5 Travel demand

5.1 Where do we want to be?

5.1.1 Trips and demands

As Croydon's population grows the resulting trip generation will place increased pressure on the transport networks across the Borough. It is important that over time **trip patterns** generated both internally from, and externally to the Borough adjust to be more sustainable i.e. are shorter in distance and more easily undertaken as a pedestrian/ cyclist or follow public transport routes provided by bus, tram and rail services.

With opportunities to deliver a step change increase to road and rail network capacities limited by available funding, making best use of the current provision and encouraging more walking and cycling is key to being able to accommodate Croydon's growth predictions. A central component of this Strategy must therefore be to manage **travel demand** generated by trips both within and external to the Borough with an encouragement to use alternative modes to the car. Travel demand management provides the opportunity for growth without a detrimental impact on people's quality of life and relies on a combination of interventions: **travel planning** and **travel reduction initiatives**.

Travel planning should be used to influence behaviour and encourage a mode shift from the private car towards more efficient and sustainable forms of transport. Significant investment in the rail, tram and bus networks will be required to ensure these services remain an attractive alternative to the car and are able to accommodate additional travel demands.

Opportunities to expand and enhance transport networks can in some cases be significantly constrained, so it is essential that best use be made of the existing infrastructure. A way of achieving this is minimise the amount of unnecessary travel undertaken (through better decision making) and provide opportunities for people to carry out activities without the need to travel. **Travel reduction initiatives** provide an opportunity to maintain economic activity but without putting increased pressure on the associated transport networks. It is fundamentally a land use planning goal to encourage people to live close to the facilities they need (e.g. work, schools, shops) but reducing the need to travel can also be encouraged through new technologies.

Travel Reduction Initiatives are there to encourage better trip making decisions but if a journey is required then Travel Planning Initiatives should ensure public transport services, walking or cycling are considered more favourably than the car

5.1.2 Trip patterns

Accessibility

If Croydon is to develop as a new City then its Metropolitan Centre must evolve through becoming a stronger trip generator and reverse the current travel patterns that see over 60 per cent of all cross boundary commuter trips leave the Borough each morning. The attraction of Croydon, and particularly the Metropolitan Centre, will depend on integrated land use planning, transport and urban realm initiatives coming to fruition as part of Croydon's Core Strategy within the Local Development Framework (LDF).

Internal trips

A much larger proportion of trips generated from inside the Borough should be undertaken by foot, cycle or as a bus or train passenger. To change travel behaviour in favour of these modes the associated networks should be safe, fully accessible and of a high quality.

External trips

A high proportion of trips made into the Borough rely on the private car that creates road traffic congestion, air pollution and road safety concerns. To lessen this environmental and economic detriment it is essential that this type of travel is reduced.

Therefore there needs to be less reliance on the A23 to accommodate car trips destined for the CMC and a reduction in car travel to access the adjacent business and retail parks. The accessibility of the CMC from outside the Borough is essential to secure Croydon's position as a regional centre of business and this should be achieved with enhancement to the tram, rail and bus networks.

5.1.3 Demand management

Travel planning

The decision to change journey habits will depend on a number of personal, local and global factors and it is important that the Council identifies those factors which are most likely to change travel behaviours within the Borough. For example, health issues may be more important than global warming or road safety more important than air quality. There may also be cultural, religious, personal safety or cost issues that discourage the uptake of certain modes and these need to be first understood and then addressed directly with the communities they most affect.

With promotional events and guidance provided to schools, employers, residents groups and developers this circulation of information will help residents better understand the need to change their travel behaviour in favour of more sustainable modes of transport.

The uptake of work place, residential and school **travel plans** across the Borough should promote walking, cycling and public transport use, with personalised travel planning initiatives targeting specific communities. This should be complimented with initiatives to deter car use within sensitive areas through restriction of car parking (**car park management**) and use (**road user charging**). **Planning requirements** should set minimum limits for cycle parking and maximum limits for car parking spaces that reflect the accessibility of public transport services and local services/ facilities.

To support these travel planning initiatives, infrastructure and public transport service improvements will need to be made. Highways improvements, particularly those at junctions are discussed in Chapter 8 while infrastructure and service improvements for the bus, tram and rail networks are discussed in Chapters 9, 10 and 11 respectively. Improvements to cycle and walking links are described in Chapters 12 and 13 while enhancement to local centres and neighbourhoods to encourage the use local facilities can be found in Chapter 14.

Travel reduction initiatives

Reducing the need to travel should not be viewed as reduced economic activity but in terms of the environmental benefits of removing unnecessary trips from the transport network. This can be achieved by ensuring people make better trip decisions but also through the use of technology to allow activities, particularly those related to work and shopping to be done remotely.

5.2 Where are we now?

5.2.1 Trip patterns

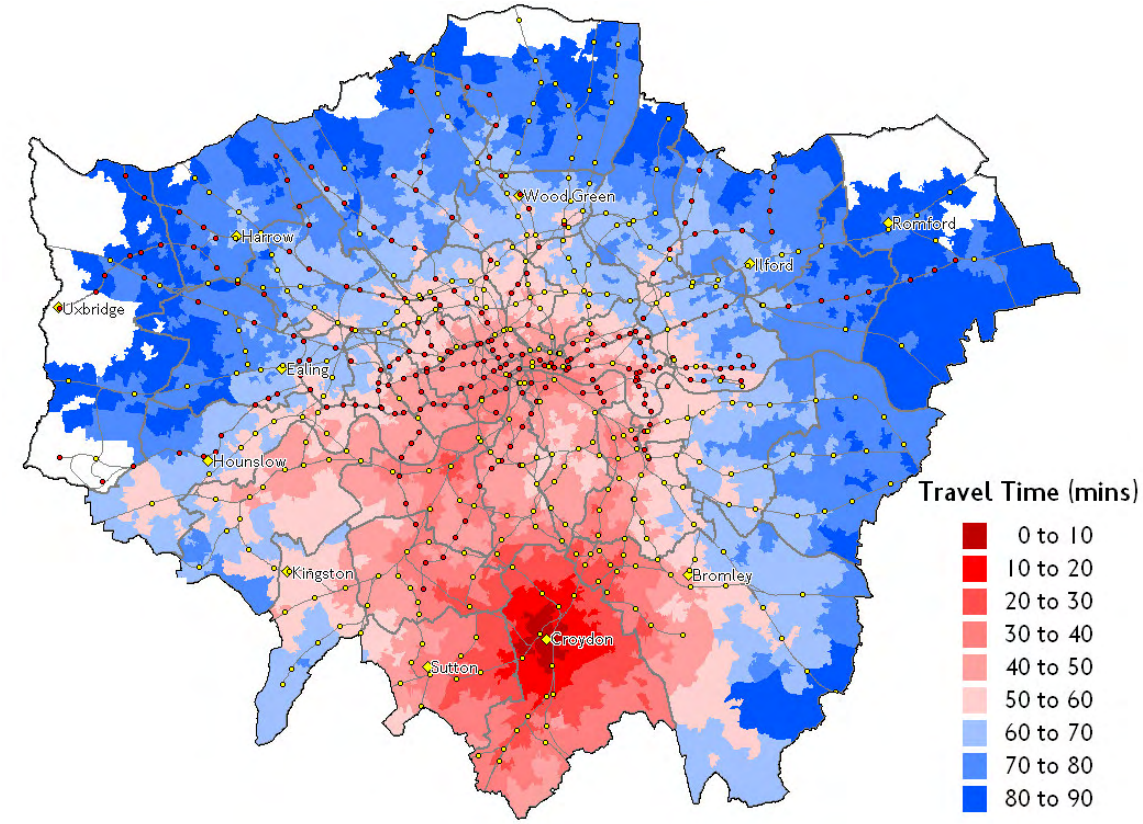
Accessibility

The figures below have been generated using Transport for London's CAPITAL tool and taken from the TfL Travel in London - Key trends and developments document [Transport for London, 2009]. They show the accessibility isochrones from the CMC for minimum travel times by public transport and car[1].

By public transport, the CMC is accessible from much of south and central London. However, access from the east is relatively poor, and access from about half of London requires journeys of more than 60 minutes.

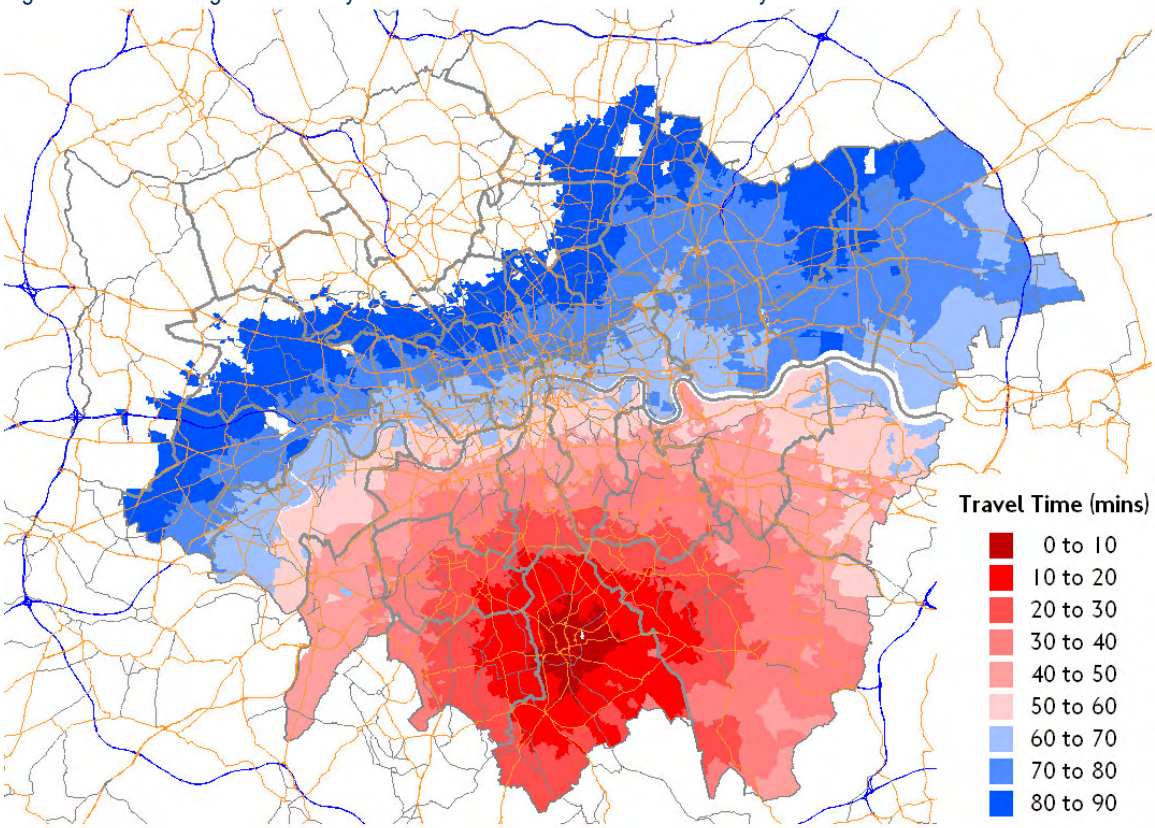
By car the accessibility pattern is more concentric, reflecting individual drivers' routing choices but it is noticeable that the 60 minute isochrone tends to follow the Thames for much of its length within London. Comparison of the two figures show that compared with public transport, the proportion of London north of the river from which Croydon is accessible by road is lower than for public transport across all time bands. **[TD.01]**

Figure 5-1: Min travel time to Croydon from within Greater London, public transport – weekday AM



[1] Note that these time bands include, in the case of public transport, access trips to the nearest bus stop or rail station together with an allowance for appropriate interchange and, in the case of private vehicle trips, an appropriate allowance for parking search.

Figure 5-2: Min driving times to Croydon from within Greater London - weekday AM



Internal trip patterns

The London Area Transport Surveys LATS[2] suggest that over 400,000 trips are made in Croydon each day, of which around 12 per cent or nearly 47,000 are made during the AM peak period (0800 to 0900 hrs).

Just over half of all peak hour trips are made by car (compared to a quarter made by public transport) resulting in almost 18,000 vehicles making local trips on the highway network. For work trips 53 per cent are undertaken using the car which is similar for non work trips, where 51 per cent use a car. The number of people car sharing for non-work trips is however much higher at 18 per cent compared to 4 per cent for work trips. It would appear that car sharing for work purposes is not a popular option for many Croydon residents.

Almost a third of all work trips are undertaken on public transport, with 11 per cent on foot. By contrast, only 17 per cent of non-work trips are made on public transport while over 30 per cent are made on foot. This can perhaps partly be explained by the distances travelled for commuter and non-work trips. Over 50 per cent of non-work trips involve travelling less than 2 km while only 25 per cent of commuter trips involve travel over the same distance. The shorter distances travelled for non-work trips therefore facilitate walking as a viable mode of transport.

Figure 5-3 shows the mode share of commuter trips by local residents. It is clear from LATS that residents who live in the south of the Borough use their cars more than those living in the north. This situation is probably an outcome of the lower PTAL and IMD scores in areas to the south of the Borough which suggests higher car ownership and use. The influence of these factors (availability of alternatives and income) on mode choice therefore highlights the need for good public transport accessibility when seeking to focus development on making sustainable travel choices.

[2] The LATS is a large scale surveys carried out roughly every ten years to help understand the changing pattern of travel in the London area. The survey includes all modes and aims to provide a snapshot of all travel in the London area on a 'typical' travel weekday outside school and public holidays.

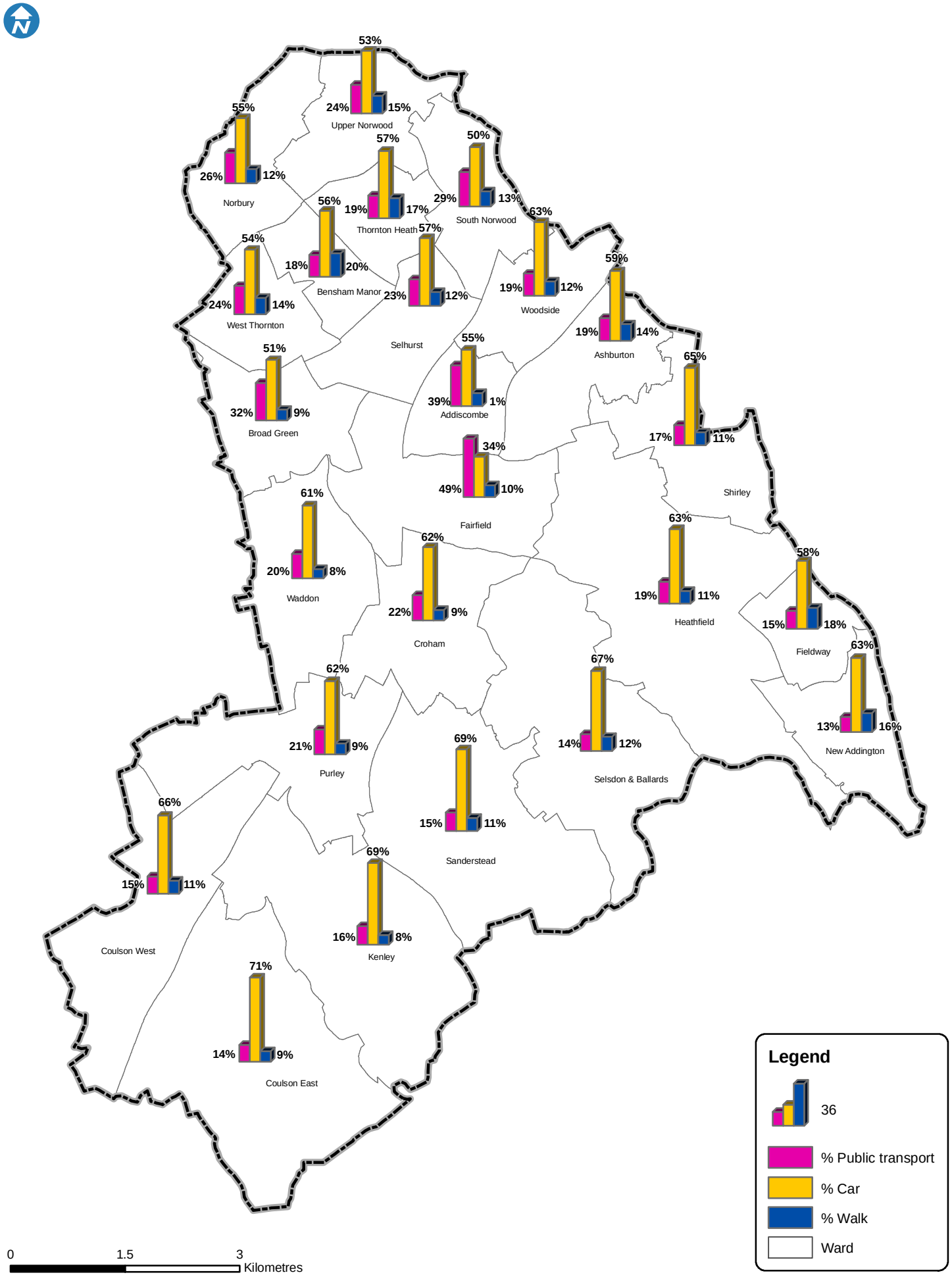
Although the average percentage of commuter travel by car across all wards is around 50 per cent, this figure is skewed by the fact that only 34 per cent of those commuting to the CMC (a quarter of all commuter trips) travel by car. If trips to the CMC are discounted the commuter mode share for car trips is typical for outer London at almost 60 per cent.

The percentage of pedestrian trips varies noticeably. Twice as many people in Bensham Manor, for instance, walk to work than in nearby Broad Green and Fairfield wards or most wards in the south of the Borough. Although factors such as work distance are a major influence on mode choice, the reason the percentage walk trips are relatively high in Bensham Manor is likely to be related to low car ownership in this area. In this case, even though public transport accessibility in this ward is among the highest in the Borough, people chose to walk to work rather than use public transport as an alternative.

It is interesting to note that, despite a fairly comprehensive cycle network in the Borough (as illustrated in Chapter 12), the mode share for cycling is only 1 per cent in every ward for work and non-work related trips. The trend for a low cycle mode share is true also for school trips. While 37 per cent of school trips are undertaken on foot, only 1 per cent cycle. It would appear that the population do not currently consider cycling a viable option for travel.

Most school-based public transport trips are undertaken on local bus services (16 per cent of total trips).

It is important to note that all 400,000 daily trips will at some point (and for varying distances and time) involve walking; be it to a car park, bus stop or train station to the shops, a friend's house or to work. This makes the condition of the pedestrian environments in which people make any trip an important consideration. **[TD.02]**



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Mode share for resident commuter outward trips

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External trip patterns

Each day 121,000 commuter trips are made either into or out of the Borough with the outflow of commuter trips accounting for 60 per cent of all the trips. Figure 5-4 shows the main origins/ destinations of commuter trips into and out of the Borough. A significant number of commuter trips out of the Borough are made to The City and Westminster, but also to Wandsworth, Merton, Lambeth and Southwark as well as eastern destinations further a field such as Greenwich, Lewisham and Tower Hamlets.

Croydon is both an importer and exporter of jobs for Surrey, Bromley and Sutton. Figure 5-5 and Figure 5-6 shows the mode share of commuter trips into and out of the Borough by ward.

The number of externally generated trips into each ward will be directly related to the number of jobs available with the CMC (Fairfield) being the main destination. This has a 52 per cent public transport mode share. In terms of the number of trips to each ward; most trips from origins external to the Borough are centred on the CMC, along the A23 corridor and in the northernmost wards, which are most accessible from outside the Borough. Workplace destinations for internal trips, although also centred on the CMC and the A23 corridor show a greater distribution in southern and eastern wards. Bensham Manor and Thornton Heath appear to supply jobs to more Croydon residents than their ward neighbours.

If we consider the mode split of commuter trips working in Croydon who reside in Sutton or Bromley we see a high car mode share. A total of 60 per cent of all commuter trips between Croydon and Bromley and 56 per cent between Croydon and Sutton are made by car (public transport mode share is 32 per cent to and from each Borough). This equates to over 16,000 two-way vehicle trips within Croydon per day, principally on the A232. This highlights the need for attractive public transport on orbital east-west corridors.

With the exception of the CMC, travel patterns in Croydon appear to be characterised by a high proportion of car-based trips. If we consider that almost 18,000 vehicle trips are generated during the AM peak hour for local movements such as travel to work, leisure or entertainment facilities and for taking children to school and combine this with the fact that the A23 provides the main route into central London from the south and that the A232 is the main orbital highway route in outer South London it is easy to see why parts of the highway network experience congestion at peak times.

Less than a quarter of local movements during the AM peak are made by public transport and yet, as we will see in later chapters, important parts of the public transport network are congested at this time. Crowded conditions on these local services will not help to encourage a mode shift away from the private car. At the same time it shows that if public transport travel mode share does increase, capacity enhancements at various locations on the network are essential. The locations of the most congested parts of the network have been presented in Chapter 4 and further detail is provided in the following Chapters.

Cycling in Croydon is uncommon for any trip purpose, even leisure. While the cycle network requires some improvement (Chapter 12) network coverage across the Borough is generally good suggesting there are issues other than infrastructure that suppress cycling as a mode of choice.

As mentioned in Chapter 3, the BME communities are expected to experience considerable growth in the next 20 years while the non-BME communities are likely to see an overall decline in population. Through the analysis in Chapter 4 it is noted that the BME communities, by virtue of lower car ownership and of living in areas of higher public transport accessibility, have a greater propensity to travel by public transport or on foot. This would suggest that a large proportion of the new population are not only likely to be open to using public transport but are just as likely to require it.

In terms of investment in public transport; investment in areas of increasing BME community population is likely to result in increased patronage in these areas. On the other hand, significant investment in areas of low BME community numbers where travel by public transport is also

historically low, i.e. in the south eastern wards, may not produce the significant increase in patronage required to make these services viable. **[TD.03]**

5.2.2 Demand management

Travel planning

Croydon Council, with the help of other partners (Envirowise, CEN, Thames Water, London Remade, Seltrans, Environment Agency, and Groundwork) have formed ENVIBE, which provides free environmental support to Croydon businesses. Seltrans offers tailored advice to businesses and schools wanting to develop travel plans.

Good practice is recognised through a tiered award scheme dependent on the outcome of self assessments, which can be used to generate publicity and recognition in the wider community. This service should form an important part of travel planning in Croydon in reducing travel demand and providing attractive alternatives to single occupancy car use.

All new developments or proposed intensification above the thresholds defined by TfL require the submission of a Travel Plan as part of the planning application. For residential developments these Travel Plans should adhere to Department for Transport [DfT, 2005] and Transport for London [TfL, 2008c] policy. There is also similar guidance on work place travel plans [DfT, 2008 and TfL, 2008d].

Residential: A lack of or poorly administered/ monitored residential travel plans **[TD.04]** can lead to:

- Not enough thought given to sustainable transport provision in early stages of planning new residential developments which can lead to parking stress within developments and potential overspill into surrounding areas.
- Too many unnecessary trips resulting from either personal preference or not enough awareness of travel options.
- Demand for parking spaces within existing residential areas can create poor street environments and local residents stress about the availability of parking.

Work: A lack of or poorly administered/ monitored work place or employment travel plans can lead to **[TD.05]**:

- Unnecessary use of the private car for journey to work trips which results in peak demands for road space and resulting levels of congestion.
- High demand for parking spaces at existing and new employment sites can lead to over parked areas and an increase in illegal parking.
- Business trips undertaken by car when comparable public transport services are available, the trip may be unnecessary or destination near enough to walk or cycle.
- Any improvements through travel planning made by a new development can be offset by neighbouring organisations without travel plans.

Retail: Trips to retail outlets can result in unnecessary shopping trips being made by car. This is particularly the case for town and district centre locations which should have either a public transport alternative or be close enough to walk or cycle. 'Out of town' retail parks are designed around the car and so this mode is usually the only realistic way to access the facilities they offer. As mentioned above, high demand for 'out of town' developments in Croydon can create severe delays on key strategic routes within the Borough.

The key trip generator for retail trips within the Borough focus on the CMC which has an extensive number of retail stores, banks, restaurant/ cafés located either within the Whitgift Centre (including Alders), Centrale or along the North End.

Retail, business and leisure park development along the A23 has created a secondary major retail destination to the east of the CMC. Valley Park includes major stores such as IKEA and B&Q, while the retail area includes many national chain stores for clothing, furniture, sports equipments. The leisure areas include fast food restaurants and a cinema.

The Colonnades leisure park is a smaller site on the A23 located to the south-west of the CMC. The site is smaller than Valley Park, with a higher proportion of hotels, supermarkets and fast food outlets. **[TD.06]**

Education: Problems related school and education trips include overcrowding and poor behaviour on buses and at interchanges. Low levels of cycling to school are common across London and Croydon has few secondary or primary pupils cycling. Walking is the main mode for primary age children, but there are concerns about safe walking routes, particularly if children are unaccompanied on the journey. Parking at schools by parents is regularly identified as an issue and the trend towards more home to school travel in parental cars is clearly adding up to 15% additional traffic to peak hour congestion.

Because of a high level of specialist schools and colleges, plus net outflows of pupils to adjoining Boroughs the home to school transport position in Croydon is complex. For primary pupils the main travel modes is walking, with increasing car travel in the south of the Borough. For secondary pupils the main mode is bus, on average 50 -60 per cent of trips. Cycling is low across the Borough for school trips, at 1 per cent on average. College pupils are often travelling longer distance and the Croydon colleges attract students from all over south London, making rail an important mode. **[TD.07]**

Health care: Access to healthcare facilities can also generate significant levels of car trips, particularly at hospitals which also attract employment and visitor trips. Key issues include poor public transport links for hospital staff on shift work, parking pressures on site for both workers and visitors, poor information about access to hospitals and complex, longer trip making discourages more active modes. . **[TD.08]**

Freight deliveries & servicing: The delivery of goods (freight) faces many of the issues faced by other road users but in the context of time sensitive business demands. The capacity of the network and congestion at key junctions and corridors is cited by hauliers as major problem. Routing and inappropriate access to sites can create local tensions. Overnight parking of both larger lorries and vans are identified as issues. **[TD.09]**

Car parking management

Car parking provision and management creates a number of problems:

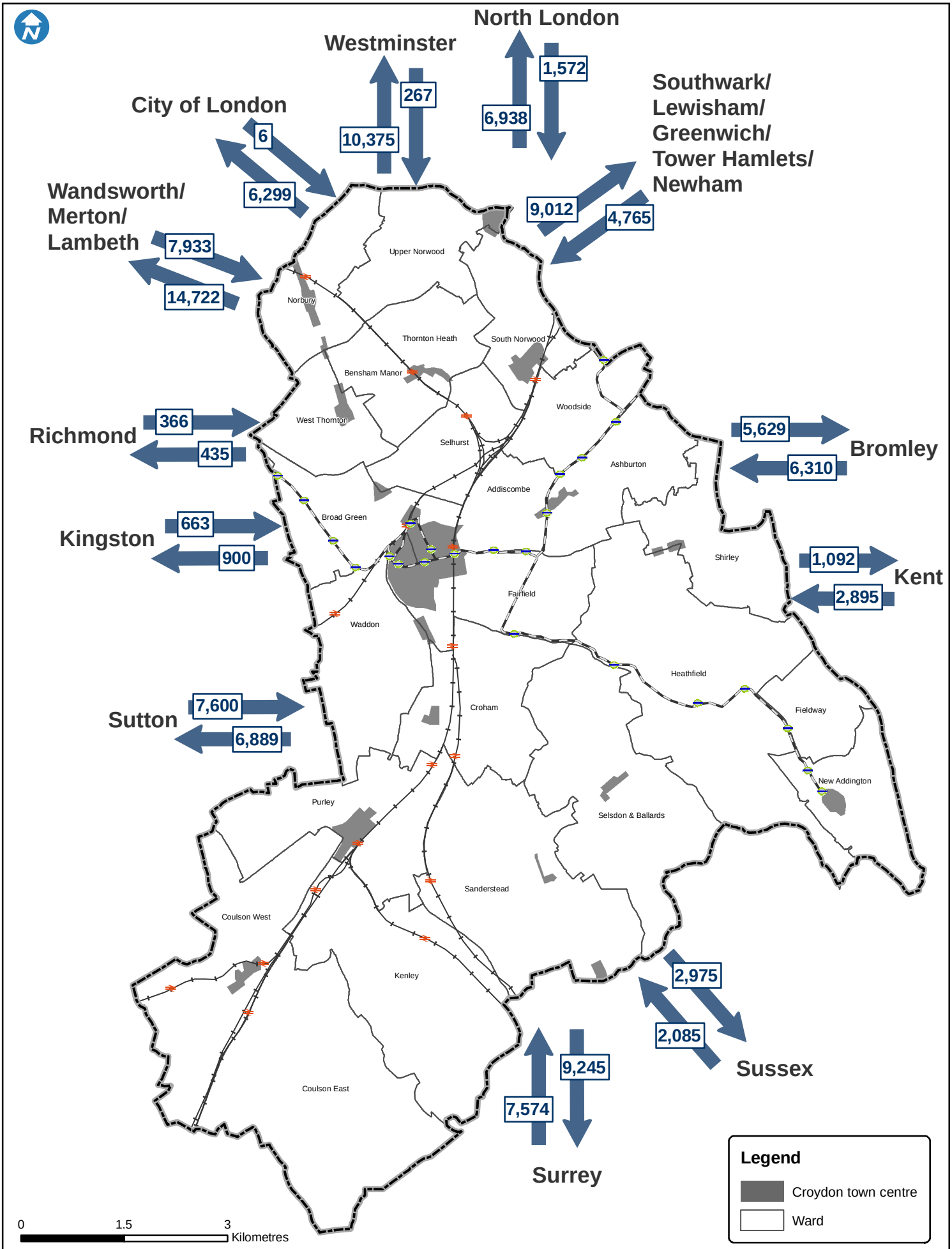
- The CMC has a substantial car parking provision which attracts large numbers of trips by private car – this can lead to increase traffic congestion on the key radials into the CMC.
- Difficult access arrangements to car parks can create delays, emissions and additional mileage related to drivers trying to access car parks in the CMC but also some local centres.
- High levels of on-street parking creates poor quality streets and increase road safety risk.

A review of public car parking within the CMC [JMP, 2009] reveals that as a maximum 52 per cent of available spaces were utilised on a weekday, and a maximum of 49 per cent were occupied on a Saturday. Within this data, a number of large car parks were significantly under utilised, with occupancies of less than 40 per cent. Subsequent comments from stakeholders suggest that car

parks are generally perceived to be better used than this and at busy times of the year such as in December the car parks are generally full. **[TD.10]**

Travel reduction initiatives

The Council currently seeks to reduce the need for travel within the Borough by working with its partners, particularly TfL, to enhance the sustainable transport offer, encourage the use of more environmentally modes and manage the impact of the car on the highway network.



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Daily commuter trips into and out of the borough

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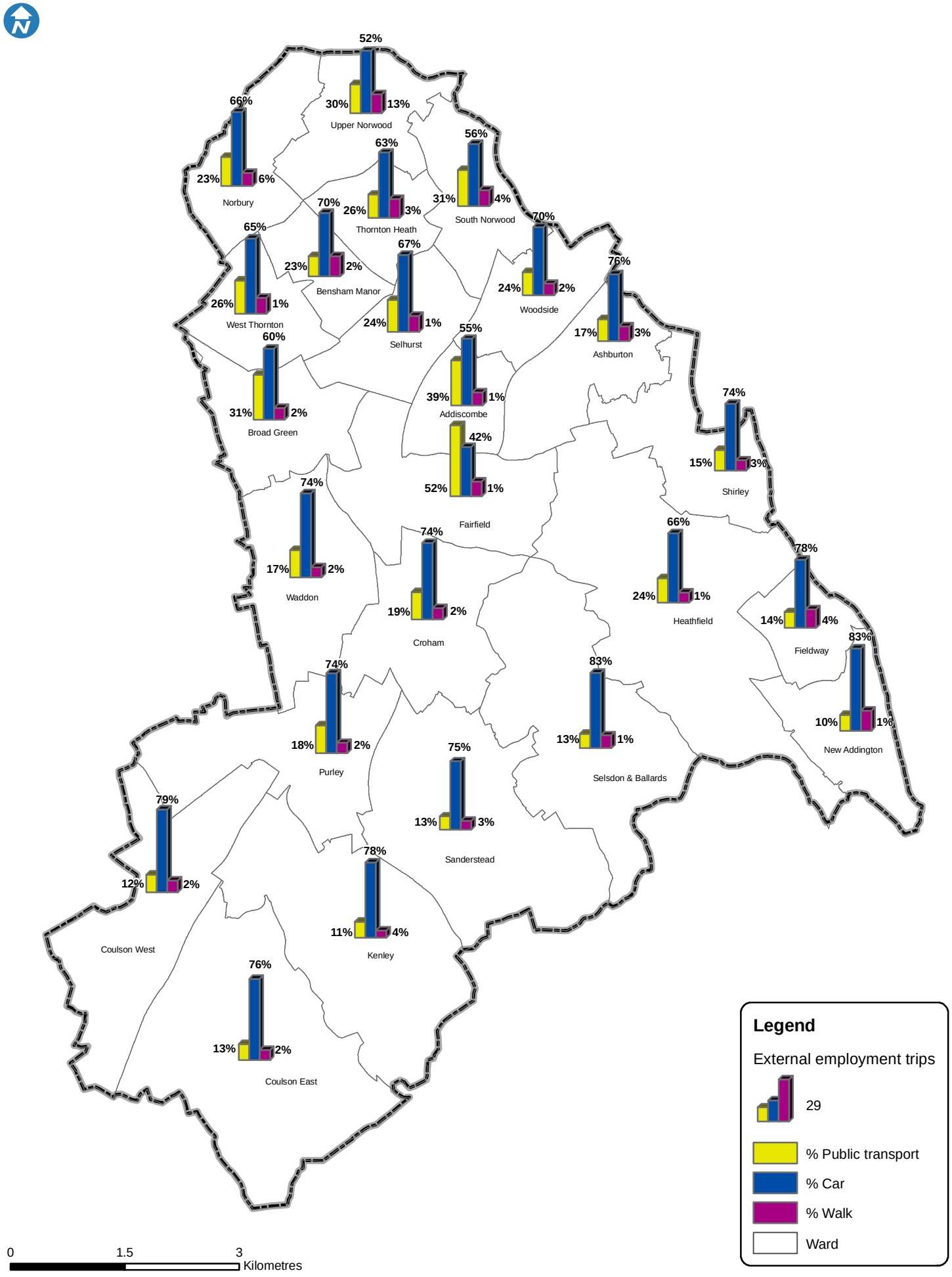

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External commuter trips travelling into Croydon by mode

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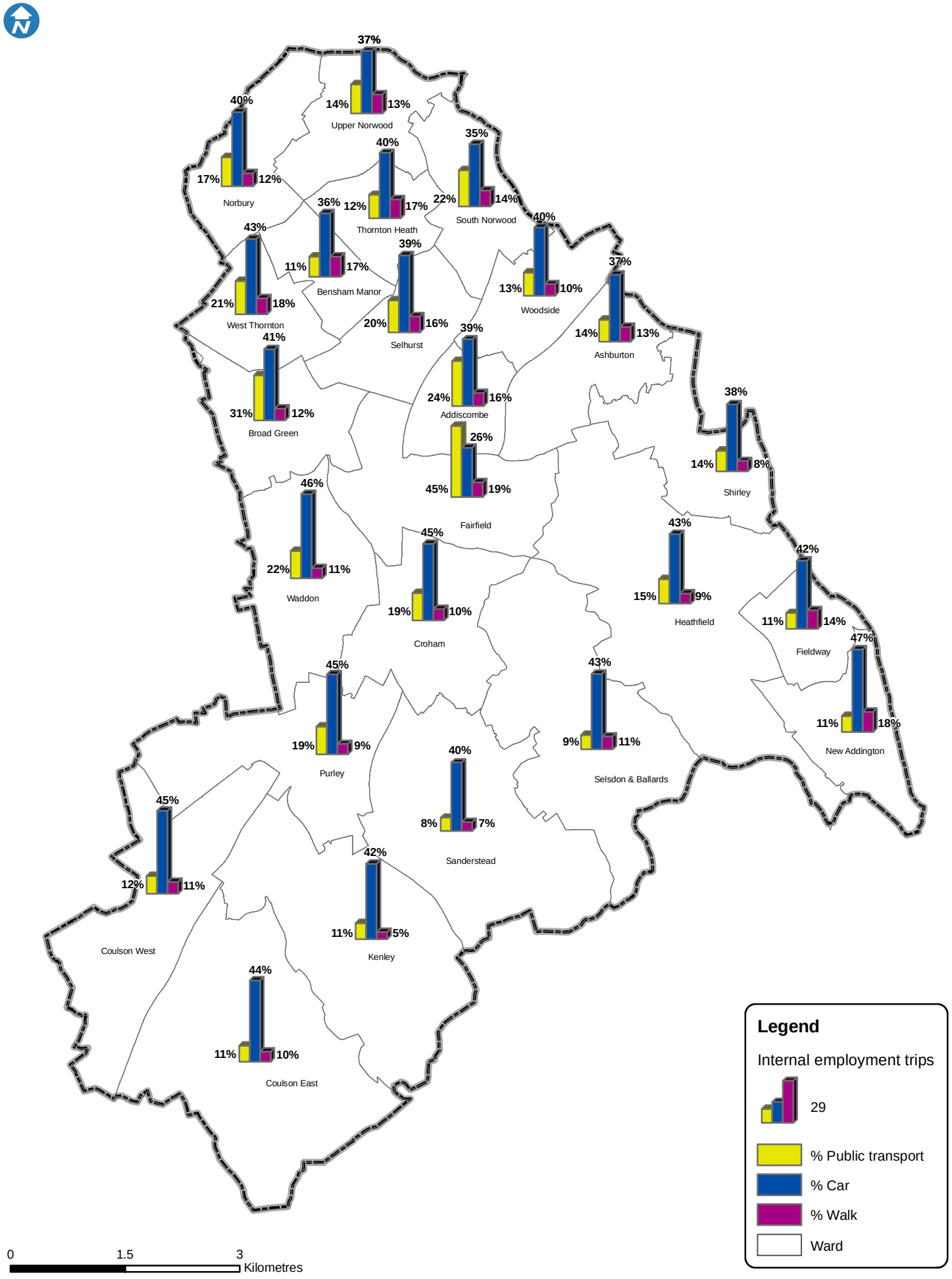

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Internal croydon ward commuter trips by mode

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5.3 What are the options for change?

5.3.1 Trip patterns

Accessibility

This Strategy is based on making all areas of the Borough fully accessible, regardless of age or mobility. With a large proportion of travel in the Borough directed towards the CMC many of the proposals look to strengthen links between the CMC and its surrounding areas. This is broadly achieved by promoting public transport services for trips with origins outside the Borough and the greater use of walking and cycling for trips generated internally. The Borough boundary is a fuzzy transition point and is not meant to be the point where encouragement to walk/ cycle stops and public transport starts. Instead it is there to suggest trips up to 2km could be walked, up to 5km could be cycled and trips over this are most likely to be undertaken by bus, tram or rail. Personal mobility will ultimately define the achievability of these aspirations but this Strategy aims to ensure access to public transport or the suitability of the walking or cycle cannot be given as reasons for not taking up these modes of travel.

Accessibility within the CMC is largely dependent on the success of the emerging Masterplan proposals which provide new housing, retail and leisure facilities combined with enhanced transport networks and urban realm. The proposals are supported by the Wellesley Road scheme which aims to transform accessibility within the CMC through the removal of the 'urban' motorway and its replacement with an area that allows easier pedestrian movement within the CMC. **[TD.01]**

Internal trips

Fro internal trips the proposals recommended by this Strategy promote walking, cycling and the use of bus and tram services in favour of the private car. This will generate local area improvements to air quality, road safety and noise while encouraging greater physical activity during trip making. **[TD.02]**

External trips

Improvement to bus, tram and rail services are key to ensuring trips into the Borough are made in the most efficient and sustainable manner. Again, options to improve these services are provided in later sections of this report. **[TD.03]**

5.3.2 Demand management

Areas of travel management demand could include:

- **Travel planning.** The implementation of work place, residential and school travel plans across the Borough should encourage more walking, cycling and public transport use, with personalised travel planning initiatives targeting specific communities.

- **Car park management.**[3] To ensure car park demands are managed and pricing and supply strategies are used to ensure the provision of car parking does not unduly reduce the attraction of more sustainable modes of travel.

- **Road user charging.** To reduce congestion on the road network through a pricing mechanism that discourages trips at particular times of the day or along particular routes. A road user charging scheme could be introduced as part of a London wide or national scheme.

- **Planning requirements.** Defines maximum targets for car parking provision and minimum targets for cycle parking that reflect a sites location to facilities and access to public transport services.

- **Travel reduction initiatives.** Used to reduce the number of trips undertaken through the adoption of new technologies that allow tasks to be done remotely without the need to travel. The use of

[3] Car parking is a cross cutting theme within this Strategy. Its inclusion within this Travel Demand section relates only issues affecting the attractiveness of parking such as pricing and the level/ quality of the provision.

new technologies should be encouraged to reduce travel associated with work and convenience shopping activities.

These areas are discussed in the following sections.

Travel plans

Travel Plans form a package of site specific measures aimed at reducing the environmental impact of trip generation through the promotion of alternatives to the car and reducing the need to travel. Promoting the more sustainable forms of transport can range from delivering infrastructure improvements that make walking, cycling and bus travel a more pleasant experience through to the 'softer' measures that encourage mode shift and provide financial, health or time saving benefits.

Reducing the need to travel is predominantly a planning policy matter which should aim to promote greater integration of employment and residential areas and in seeking mixed land uses for major developments. Travel plans can however assist with reducing the need to travel by employers offering relocation packages; providing facilities for home working; allowing work in satellite offices, and/ or providing on-site service for employees. Supermarkets offering extended and more flexible home delivery services would also help reduce the number of trips generated by convenience shopping.

Priorities for each type of Travel Plan should be:

- **Residential.** Reduce the dependence on car ownership. **[TD.04]**
- **Employment.** Promote walk, cycle and public transport travel initiatives or where appropriate opportunities for home working. **[TD.05]**
- **Retail.** Greater opportunities for home delivery services. **[TD.06]**
- **Education.** Promote walk and cycle initiatives. **[TD.07]**
- **Health.** For hospital visitors promote walk, cycle and public transport initiatives while for patients greater use of home treatments may be applicable. **[TD.08]**
- **Freight.** Safe, reliable and efficient movement of freight which doesn't compromise the economy, society or the environment. **[TD.09]**

All travel plans should be structured so that there is demonstrable evidence that they promote alternatives to the car and reduce the need to travel. There should also a structure in place to ensure good monitoring of their impacts.

Residential travel plans

New residential developments should consider sustainable access at the design stage; consideration could be given to the availability of home working facilities, the ability to access travel information in advance of departure (e.g. RTPI in the home) as well as to what extent cars are provided for within the development. Home Zone principles could be embedded in the design by implementing shared spaces or even making the whole development car-free. Planning conditions could assist in this area by reducing the minimum numbers of parking provision. Where parking is provided it could be at an additional cost thereby divorcing ownership/ tenancy of a property from the automatic "right" to a parking space.

Mixed use developments with on-site facilities which cater for the needs of the inhabitants (e.g. banks, chemists, groceries or community centres) will reduce the need to travel, and initiatives such as Car Share Schemes or Car Clubs will help reduce the dependency on car ownership. Delivery areas for the safe storage of goods could be provided for when residents are not at home to facilitate online shopping.

For established communities, the Borough can also consider using personalised travel planning techniques and travel information packs, as have been successfully utilised in the Sutton and Richmond Smarter Travel initiatives. While some funding may come from development contributions, bidding for TfL or national funds may be necessary.

Employment or workplace travel plans

Planning permission can be required for workplaces at varying stages of occupation. For those seeking to extend existing premises, travel behaviour of their occupants may already be ingrained. As growth for the Croydon area is expected to be significant it is important to strike the right balance between "carrots" and "sticks" so as not to deter potential new businesses or push away existing ones. In terms of reducing travel demand, a workplace travel plan could consider:

- flexible working (e.g. compressed working weeks, home working);
- virtual meeting facilities (e.g. tele- or video- conferencing);
- workplace parking levy;
- car share schemes which cater for commuting as well as business travel and pool cars or an on-site car club (use of which could be extended to the wider community at evenings or weekends);
- eco-driver training might deter drivers from making unnecessary trips as well as potentially reducing business mileage payments and CO_2 emissions as a result of more economical, or less numerous trips; and
- restricted access could be implemented to ensure that employees are unable to access the building by car if they live within a determined distance (clearly exceptions will apply);

In addition a Business Improvement District/ Area Based Group/ Development Zone could be set up with neighbouring organisations to establish collaborative working with the objective of reducing travel demand to that area.

Retail travel plans

Travel to retail areas is mainly determined by location. Retail within town centres is more likely to be accessed by modes other than the car due to the cost or availability of parking, especially in times of peak demand. Retail parks on the fringe of urban areas on the other hand, often with large numbers of free parking spaces will attract shoppers travelling by car.

The CMC has many relatively reasonably priced car parks which encourage car use over other public transport choices. This allows the CMC to compete with the high concentration of retail parks along the A23 that generate significant numbers of car trips, with the associated congestion on the corridor (particularly during the weekends).

Within a retail travel plan, stores ought to be encouraged to make their products or services available online. This not only has the effect of cutting out a number of potential car trips but also has the benefit for them of reducing the overhead cost of the transaction.

For new developments, restrictions on the number of parking spaces could be enforced if appropriate or spaces given over to alternative uses in the case of an existing location seeking to extend or redevelop.

Education travel plans

As primary and secondary school attendance is compulsory up until the age of 16 it is difficult to reduce the need to travel. Further and higher education establishments could however be encouraged to provide more distance and home learning courses, which may result in a more inclusive education system.

For younger students the main focus should be in discouraging parents from taking their children to school by car. The impact of "the school run" is evident during school holidays when peak hour traffic conditions are less congested, especially in the mornings. The improvement in traffic flows is not wholly to do with "school run" traffic as many parents also choose to taken time off work during school holiday periods thereby also removing a proportion of work related travel from the network. Nevertheless children tend to live closer to their primary school than secondary school and increase in the number walking to school will have local air quality and road safety benefits.

Travel by car could be discouraged by increasing parking restrictions within the vicinity of the school in conjunction with the promotion of Smarter Travel options such as "Walking Buses", or cycling. Greater emphasis should be placed on health benefits of these modes whilst obesity is still such a topical issue for the younger generation.

For secondary schools, parental choice admission policies and private school provision results in many children not attending their local school. This movement of children at the start and end of the school day causes a number of problems:

- Increased car trips as parents drop off and pick up their children from school. These trips add to congestion on the road network and create high levels of parking stress around school entrances where they create road safety and highways capacity problems. Bus operators have identified parking around schools as being particularly at the end of the school day as being a major source of service delay and unreliability.

- Overcrowding issues resulting in bus operators having to put on additional or larger buses.

- Road safety concerns around bus stops and stations.

- Personal safety concerns from users who feel intimidated by large numbers of school children – this is reported to be a significant reason why some travellers avoid using public transport.

The Council should seek to engage with education and transport providers to ensure that school transport provision is adequate for their students.

Healthcare travel plans

The reason for attending a health centre or hospital often dictates the mode of transport or the need to travel in the first place. Services such as NHS Direct however do help with reducing unnecessary journeys to medical facilities and should be encouraged within travel plans for these sites. Regular treatment could take place at home for some patients, through an increase in home visits. Better coordination of trips by the medical staff themselves can be designed to minimise journey times and mileage. Health providers and the LBC should investigate the possibility of increased numbers of home visits which ultimately put less pressure on hospital parking facilities.

Hospital car fleets offer a good opportunity to increase the usage of electric cars as these vehicles tend to be used during the day and for local home visits. This would allow recharging to take place at night.

Freight travel plans

The London Freight Plan (November 2007) states that without the adoption of green procurement and links to travel plans, the potential CO_2 savings of freight operations in the design, construction and operational phases of buildings are reduced to 18 per cent by 2025 compared to more than 45 per cent by 2025 if these issues are considered as part of the planning process.

This illustrates the importance of addressing freight travel planning at all stages of a development, not just once a building is occupied.

Car park management

Specific measures need to be introduced to deter car use for either unnecessary trips or those that could be better served by public transport or the walking and cycling networks. Car Park Management Strategies provide mechanisms to discourage car use through the use of improved infrastructure and increased costs associated with car usage and ownership.

Influencing the demand for parking is a complex mix of pricing, management and marketing. Car park management needs to be considered holistically otherwise demand may migrate to other formal or informal sites, on street or create significant enforcement issues. Among the initiatives the Borough may need to consider as part of wider influencing demand strategy are:

- pricing strategies to discourage long stay parking within the CMC with revenue raised ring fenced for other transport initiatives;
- reorganisation of car parks within the CMC to ensure their access arrangements do not conflict with walking, cycling and public transport services.
- new car parks introduced to improve the provision but and accommodate demand more efficiently but with parking capacity reducing as public transport levels increase; and
- a review of parking controls and pricing in local centre's to discourage short trips being made by car.

Any Parking strategy should identify and recommend safeguarded locations for new car parks to ensure that when the existing stock reaches its design life they can be replaced with more accessible car parking. Access routes to car parks should be formalised with the whole network of car parks managed via VMS to ensure drivers reach the most suitable car park without a convoluted access or egress route.

A more in depth car parking study is required to reliably assess the utilisation of car parks within the CMC but also within surrounding local centres. This will allow a better understanding of existing spare capacity and the main reason for current levels of under utilisation.

Imagine Croydon [London Borough of Croydon, 2009] also suggested the development of Park & Ride facilities "in key locations, such as Purley, linked to enhanced bus services to town and district centres." Park & Ride facilities will only be made attractive when the parking cost is substantially less than parking provision in the town centre. In order to implement a successful system, town centre parking strategies will need to be in place to ensure suitable charging system is in place for the wider area as a whole.

On-street parking in residential areas, particularly those to the north of the Borough with high levels of parking stress, creates a poor street environment for those living and travelling through the area. These parked cars reduce sight lines which increase road safety concerns, they take up space which could be used to improve the amenity of streets for local residents; and can delay public transport movements. A number of London Borough's have introduced residential parking schemes which use variable pricing to discourage multiple car ownership and high polluting vehicles. **[TD.10]**

Road user charging

In the longer term there is the possibility of the Mayor introducing Road User Charging as part of a London wide or national scheme. Road user charging, such as the Congestion Charge, could be utilised to encourage people to reconsider their travelling needs and the mode they used to travel. However, the adopted Mayor's Transport Strategy (2010) suggests that any new road user charging schemes will only be implemented as part of a pan London or nationwide scheme. **[TD.11]**

Planning requirements

The planning process allows a degree of intervention into the sustainable principles of a development and the direction in which developments must go to comply, as well as provide, a positive legacy for future users of the facility. In keeping with this, the new Draft Replacement Plan identifies a number of changes from the previous document, first published in 2004. **[TD.12]**

The following points relate to travel demand:

Policy 6.1 A (a) – encourage patterns of development that reduce the need to travel, especially by car supported by the below parking standards (**Policy 6.13**):

- Parking standards for employment B1 developments are 1 space per 100-600m² of gross floor space.
- 20% of all **employment** spaces must be for electric vehicles with an additional 10% passive provision for electric vehicles in the future.
- Cycle parking provision should be a minimum of 1 per 250m² of gross floor space.
- Parking standards for residential developments are 1.5-2 spaces for a 4 bed unit, 1.5-1 space for a 3 bed unit and less than 1 spaces for a 1-2 bed unit.
- 20% of all **residential** spaces must be for electric vehicles with an additional 20% passive provision for electric vehicles in the future.
- Cycle parking provision should be a minimum of one per unit.
- Provision for the needs of businesses for delivery and servicing must be made within the development.

Policy 6.11 B (a) – DPDs should develop an integrated package of measures which promote local services and e-services to reduce the need to travel.

Policy 6.11 B (e) - DPDs should develop an integrated package of measures which encourage the development of intelligent transport systems to convey information to transport users.