

19 Recommendations

19.1 Key priorities

Our consultation with all stakeholders has given the Strategy team many ideas and proposals for future investment in transport infrastructure and operational capacity. Our assessment of the options suggest the following common themes will emerge as high priorities for this Borough Wide Transport Strategy, to enable delivery the proposed LDF growth over the next 20 years.

The funding and resources required to deliver these recommendations will be a major challenge for the Council given current spending constraints. Croydon has the potential however to meet its London Plan and Local Development Framework growth allocations in a way that is both economically and environmentally sustainable. This should strengthen the Councils case for to fund the recommendations provided in this strategy and secure the resources required once priorities have been agreed.

The overriding objective of this Strategy is one of travel demand management where measures are first targeted at reducing the need to travel but if required, undertaken either on public transport, as a pedestrian or as a cyclist. Car usage to access sensitive areas is discouraged but not restricted and measure to improve the efficiency of the highway network are prioritised to reduce traffic congestion that detracts air quality, damages health and the environment. Improvement to air quality is seen as key driver of change to travel behaviours across London over the next 20 years.

The recommendations are shown as headlines in this section of the report, but more detail on each proposal can found in the main chapters and in the Appendices. The timing and importance given to them by the Borough officers and councillors will be part of the next iterative stage of scheme assessment, modelling and programme development. Some major infrastructure categories have limited activity in earlier years because of known budget constraints on government, the Mayor and TfL. All of the recommendations and their priority are necessarily dynamic at this stage of the Strategy development.

19.1.1 Travel demand

Trip patterns both within and outside the Borough will continue to focus on the CMC either as a final destination or via interchange at East Croydon station for central London. Croydon has strong public transport links to central London and south coast destinations by rail and sub regionally via Tramlink and the extensive bus network. The convenience of these public transport networks makes them popular, increasing pressure on both railway station facilities and rail, tram and bus services which regularly operate at capacity during peak times. While interchange within the CMC will always be a major component of transport movements in Croydon this activity should not override the town centres importance as a place to directly access work, retail and leisure opportunities.

The Borough also is bisected radially by the main vehicular route into south London from the M25 (A23) and orbitally by the A232 which links Sutton and Bromley. The extent and strategic nature of the highway network ensures that car based travel dominates within the Borough and which at peak times can lead to periods of long delays, congestion and poor air quality, particularly along the A23/ A232 corridors and within the CMC.

The difficulties currently experienced moving goods and people around the Borough reduce Croydon's economic viability and future development. To strengthen its economic position within south London two objectives need to be achieved. Firstly, make the CMC a more attractive destination and secondly provide the transport infrastructure and services required to efficiently move people to and from the Borough.

The CMC Masterplanning exercises currently underway, offers an opportunity to develop high quality retail, office and housing space within areas of attractive public realm but their attraction will only be realised if they can be easily accessed. Current access arrangements rely heavily on the car but this cannot be sustained or accommodated with the level of development being proposed. The key to ensuring sustainable growth is to maintain good access by discouraging increased car use and improving public transport networks and walking/ cycling routes.

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 aspirations. 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 should rely 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 to 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.

19.1.2 Air quality

Over the period of this Strategy adherence to **air quality limits** is likely to drive policy and be a key mechanism to secure funding for schemes that reduce transport related emissions.

Improving air quality within Croydon can only be achieved by reducing the impact of travel as transport related activity, particularly **traffic congestion** accounts for over 60 per cent of airborne pollutants. A key principle is therefore to reduce the need to travel but when travel is necessary, then a higher proportion of walking, cycling or public transport trips are required. In recognition that this mode shift is unlikely to lead to a corresponding reduction in road network capacity, **vehicle emissions** need to be reduced through greater uptake of zero or low emission vehicles.

19.1.3 Road safety

Croydon is well positioned to meet current Government and TfL **targets** for personal injury collisions with the only exception related to powered two-wheelers which nationally have been difficult to reduce.

With greater levels of walking and cycling key to the success of this Strategy the network of routes they use must be safe and provide a non threatening environment regardless of the users experience or capability. Reducing the frequency and **severity** of personal injury collisions involving vulnerable road users, particularly cyclists and those on power two wheelers must be a focus for the future.

Road users who perceive certain roads to be dangerous may decide to avoid them by either taking an alternative longer route or choose not to make the trip at all. This is particularly pertinent to pedestrians, cyclists, and powered two wheelers whose severity of injury in a road traffic accident is generally greater than those travelling by car or bus. **Road danger perception** can therefore lead to local area severance and accessibility issues which in turn deter the use of these key modes.

Education is vital in providing the road skills needed to stay safe on a road, particularly for the young who do not always perceive the risks involved. **Awareness campaigns & educational programmes** are key to promoting safety, road user responsibilities and reducing personal injury collisions on the Borough's roads.

19.1.4 General traffic

Ideally, the Strategy would achieve a reduction of car trips to assist the air quality, bus reliability and road safety objectives being met. The extent and capacity of the road network; the Borough's land use profile (i.e. large 'out of town' developments); the good provision of CMC car parking all combined with the substantial residential, retail and employment growth scenarios over the next 20 years, suggest however that this is unrealistic.

The aim in the short to medium term is to reduce the impact of road traffic by tackling congestion. This is to be achieved by easing bottlenecks; smoothing traffic flows; providing easier access to car parks; and ensuring good road network management (including road works).

- **Junction capacity & traffic signals:** Easing bottle-necks will focus on improving the operation of key junctions through physical and signal control/ timing changes.
- **Link capacity:** Smoothing traffic flows will provide better co-ordinated traffic signals, new traffic management measures that change on-street parking provision, bus stop locations reviews and the removal of unnecessary signal control.
- **Car parking:** There is a strong case to rationalise car parking within the CMC and therefore making them more accessible from the strategic road network. Local centre car parking provision and management of should ensure it best meets the needs of local shops and residents but without detracting from the walking, cycling and public transport access routes.
- **Road network management:** Better co-ordination and management of utility and road works will ensure that all road works cause the minimum of disruption.

In the longer term there will be need to replace some of the aging major infrastructure elements of the road network. This includes a number of rail bridges but also the Croydon flyover where removal rather than replacement has been suggested as a possible option. The Wellesley Road scheme proposes to remove the Croydon underpass and modification to the Croydon gyratory but the impacts these changes will have on the wider network will need to be assessed.

19.1.5 Bus services

The difficulties with increasing rail and Tramlink capacity makes enhancement to the bus network is the only realistic option to meet the demands of Croydon's growth aspirations. The recommended works focus on making bus services more reliable, improving interchange between routes and making them increasingly accessible. These enhancements should be provided through the following work programmes.

Bus service capacity should focus on increasing the frequency or size of buses to accommodate increases in demand created by growth and modal shift. As part of this expansion there is a need to identify any existing or emerging **bus network gaps** that limit those living in certain areas from access to the bus network and the opportunities these provide. Levels of residential growth predicted for the CMC will see a substantial increase in the night-time economy of Croydon and to serve this, a comprehensive network of **night buses** is required.

Bus service delays should be reduced through the introduction of traffic management and bus priority interventions, ensuring more reliable passenger journey times and operational savings. Existing measures should be assessed regularly and a programme of refurbishment established for

those schemes that continue to provide good benefits. A review of the impacts Tramlink has on the reliability of bus services should also be undertaken and mitigation measures progressed.

Bus stop enhancement works should aim to make the waiting environment more attractive through the introduction of new shelters (London Landmark), safety initiatives (improved lighting, help points) and 'smart stop' technologies. The bus stop accessibility programme should continue, ensuring access to bus services is open to all, while the phased introduction of access kerbing should be considered to help reduce the perceived quality gap between bus and tram services.

Over 70 per cent of all bus routes in Croydon terminate within the CMC and with close links to key railway services and tram routes the importance of good interchange to provide wider travel opportunities cannot be underestimated. With many of the existing **bus stations & interchanges** in the CMC struggling to cope with demand or provide sufficient inter-modal connections there is need to make improvements which could be realised through the emerging Masterplan proposals.

The provision of good **bus stand** facilities is key to operating reliable bus services. While there is just sufficient stand capacity within the CMC to accommodate current levels of service, the stands lack good driver rest and meal facilities while any future increase in services levels would be constrained by existing stand capacities. Bus stand provision outside the CMC also suffers from both capacity and driver facility deficiencies. A Borough wide review of bus stands should therefore be completed with recommendations ensures sufficient and suitable stands are secured both within the CMC (as part of the emerging Masterplan sites) but also in outlying areas.

19.1.6 Rail services

No plans to extend the rail network (**network planning** aspirations) in Croydon were identified during the development of this Strategy.

The **network capacity** issues related to train overcrowding are difficult to resolve as any track capacity increases require substantial work at major railway junctions to the north of Croydon and additional platforms at the London termini stations. The East London Line extension and Thameslink schemes will add new services and longer trains to East Croydon, West Croydon and Norwood Junction stations but the capacity benefits they bring are predicted only to last until 2016.

East Croydon station is at capacity with platform, ticket hall and gateline overcrowding common occurrences throughout the peak periods. Pedestrian, cycle and bus access to the station entrance on George Street is also poor for the current level of demand. As the gateway station for Croydon the priority for any **network infrastructure** improvements should therefore focus on East Croydon station.

Network Rail proposals for a new footbridge station entrance plus a proposed rationalisation of retail space within the station building and platforms will help ease current passenger congestion levels. While the Thameslink (12 car trains) and West Croydon improvements will ease congestion in the short term it is predicted that these gains will not continue much beyond 2016. Future development proposals within the CMC will create increased pressures on the station infrastructure and additional platforms are likely to be the next most practical solution.

Land requirements for the footbridge, new station entrance and additional platforms need to be safeguarded in the East Croydon Masterplan proposals to ensure these critical capacity enhancements can be delivered. Better pedestrian routes between the CMC central area and College Green should also be secured within the emerging Masterplans for these areas.

It is important discussions with Network Rail progress at a strategic level to investigate the feasibility of options to accommodate the additional rail travel predicted from new development within the CMC and a shift of mode share towards rail. Longer term solutions related to relieving junction bottlenecks, increasing platform capacity at central London termini stations, the use of double-deck trains and a potential underground link for longer distance trains on the Brighton Main Line should all be explored.

West Croydon station also has spare capacity which will increase further with the East London Line Phase 1 improvements (12 car trains) which in some way will ease pressure on East Croydon station. The access routes and interchange with bus and tram services is very poor and proposals to introduce a new station entrance on Station Road should be investigated.

19.1.7 Tramlink services

TfL took direct control of the Tramlink network in 2008 and has since been delivering a programme of **network infrastructure** improvements to enhance the passengers' experience of the tram system. This has included a new tram livery and seating while stops have received a deep clean, new signage, a re-paint of all furniture and repair of anything broken. The next step will be to improve interchange between rail and bus services.

The priority over the next few years will focus priorities on increasing **network capacity** (tram and track) through small scale enhancements from new tram stock to ease overcrowding and increased track capacity at pinch points (dual tracking) to speed up journey times.

The availability of funding constrain many of the **network planning** proposals for either local extensions (e.g. Morden and Mitcham town centres) branch extensions (e.g. Crystal Palace, Bromley and Sutton town centres) or new routes such as that proposed between the CMC and Purley. TfL's current position is that extensions to Morden and Mitcham have most benefit as well as increasing the frequency of services on the new Line 4 up to Wimbledon. Current TfL assessments do not take account of predicted growth scenarios for Croydon over the next 20 years and it is hoped that when this process takes place under the Opportunity Planning Framework development proposals for early 2011 the justification to strengthen east-west connections and a new north-south route (to relieve road and rail congestion along the A23 corridor via the CMC and Brixton) is more apparent.

No preferred alignment for a north-south route has been established but any extension would need to satisfy TfL's strict business case requirements and be closely linked to new development or the intensification of adjacent land uses.

The timescales for improvements presented in the following recommendations for Tramlink are a combination of TfL's current priorities and the Councils aspirations to enable sustainable economic development and growth within the CMC.

19.1.8 Cycling

Resolving the problems identified by the CRISP studies on the **existing LCN+ network** should be a priority along with a refurbishment of the networks infrastructure using new signage, lining and surfacing.

Under a **gaps & networks** programme, missing links in the existing network should be filled and networks such as the Greenways and Connect 2 initiatives progressed. The development of these new links and networks should work towards a longer term goal of providing a strategic network of direct and dedicated cycle routes into the CMC from surrounding areas.

A key barrier to the uptake of cycling is a behavioural aversion to this mode and initiatives to improve **skills, abilities & information** should help build confidence and encourage more people to cycle. The introduction of traffic free links to and within parks and green open spaces will provide areas which are safe to practice and an increase in leisure cycling could act a precursor to more people attempting the commute to work. A cycle hire scheme offering a range of family bikes should also be set up to support these new route initiatives. Information provision should provide advice on the most suitable routes but also the health and environmental benefits it can delivery.

Cycle parking, maintenance & repairs facilities should ease the difficulties with cycle ownership and ensure those that take up cycling continue to do so. It is suggested that a catalyst for a cycling renaissance within Croydon would be the introduction of cycle hubs within the CMC providing secure

parking at key locations (e.g. East Croydon station) offering a same day maintenance and repair service.

19.1.9 Walking

Walking is one of the least well understood modes of travel within the Borough in terms of the location of important routes, the quality of these routes and issues affecting peoples propensity to walk, such as a fear of crime, exposure to noise, pollution or road safety concerns.

Increased walking levels across the Borough is a priority to reduce car dependency, ease pressure on public transport services and promote personal well being. To better understand the issues that deter walking an assessment of the problems and opportunities need to be undertaken and **targets** set to measure the success of any investment in walking routes.

With the development growth proposed for the CMC likely to generate a substantial number of trips to and from the town centre, walking should be encouraged for those shorter journeys. The priority should be to provide high quality walking **routes** between the CMC and the surrounding residential/commercial areas with the improvements focusing on the quality of the environment, good levels of personal safety and wayfinding.

In outer areas of the Borough the focus should be to improve access to the many parks and green open spaces. The severance caused by railway lines and major roads due to a lack or poor quality of bridges and underpasses should also be reviewed.

Actively promoting walking as an attractive mode of travel will be key to achieving increases in walking activity. Better information & promotion of the benefits of walking and suitable routes should therefore be progressed under an **area wide initiative** or as part of the Borough's Smarter Travel initiatives.

This Walking part of the Strategy focuses on strategic walking routes while local walking routes are covered in the local centres & neighbourhood section.

19.1.10 Local centre's & neighbourhoods

This Strategy identified many common issues affecting access and movement through and within local centres & neighbourhoods, many of which discourage walking, cycling and public transport use in favour of car based travel. To identify the specific transport improvements required to reverse this pattern, a more detailed audit for each area is required. This will be identify opportunities for improvement and allow the Council prioritise transport investment where it is most needed.

The needs assessment undertaken during the development of this Strategy suggests Thornton Heath, South Norwood & Woodside, Broad Green, Waddon and parts of New Addington are in most need of improvement. As such this Strategy for local centre's & neighbourhoods is based on the initial assessment but may change once more is understood of the problems that affect each of the areas. Funding should be sort through the LIP programme, either through the 'neighbourhoods & corridors' or for areas needed greater levels of investment 'major scheme' LIP programmes.

19.1.11 Freight deliveries & servicing

There is a lack of base data with which to build a robust freight element into this Strategy. The priority therefore is to undertake a review of **freight activity & delivery restriction**. From this work options to reduce the impact of freight movements while ensuring the efficient movement and distribution of goods could include **innovative delivery & collection schemes**; central store rooms/ delivery centres; centralised waste collection; use of low emission vehicles particularly for the Council fleet; and the introduction of a vehicle emission priority zone within the CMC. The Council's role in the **South London Quality Freight Partnership** (SLQFP) will be key to the success of these schemes and promoting best practice amongst logistic and freight operators.

19.1.12 Taxi services

The Borough should have an active taxi market that serves the needs of its users. For **taxi ranks** the provision across the Borough is seen to be adequate with the exception of the rank at West Croydon station which often operates over capacity due to the level of demand from station users and town centre shoppers.

The capacity of all existing taxi ranks should be reviewed in line with expected demand at regular intervals or defined trigger points corresponding to new major development within the CMC. This is particularly relevant at West Croydon station which is likely to see significant increases in passenger numbers with the introduction of the East London Line extension and nearby development.

It is anticipated that the number of All London (Green Badge) and Area 5 Suburban (Yellow Badge) **taxi licenses** will overtime need to reflect increasing demand.

Increase **fare integration** between public transport modes could be achieved by allowing taxi fares to be paid for using TfL's Oyster Card scheme. A continued London Taxicard scheme would ensure those less mobile are unable to access the bus, Tramlink or rail services still have access to a door to door transport service.

19.2 Planning & review (2010 to 2012)

19.2.1 Growth scenario & drivers for change

Before embarking on a 20 year programme of enhancements to the Croydon transport network, a phase of assessment and review is necessary to ensure the investment priorities, funding and resources are in place to achieve the Strategy objectives (see Section 1.3). The following provides a description of what should be progressed in the next two years to meet the future demands for travel within the Borough.

Although much in these first couple of years relates to Borough wide initiatives, the Council is about to embark on the preparation of the Council's second LIP which could contribute to the shorter term proposals of this Strategy. To better understand the spatial context of these proposals their location is illustrated in the Planning & Review (2010 to 2012) figure which can be found in Appendix E.

19.2.2 Travel demand

Recommendation 10/12TD-A: Accessibility targets

Define criteria and set targets to measure the success of transport initiatives set out by this Strategy. This should encompass both internal and external trips in terms of mode share. The aim of these criteria is to assess the success of measures to promote sustainable travel across the Borough and use the monitoring to focus efforts on areas which prove difficult to resolve. [TD.01, TD.02, TD.03]

Recommendation 10/12TD-B: Travel planning (school travel)

There is an urgent need to review school transport provision across the Borough to understand its impact on transport networks and make recommendations to improve the accessibility of schools by bus. Walking and cycle school access initiatives should be progressed at the same time.

The Council should undertake a study to assess the impacts of parental choice, TfL's freedom pass and the location of schools and colleges have on Croydon's transport network. The study should make recommendations on how the bus network can best cope with the annual change to student movements across the Borough. Regular liaison between the Council, school/ college admission offices, bus operators and TfL should help identify the emerging pressures on the bus network and how best to resolve them. Good interchange within the CMC will be key to ensuring students have access to better range of educational opportunities.

Recommendation 10/12TD-C: Car parking management (CMC parking strategy)

The Council should undertake a detailed parking study with the aim of ensuring there are sufficient controls in place to effectively manage parking demand and that the provision is best placed to serve the needs of those who most need it. The study should focus on the CMC where parking has the greatest effect on car based trips and the impact access arrangements have on the road network. The review should:

- Determine the key issues with the existing provision in terms of location, access, pricing, management and quality of the infrastructure.
- Assess the parking proposals of the emerging CMC Masterplan proposals and determine their suitability relative to the existing provision.
- Assess future demands and how it can best be managed with respect to key attractors, pricing tariffs and constraints associated ownership/ leaseholds.

The aim should be to ensure that over time there is a balanced and convenient supply of parking around the CMC that is easily accessed from the strategic road network but without weakening the attractiveness of public transport services or create barriers to pedestrian and cycle movement.

Recommendation 10/12TD-D: Road user charging

A recent government announcement suggests there is unlikely to be any further progress on a regional or national road user charging scheme until after 2017.

Recommendation 10/12TD-E: Planning requirements

The Council should review and confirm parking standards for new developments that include those for cars, cycles and electric vehicles. A zonal approach could be adopted within the Borough reflecting the level of access to facilities.

Recommendation 10/12TD-F: Travel reduction initiatives

Travel reduction initiatives will form part of the Smarter Travel initiative to be set up within the Council [12/17TD-B].

19.2.3 Air quality

Recommendation 10/12AQ-A: Air quality limits

Air quality targets for NO₂ are not being met within the CMC and in northern areas of the Borough. This has been the case for at least 6 years and will continue without a significant reduction in traffic congestion in these areas. With this unlikely to be achieved in the short to medium periods of this Strategy the urgency of measures to reduce the impacts of congestion are essential if air quality is to meet legal limits. The London Air Quality Strategy (Mayor of London, 2010) proposes some drastic measures for central London where EU-mandated (Directive 2008/50/EC) maximum levels for particulate (PM10) and NO_x are often breached. The Council should investigate how applicable these options would be for critical areas of Croydon.

Recommendation 10/12AQ-B: Traffic congestion

See recommendations made in 10/12GT-A1 and 10/12GT-A2.

Recommendation 10/12AQ-C: Vehicle emissions

To encourage greater uptake of electric vehicles by residents, the Council should seek to find locations and install an initial provision of electric vehicle charging points (EVCP) across the Borough. These charging points should be located in places that are most likely to be used such as within the CMC. Their location should be promoted to key users groups and their usage monitored.

There is a need to increase the proportion of buses in the Croydon bus network fleet with Euro 5 standard or hybrid engines. The Council should therefore work with TfL to ensure that during the Tender renewal process for bus routes in Croydon, vehicles are ideally specified with hybrid engines.

The Council should work with TfL on options to improve vehicle emissions from Croydon's taxi and private hire vehicle fleets. TfL have proposals to introduce a 15 year rolling age limit from 2012 and a 10 year rolling age limit in 2015 for the London taxi fleet with future aspirations to work with industry to develop a zero-emission taxi by 2020, while for London's private hire vehicle fleet there will be a 10 year rolling age limit from 2012.

Recommendation 10/12AQ-D: Awareness campaigns & driver training

The Council should supported campaigns (by providing advertising space) to raise awareness of air quality issues within the Borough by supporting Government initiatives such as the Act on CO₂ campaign to 'drive five miles a week' or campaigns which highlight the risks to public health of poor air quality.

19.2.4 Road safety

Recommendation 10/12RS-A: Personal injury collision reduction targets (road safety plan)

Following the publication of new National road safety targets and potentially subsequent targets from TfL, the Council needs to agree how best to be achieve these targets over the next 10 years. This Strategy promotes a step change in walking and cycling and but with increased activity comes greater exposure to vehicular traffic and risk of injury during a collision. These targets should drive road

safety improvements to protect vulnerable road users as the required step change in travel behaviour is dependent on pedestrians and cyclist feeling safe within the highway.

The Council should produce a Road Safety Plan covering the period 2010 to 2020 and set out how new National targets are to be achieved and a priority for mitigation measures. These measures must support the Strategy's aim to create a substantially safer and friendlier environment for pedestrians and cyclists throughout the Borough.

Recommendation 10/12RS-B: Severity of personal injury collisions (road safety plan)

Reducing the severity of personal injury collisions is strongly linked to reducing vehicle speed. To achieve this, the proposed Road Safety Plan should set out innovative and effective approaches in the areas of physical speed reducing measures, enforcement and awareness campaigns.

Recommendation 10/12RS-C: Vehicle speed enforcement

Investigate the suitability and funding options available for average speed enforcement cameras.

Recommendation 10/12RS-D: Road danger perception

Initiatives in this area are deferred until the short term (2012-2017) of this Strategy but provision should be made for schemes to reduce the perception of road danger in the Council's second LIP.

Recommendation 10/12RS-E: Education programmes & awareness campaigns

The Council should continue to introduce road activated speed signs at problem locations, funding permitting. As an effective method of reducing speeds in residential areas it is recommended that provision is made for additional signs within the preparation of the Council's second LIP.

19.2.5 General traffic

Recommendation 10/12GT-A1: Junction capacity & traffic signals (Borough roads)

While a preliminary assessment made during the development of this Strategy identified a number of problematic junctions a more robust assessment is needed. The Council should therefore undertake a Borough wide junction review to establish the specific problems and main functions. For example, is the function to accommodate through traffic movements, facilitate pedestrian crossing demands or ensure sufficient time is provided for turning movements?

Following the junction review a feasibility study is required to establish the level of investment required to resolve the problems at each junction. Some junctions may require a significant funding commitment or substantial changes to the way they operate (e.g. banned turning movements/ road closures) and ensuring the impacts of each proposal are carefully considered. There may ultimately be no scope to improve junction capacity in which case the only realistic option would be to implement some form of traffic reduction intervention.

Recommendation 10/12GT-A2: Junction capacity & traffic signals (TLRN)

Easing congestion along the A23 should be a priority for improving air quality. The Council should therefore establish TfL's timescales for implementing SCOOT along this corridor and the proposed small scale improvements to the operation of the A23 Fiveways junction by modifying the Stafford Road service lane to prevent queue jumping.

Recommendation 10/12GT-B: Link capacity (Borough roads)

The Council should undertake a more detailed assessment of the Traffic Master data to assess the worst performing links and establish the opportunities for improvement.

Recommendation 10/12GT-C: Car parking

The Council should review car parking in the CMC to ensure that future car parking provision provides a well balanced and convenient facility that does not weaken the attractiveness of public transport services or create barriers to pedestrian and cycle movement. [See. 10/12TD-C]

Recommendation 10/12GT-D: Road network management

The Council should investigate the merits of introducing either a 'permit' or 'lane rental' scheme to reduce the impact of road and utility works on traffic flows.

Recommendation 10/12GT-E: Major highway infrastructure

The Council should review of all major highway infrastructure to assess the liabilities associated with replacement or removal. In addition to the numerous road/ rail bridges that needed strengthening the two main items identified during the development of this Strategy include the Croydon flyover and the road bridge on the A23 near Waddon station which both lie on the TLRN and so fall under TfL's responsibility.

19.2.6 Bus services

Recommendation 10/12BN-A: Bus service capacity

The previous CMC Transport Strategy [JMP, 2009] suggested spare capacity in the existing bus network that serves Croydon. To understand current utilisation of bus services the Council with TfL should undertake a capacity review of the Croydon bus network. This review could form part of a more detailed CMC Bus Strategy and act as a baseline for assessing the bus requirements of the emerging Masterplans and as an evidence base for the forthcoming Opportunity Area Planning Framework (OAPF) being prepared by TfL. [BNP.01]

With bus mileage across London predicted to fall and the proposed introduction of new trams between Therapia Lane and Arena there may be pressure to reduce some bus service levels on competing routes. The Council should work with TfL to understand the potential impact this may have on Croydon's bus network and use the findings of the above review to inform any decision to reduce services on the network. [BNP.01]

Recommendation 10/12BN-B: Bus network gaps

The Council should work with TfL to understand the scope for new routes in light of existing gaps and areas of new residential and commercial development. [BNP.02 to BNP.25].

Recommendation 10/12BN-C: Night buses

The Council should work with TfL to understand any further threats to the night bus network serving Croydon and the CMC. [BNP.26]

Recommendation 10/12BN-D: Bus service delays

The Council should review scheme priorities based on the list of identified bus service delay locations provided by this Strategy. With many of the delay 'hot spots' corresponding to locations of general traffic congestion any priority list for bus improvements needs to be cross referenced with proposed general traffic highway improvements. An assessment of how tram movements affect bus operations should also be included in this review. This priority list for bus priority interventions should feed into the preparation of the Council's second LIP. [BNI.01 to BNI.30]

Recommendation 10/12BN-E: Bus stops

With only 50 per cent of the Borough's bus stops meeting TfL's bus stop accessibility guidelines it is recommended that the Council maintain a bus stop accessibility programme for this year and next, building on the work already achieved. A programme of improvement should feed into the preparation of the Council's second LIP to ensure there is ongoing improvement to support bus usage and sustain patronage increases. [BNI.40]

Recommendation 10/12BN-F: Bus stations & interchanges

Improved bus station/ interchanges for West Croydon [BNI.42], East Croydon [BNI.43], and Park Street/ Katherine Street [BNI.44] should be developed as part of the CMC Masterplans an in partnership with TfL.

Recommendation 10/12BN-G: Bus stands

The Council with TfL should undertake a Borough wide review of bus stand provision investigating the adequacies of capacity and driver rest/ meal facilities. This review should focus on stands outside the CMC as those within the town centre will be developed to reflect the growth impacts of the emerging Masterplans. [BNI.45]

19.2.7 Rail services

Much needed improvement to Croydon's rail network is dependent on Network Rails priorities over the next ten years. It is essential that Croydon Council progresses both detailed and high level discussions with Network Rail.

For East Croydon station, clarification on the following is needed to help plan future growth in the CMC:

- Timescales for concourse and platform passenger capacity improvements.
- Timescales and land use integration issues associated with the new pedestrian footbridge, station entrance and platforms.
- Options to stop some or all Gatwick Express services.
- The impact of the growth scenarios put forward as part of the London Plan (supported by the Council's Core Strategy) on demand for rail services within the CMC. This should be made within the context of the Opportunity Area Planning Framework to be undertaken by TfL early in 2011.
- The scope for major junction improvements, platform capacity increases at the London termini stations, the use of double – deck trains and the possibility of an underground route for express services on the Brighton Main Line.

For West Croydon station the discussion should focus on providing a new station entrance on Station Road with better integration with bus and tram services and should be made within the context of the West Croydon Masterplan.

Recommendation 10/12NR-A: Network planning

Recommendations to increase rail service destinations from East Croydon will depend on the future progress of the East London Line extension.

Recommendation 10/12NR-B: Network capacity

Within this period of the Strategy the Thameslink enhancements and the East London Line extension (phase 1) works will introduce 12 carriage trains to East Croydon and West Croydon stations respectively.

Recommendation 10/12NR-C: Network infrastructure

East Croydon station: The Network Rail investment programme should deliver the internal layout changes to the station building providing increased circulation space to reduce passenger congestion in the main station building and on the platforms.

West Croydon station: The East London line extension (phase 1) works will bring about an improvement to in-station facilities including increased staffing levels.

Local stations: A programme of station access improvement works should be developed for all local stations under the TfL Major schemes. The Councils first step should be to prioritise stations in order of need and seek to maximise investment potential with linked funding from Section 106 agreements, Department for Transport initiatives or LORAL investment.

19.2.8 Tramlink services

Recommendation 10/12LTL-A: Network infrastructure (stops and interchanges)

TfL to continue the tram stop maintenance and refurbishment programme to maintain the quality of stops. Measure to improve accessibility, signing, personal security and reduced levels of anti-social behaviour should also continue. [LTL.01]

Recommendation 10/12LTL-B: Network capacity (trams and tracks)

TfL to lease or purchase an additional 4 to 6 trams for service on the new Line 4 between Therapia Lane and Arena. [LTL.06]

Recommendation 10/12LTL-C: Network planning (local, branch & route extension)

Establish through the OAPF process those Tramlink extensions which provide Croydon the best opportunity to meet its growth targets. The following Strategy period for Tramlink suggest a possible (untested) way forward.

19.2.9 Cycling

Recommendation 10/12CN-A: Existing network

The Council should undertake a prioritisation review of the issues affecting the LNC+ network [CN.01 to CN.14] and establish an implementation programme for these works within the Councils second LIP. This programme should include a scheme to refurbish the existing LCN+ with new signs, lining and surfacing where needed. [CN.15]

The Council working with TfL should deliver the proposed improvements to the Lombard roundabout [CN.03] and investigate quick win proposals for the A23 Fiveways junction. [CN.01]

Recommendation 10/12CN-B: Gaps & networks

The Council to progress works to introduce cycle friendly crossings on Roman Way, Park Lane and Barclay Road as part of the Connect2 route [CN.18] improvements and initial implementation of the proposed Greenway routes [CN.19] should also start.

Recommendation 10/12CN-C: Skills, abilities & information

The Council should maintain its cycle training schemes with Cycle UK and investigate the options to introduce a small scale hire scheme focused on the leisure market. [CN.22]

Recommendation 10/12CN-D: Cycle parking, maintenance & repairs

The Council should investigate the feasibility of a cycle hub at East Croydon station, West Croydon station and potentially within an area to the south of Croydon town centre (North End j/w George Street) and Purley town centre. [CN.25]

19.2.10 Walking

Recommendation 10/12WN-A: Targets

The Council should seek to set targets of walking across the Borough to assist with monitoring and helping to establish best practice in the implementation of infrastructure and area wide initiatives to increase walking levels. These targets should be area or route specific and focussed initially on the key routes into the CMC. [WN.01 & 10/12TD-A]

Recommendation 10/12WN-B: Routes & infrastructure

The Council should undertake a review of all key strategic walking routes within the Borough that takes account of the Greenways and Connect2 initiatives plus key pedestrian routes serving the CMC and produces a core network of strategic routes to be developed across the Borough. [WN.02]

In this Planning & Review stage, the Council should make 'quick win' improvements to the walking environment along George Street between Cherry Orchard Road and the Wellesley Road junctions. Improvements to the junction with Dingwall Road and the removal of street clutter along the northern

footway are seen as short term priorities. This work should form part of the Connect2 initiative [WN.12, CN.19] which should be substantially completed by 2012.

The proposed introduction of controlled crossing facilities at the signalised junction of Parchmore Road with Beulah Road in Thornton Heath will be completed. This will improve access to a local school and town centre facilities. [WN.14]

Recommendation 10/12WN-C: Area wide initiatives

The Council should review its policies on how to best secure good walking environments to, from and within new developments. [WN.20]

19.2.11 Local centres & neighbourhoods

Recommendation 10/12LC-A: Local area transport improvements (Purley)

The Council currently has LIP funding to implement improvements in Purley town which should address issues within the town centre but resolving pedestrian and cycle severance issues at the Purley Cross gyratory will potentially require more time.

19.2.12 Freight deliveries & servicing

Recommendation 10/12FDS-A: Freight activity & delivery restrictions (Study)

Carry out an in-depth study of freight activity using a range of survey and data capture techniques [FDS.01]. In addition, undertake a study of current delivery restrictions to identify inconsistencies, ways to balance and harmonise restriction, consider if out-of-hours restrictions can be eased for specific cases or areas as a means of improving delivery efficiency. [FDS.02]

Recommendation 10/12FDS-B: Innovative delivery & collections schemes (Consultation)

Working in partnership with developers and retailers investigate ways to incorporate central storeroom and delivery centres into new developments. Similarly, centralised waste collection systems should be examined with developers. [FDS.03]

The Council with developers and Network Rail assess the feasibility of a consolidation centre for construction materials at the Reedham station sidings. This has urgency if construction of the proposed CMC masterplan developments overlap as construction vehicle movements for each are likely to be substantial, raising traffic congestion and air quality concerns. [FDS.04]

Recommendation 10/12FDS-C: SLFQP (Participation)

The Council should use the membership of this organisation to promote operator best practice etc and being proactive in forming closer relationships with freight and logistics businesses in the Borough - e.g. creation of sub-regional forum. [FDS.07]

19.2.13 Taxi services

Recommendation 10/12TX-A: Taxi ranks

As part of the East Croydon and West Croydon Masterplan proposals the Council should review taxi provision and ensure an enhanced rank is secured at each site to accommodate future increases in demand. [TX.01]

Recommendation 10/12TX-B: Taxi licences

Increase the number of All London (Green Badge) or Area 5 Suburban (Yellow Badge) licenses to reflect increasing demand. [TX.02]

Recommendation 10/12TX-C: Taxi fares (integration)

Increase integration between public transport modes by encouraging smartcard payment within taxis (using TfL's Oyster Card scheme) and would allow taxi fares to be paid for as part of the public transport journey. Continue the London Taxicard scheme to ensure less mobile people are unable to access the bus, Tramlink or rail services still have access to a door to door transport service. [TX.03]

19.2.14 How will this be delivered?

It is anticipated that the proposals from this Planning & Review stage of the BWTS can be funded through the 10/11 and 11/12 LIP allocations.

19.3 Short term transport strategy (2012 to 2017)

19.3.1 Growth scenario (drivers for change)

East Croydon and West Croydon Masterplan proposal should be substantially complete within this Strategy period with transport investment focusing on supporting access to these two CMC railway stations. To better understand the spatial context of these proposals their location is illustrated in the Short Term (2010 to 2012) figure which can be found in Appendix E.

19.3.2 Travel demand

Recommendation 12/17TD-A: Accessibility targets

Use the Strategy criteria to monitor the success that new transport provision has increasing sustainable travel across the Borough. Introduce mitigation measures to address any areas which do not show improvement.

Recommendation 12/17TD-B: Travel planning (Smarter Travel)

The Council should set up a team to promote travel planning across the Borough similar to the 'Smarter Sutton' or 'Smarter Richmond' initiatives funded by TfL. While funding for such an initiative through TfL may be difficult it is important Council has a team to develop bespoke marketing, awareness and information services to promote better trip making decisions within the Borough.

New development (of which much is proposed for the CMC) offers an opportunity to 'hard wire' sustainable travel behaviours into new residential, retail and office development which is often more effective than trying to change existing travel behaviours. To do this the Council needs to be prepared to give developers and new businesses advice on what to provide and new residents and employees advice how best to travel around the Borough and into surrounding areas.

This team should provide advice to existing employee, residents and students on better trip making decisions and the need to be more sustainably when required to travel. [TD.04 to TD.09]

Within this period the Smarter Travel initiative should:

- Promote car clubs in residential areas to reduce levels of on-street parking and in new development to minimise car parking provision. The Council should commit to ensuring each resident is no further than 10 minutes walk away from a Car Club vehicle.
- Continue to engage with education and transport providers to ensure that school transport provision is adequate for the students and operational manageable. Key areas of improvement would be to ensure interchanges within CMC provide good linked trips to schools within the Borough and bus stops outside schools are upgraded to cope with the high level of demand at the start and the end of the school day.

Recommendation 12/17TD-C: Car parking management

A review of car parking provision within local centres is also required to meet similar objectives but should be carried out on an opportunity basis i.e. during town centre improvement schemes. (Local centre parking review). To alleviate congestion on the A23 the Council should seek ways to limit the number of parking spaces accessed off the A23 corridor. (A23 parking review)

Recommendation 12/17TD-D: Road user charging

There is unlikely to be any further progress on a regional or national road user charging scheme until after 2017.

Recommendation 12/17TD-E: Planning requirements

The Council should review parking standards for new developments in light of improving public transport services and facilities for pedestrians and cyclists within the Borough.

Recommendation 12/17TD-F: Travel reduction initiatives

Travel reduction initiatives will form part of the Smarter Travel initiative [12/17TD-B].

19.3.3 Air quality

Recommendation 12/17AQ-A: Air quality limits

Ensure that by the end of this period all parts of Croydon meet the European Union mandated (Directive 2008/50/EC) on maximum levels for particulate (PM10) and NOx pollutants. This will be a challenge of the A23 corridor which is managed by TfL but through Borough initiatives to reduce congestion and vehicles emissions should be achievable within the CMC.

Recommendation 12/17AQ-B: Traffic congestion

See recommendations made in 12/17GT-A1 and 12/17GT-A2.

Recommendation 12/17AQ-C: Vehicle emissions (electric vehicle charging points)

The Council should promote initiatives that increase the proportion of low/ zero emission **cars** within the Borough. Rather than privately owned vehicles, the Council's short term strategy should be to focus on pool vehicle fleets such as those found in private businesses (e.g. store delivery vehicles), the Council (Social Services, Occupational Health, Pest Control, Housing Association/ Street Maintenance departments), NHS fleet vehicles (midwives, on-call doctors).

The Council should internally investigate the costs and benefits of switching to a low and no emission van and light goods vehicle fleet. As an example the Council could insist that all new service providers use low emissions vehicles as part of new contract arrangements.

To promote the uptake of low emission vehicles for those that are privately owned the following incentives could be developed over the short to medium term:

- Preferential spaces in car parks with access to free charging points for electric vehicles. In the short term maintain the previous level of electric vehicle charging points unless there is growing usage which needs to be encouraged. Convert the Council's fleet to electric or hybrid powered vehicles if economically viable.
- Emission-based car parking charges (carbon metered parking) or revenue neutral emissions-based parking charges for residential parking permit schemes and on and off street pay & display bays.

These initiatives should make use of UK government incentives or grants to encourage the uptake of low emission vehicles.

The Council should work with TfL to facilitate the introduction of hybrid engines to the Croydon **bus** fleet, with a focus on those services that use the most congested routes.

Recommendation 12/17AQ-D: Awareness campaigns & driver training

Recommendation for new air quality awareness campaigns to be confirmed once budgets have been established.

19.3.4 Road safety

Recommendation 12/17RS-A: Personal injury collision reduction targets

Road safety initiatives should focus on achieving the 2020 national targets and any additional requirements placed on the Council by TfL. This should be done by undertaking an annual review of personal injury collisions and updating the Council's Road Safety Plan accordingly.

Recommendation 12/17RS-B: Severity of personal injury collisions

Through the Council's highway improvement work programmes road junctions should be made safer; better pedestrian crossing facilities introduced (balanced against the impact of disrupting traffic flow) and improved street lighting provided. These measures should be targeted at problem areas. Major schemes also provide the opportunity to make streets safer through urban realm and shared space schemes.

The Council should assess the benefits of introducing a 20 mph zone in all residential roads across the Borough and implement should the assessment be favourable. Introduction of such a scheme may be easier to achieve as part of a London wide initiative which is currently being considered by the Mayor of London.

Recommendation 12/17RS-C: Vehicle speed enforcement

Investigate the benefits of average speed cameras enforcement systems and implement in problem areas if deemed suitable for this type of enforcement. The Council should also extend the Community Road Watch scheme to the rest of the Borough. Funding for fixed speed enforcement cameras is likely to be constrained in this period of the Strategy.

Recommendation 12/17RS-D: Road danger perception

Understanding the impact that the perception of road danger has on the levels of walking and cycling within the Borough is not well understood. Accident analysis gives some indication of areas that these modes avoid but it does not identify for example local communities where residents fear for their children being on streets or footways and paths which are perceived to be unsafe. The Council should undertake a Borough wide study to identify areas where road traffic or the fear of crime, prevent local residents from walking and cycling.

Implementation of schemes within local communities should be progressed under the LIP funding programmes for Corridors & Neighbourhoods and Major Schemes.

Recommendation 12/17RS-E: Education programmes & awareness campaigns

Introduce additional road activated speed signs in residential areas where speeding is a problem.

19.3.5 General traffic

Recommendation 12/17GT-A1: Junction capacity & traffic signals (Borough roads)

This Strategy identified several junctions that act as significant bottlenecks and which are responsible for long periods of congestion and delay. Without prejudging the outcome of the junction review and feasibility work [10/12GT-A1] this Strategy suggests the following should be treated as a priority for improvement. It is recommended that works are progressed in tranches reflecting their location and inter-relations with respected to linked junctions.

The priority for part of the plan would be to resolve the issues affecting the cluster of junctions to the north of the CMC, namely:

- Windmill Road j/w Whitehorse Road [GT.11]
- Roman Way j/w Derby Road [GT.12]
- London Road j/w Sumner Road [GT.13]
- Mitcham Road j/w Sumner Road [GT.14]
- Wellesley Road j/w Station Road [GT.15]

The aim should be to discourage general traffic movements in favour of greater priority for pedestrians and buses (exc. GT12).

Recommendation 12/17GT-A2: Junction capacity & traffic signals (TLRN)

The priority should remain the A23 with enhancements made to the Purley Cross gyratory [GT.01], the Fiveways [GT.02] and Croydon Road junctions [GT.03]. The Council should work with TfL to ensure improvements are programmed and implemented to compliment the Councils priorities for other parts of the road network (e.g. the Wellesley Road scheme). The changes made to Fiveways and the Croydon Road junctions should act a precursor to more fundamental changes in subsequent periods of the Strategy.

Recommendation 12/17GT-B: Link capacity (Borough roads)

As part of the Thornton Heath town centre improvements improvements should be made to improve traffic flows through the High Street. Resolving conflicting demands at the Brigstock Road j/w High Street from local traffic, through traffic and pedestrian crossing demands will be key to the success of this scheme.

Recommendation 12/17GT-C: Car parking

The Council should act on the findings of the CMC car parking strategy [10/12TD-C].

Recommendation 12/17GT-D: Road network management

The Council should introduce a 'permit' or 'lane rental' scheme to reduce the impact of road and utility works on traffic flows.

Recommendation 12/17GT-E: Major highway infrastructure

Any improvement to major highway infrastructure within the Borough will depend on the urgency of the works and availability of funding from Network Rail and TfL.

19.3.6 Bus services

Recommendation 12/17BN-A: Bus service capacity

Tasks are undefined until the findings of the bus route capacity review proposed in the Planning & Review stage of this Strategy [10/12BN-A] are known. This review proposes to assess the utilisation of the existing bus network to understand better the capacity constraints associated with the impact of CMC development proposals on the local bus network.

Recommendation 12/17BN-B: Bus network gaps

The Council should continue to work with TfL in their network reviews to ensure committed development proposals are accounted for in any service revisions. [BNP.02 to BNP.25]

Recommendation 12/17BN-C: Night buses

The Council should continue to work with TfL to develop new night bus routes as demand for such services increases. [BNP.26]

Recommendation 12/17BN-D: Bus service delays

Without prejudging the outcome of the Council's priority list for highways works to reduce bus service delay this Strategy suggests that works are progressed on the two main bus routes to the north and south of the CMC, namely A235 Brighton Road between Purley Cross and High Street and A235 London Road between Thornton Heath Pond and North End. Both lie on the Busy Bus Route network which helps justify any bus priority intervention along these two corridors. Specific improvements for each are as follows:

- A235 Brighton Road: BNI.07, BNI.12, BNI.13
- A235 London Road: BNI.01, BNI.24, BNI.25
- Cherry Orchard Road
- Stafford Road

As part of the local area enhancement in and around Purley it is recommended the proposed bus lane on Brighton Road (southbound approach to Purley Cross) as part of BNI.01 is reviewed and if feasible, implemented within this period of the Strategy.

Recommendation 12/17BN-E: Bus stops

The Council in partnership with TfL should implement a rolling programme of bus stop improvements with the objective of creating a highly quality access point to the bus network. The works should incorporate the following four elements:

- **bus stop accessibility** works to ensure buses meet exemplar standards for boarding and alighting environments;
- **shelter renewal** (based predominantly on the new London Landmark shelter) aimed at improving the shelter environment at stops;
- **personal security** enhancements related to improved lighting, CCTV and possibly station type 'help points'; and
- **communication technology** with the delivery of real time passenger information (rtpi) via Wifi to mobile/ smart phones¹³ with a possibility to creating Wifi hot spots at reach bus stop i.e. smart stops.

These measures aim to encourage greater bus use through a step change improvement to bus stop quality.

In this period of the Strategy the priority should be to ensure all stops meet TfL's accessibility guidelines with subsequent bus stop works focusing on improving the quality and security of the waiting environment. [BNI.40]

Recommendation 12/17BN-F: Bus stations & interchanges

Delivery the following bus station and interchange improvements.

- West Croydon bus station (as currently defined by the West Croydon Masterplan proposals). [BNI.42]
- East Croydon bus interchange (as currently defined by the East Croydon Masterplan proposals). [BNI.43]
- Park Street/ Katherine Street interchange (as currently define by the Wellesley Road Masterplan proposals). [BNI.44]

These new and enhanced facilities will provide greater stop capacity to help accommodate future increases in bus services.

Recommendation 12/17BN-G: Bus stands

Based on the Borough wide review of bus stands [10/12BN-G] TfL working with the Council should prioritise and deliver improvements to bus stands outside the CMC where required. [BNI.45 to BNI.69]

The Council working with TfL should deliver the Wandle Road bus stand as this provides increased stand capacity; the opportunity for much improved driver rest and meal facilities; but also with the removal of the stands on Katherine Street unlocks the potential for Katherine Street to be pedestrianised in the Mid Croydon Masterplan proposals. [BNI.53]

19.3.7 Rail services

Recommendation 12/17NR-A: Network planning

Recommendations to increase rail service destinations from East Croydon will be dependent on the future progress of the East London Line extension (phase 2) and Thameslink schemes.

Recommendation 12/17NR-B: Network capacity

East Croydon station: It is anticipated that the Network Rail investment programme will provide the footbridge, new station entrance and station building internal layout changes to reduce passenger overcrowding within the station. The additional platforms would also help ease longer term congestion concerns related to new development within the CMC.

¹³ This in some cases would avoid the need to introduce costly rtpi displays.

The option of stopping some or all Gatwick Express services at East Croydon should be discussed with the Strategic Rail Authority and Network Rail.

West Croydon station: It is anticipated that the Network Rail investment programme with the West Croydon Masterplan development will provide a new station entrance on Station Road.

Recommendation 12/17NR-C: Network infrastructure

Local stations: Without prejudging the outcome of any station priority needs assessments [10/12NR-C] it is suggested that the first tranche of stations to undergo access improvements include Purley, South Coulsdon and Woodmansterne station. These improvements should aim to encourage greater use of the train service from these stations and act as a precursor to the Cane Hill development should it gain planning permission.

19.3.8 Tramlink services

Recommendation 12/17LTL-A: Network infrastructure (stops and interchanges)

TfL to maintain a programme of tram stop maintenance, refurbishment, accessibility and personal security improvements. [LTL.01]

The Council to work with TfL to improve access routes to Tram stops and in particularly those that provide valuable interchange opportunity between tram and bus services. [LTL.02]

Opportunities to improve bus/ tram interchange through the West Croydon Master Plan proposals and tram/ rail interchange through the East Croydon Masterplan proposals.

Recommendation 12/17LTL-B: Network capacity (trams & tracks)

Introduction of Line 4 Tramlink services between Arena and Therapia Lane to relieve congestion to the east of the CMC. To allow more reliable running the section of signal track between Mitcham and Mitcham Junction is to be duedled.

Recommendation 12/17LTL-C: Network planning (local, branch & route extension)

Progress works to deliver the local extension to Morden and Underground services via the Northern Line [LTL.11a] and the local extension to Mitcham town centre. [LTL.12]

19.3.9 Cycling

Recommendation 12/17CN-A: Existing network

The Council should progress works to resolve problems on the LCN+ network [CN.01 to CN.14] based on the priorities identified as part of the review taken in 10/12CN-A.

Recommendation 12/17CN-B: Gaps & networks

The Council should progress works to provide a better link for cyclists between Thornton Heath, the BRIT school and East Croydon station [CN.17], complete Connect2 [CN.18] and make substantial progress in implementing the Greenways proposals [CN.19].

Recommendation 12/17CN-C: Skills, abilities & information

The Council to produce information on the developing network to assist cyclists' take routes which are suitable for their level of ability and confidence.

The Council should assist the introduction of a small scale cycle hire scheme focus at the leisure market and providing both adult and child cycles. [CN.22]

Recommendation 12/17CN-D: Cycle parking, maintenance & repairs

The Council should promote and work with organisations to introduce more covered, well lit and secure cycle parking facilities within retail centres, local railway stations and at tram stops. [CN.24]

The Council should work with local cycle shops to promote a network of local and easily access cycle maintenance and repair facilities. [CN.25]

As part of the drive to improve facilities for cyclists the Council, developers of the East Croydon masterplan site and Network Rail should introduce a cycle hub at East Croydon station and consider the feasibility of addition cycle hubs at West Croydon station and within an area to the south of Croydon town centre (North End j/w George Street). Introduce a cycle hub in Purley town centre if proved to be feasible. These hubs should provide safe parking and users should have access to a same day maintenance and repair service. [CN.25]

19.3.10 Walking

Recommendation 12/17WN-A: Targets

The Council should monitor key routes into the CMC to ensure the investment in routes infrastructure and area wide initiatives has produce an increase in walking activity. The Council should adjust its approach should the monitoring suggest measures are not producing the increases required. [WN.01]

Recommendation 12/17WN-B: Routes & infrastructure

The Council should act upon the findings of the Borough wide walking review [WN.02] and prioritise improvements accordingly. It is anticipated that improvement to the nine identified main routes into the CMC from surrounding areas will be a priority give the scope of increasing walking activity along these routes. Options for improvement should include those described in section 13.2 but measures can range from 'quick win' de-cluttering of footways to more substantial resurfacing, footway widening or new street lighting schemes depending on the availability of funding. [WN.03 to WN.11]

The Greenway proposals should be substantially complete, providing a network of quite routes linking parks and green open spaces across the Borough [WN.13].

Under the LIP Principle Road Maintenance Programme the Council should resurface adjacent footways when carrying out road carriageway works. [WN.17]

Recommendation 12/17WN-C: Area wide initiatives

The Council should continue prioritise improved walking routes through new development [WN.20], promote walking initiatives through the travel plan process [WN.21].

The completion of Connect2 [WN.12], the Greenway proposals [WN.13] and enhancement to the main routes into the CMC [WN.03 to WN.11] creates a potential network of commuter and leisure routes which should be promoted by the Council. [WN.22]

19.3.11 Local centres & Neighbourhoods

Recommendation 12/17LC-A: Local area transport improvements (Thornton Heath)

The Council should progress with a Major scheme bid under the Council's second LIP to improve access and movement through Thornton Heath town centre.

Recommendation 10/12LC-B: Local area transport improvements (South Norwood & Woodside)

The Council should progress with a Neighbourhood & Corridor scheme bid under the Council's second LIP to improve access and movement through South Norwood & Woodside.

19.3.12 Freight deliveries & servicing

Recommendation 12/17FDS-A: Freight activity & delivery restrictions

The Council should act on the findings of the freight activity & delivery restrictions study. [10/12FDS-A]

Recommendation 12/17FDS-B: Innovative delivery & collections schemes

The Council working in partnership with developers, retailers and Network Rail should progress feasible consolidation centres for delivery & collection (including construction materials and waste collection). [FDS.03, FDS.04]

Recommendation 12/17FDS-C: SLFQP (Participation)

The Council should continue to promote operator best practice through this forum. [FDS.07]

19.3.13 Taxi services

Recommendation 12/17TX-A: Taxi ranks

Increase the rank provision at East Croydon station, West Croydon station and within the CMC as required. [TX.01]

Recommendation 12/17TX-B: Taxi licences

Increase the number of All London (Green Badge) or Area 5 Suburban (Yellow Badge) licenses to reflect increasing demand. [TX.02]

Recommendation 12/17TX-C: Taxi fares (integration)

See the introduction of smartcard payment within taxis (using TfL's Oyster Card scheme). [TX.03]

19.3.14 How will this be delivered?

It is anticipated that funding for this Short term period of the BWTS will be funded through the Council's second Local Implementation Plan and annual allocations.

19.4 Medium term transport strategy (2017 to 2022)

19.4.1 Growth scenario (drivers for change)

Completion of the Mid Croydon and College Green Masterplan proposals combined with the Wellesley Road scheme. It is hoped that much of this development will be car free but to accommodate this growth and reduce the environmental impacts of travel, the following recommendations are made for this medium term period of the BWTS. To better understand the spatial context of these proposals their location is illustrated in the Short Term (2017 to 2022) figure which can be found in Appendix E.

19.4.2 Travel demand

Recommendation 17/22TD-A: Accessibility targets

Continue to monitor the success that new transport initiatives in achieving increased sustainable travel across the Borough. Introduce mitigation measures to address any areas which do not show improvement.

Recommendation 17/22TD-B: Travel planning

The Smarter Travel team should continue to develop links with businesses, education, retail and healthcare organisations to promote Travel Planning principles across the Borough. Ensure every school, college, large healthcare sites and mayor new developments has an active Travel Plan in place which is monitored regularly.

Recommendation 17/22TM-C: Car parking management

Implement proposals to rationalisation/ reorganise central Croydon car parks as part of the above redevelopment of the CMC Masterplan areas.

Recommendation 17/22TD-D: Road user charging

Review status of Regional or National Road user charging scheme.

Recommendation 17/22TD-E: Planning requirements

The Council should review parking standards for new developments in light of improving public transport services and facilities for pedestrians and cyclists within the Borough.

Recommendation 17/22TD-F: Travel reduction initiatives

Travel reduction initiatives will form part of the Smarter Travel initiative [12/17TD-B].

19.4.3 Air quality

Recommendation 17/22AQ-A: Air quality limits

Continue to meet current European Union limits for pollutants harmful to human health. Consider the introduction of a Borough Wide LEZ to compliment the completion of the CMC Masterplan developments.

Recommendation 17/22AQ-B: Traffic congestion

Continue to progress highway schemes that improve the flow of traffic on Croydon's highway network. See recommendations made in 17/22GT-A1 and 17/22GT-A2.

Recommendation 17/22AQ-C: Vehicle emissions

It is predicted that from about 2017 the number of electric vehicles will increase significantly as technologies stabilise and reliability and costs reduce. The Council should therefore increase the initial provision of electric vehicle charging points to accommodate the growth. The Council should use the new development across the CMC as a catalyst for increase electric vehicle ownership or better to define car share clubs with a proportion of EV's.

Recommendation 17/22AQ-D: Awareness campaigns & driver training

Following success campaigns it is anticipated that the need to increase public awareness about the link between car travel, vehicle emissions and the damage it causes to human health and the environment will not be needed.

19.4.4 Road safety

Recommendation 17/22RS-A: Personal injury collision reduction targets

Review personal injury collision data annually to monitor the Council's progress in meeting the 2020 national targets (and any additional requirements placed on the Council by TfL) and identify problem areas that require intervention. This monitoring should be done as part of the annual update to the Council's Road Safety Plan.

Recommendation 17/22RS-B: Severity of personal injury collisions

Continue to introduce road safety schemes in areas identified by the updated Road Safety Plan.

Recommendation 17/22RS-C: Vehicle speed enforcement

Fixed/ mobile and average speed camera technologies to be used to enforce vehicle speeding in problem areas.

Recommendation 17/22RS-D: Road danger perception

Continue to introduce scheme that reduce the perception of road danger.

Recommendation 17/22RS-E: Education programmes & awareness campaigns

The recommendation is undefined until the availability of funding for education and awareness initiatives is known.

19.4.5 General traffic

Recommendation 17/22GT-A1: Junction capacity & traffic signals (Borough roads)

The Council should investigate improvements to the following cluster of problematic junctions.

- Southbridge Road j/w Lower Coombe Street (nr Old Town roundabout). This mini-roundabout is located on a heavy converging point of traffic flows and the lack of capacity leads to severe queuing on Brighton Road and Coombe Road. [GT.21]
- George Street j/w Wellesley Road & Park Lane (despite the underpass) experiences severe congestion as it tries to balance high general traffic, bus and pedestrian crossing activity with tram movements. This junction is also an identified high risk for accidents. [GT.22]
- Brighton Road/ Sanderstead Road junction is a priority junction unable to cope with the level of demand from side road traffic (Sanderstead Road) and pedestrians using the Zebra crossings on Brighton Road. [GT.23]

It is possible that improvements to the George Street j/w Wellesley Road & Park Lane [GT.22] will take place in the previous period (2012-2017) as part of the Wellesley Road scheme which removes the underpass and redesigns the junction.

Recommendation 17/22GT-A2: Junction capacity & traffic signals (TLRN)

The priority should be to reduce congestion and improve the east-west (A232) link at the Fiveways junction [GT.02]. It is possible that bridge strengthening/ replacement works could act as catalyst for a more substantial scheme that links the Croydon Road directly with Duppas Hill Road via a flyover. This would relieve demand at the Fiveways junctions allowing greater bus, cycle and pedestrian priority to

be implemented. Given current funding constraints it is likely this scheme may only be delivered in the next period of the Strategy (2022-2031).

Wellesley Road scheme proposals (as they stand) will remove the Croydon gyratory [GT.06] and replace it with a staggered signalised junction with at grade crossings.

Recommendation 17/22GT-B: Link capacity

The Council should to implement schemes which reduce impediments to traffic flows within links.

Recommendation 17/22GT-C: Car parking

Realisation of the CMC Masterplan development proposals provides an opportunity to rationalise car parking provision within the town centre. This may also require Planning interventions to safeguard areas within the CMC for new (more accessible) car parks.

Once a rationalisation of car parks has occurred introduce a VMS based car parking access strategy within the CMC.

Recommendation 17/22GT-D: Road network management

The Council should continue to manage road works in such a way as to reduce the impact of traffic flows.

Recommendation 17/22GT-E: Major highway infrastructure

Any improvement to major highway infrastructure within the Borough will depend on the urgency of the works and availability of funding from Network Rail and TfL.

19.4.6 Bus services

Recommendation 17/22BN-A: Bus service capacity

This recommendation is dependent on the work undertaken in the previous period (2012-2017) to accommodate trips generated by new development or mode shift. [12/17BN-A]

Recommendation 17/22BN-B: Bus network gaps

This recommendation is dependent on the work undertaken in the previous period (2012-2017) to accommodate trips generated by new development or mode shift. [12/17BN-B]

Recommendation 17/22BN-C: Night buses

This recommendation is dependent on the work undertaken in the previous period (2012-2017) to accommodate trips generated by new development or mode shift between 12 - 6am. [12/17BN-C]

Recommendation 17/22BN-D: Bus service delays

Following improvement works implemented along the A235 London Road and Brighton Road corridors [12/17BN-A] the Council should progress improvements to orbital bus routes by resolving problems along key bus corridors to the east and west of the CMC. Both corridors lie on the Busy Bus Route network, helping to justify any bus priority intervention. Specific improvements for each are as follows:

- East: Addiscombe Road/ Lower Addiscombe Road corridors. [BNI.09, BNI.10, BNI.11, BNI.23, and BNI.27].
- West: Getting across the A23. [BNI.03 and BNI.04].

For the A23 these should tie into works to improve the Fiveways and Croydon Road junctions.

In addition, it is recommended that to tie into the junction capacity improvements at the Whitehorse Road j/w Windmill Road and the completion of Phase 3 of the Wellesley Road scheme that a quality bus corridor is developed along Whitehorse Road (A212) towards Crystal Palace and West Norwood and along Selhurst Road (A213) towards Anerley and Penge.

Further development work along the A235 London Road and Brighton Road should explore the opportunity to introduce a Bus Rapid Transit Scheme by strengthening further the bus priority interventions along this corridor. These works could act as a precursor to a new north-south extension to Tramlink.

Recommendation 17/22BN-E: Bus stops

The Council in partnership with TfL should continue the bus stop improvement programme as defined in the previous period of this Strategy [12/17BN-E] and based around the four core principles of accessibility, shelter renewal, personal security and communication technology.

It is anticipated that works in this period of the Strategy will focus on improving the quality of the waiting environment, personal security and improved communication technology in the delivery of next bus arrival information. These measures should continue to encourage greater bus use through a step change improvement to bus stop quality. [BNI.40]

Recommendation 17/22BN-F: Bus stations & interchanges

Deliver the Wellesley Road interchange as defined by the Wellesley Road scheme which will relieve pressure on West Croydon station and offer opportunities to make more radical changes to the interchange between bus, tram and rail services. For example a new station entrance on Station Road. [BNI.42]

To improve bus facilities at East Croydon station there is an option to create a new bus station on Dingwall Road which will link to the proposed pedestrian footbridge and new station entrance. The footbridge will provide a new station entrance as well as a pedestrian link between Cherry Orchard Road and Lansdowne Road. [BNI.43]

Potentially improvements to the Addington Village could also be progressed should sufficient justification and funding be identified. [BNI.41]

Recommendation 17/22BN-G: Bus stands

Deliver alternative stands close to West Croydon station with possible new stands located within the Church Street car park or vacant land near the former Prospect First building. [BNI.45]

19.4.7 Rail services

The required track, train and station capacity (East Croydon) improvements will be much dependent on the delivery of HLOS2 and the performance of the train operating companies to meet the capacity issues that may arise as the recession lifts and growth rates increase. The following recommendations are therefore undefined until the Network Rail investment programme for this period is better understood.

- Recommendation 17/22NR-A: Network planning
- Recommendation 17/22NR-B: Network capacity
- Recommendation 17/22NR-C: Network infrastructure

19.4.8 Tramlink services

Recommendation 17/22LTL-A: Network infrastructure (stops and interchanges)

TfL to maintain a programme of tram stop maintenance, refurbishment, accessibility and personal security improvements. [LTL.01]

Opportunities to improve tram/ rail interchange to be progressed via the Wellesley Road scheme which proposes to create a new bus interchange on Wellesley Road thus relieving pressure West Croydon bus station and providing an opportunity to create a new station entrance of Station Road.

Recommendation 17/22LTL-B: Network capacity (trams and tracks)

Extension of Tramlink Line 4 services to Wimbledon and requiring associated terminus improvements at Wimbledon station [LTL.07]. Signalling and track improvements within the Central Croydon loop. [LTL.08]

Recommendation 17/22LTL-C: Network planning (local, branch & route extension)

Introduce the Morden extension to Sutton via TfL to deliver the local extension to Morden town centre.

Strengthening orbital movements through south London should be achieved by extending the Morden local extension to Sutton via St. Helier [LTL.11b] and the branch extension to Bromley via Beckenham Junction [LTL.17].

19.4.9 Cycling

Recommendation 17/22CN-A: Existing network

It is anticipated that the issues identified on the existing network would have been substantially resolved by this period of the Strategy and so no further recommendations are made until the performance of the revised network is known.

Recommendation 17/22CN-B: Gaps & networks

The Councils in partnership with Sustrans and Natural England should complete the Greenways network [CN.19] and make a start on works required to create a strategic network of dedicated routes into the CMC from the surrounding areas. [CN.20]

Recommendation 17/22CN-C: Skills, abilities & information

The Council should expand the hire scheme if deemed successful at encouraging new users but it anticipated that by this period within the Strategy, greater cycle ownership and the new routes connecting parks and green/ open spaces with residential areas will have reduced the demand for hiring cycles. [CN.22]

The Council should have a programme of providing updated information on new cycle routes and facilities (such as hire schemes, secure parking, leisure trip ideas, training and bike purchase promotions). [CN.23]

Recommendation 17/22CN-D: Cycle parking, maintenance & repairs

The Council working with developers and Network Rail should progress with the implementation of cycle hubs at West Croydon station and within an area to the south of the Croydon town centre, should demand at the East Croydon hub is sufficient to justify a second or third facility.

19.4.10 Walking

Recommendation 17/22WN-A: Targets

The Council should monitor key routes into the CMC to ensure the investment in routes infrastructure and area wide initiatives have produced an increase in walking activity. The Council should adjust its approach should the monitoring suggest measures are delivering the uptake in walking required. [WN.01]

Recommendation 17/22WN-B: Routes & infrastructure

The Council should review its Borough wide walking strategy [WN.02] and prioritise improvements accordingly. Unless significant new issues have emerged the Council should focus on reducing the severance caused by railway lines and major roads by making improvements to bridges and underpasses. [WN.16]

If by this time significant development within the CMC is complete then the introduction of a 'legible' London signing scheme to provide new visitors with better access to the expanded town centre facilities should be implemented.

Recommendation 17/22WN-C: Area wide initiatives

The Council should continue to prioritise improved walking routes through new development [WN.20], promote walking initiatives through the travel plan process [WN.21] and promote the expanded walking network of routes. [WN.22].

Introduce a 'Legible' London scheme within the CMC following completion of major works involved with the development sites. [WN.23]

19.4.11 Local centres & neighbourhood

Recommendation 17/22LC-A: Local area transport improvements (Broad Green)

The Council should progress with a Major scheme bid under the Council's third LIP to improve access and movement through Broad Green.

Recommendation 17/22LC-B: Local area transport improvements (Waddon)

The Council should progress with a Major scheme bid under the Council's third LIP to improve access and movement through Waddon.

19.4.12 Freight deliveries & servicing

Beyond 2017 it is difficult to anticipate the issues affecting freight and deliveries with the Borough without knowing the success of previous initiatives. The following recommendations are therefore to be confirmed once outstanding issues are better understood.

- Recommendation 12/17FDS-A: Freight activity & delivery restrictions
- Recommendation 12/17FDS-B: Innovative delivery & collections schemes
- Recommendation 12/17FDS-C: SLFQP

19.4.13 Taxi services

Recommendation 17/22TX-A: Taxi ranks

Investigate relocating the taxi rank at East Croydon station to a location currently occupied by the bus interchange as part of a new bus station facility on Dingwall Road. Buses will still need to serve stops outside the station but a linear arrangement may provide scope to have both buses and taxis outside the front of the station.

Increase ranks at the busier outlying railway stations such as Norbury and Norwood Junction if demand justifies an increase. [TX.01]

Recommendation 17/22TX-B: Taxi licences

Increase the number of All London (Green Badge) or Area 5 Suburban (Yellow Badge) licenses to reflect increasing demand. [TX.02]

Recommendation 17/22TX-C: Taxi fares (integration)

Undefined at this time.

19.4.14 How is this delivered?

Funding and resources require more detailed consideration once priorities are agreed.

19.5 Long term transport strategy (2022 to 2031)

19.5.1 Growth scenario (driver for change)

To accommodate growth and reduce the impact of travel on the environment, the following recommendations are made for this long term period of the BWTS. To better understand the spatial context of these proposals their location is illustrated in the Long Term (2022 to 2031) figure which can be found in Appendix E.

Note: Many of the Action Plans remain undefined in this period as works are dependent on what was achieved in previous periods of the Strategy. For example, if a large scheme is delayed then it would generally be carried forward thereby limiting what else could be achieved in the next period of the Strategy. If schemes are included in this period they are generally aspirational and based on achieving current levels of predicted growth.

19.5.2 Travel demand

Beyond 2022, local, national and international initiatives to manage travel demand and achieve greater levels walking, cycling and public transport use, it is difficult specify with any confidence the tasks needed to make further improvements. The following recommendations are therefore to be confirmed until the priorities for 2022 to 2031 are better understood.

- Recommendation 22/31TD-A: Accessibility targets
- Recommendation 22/31TD-B: Travel planning
- Recommendation 22/31TD-C: Car parking management
- Recommendation 22/31TD-D: Road user charging
- Recommendation 22/31TD-E: Planning requirements
- Recommendation 22/31TD-F: Travel reduction initiatives

The only possible option may be the introduction of a National or Regional road user charging scheme [22/31TD-D] which given current predictions is over 10 years away from being realised.

19.5.3 Air quality

Beyond 2022, local, national and international initiatives should have achieved improvements to air quality within Croydon. Without knowing the effectiveness of these measures or any changes to safe limits it is not possible to specify with any confidence any tasks needed to improve air quality.

The following recommendations are therefore undefined until such time as there is greater certainty on the issues affecting air quality.

- Recommendation 22/31AQ-A: Air quality targets (awareness campaigns)
- Recommendation 22/31AQ-B: Traffic congestion
- Recommendation 22/31AQ-C: Vehicle emissions
- Recommendation 22/31AQ-D: Awareness campaigns & driver training
- Recommendation 22/31AQ-E: Noise

The only possible recommendation for this period could relate to achieving a zero emission bus fleet in Croydon [22/31AQ-C]. This aspiration comes from previous plans by TfL to build a Hydrogen fuel plant near the Tramlink depot at Therapia Lane.

19.5.4 Road safety

Beyond 2021, when the National 2020 targets for personal injury collisions should have been met and number of road safety and road danger schemes have been implemented, it is difficult to identify what

other measures would be needed to achieve further significant improvements to road safety within the Borough.

The tasks required to meet the following recommendations are therefore to be confirmed once the road safety priorities for 2022 to 2031 are better understood.

- Recommendation 22/31RS-A: Personal injury collision reduction targets
- Recommendation 22/31RS-B: Severity of personal injury collisions
- Recommendation 22/31RS-C: Vehicle speed enforcement
- Recommendation 22/31RS-D: Road danger perception
- Recommendation 22/31RS-E: Education programmes & awareness campaigns

19.5.5 General traffic

Recommendation 22/31GT-A1: Junction capacity & traffic signals (Borough roads)

If previous programmes are achieved, improvements should be made to the South Norwood Hill corridor with a focus on the operation of the following two junctions.

- South Norwood Hill j/w Portland Road [GT.28]
- South Norwood Hill j/w Beulah Hill [GT.29]
- St. James's Road j/w Whitehorse Road or Newgate gyratory [GT.16]

Improvement to these junctions should bring about bus and pedestrian crossing benefits with the Newgate gyratory tying into Phase 4 of the Wellesley Road scheme.

Recommendation 22/31GT-A2: Junction capacity & traffic signals (TLRN)

It is anticipated that work to improve the Fiveways junction [GT.02] will continue into this period of the Strategy.

Recommendation 22/31GT-E: Major highway infrastructure

A decision on the replacement of the Croydon Flyover [MHI.01] could have significant implications on the surround road network and access to the CMC.

The following recommendations remain undefined at this stage:

- Recommendation 22/31GT-B: Link capacity
- Recommendation 22/31GT-C: Car parking
- Recommendation 22/31GT-D: Road network management

19.5.6 Bus services

Beyond 2022 it is difficult to predict the required actions to address issues on the bus network. The following recommendations therefore at this time remain undefined.

- Recommendation 22/31BN-A: Bus service capacity
- Recommendation 22/31BN-B: Bus network gaps
- Recommendation 22/31BN-C: Night buses
- Recommendation 22/31BN-D: Bus service delays
- Recommendation 22/31BN-E: Bus stops
- Recommendation 22/31BN-F: Bus stations & interchanges
- Recommendation 22/31BN-G: Bus stands

The only exceptions relate to the bus stop enhancement programme which due to the number of bus stops (over 1,000) will continue into 2022 and beyond [22/31BN-E]. Also, following improvement

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works to orbital bus routes to the east (Addiscombe Road and Lower Addiscombe Road corridors) and to the west (routes across A23 and towards the CMC) [17/22BN-D] the Council should further develop these corridors and explore opportunities to introduce a Bus Rapid Transit scheme. This would follow the scheme proposed along the A253 (London Road and Brighton Road) in the previous period of this Strategy. [17/22BN-D]

19.5.7 Rail services

The following recommendations are undefined until the Network Rail investment programme for this period is better understood.

- Recommendation 22/31NR-A: Network planning
- Recommendation 22/31NR-B: Network capacity
- Recommendation 22/31NR-C: Network infrastructure

19.5.8 Tramlink services

Recommendation 22/31LTL-A: Network infrastructure (stops and interchanges)

TfL to maintain a programme of tram stop maintenance, refurbishment, accessibility and personal security improvements. [LTL.01]

Possible improvements made to the Addington Village interchange as part of bus proposals to increase the stop and stand capacity of the bus station. []

Improvement to the urban realm of areas alongside tram tracks within the CMC. The use of grass beds or new styled power cable poles are possible ways to reduce the impact of tram infrastructure on the streetscape while more extensive development adjacent to the tram tracks may provide an opportunity to remove the poles in favour of building fixings.[LTL.04]

Recommendation 22/31LTL-B: Network capacity (trams and tracks)

Convert the heavy rail section between Harrington Road and Beckenham Junction to tram operation thereby allowing an improvement to the operation capacity of Tramlink between Arena and West Croydon. [LTL.10]

Recommendation 22/31LTL-C: Network planning (local, branch & route extension)

Should the proposals to introduce bus rapid transit along A235 Brighton Road and London Road [17/22BN-D] be a success then future conversion to a north-south tram route between the CMC and Purley should be progressed [LTL.18] with possible extensions via the CMC to Coulsdon in the south [LTL.19] and Brixton in the north [LTL.20].

19.5.9 Cycling

Beyond 2022 it is difficult to predict the needs of cyclists if what is proposed in the previous periods of the Strategy is completed. It is anticipated the step change in the number of people cycling to work, school or for leisure will create demand and drive forward new ideas of improving the network.

The only outstanding initiatives from the previous period of the Strategy relate to the completion of the strategy cycle route network into the CMC and to introduction of cycle hubs at either West Croydon station or a site somewhere to the south of the town centre.

The following recommendations are therefore to be confirmed once the success of the previous initiatives is known.

- Recommendation 22/31CN-A: Existing network
- Recommendation 22/31CN-B: Gaps & networks
- Recommendation 22/31CN-C: Skills, abilities & information

- Recommendation 22/31CN-D: Cycle parking, maintenance & repairs

19.5.10 Walking

Beyond 2022 it is difficult to predict how much further the walking network needs to be expanded or improved. It is anticipated that walking is a key means of accessing the CMC from surrounding residential areas and residential areas have good links to parks and the many green open spaces within the Borough. It is hoped therefore that this increased demand will drive forward new ideas for enhancing the network and maintaining the popularity of walking.

The following recommendations are therefore to be confirmed once the success of the previous initiatives is known.

- Recommendation 22/31WN-A: Targets
- Recommendation 22/31WN-B: Routes & infrastructure
- Recommendation 22/31WN-C: Area wide initiatives

19.5.11 Local centres & neighbourhood

Recommendation 22/31LC-A: Local area transport improvements (New Addington)

As part of possible major development proposals within New Addington the Council should progress local improvements to access and movement.

Recommendation 22/31LC-B: Local area transport improvements (Coulston)

As part of possible major development proposals close to Coulston the Council should progress local improvement to access and movement, particularly towards the two nearby railway stations.

Recommendation 22/31LC-C: Local area transport improvements (Norbury)

The Council should progress improvements to improve access and movement through Norbury.

19.5.12 Freight deliveries & servicing

See section 19.4.12. The following recommendations are to be confirmed once outstanding issues affecting Freight deliveries & servicing are better understood.

- Recommendation 12/17FDS-A: Freight activity & delivery restrictions
- Recommendation 12/17FDS-B: Innovative delivery & collections schemes
- Recommendation 12/17FDS-C: SLFQP

19.5.13 Taxi services

Beyond 2022 it is difficult to predict the improvement needed to taxi services across the Borough. It is however anticipated that if the CMC area is to grow as currently predicted, the demand for taxi services will be substantially greater than current demand and hence require an expanded rank at East Croydon station, West Croydon station, the High Street and potentially new ranks at other locations within the CMC.

The following recommendations are therefore to be confirmed until demand for taxi services from and expanded CMC are better understood.

- Recommendation 22/31TX-A: Taxi ranks
- Recommendation 22/31TX-B: Taxi licences
- Recommendation 22/31TX-C: Taxi fares (integration)

19.5.14 How will this be delivered?

Funding and resources require more detailed consideration once priorities are agreed.

19.6 The 'Top 10'

To focus the outputs from the Strategy the following give the Borough's 'Top 10' (in no particular order) for the period defined as short term i.e. 2012 through to 2017. Some initiatives are not within the Borough's direct control but should be able to influence partners of other organisations.

- 1. Tramlink Line 4 (Therapia Lane to Arena).** These additional trams (4-6 vehicles) will help ease overcrowding on the central sections of the Tramlink network and act as a precursor to increasing the frequency the service to Wimbledon (again to ease congestion between Mitcham to Wimbledon). This will require additional Trams, a double tracking of the single track between Mitcham Junction and Mitcham and a upgrading the Wimbledon terminus to either two platforms or adding a layover siding.
- 2. Wellesley Road (Phase 1 with Connect2).** Phase 1 of the Wellesley Road scheme will establish at-grade pedestrian and cycle crossings on Wellesley Road and Park Lane. Phases 2 (removing the Croydon underpass and a new bus interchange in Park Lane/ Park Street) should also start in this period. The Croydon Park Links component of Connect2 will create a continuous route for pedestrians and cyclists between Wandle Park and Lloyd Park through the CMC with an additional link to South Norwood Country Park.
- 3. Greenways.** Introduction of routes for cycling and walking intended to encourage people to travel in ways that benefit their health and the environment. There are 11 routes currently under consultation (N1-N6 and S1-S5) and they compliment the Connect 2 programme. The routes form a key part in improving access between the town centre and nearby green space, including links to numerous schools. As part of these cycle network improvements a refresh of the existing LCN+ network is required.
- 4. Smarter Travel Initiative.** A programme of measures to promote sustainable and healthier types travel while also helping to influence behavioural change in trip making decisions. This will ensure new development within the CMC achieves higher mode share by public transport than existing land uses.
- 5. Cycle Hubs.** The introduction of cycle hubs within the CMC (East Croydon and possible West Croydon stations) to provide secure sheltered parking with cycle repair and maintenance facilities. A possible third cycle hub could also be introduced at Purley.
- 6. CMC bus stands.** Introduce new bus stands within the CMC that provide increased capacity and better driver/ rest facilities.
- 7. East Croydon and West Croydon Stations.** East Croydon - Expansion of platform, concourse and track capacity. Better pedestrian links to Wellesley via George Street or Lansdowne Road. [NR, LBC, Developer]. West Croydon - Enhancement to areas outside the station to provide better bus/ tram interchange and walking routes along London Road and North End.
- 8. Junction Improvements.** A number of road junctions to the north of the CMC struggle to accommodate all the competing demands placed on them by general traffic, bus, cycle and pedestrian crossing movements. There is a need to review their operation and geometry to identify user priorities and scope for improvement.
- 9. Air Quality.** Promote cleaner engine technologies for public and private vehicles including bus and taxi fleets.
- 10. Thornton Heath.** Major Scheme bid to improve this town centre and links to it. This should include public realm improvements to the High Street, a new section of the LCN+ linking it with the CMC and BRITS School.

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Beyond this 5 year period (2012-2017) the focus should be on improving the A23 and Wellesley Road although work will need to progress beforehand to develop feasible and costed options.

A23 improvements should focus on reducing congestion and the severance caused by A23 traffic to east-west movements. Potential scheme include junction improvements and signal works at Purley Cross, Fiveways, Croydon Road, and the Lombard roundabout with complimentary measure to enhance the attractiveness of the public transport offer between Purley/ Coulsdon and the CMC (e.g. bus rapid transit, parkway services or Tramlink extensions).

Realisation of the Wellesley Road scheme will help secure major economic benefits in the CMC as it integrates the emerging masterplan areas to create a high quality and attractive public realm. Free pedestrian and cycle movement; efficient access to improved car parks; better public transport integration are just some of the measure that will transform the 'look and feel' of Croydon's city centre.