

9 Bus services

9.1 Where do we want to be?

Bus services in Croydon will continue as the main public transport network within the Borough, with services providing comprehensive links between the CMC and surrounding residential and local centre areas. Maintaining this provision in the future is essential, as it offers many within the Borough the only opportunity to access employment sites, retail centres and education services without need of a car.

With population growth forecast to be high for both the CMC and northern areas of the Borough, the bus network will need to expand to ensure these areas have good access to public transport services (particularly in those areas not served by Tramlink) and so help reduce car dependency in these areas of high residential density.

The bus network needs to be of a high quality and complement the Tramlink network by providing a more dispersed network of public transport services. To achieve the quality aspiration, the bus network should:

- include an improvement to the quality of vehicles and therefore the travel experience;
- ensure frequent, quick and reliable services;
- guarantee buses are accessible to all and waiting environments are comfortable and feel safe;
- increase the number of early and late running services to serve employment shift patterns related to a night time economy within the CMC;
- actively seek new routes that encourage trip making by public transport rather than car;
- seek to increase service frequencies or introduce larger buses on over-crowded routes or those where growth in patronage levels can be demonstrated;
- encourage use of modern low emission vehicles; and
- provide better (real time) bus service information at stops (through iBus and Wifi/ mobile phone technologies).

With future funding levels for London's bus network likely to fall over the next five years it is important that any change to Croydon's network does not suppress growth or encourage greater car use.

9.2 Where are we now?

9.2.1 Structure

The **provision & level of service** and **performance** of bus services in the Borough can be defined in three ways. 'Network planning' relates to the geographical reach of bus services, 'network capacity' the frequency of bus services while 'network infrastructure' encompasses those road features required to operate an efficient and attractive service (e.g. bus stops, stands, stations, bus priority and vehicles).

Under **performance**, 'network planning' address gaps in the network where demand exists for bus services while 'network capacity' highlights insufficient service frequencies leading to overcrowding or a lack of early/ late running buses. 'Network infrastructure' is concerned with locations where bus services are delayed by congestion or problems at bus stops, stations and stands associated with accessibility, personal security, waiting environment or interchange issues.

Specific issues relating to the performance of bus services are provided in the 'Issues & Solution' table provided in Appendix D under the bus service heading. The identification of problems, reveal some common themes that affect the operational performance of buses in Croydon.

9.2.2 Provision & level of service

Network planning

London's bus network has expanded significantly over recent years in terms of new routes, route extensions and increased service frequencies. In Croydon, the density of bus services is greatest to the north of the Borough but there is also good coverage to the south, where lower housing densities and higher car ownership do not generally make for a good bus operating environment.

Most bus routes in Croydon serve the CMC, a result of the town centre being a major hub for bus services in south London. Over 125,000 passengers get on and off buses within the CMC each day, a value higher than the number using East Croydon station which in itself is the 9th busiest railway station in the UK.

TfL's bus route map for the CMC is shown in Figure 9-1 which illustrates the extent of the network and how services from a wide range of inner London locations converge on the CMC. The density of routes is highest to the north of the Borough, reflecting the attraction of the inner London areas. To the south the network thins out as housing and population density reduce.

The effectiveness of Croydon's bus network to link the CMC with destinations outside the Borough is illustrated by Figure 9-3. Destinations which are directly connected by services and have good bus speeds include Redhill, Caterham, Sydenham, Streatham, Whyteleafe, Tulse Hill and Warlingham whereas slower routes include those to Elephant & Castle, Lewisham, Stockwell, Peckham, Banstead, Tooting, Sutton and Crystal Palace. Journey times to Morden seem particularly long given the distance from the CMC. These differences can be explained by either circuitous or congested routes and suggest greater bus priority or more direct routes may be needed.

Croydon's bus network also connects local centres directly with a wide range of destinations both within and outside the Borough - this is illustrated in Figure 9-3. South Croydon is the best connected local centre with direct links to over 35 key destinations. Purley, Norwood Junction, Waddon, Thornton Heath, Upper Norwood and Addington follow but with Thornton Heath and Upper Norwood having the least attractive links to external destinations. Residents close to these two local centres do however have access to rail services from nearby stations.

Selsdon is the least well connected local centre with no direct bus access to key destinations outside the Borough. However, with so many routes converging on the CMC there are opportunities (through linked trips) to access many destinations across and outside the Borough.

Figure 9-1: Bus Network for the Croydon Metropolitan Centre

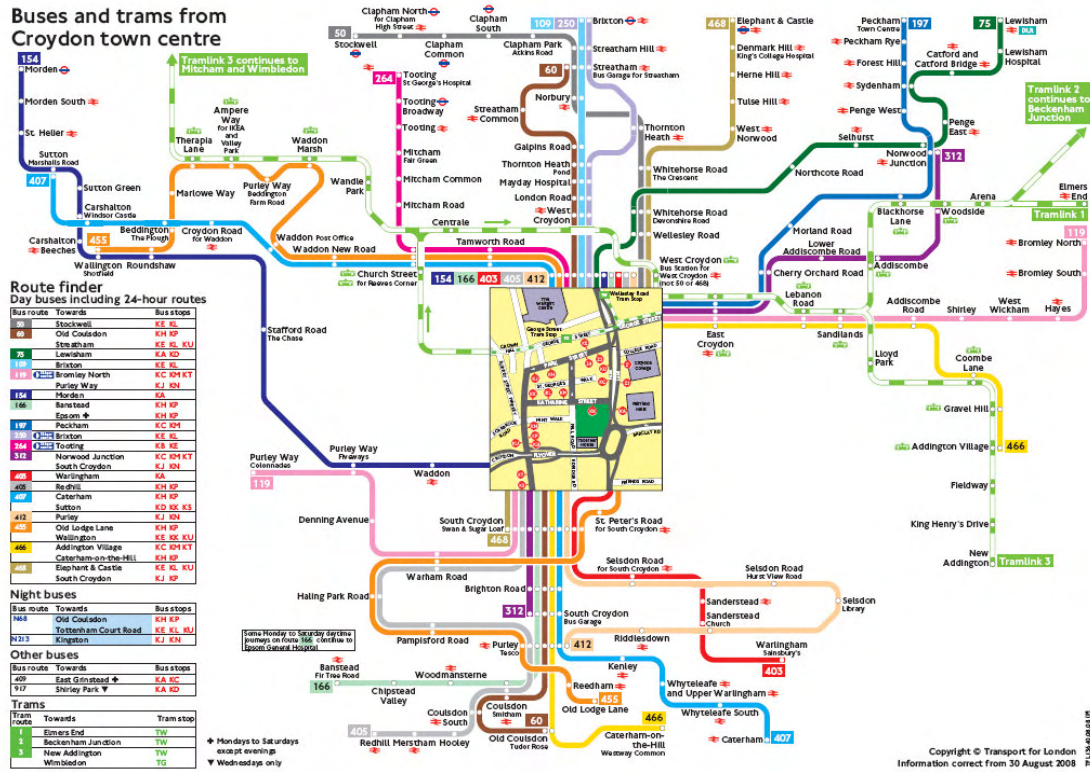


Figure 9-2: Bus links to key destinations outside Croydon

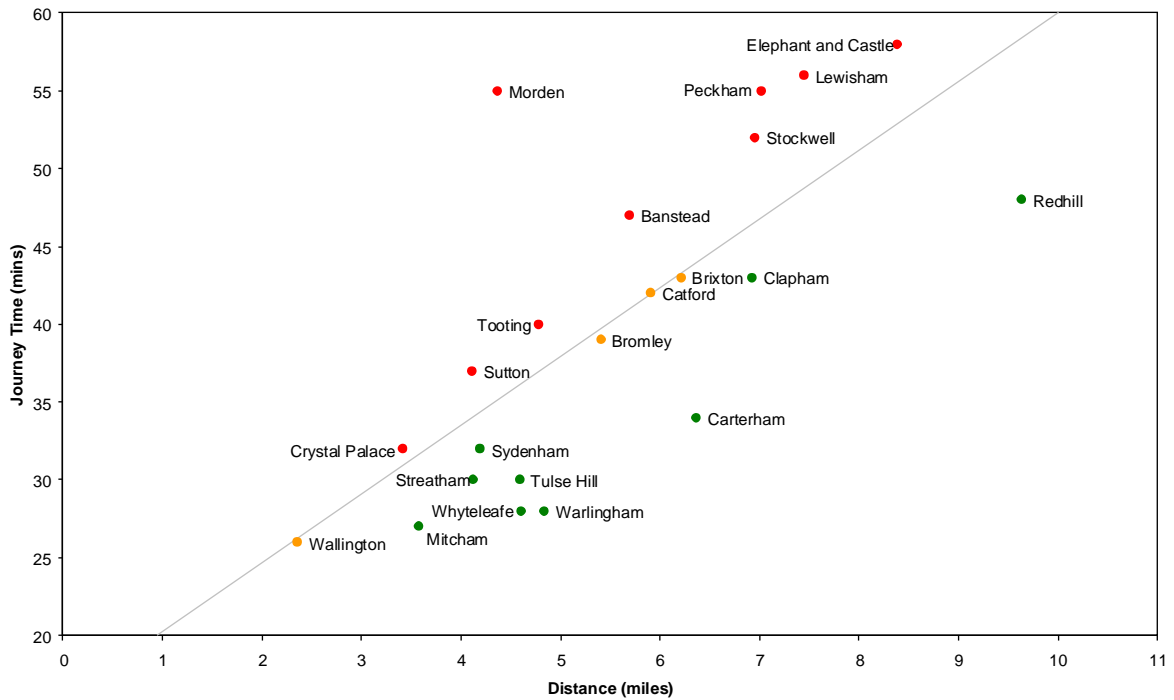
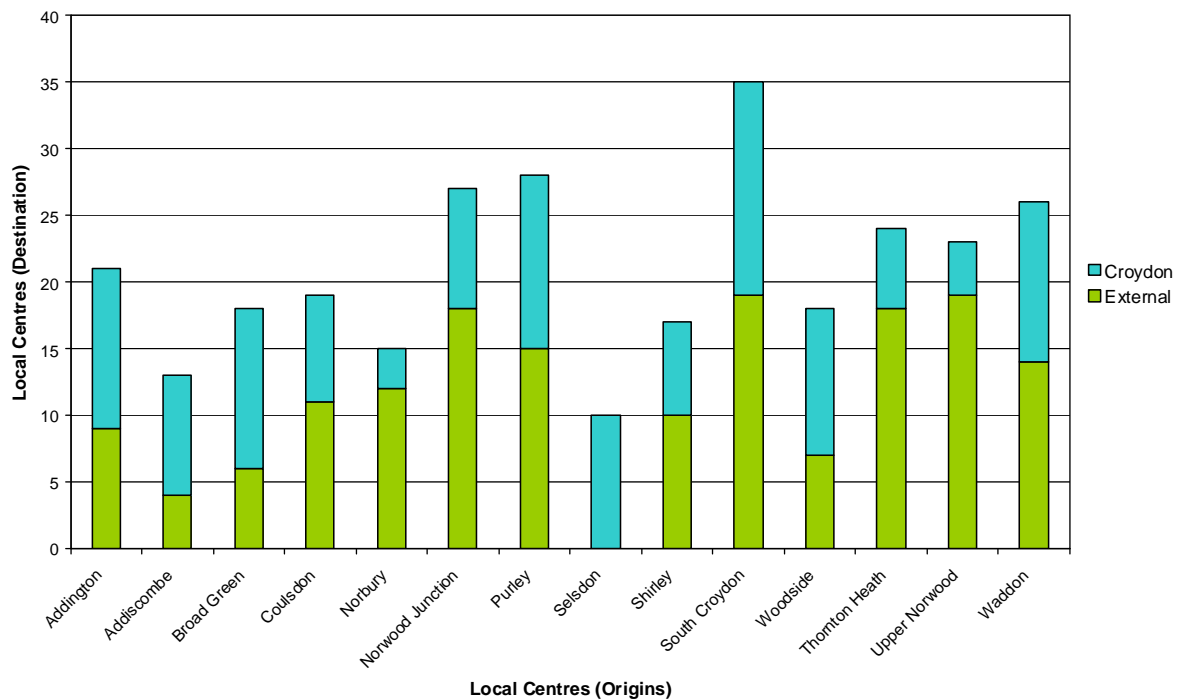


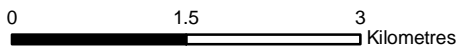
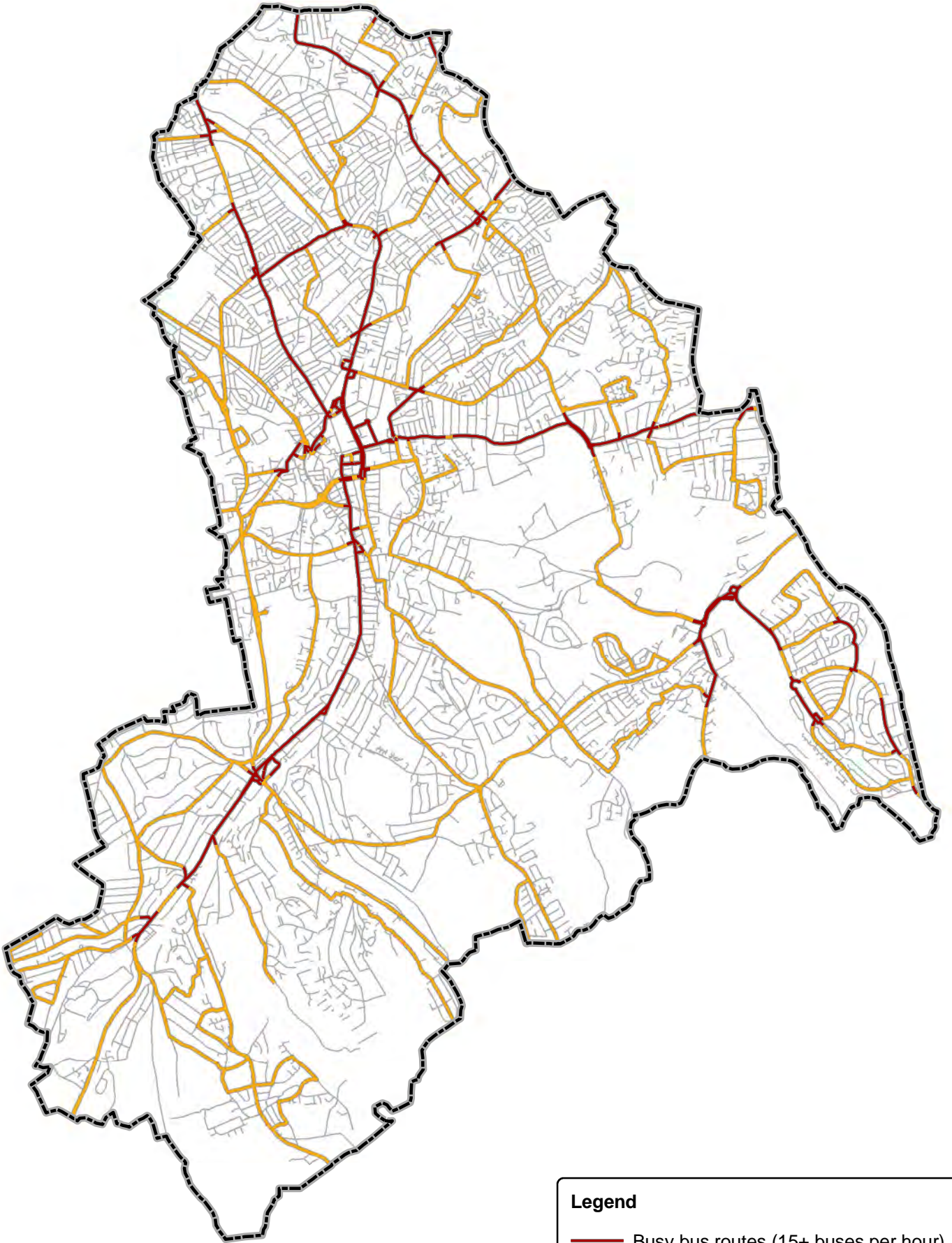
Figure 9-3: Levels of accessibility provided by the bus network



Network capacity

On key approach roads, routes converge to create busy bus routes (i.e. with more than 15 buses/hour). The Borough has 7 such busy bus routes (BBR) and two routes to the east of the CMC (Stafford Road & Croydon Road) that fall just below BBR criteria. The extent of the bus route network in Croydon is shown in Figure 9-4 which highlight the BBR network on:

- Wellesley Road and Park Lane;
- Tamworth Road and Waddon New Road;
- London Road;
- Whitehorse Road;
- Addiscombe Road;
- Brighton Road;
- Beulah Hill and South Norwood Hill;
- Brigstock Road and Thornton Heath High Street; and the area near
- Addington Village.



Legend

- Busy bus routes (15+ buses per hour)
- Bus route network

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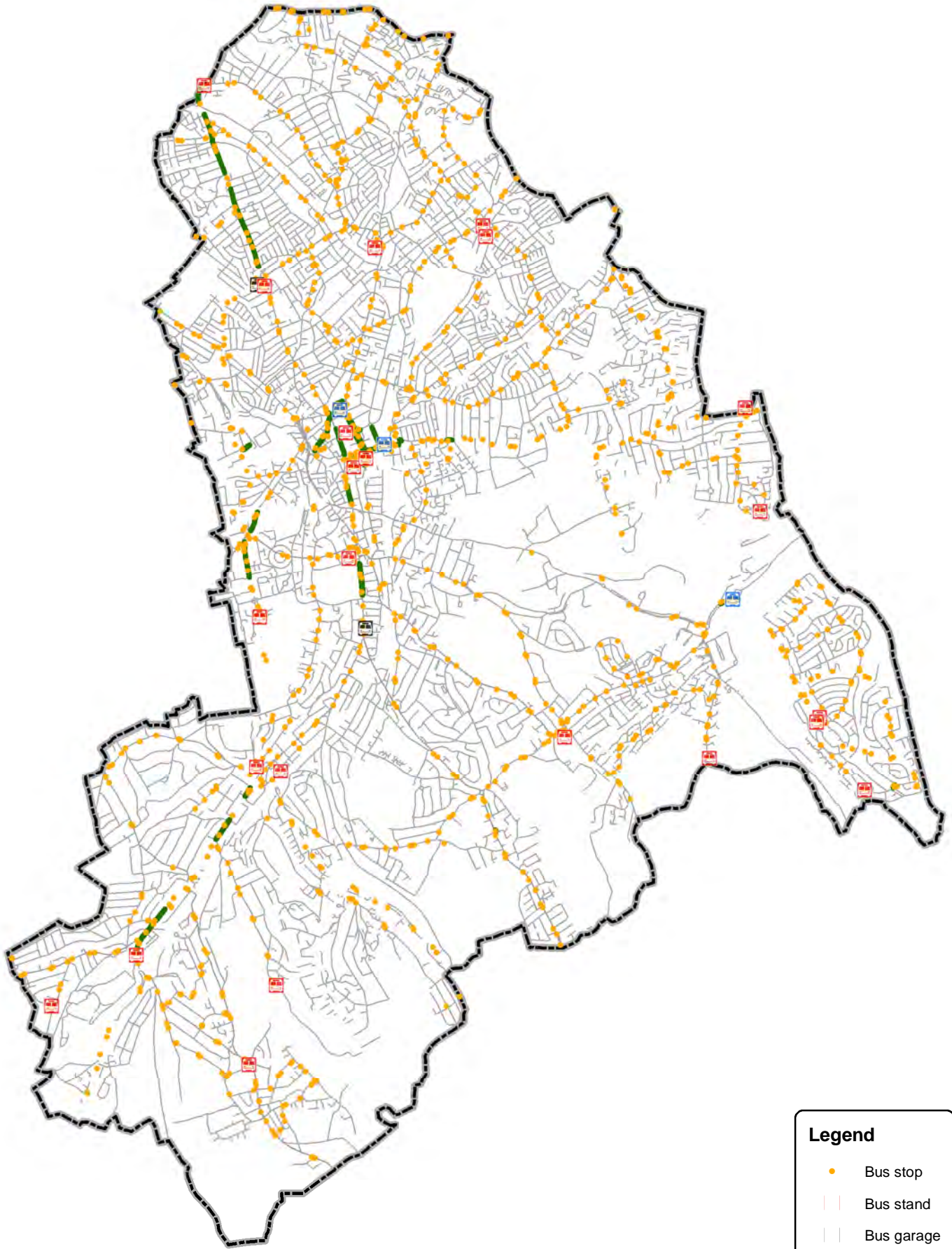
Bus network - level of service

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Scale	1:65,000 @ A4
Drawn By	TH
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Figure Number	Figure 9-4

Network infrastructure

Croydon's bus network is accompanied by infrastructure to help it maintain a reliable service and good/ safe access to buses. Key elements of the infrastructure provision in Croydon include:

- 35 bus lanes and 5 bus gates which amount to 7.5 km (or 46,000 km. hrs) of dedicated road space for bus service;
- over 1,000 bus stops in Croydon (the highest number than any other London Borough);
- three bus stations/ interchanges at Addington (bus/ tram interchange), West Croydon (bus/ tram/ rail interchange) and East Croydon (bus/ tram/ rail interchange); and
- 26 bus stands which amounts to approximately 63 vehicle spaces (five of these stands are located within the CMC with a stand capacity for about 17 vehicles.



0 1.5 3 Kilometres

Legend

- Bus stop
- ▭ Bus stand
- ▭ Bus garage
- ▭ Bus station
- ▬ Bus lane

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www.pba.co.uk
Peter Brett Associates LLP
LONDON
Tel: 0207 268 6500 Fax: 0207 268 6533

Client
CROYDON COUNCIL

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Bus network - infrastructure

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9.2.3 Performance

Network planning

Network gaps: Previous engagement between the Council and TfL (London Buses) produced a list of potential gaps the bus network serving Croydon that were considered at the time to justify further assessment. No progress has been made on this list since 2007 but with the proposed population growth and development likely to occur over the next 20 years these previously identified gap could represent greater deficiencies in a future network. Figure 9-6 summarises the identified gaps within the bus network which Croydon Council had previously raised with TfL. **[BNP.02 to BNP.25]**

Some of the missing links identified include:

- Access to the Mayday Hospital from South Norwood and the Wandle Valley area;
- Tollers Lane Estate (Ellis Road and Goodenough Way) to Coulsdon;
- Church Road, Upper Norwood to South Norwood and Central Croydon;
- Purley Downs Road to Sanderstead and Purley;
- Downs Road, Reddown Road and Woodplace Lane to Coulsdon - Nethern Estate; and
- Wickham Road, Shirley to Princess Royal University Hospital, Locksbottom.

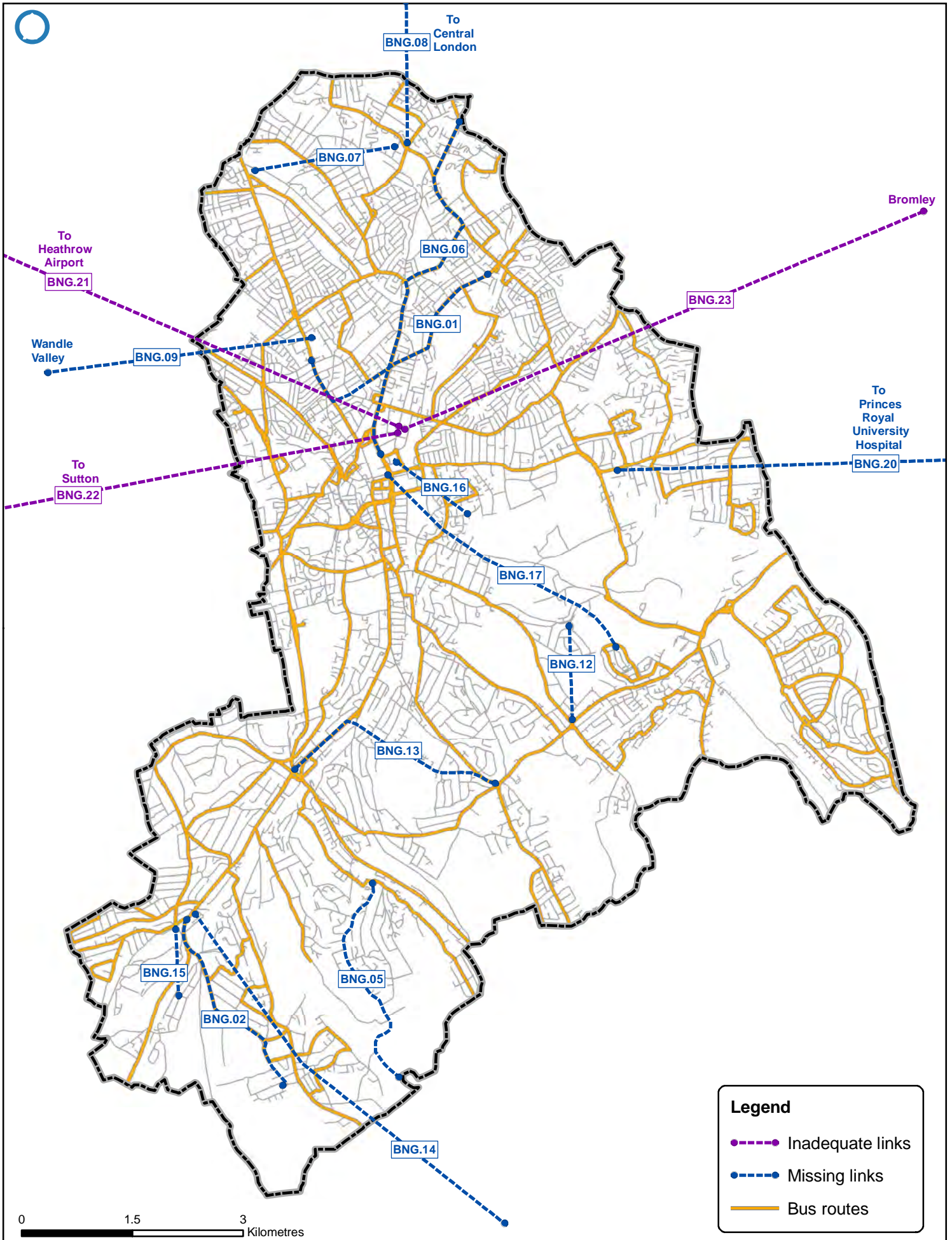
Areas within Croydon deemed to be poorly served by the bus network included: Chepstow Rise; Monks Hill; the ASDA store in Beddington; and Orchard Way in Shirley.

Consultation during the preparation of this Strategy confirmed the need for better orbital links towards Sutton and Bromley which could be achieved with an enhancement to existing services.

Night buses: Consultation during the preparation of this Strategy suggested insufficient night buses serving the CMC. The reasons behind this are unclear as there are currently 5 routes (119, 250, 264, N68, N159) that provide services every 30 minutes to and from the CMC between midnight and 6am. It is likely this comment may have come as a result of losing the N213 in July 2009 which provided the only night time link between Croydon and Sutton town centres.

Bus mileage across London is likely to fall over the next five years and there is a consequential risk this will result in cuts to the Croydon network. The potential introduction of up to 6 new trams between the Arena and Therapia Lane stops may also put increased pressure to reduce parts of the local bus network. **[BNP.26]**

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Legend

- - - Inadequate links
- - - Missing links
- Bus routes

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Bus network planning - service gaps

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Network capacity

The Transport Strategy for the Croydon Metropolitan Centre Area Action Plan [JMP, 2009] suggested in their baseline audit that there was a significant amount of spare capacity in the bus network. This suggests that additional bus passengers could be accommodated within the network without change to service frequencies or the passenger capacity of vehicles.

It was not possible during the development of this Strategy to confirm these findings for the CMC or understand wider issues related to overcrowding on the Croydon bus network. It is hoped that in partnership with TfL a future update of this document will establish where service frequencies are unable to cope with demand or where space capacity may exist. **[BNP.01]**

Network infrastructure

Bus service delay: Consultation with London Buses and the main bus operators in Croydon identified locations on the road network that cause delay and unreliability to local bus services. The location of these 'delay hot spots' are illustrated in Figure 9-7 with a description and assessment provided in 'Issues & Solutions' table (Appendix D). **[BNI.01 to BNI.43]**

Common causes of bus service delay included:

- Congestion on the approach to busy junctions that are without bus priority interventions (e.g. Whitehorse Road j/w Windmill Road, South Norwood Hill j/w Beulah Hill, Lower Addiscombe Road j/w Cherry Orchard Road).
- Difficult operating environment through local and district centres caused by on-street parking manoeuvres, pedestrian crossing activity and vehicle turning movements from side roads (e.g. Thornton Heath High Street and London Road through Broad Green).
- Difficult operating environment through residential areas caused by obstructive parking and traffic calming measures (e.g. Green Lane and Old Lodge Lane).
- Tram crossings points which cause congestion of the highway network.
- Over running road maintenance works on key bus route corridors.
- Delay caused at the start and end of the school day related to parent or coach parking activity blocking the road for passing buses (e.g. Green Lane).
- Delays within the CMC caused by congestion on the approach to car parks off Wellesley Road and Tamworth Road.

The majority of these issues were identified as part on the London Bus Priority Network programme which worked closely with the Croydon Council, TfL and the local bus operators to ensure an efficient operating environment for buses. With the end of this initiative in 2010 there is still a need to press ahead with resolving the above problems.

Bus stops: TfL's bus stop database suggests that only 50 per cent of bus stop within Croydon meet TfL's bus stop accessibility guidelines [Transport for London, 2006b] which can make access to the bus network difficult, especially for those who are mobility impaired. While the Council has made significant advances over the last 5 years under the Bus Stop Accessibility programme the extent of bus stops within Croydon (over 1000) this work needs to continue to ensure the bus network is open to all. Personal security or poor waiting environments have been identified along London Road and Fieldway (New Addington). **[BNI.40]**

Bus stations & interchanges: The four main bus stations/ interchanges within the Borough each with a number of deficiencies that are described below.

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Addington Village Interchange: Key issues identified at this interchange include:

- a lack of stand capacity resulting in bus on bus delays – this can be particular problem when used by school services;
- internal bus station delays due to circuitous bus manoeuvres and exit delays onto Lodge Lane;
- bus service delays on the Kent Gate Way and Lodge Lane approaches which can result in poor bus/ tram interchange particularly for those bus feeders services using Lodge Lane;
- there is poor pedestrian access from Addington Village which results in pedestrians crossing the heavily trafficked Kent Gate Way at uncontrolled locations; and
- landscaping of the area could be improved.

An assessment of these issues can be found in the 'Issues & Solutions' spreadsheet found in Appendix D. **[BNI.41]**

West Croydon: The bus station at West Croydon is at capacity in terms of the stops and stands required to accommodate the services using it. While located close to a tram stop and railway station the interchange between bus and both these modes is very poor.

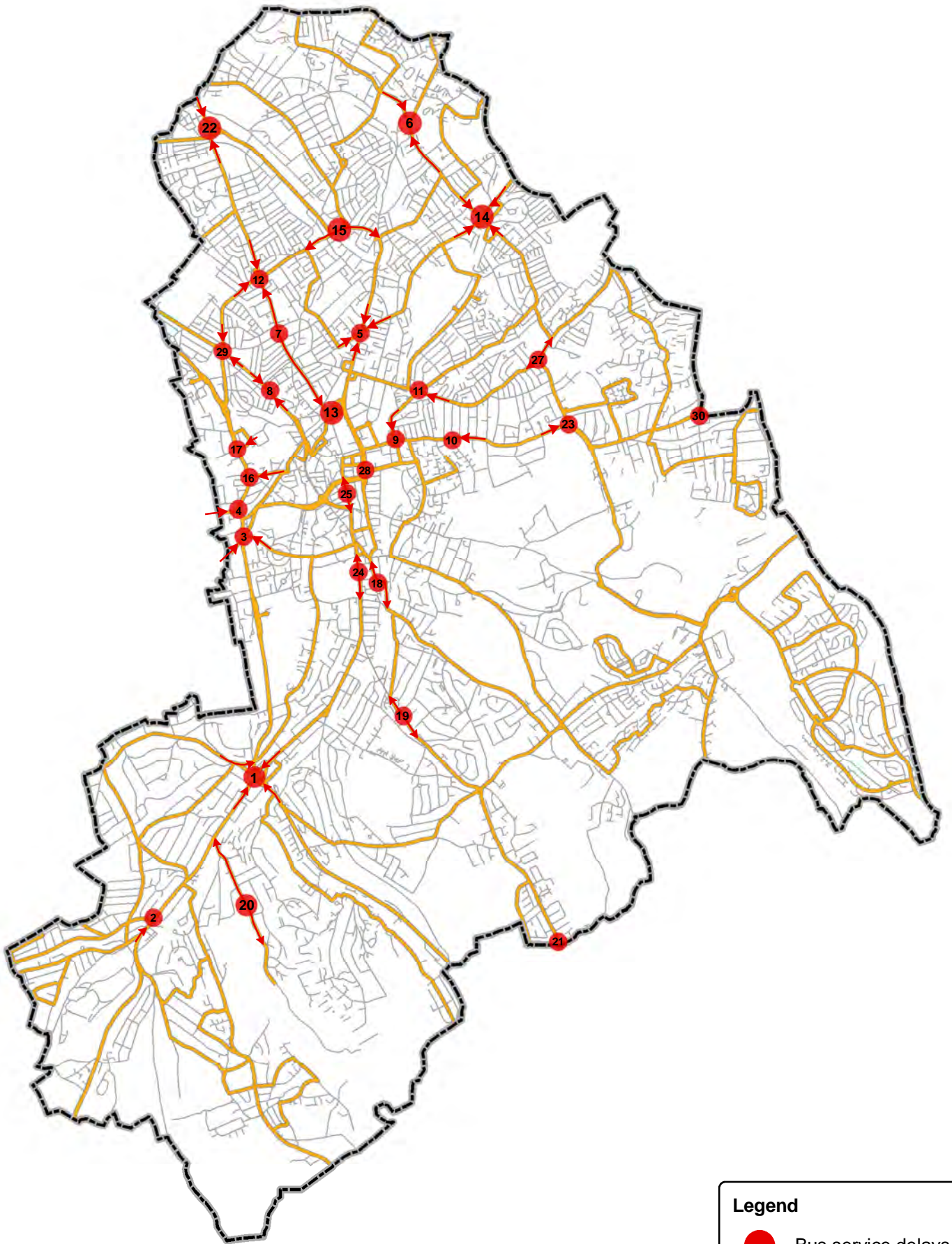
The bus station is not of a high architectural quality but is functional and in common with many busy transport interchanges there are occasional problems with anti-social behaviour. The Bus Station does however deliver a fully enclosed waiting environment and it scores well in London Buses customer satisfaction surveys. **[BNI.42]**

East Croydon: The bus interchange at East Croydon station is not large enough to accommodate all bus routes running past the front of East Croydon station and results in additional stops being placed on Cherry Orchard Road (for routes 197, 312 and 410). The interchange can get busy and it is suggested (although not proved) that a significant number of passengers board buses to make the relatively short trip to the Whitgift shopping centre entrance on Wellesley Road or to West Croydon station. **[BNI.43]**

Park Street/ Katharine Street: This is a collection of 11 bus stops to the south of the main retail area. With the bus stops located on two streets it is not always that easy to find the correct stop or establish good interchange between bus services.

Interchange between bus services within the CMC is currently achieved by having north and southbound services overlapping at either West Croydon station or along Wellesley Road. It is perceived however that bus-bus interchange needs to be improved, particularly to help those unable to walk long distances between bus stops, increase opportunities for cross Borough trips, and assist school transport provision by making it easier for students to access schools. **[BNI.44]**

Bus stands: There is a general lack of bus stand capacity across the Borough with delayed access to stands reducing the operating efficiencies (i.e. increasing the level of late departures) which may also increase general traffic congestion caused by buses blocking the highway as they wait to access the stand. With many routes terminating within the CMC, bus stand issues are greatest at West and East Croydon station and along Wellesley Road/ Park Lane. Bus stands not only provide recovery time to protect service reliability, but also driver facilities such as toilets or for meal and rest breaks. London Buses therefore require a bus stand for each end of the route. **[BNI. 45]**



0 1.5 3 Kilometres

Legend	
	Bus service delays
	Bus routes

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www.pba.co.uk
Peter Brett Associates LLP
LONDON
Tel: 0207 268 6500 Fax: 0207 268 6533

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Bus network - location of delay

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9.3 What are the options for change?

9.3.1 Network planning

Network gaps

Gaps in the network are relatively limited but as passenger demand increases for specific destinations and from new housing, for example, the network planning needs to be responsive to a dynamic market. New longer distance and orbital links are likely to be most valuable when acting as precursors for new Tramlink services and where demand can be developed over time. Previous consultation with TfL suggests links to Mayday hospital need to be improved. [BNP.02 to BNP.25]

Night buses

With much of the predicted CMC growth coming from new residential developments the town centre's night time economy is likely to prosper. This in turn will increase demand for late travel and the need to review the night bus network to ensure it can meet the needs of those wishing the access the CMC during the evenings. [BNP.26]

9.3.2 Network capacity

With bus mileage across London predicated to fall over the next five years, maintaining the current level of services across the Borough, will present a significant challenge for the future. To ensure the Council is fully involved in the consultation process, early engagement with TfL bus service planners would help ensure key routes are protected from any cuts.

The levels of residential, retail and commercial growth proposed for the CMC will have a substantial impact on the number of people travelling into and out of the town centre every day. With car parking controls proposed to protect the local road network from congestion and increased air pollution, this level of movement can only be achieved if a significant number of travellers opt for the bus. The previous CM Transport Strategy [JMP, 2009] suggests that the current network has spare capacity. The extent of this spare capacity however needs to be established to understand when, during the period of growth, intervention in the form of more buses/ routes needs to take place to grow and accommodate demand for buses. [BNP.01]

9.3.3 Network infrastructure

Bus service delay

Introduce measures to smooth traffic flows particularly in local centres where the high demands from pedestrian crossing activity, parking manoeuvres and vehicle turning movements at side roads disrupt the flow of traffic. In local centres, the removal of controlled pedestrian crossings and some signalised junctions may be appropriate within the context of traffic calmed or areas of shared space. Along key corridors such as London Road and Brighton Road the problem will more realistically be resolved through better traffic signal co-ordination, better parking enforcement and bus priority.

At key junction bottlenecks where capacity improvements are unrealistic due to the constraints associated with road widening, bus lanes should be implemented. These should only be considered along the busy bus route sections of the network and careful consideration should be given to frontage needs, including delivery requirements through adequate loading facilities. [BNI.01 to BNI.30]

Bus stops

There is great potential to improve the quality of bus stops within Croydon to make the waiting environment more comfortable and secure: This should include:

- bus stop accessibility works;
- mobile phone link to iBus bus arrival information;

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- shelter replacement and refurbishment;
- help points, improved lighting and CCTV to support sense of greater personal safety.

Access routes to bus stops should be assessed and improved to ensure the whole bus journey experience (access, waiting, boarding/ alighting and travel) is done in a safe and quality environment. This may not relate to the busiest bus stops but those in more isolated locations where people may be deterred from using the bus due to a poor perception of personal safety in the area. [BNI.40]

Bus stations & interchanges

The redevelopment proposals with the CMC should bring with them substantial improvement to West Croydon, East Croydon, and the Park Street/ Katherine Street bus 'stations'. The following improvements should be sort:

East Croydon: Needs an expanded bus station with good pedestrian access to the railway station and trams stops. Expansion should include a greater number of bus stops to allow for an increase in stopping services and an enhanced waiting environment to accommodate the predicted increase in users. [BNI.43]

West Croydon: Again needs an expansion of the bus station to provide better functionality and facilities for users and bus operations. Constraints within the site make any expansion of the bus facilities to accommodate growth difficult to realise and a more dispersed bus station utilising areas on Wellesley Road may need to be considered to ensure the improvements the pedestrian environment and interchange can be achieved. There are opportunities to relocate the bus stand to other areas including the Council owned car park on Church Street or within the car parking area of the nearby (and vacant) Prospect First building. [BNI.42]

Park Street/ Katherine Street: With the nearby and overlapping Masterplan proposals seeking to create a key pedestrian route across Park Lane and along Katherine Street there is an opportunity to consolidate bus stopping arrangements in the is area to create a better bus interchange facility. A key first requirement would be to relocate the bus stands out of Katherine Street and a potential new site has been identified at the Council run Wandle Road car park.

Key requirements for this interchange should be that it provides sufficient bus stop capacity (and stands should the Wandle Road site not be feasible) a good waiting environment that is sheltered from the elements and well linked to surround land uses. This last point will ensure the bus facility acts as a destination in its own right and that there is sufficient additional pedestrian activity to ensure the area has a good sense of personal safety. [BNI.44]

Bus stands

The current shortage of bus stands across the Borough needs to be addressed to ensure current and future bus networks in Croydon can operate efficiently. New and existing stands should:

- provide sufficient capacity with which to accommodate the number of bus services using it – stands operating over capacity can create areas of local traffic congestion as bus drivers seek to access the stand;
- be located sufficiently close to the last stop on the route to reduce unnecessary time and dead mileage into the bus service schedules;
- be located in areas which do not affect the quality of key pedestrian routes and have a minimal impact of residential areas.
- provide driver rest facilities at both ends of the route.

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The greatest need demand for additional bus stand capacity lies within the CMC area where there is a need to provide more bus stands at the northern end to relieve pressure at West Croydon and in the south to relieve congestion along Katherine Street and provide better driver facilities. Locations for new bus stands have been identified but these need to be assessed in terms of the availability of land and impact on operational costs. [BNI.45]

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