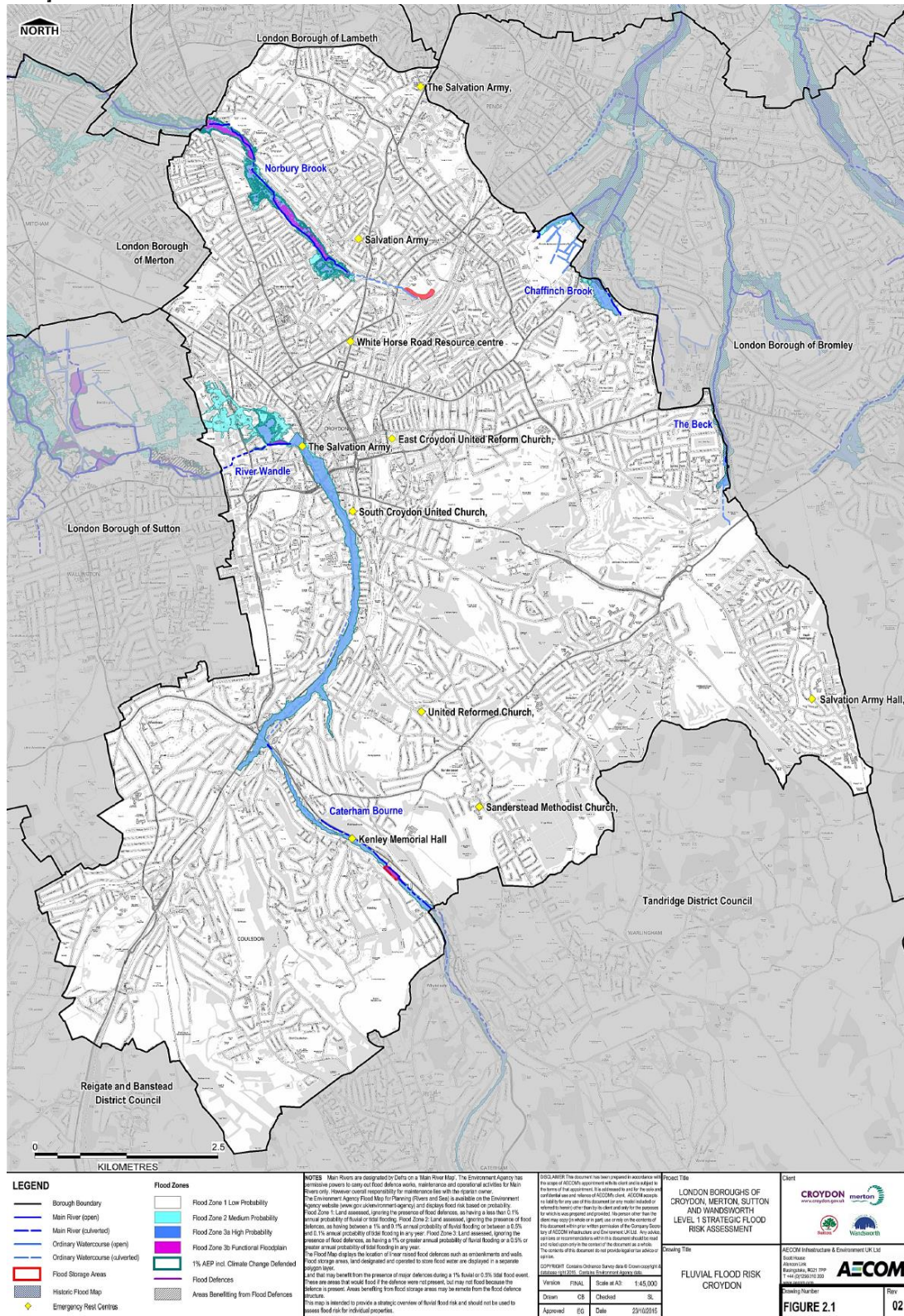
For carbon dioxide emissions as a whole there has been a decrease of 38% per head of population over the same period. The Council has adopted a target of reducing carbon dioxide emissions by 34% from 2005 level by 2025. Carbon dioxide emissions have already been reduced by 32% by 2015.

Flood Risk

Croydon Council is the Lead Local Flood Authority for the Borough which has a history of severe flooding. Most recently Purley and Kenley experienced significant flooding from the Caterham Bourne due to extremely high groundwater during January to March 2014, when properties and businesses were impacted and an emergency situation was declared. Severe surface water flooding during July 2007 flooded into properties and brought Purley town centre to a standstill.

The Preliminary Flood Risk Assessment (PFRA) and Surface Water Management Plan (SWMP) identify parts of Croydon to be particularly susceptible to surface water flooding, including Brighton Road through Purley up to Central Croydon and the A22 Godstone Road.

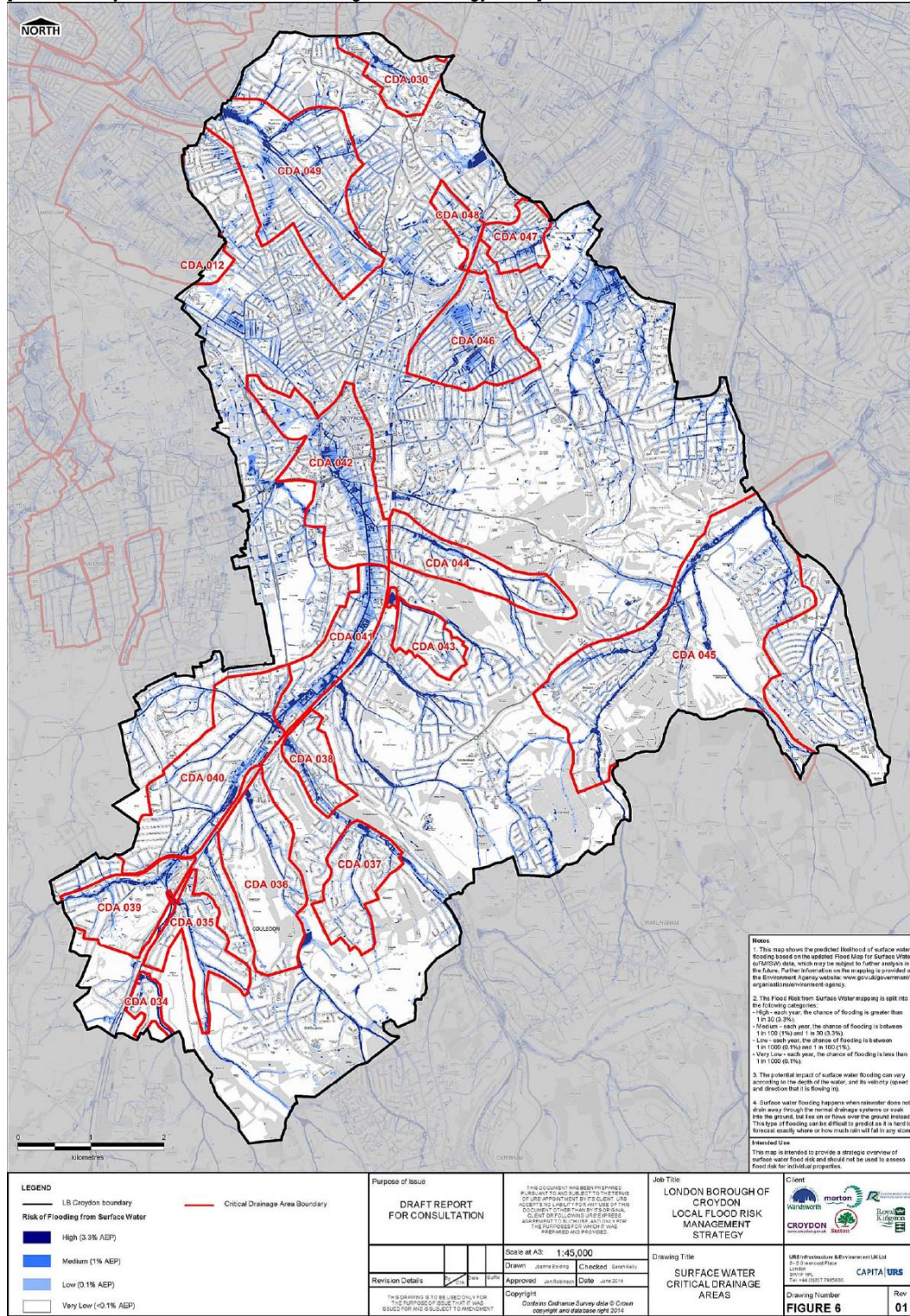
Figure A35: Map of Fluvial Flood Risk in Croydon [Source: Croydon Local Flood Risk Management Strategy 2015]¹¹



¹¹ <https://www.croydon.gov.uk/environment/flood-water/flood-management>

Figure A36: Map of Surface Water Flooding Critical Drainage Areas

[Source: Croydon Local Flood Risk Management Strategy 2015]¹²



¹² <https://www.croydon.gov.uk/environment/flood-water/flood-management>

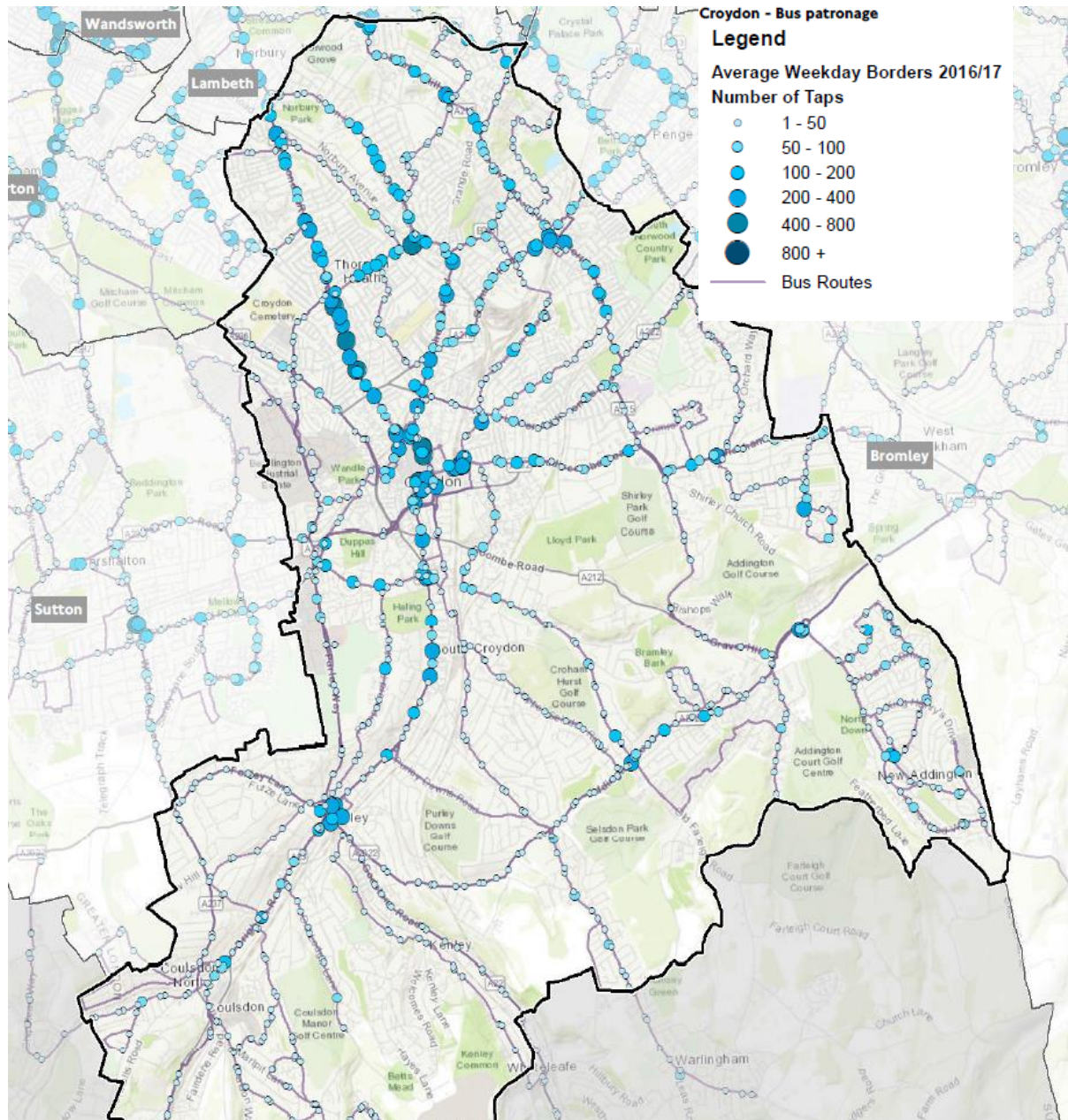
8) Outcome 5 Meeting the Needs of a Growing Population

Challenges and opportunities evidence

Buses

Figure A37: Bus Patronage Map – Weekday Boarders

[Source: TfL Playbook]



Trams

According to TfL the number of passengers is predicted to nearly double again by 2031 however in reality passenger numbers have actually dropped since 2013/14 from 31 million journeys to 29 million journeys in 2017/18.

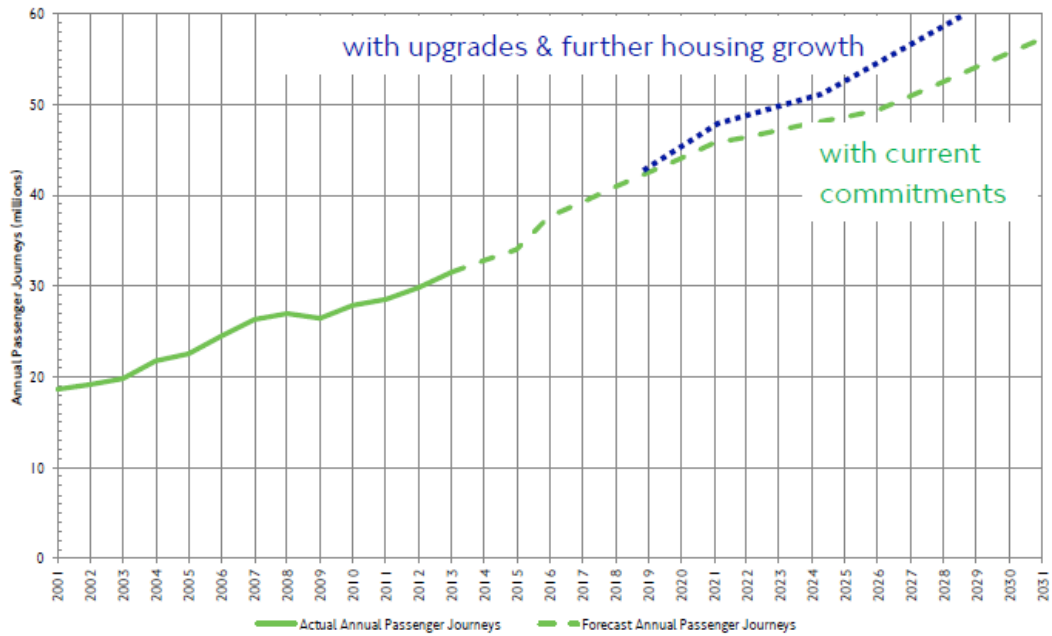


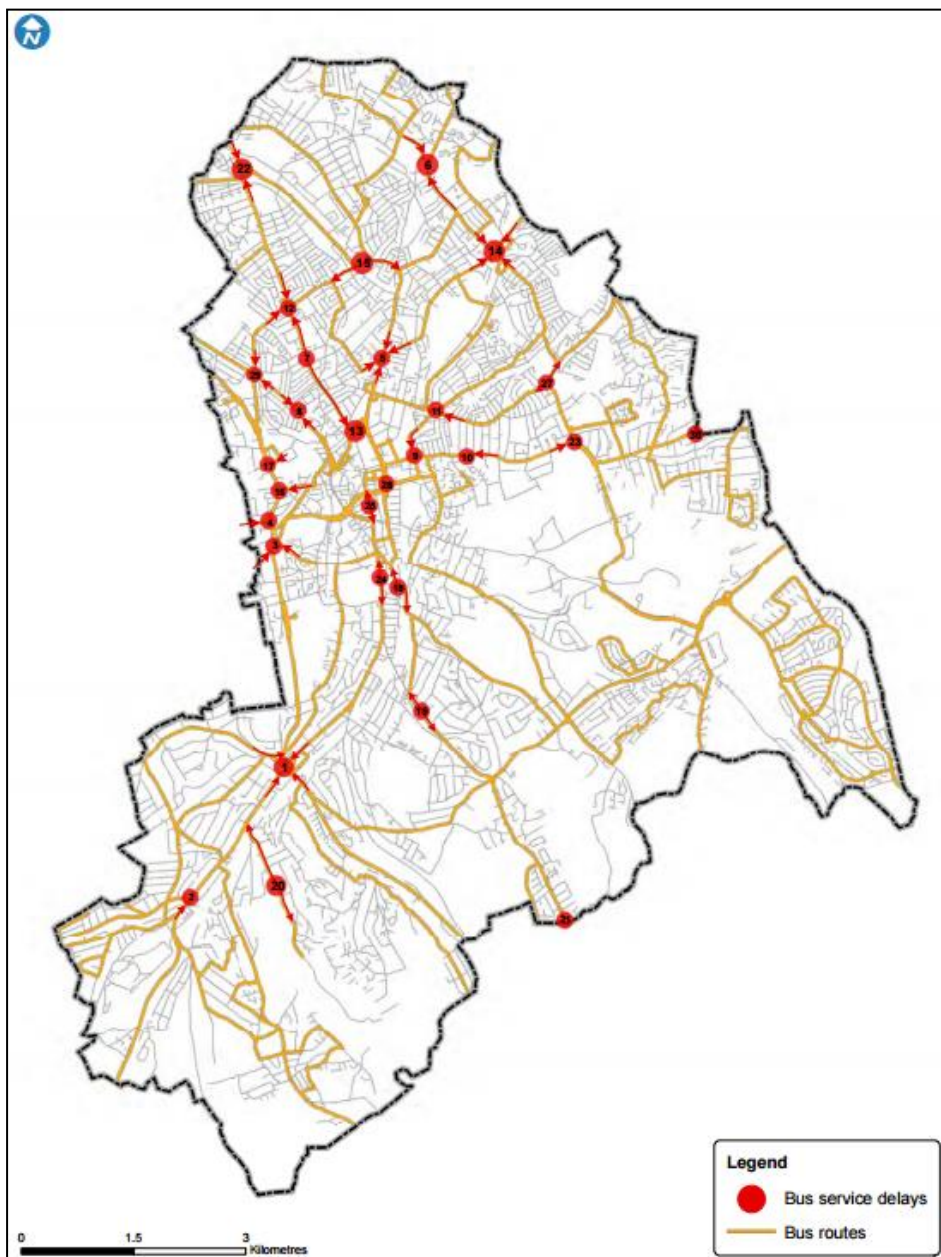
Figure A38: Predicted growth in Passengers on Tramlink [Source: TfL Tram 2030]

10) Outcome 7 Public Transport Journeys to be Pleasant, Fast and Reliable

Challenges and opportunities evidence

The location of capacity constraints on the bus network are shown in figure A40. Most are focused around major junctions in and around Croydon Town Centre or in district centres.

Figure A40: Croydon Bus Network – Capacity Constraints



Source: LB Croydon (<https://www.croydon.gov.uk/sites/default/files/articles/downloads/busservices.pdf>)

Figure A41 - Road Performance – Bus speed change % (AM 14/15-16/17)

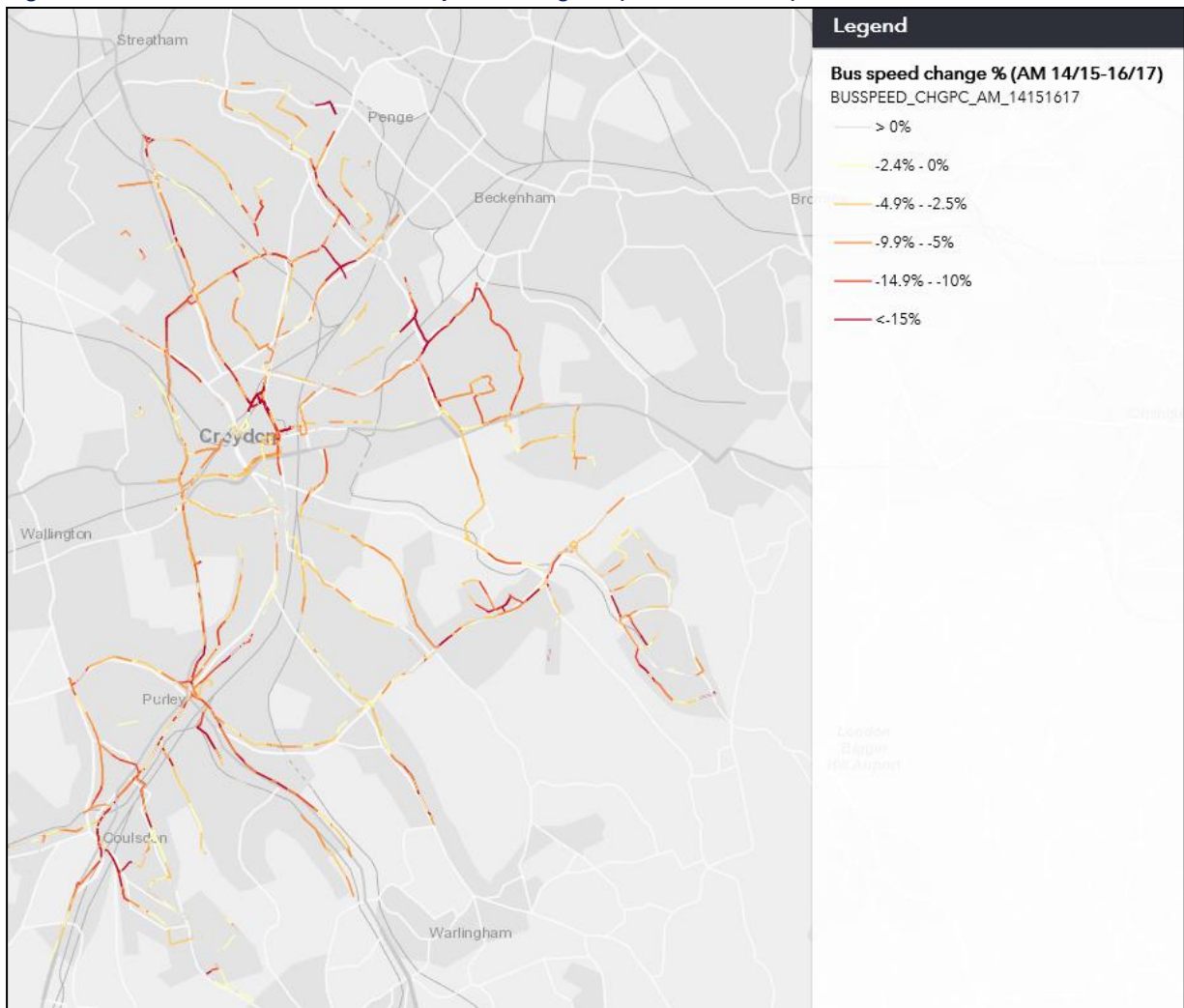


Figure X - Road Performance – Bus speed change % (PM 14/15-16/17)

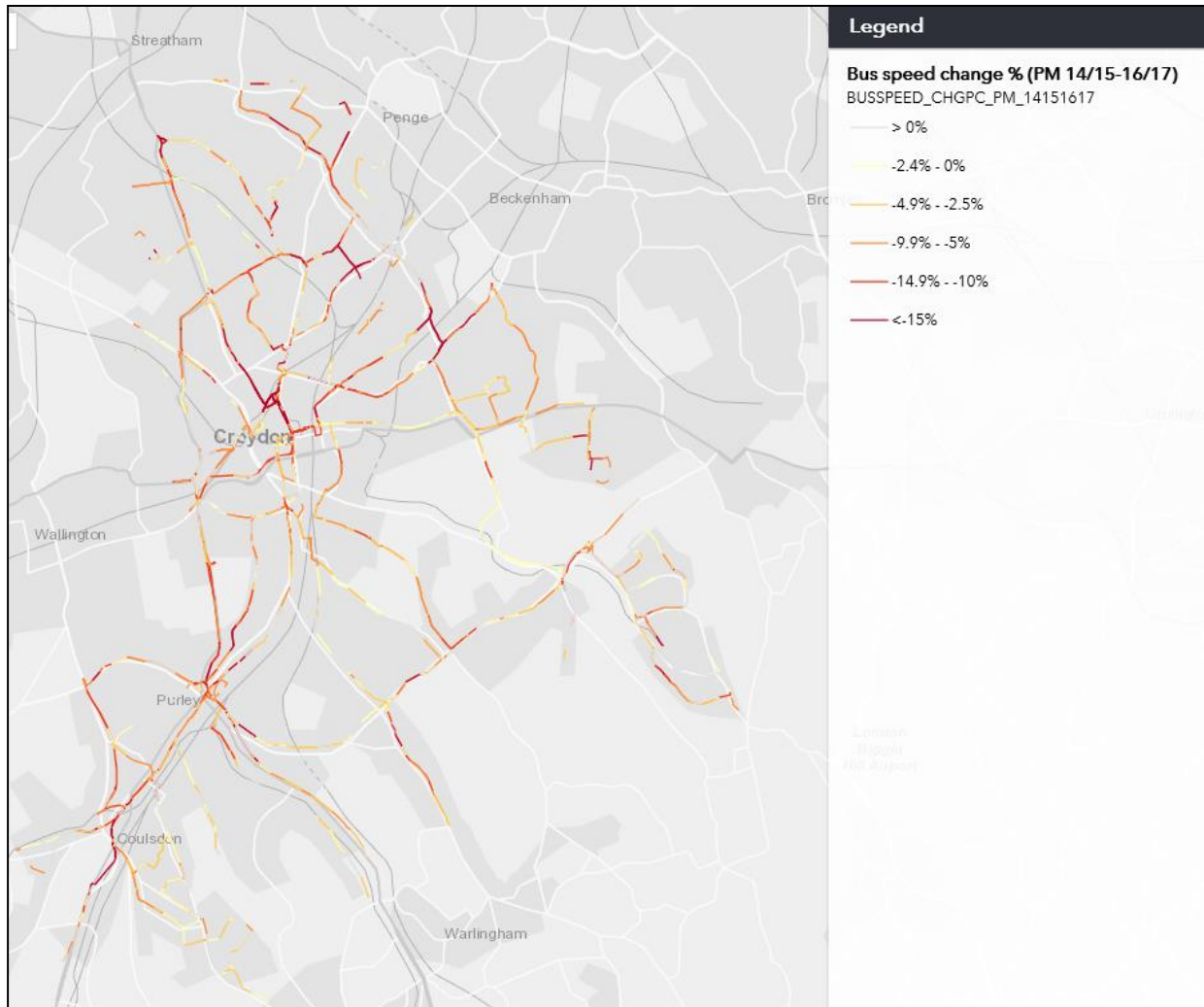
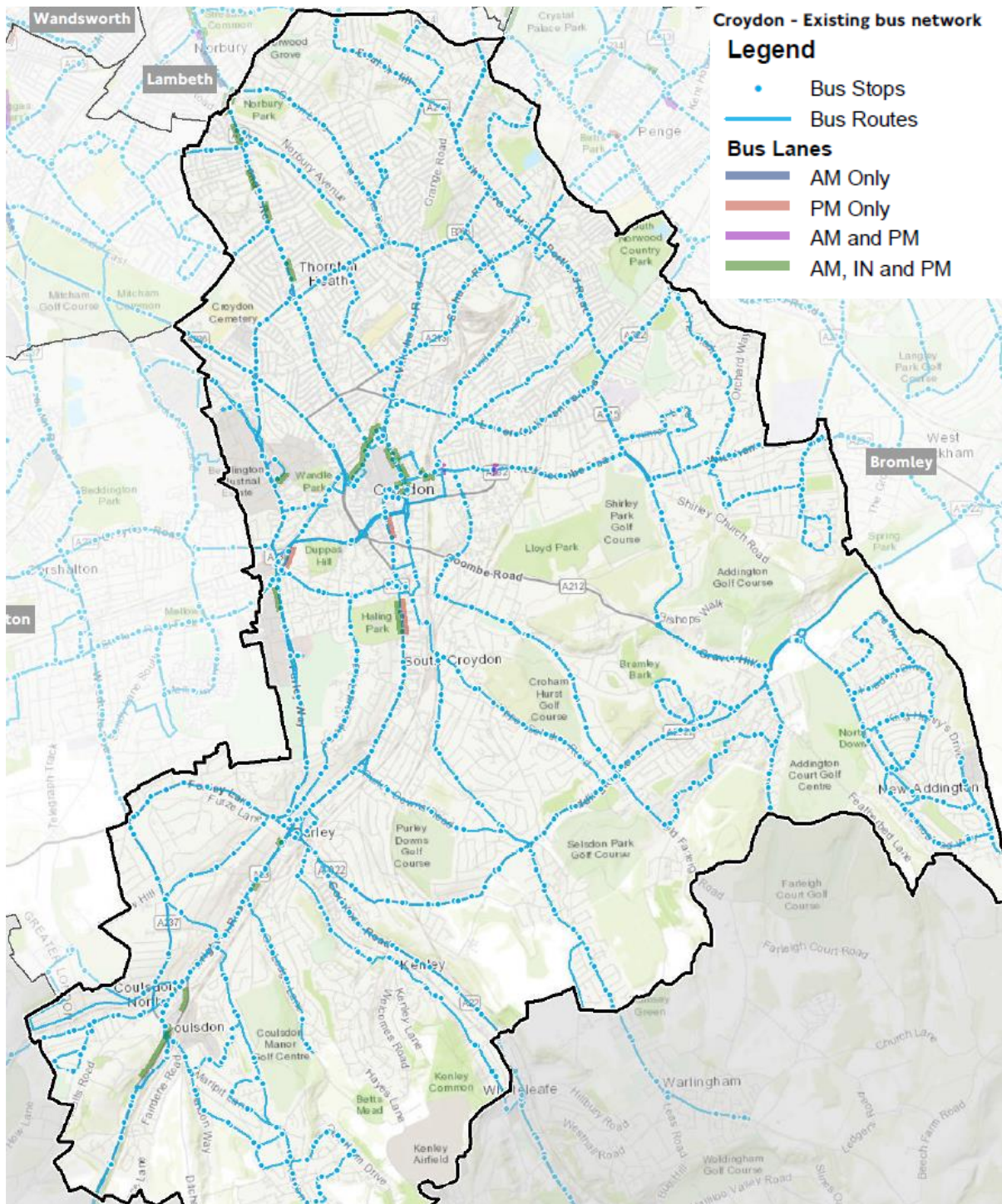


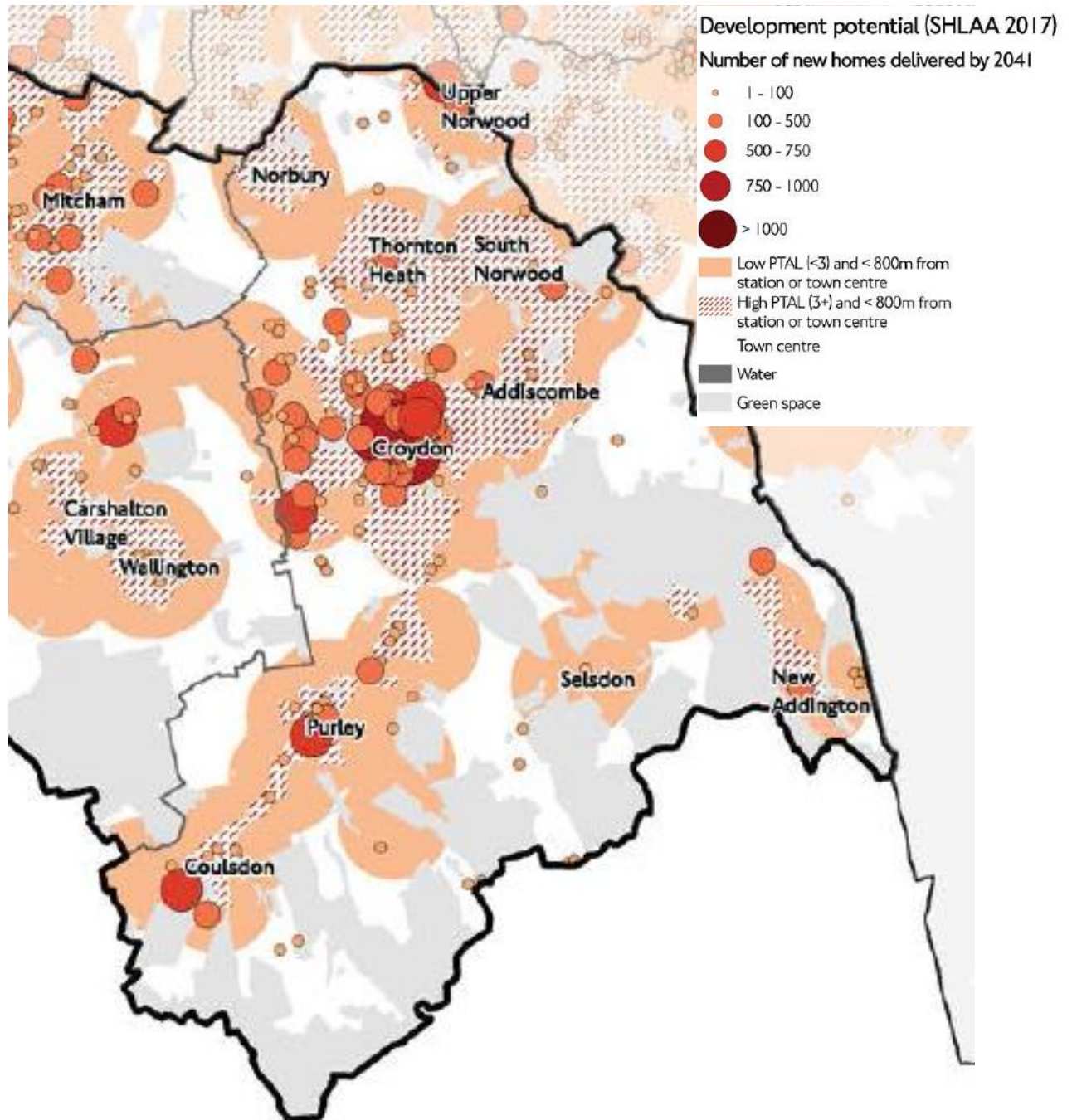
Figure A42: Map of bus routes and bus priority infrastructure in Croydon (Source: TfL Playbook)



11) Outcome 8 & 9 New Homes & Jobs

Challenges and opportunities evidence

Figure A43: Map showing location of new homes to be delivered by 2041 (Source: SHLAA 2017)



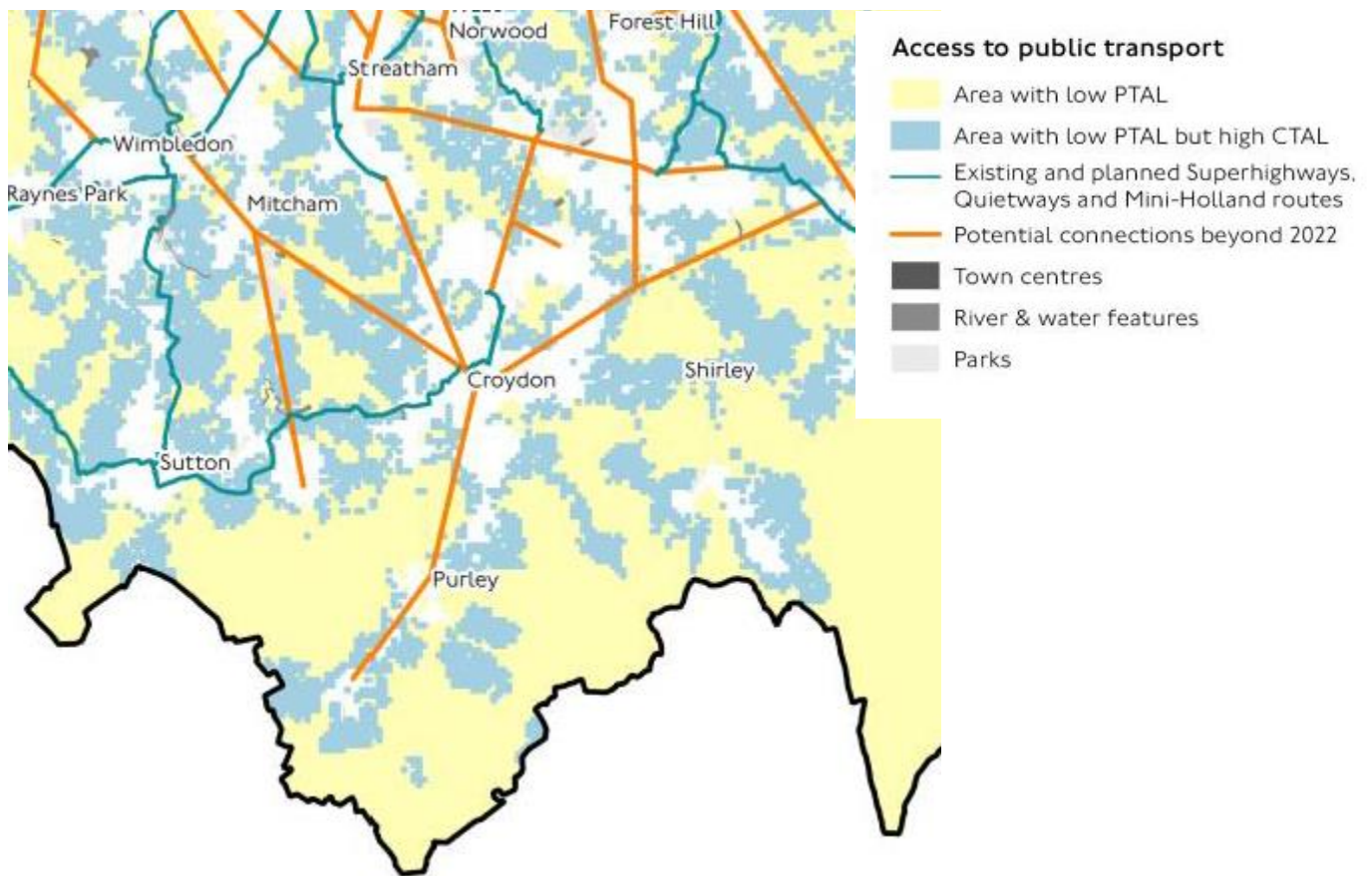


Figure A44: Potential for a cycling network to improve access to public transport network.

Figure A44 shows areas with low PTAL values (2 or less) but high CTAL values (3 or more). This analysis enables the identification of areas where access to the public transport network is currently low, but could be much improved if cycling was facilitated. There are numerous overlaps between areas of low PTAL and high CTAL, which demonstrates the important role that a cycling network could play in increasing access to public transport for the local communities it would serve and to accommodate intensification and growth in these areas.