



Streets and Walkways Sub (Planning and Transportation) Committee

Date: MONDAY, 23 FEBRUARY 2015
Time: 1.45 pm
Venue: COMMITTEE ROOMS, 2ND FLOOR, WEST WING, GUILDHALL

Agenda Item 5G

Appendix 1 - Cycle Superhighways – The Mayor's Decision

For Information
(Pages 1 - 70)

John Barradell
Town Clerk and Chief Executive

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This paper will be considered in public

1 Summary

- 1.1 TfL's Road Modernisation Plan is designed to get more from the road network and help London grow. It contains five core portfolios, which together make up the £4bn roads investment in Surface Transport's ten year business plan. The Cycle Superhighways (CS) programme is a key element within the £0.9bn cycling portfolio to deliver the 'Mayor's Vision for Cycling in London', which seeks to double cycling over the next 10 years and transform London's streets and spaces to places where cyclists feel they belong and are safe. £0.2bn from the cycling budget has been committed to the CS programme, to provide TfL with the resources to deliver significant improvements, including the proposed East-West route.
- 1.2 The CS programme is essential for improving the levels of service experienced by the hundreds of thousands of people already cycling daily in London, as well as driving future demand for cycling. The proposed routes deliver the backbone for the wider cycling infrastructure proposals, linking Quietways and existing London Cycle Network (LCN) routes to key home and workplace destinations, providing attractive high-capacity routes for commuters and leisure users alike.
- 1.3 This paper seeks Board approval for the construction of four new Cycle Superhighways (CS), and upgrades to the four existing CS routes. The approvals sought include project and procurement authority and delegated authority to TfL Officers for certain matters. The proposals covered by this paper are:
- (a) East-West CS (Phase 1): Tower Hill to Westbourne Terrace (consultation concluded November 2014);
 - (b) North-South CS: Elephant & Castle to King's Cross (consultation concluded November 2014);
 - (c) CS5 Inner: Oval to Pimlico (consultation concluded September 2014);
 - (d) CS2 Upgrade: Bow to Aldgate (consultation concluded November 2014);
 - (e) CS1: Tottenham to the City (consultation to start February 2015); and
 - (f) Upgrades to CS3, CS7, and CS8: various locations (rolling programme of minor projects, currently at detailed design).

ID: ST-PF108 Cycle Superhighways programme				
Existing Financial Authority	EFC	Existing Project Authority	Additional Authority Requested	Total Authority
£216.5m	£216.5m	£66.6m	£95.1m	£161.7m

Authority Approval: The Board is asked to approve budgeted project authority of £161.7m within the TfL Business Plan, including an additional £77.5m procurement authority.

Outputs and Schedule: To undertake construction or upgrades of a number of Cycle Superhighways routes (or parts of routes) by the end of 2016.

- 1.4 There were seven fatalities in the 18 months between July 2013 and December 2014 along the routes covered by these projects. Through use of segregation kerbs, quiet backstreet routes, and by physically separating cyclists in space and time along links and at junctions, the proposed routes would seek to substantially reduce the interactions between cyclists and motor traffic and eliminate or substantially reduce the existing numbers of collisions. The CS projects set out in this paper are expected to directly attract an additional 3,800 cyclists per day in the AM peak alone, and lead to over 110 fewer cycling collisions per year.
- 1.5 Furthermore, the CS programme seeks to deliver wider benefits for London, including enhancements to the urban realm and improvements to pedestrian safety. For example, the proposals include a net increase to footway space and the introduction of 30 new signalised pedestrian crossings.
- 1.6 Following consultation with stakeholders during design development, further public consultations were completed on proposals for the East-West, North-South, CS5 Inner and CS2 Upgrade routes throughout autumn 2014. The consultations generated considerable public interest, with over 25,000 responses. Between 72 per cent and 89 per cent of respondents supported or partially supported the proposals¹.
- 1.7 A number of changes have been made to the designs in response to comments received as part of the consultations, in particular on the East-West route. This includes retaining two lanes of traffic along most of the westbound carriageway between Tower Hill and Westminster Bridge, reducing forecast traffic delays along this section in the morning peak by around 60 per cent compared to the pre-consultation designs.
- 1.8 The final proposals are considered to strike an appropriate balance between the objective to provide safer, fast, direct, continuous and comfortable cycle routes into and across central London – knitting together the wider network of cycling infrastructure, and capable of catering for higher future demand – with the need to

¹ This figure rises to 95 per cent when submissions from the London Cycling Campaign online petition are included.

keep traffic flowing into and around central London. It is considered that the potential step change in safety benefits – and the importance of the routes to the overall network within the wider cycling portfolio business case – will make a substantial and positive contribution to London's transport network.

- 1.9 In addition to the proposals set out in this paper and subject to public consultation and technical feasibility, at a later date the Board may be asked to approve the remaining Project Authority for construction of the following further routes: CS4 Phase 1 (Deptford to the City), East-West Phase 2 (Acton to Westbourne Terrace), CS11 (Brent Cross to the West End) and CS5 Extension (New Cross to Lewisham/Greenwich).
- 1.10 Detailed cost tables describing the breakdown of the £161.7m are included in the financial implications contained in Section 7 and in Appendix 1.

2 Recommendation

2.1 The Board is asked to:

(a) note and give detailed consideration to this paper;

(b) note and endorse TfL's Consultation Responses (provided to Board Members separately) to the public consultations on each of:

- (i) the East-West Cycle Superhighway Phase 1 (Westbourne Terrace to Tower Gateway);**
- (ii) the North-South Cycle Superhighway (Elephant and Castle to King's Cross);**
- (iii) Cycle Superhighway 5 Inner (Oval to Pimlico); and**
- (iv) Cycle Superhighway 2 Upgrade (Bow to Aldgate);**

(c) approve the final plans for each of:

- (i) the East-West Cycle Superhighway Phase 1 (Westbourne Terrace to Tower Gateway);**
- (ii) the North-South Cycle Superhighway (Elephant and Castle to King's Cross);**
- (iii) Cycle Superhighway 5 Inner (Oval to Pimlico); and**
- (iv) Cycle Superhighway 2 Upgrade (Bow to Aldgate);**

as set out in this paper and in the Consultation Responses referred to at paragraph 2.1(b) above but excluding the matters subject to further consultation as described in paragraph 2.1(e) below;

(d) approve the proposals set out in this paper for:

- (i) public consultation on the Cycle Superhighway 1 proposals; and**

materially alter the Approved Plan and do not alter the route alignment of the Cycle Superhighway contained within that plan;

- (j) grant project authority in the sum of £95.1m (to increase existing project authority from £66.6m to make a total of £161.7m) for the purposes of implementing each and all of the Approved Plans (including as amended further to paragraph 2.1(i) above) and any proposals approved in accordance with paragraph 2.1(f) above, and the construction and delivery of the Cycle Superhighways in accordance with the Approved Plans and any such proposals;**
- (k) grant procurement authority in the sum of £77.5m for the purposes of procuring the implementation of each and all of the Approved Plans (including as amended further to paragraph 2.1(i) above) and any proposals approved in accordance with paragraph 2.1(f) above, and procuring the construction and delivery of the Cycle Superhighways in accordance with the Approved Plans and any such proposals; and**
- (l) authorise the TfL Officers to:**
 - (i) finalise the terms of the contracts for the purposes of implementing each and all of the Approved Plans and any proposals approved in accordance with paragraph 2.1(f) above and constructing and delivering the Cycle Superhighways in accordance with the Approved Plans and any such proposals (“the Agreements”);**
 - (ii) agree and execute (whether by deed or otherwise on behalf of TfL or any Subsidiary (as appropriate)) any documentation to be entered into in connection with the completion and implementation of the Agreements and any of the matters referred to in them (including, without limitation, all agreements, deeds, guarantees, indemnities, announcements, notices, contracts, certificates, letters or other documents); and**
 - (iii) do all such other things as they consider necessary or desirable to facilitate the execution and implementation of the Agreements and the matters referred to in them.**

2.2 The following TfL Officers shall have delegated authority:

- (a) TfL Officers: the Commissioner, Managing Director Finance, Managing Director Surface Transport and General Counsel.**

3 Background

- 3.1 Cycling is already a well-established mode of transport in the capital, and has doubled over the last decade. It currently accounts for nearly 600,000 trips a day in London. This is almost as high as the daily trips made by London Overground and the DLR combined, with cyclists now making up around a quarter of rush hour traffic in central London².**

² Cycle Census', July 2013

- 3.2 Given the predicted population growth, the number of trips made by bike will also rise. Without providing infrastructure to specifically accommodate cyclists on the TLRN and other main roads, this increase is expected to have a negative impact on general traffic flow and bus journey times.
- 3.3 In 2008, the Mayor set out an aspiration in his 'Way to Go' vision for transport in London to provide decent cycling facilities along Victoria Embankment. The Mayor's Transport Strategy (May 2010) further described plans for 'a network of Cycle Superhighways running from Outer and Inner London to central London' to 'improve conditions for existing cycle commuters, attract those who do not currently cycle to work, and encourage others to start cycling'.
- 3.4 In April 2012 the Mayor committed to promoting the CS programme to 'Go Dutch' standards – with routes separated from traffic on main roads.
- 3.5 The 'Mayor's Vision for Cycling in London' (March 2013) set out the detail for an ambitious programme of work to deliver a step-change in the quality of provision for London's cyclists. Included in these plans are a number of key projects intended to generate and support a large anticipated growth in cycling, with a target of 1.5 million cycle journeys per day by 2026. Achieving this target is expected to reduce pressure on public transport services, and help create a healthier, cleaner London.
- 3.6 CS routes are the backbone of the 'Vision' – high capacity routes that provide safer, fast, direct, continuous and comfortable ways of getting into and across central London by bicycle along recognised commuter routes. The CS play a central role in realising the benefits of the Cycling Vision Portfolio both geographically – by covering areas with high demand – and also in terms of attracting people who do not currently cycle for safety reasons.

"My flagship route – a true Crossrail for the bicycle – will run for at least 15 miles, very substantially segregated, from the western suburbs, through the heart of the Capital, to the City, Canary Wharf and Barking in the east. It will use a new segregated cycle track along, among other places, the Victoria Embankment and the Westway flyover."

'The Mayor's Vision for Cycling in London', March 2013

- 3.7 According to the 'Analysis of Cycling Potential', 4.3 million trips currently made by mechanised modes could be cycled. Over a quarter (26 per cent, over 1.1 million) of these potentially cyclable trips are in the central sub-region. Of the 1.1 million, 70 per cent of these could be made by people in market segments with the greatest propensity to cycle³. Therefore there is a higher likelihood of actually achieving a mode shift to bike for these trips compared with other areas.
- 3.8 Moreover, nearly half (47 per cent) of all current cycling trips in Greater London have an origin and/or destination in the central sub-region, making this the region with the highest proportion of unrealised potential. The analysis of cyclable trips includes London residents only, but in addition, the central sub-region attracts a high number of commuters and visitors from outside London who also either cycle or offer potential for increased cycle travel.

³ Analysis of cycling potential by scheme, TfL Policy Analysis, October 2013

- 3.9 In order to convert potentially cycled trips to actual trips, known barriers to cycling need to be overcome. The CS will provide easy to navigate, high volume cycle routes into and across central London which will contribute towards overcoming most of the key barriers and tackle all three of the most important barriers to cycling faced by non-cyclists⁴, therefore improving the likelihood of converting the potentially cyclable trips to trips actually cycled.
- 3.10 Dramatic increases in cycling numbers in central London are matched by a reduction in traffic flows along the routes covered by this paper⁵. Motor traffic on the Victoria Embankment (East-West route) has fallen by 24 per cent in the ten years between 2004 and 2013⁶, with motor traffic on Upper Thames Street by 28 per cent over the same period. Motor traffic on Farringdon Street (North-South route) has fallen by 44 per cent.
- 3.11 Safety, or the perception of safety, is often the main reason both would-be and existing cyclists give about why they do not cycle, or do not cycle more⁷. The segregated nature of the majority of the proposed CS infrastructure – with separation from other road users in time and space on both links and at junctions – breaks down these significant barriers: the perception that cycling is unsafe, and that there is a lack of specific infrastructure for cyclists.
- 3.12 The proposed new routes would connect Quietways, existing CS and other local cycle routes, and integrate with the Central London Cycling Grid with safer junction designs that meet the needs of those joining and leaving the routes. Without the CS, the cycling network in London would effectively remain a network of low capacity 'B' Roads with variable infrastructure provision, unconnected and unsupported by high quality, high capacity cycling routes.
- 3.13 Four CS routes have been completed to date (CS2, CS3, CS7 and CS8) – the first two pilot routes in July 2010 and the second pair of routes in July 2011. These routes have seen an average 77 per cent increase in cycling trips since they opened with generally positive user responses⁸. However, there has also been criticism from campaign groups that these routes lack physical separation between cyclists and other traffic. These existing routes will be upgraded to meet the Mayor's commitment to improving the design standards for cycling infrastructure in London, with funding targeted at collision hot spots, including a substantial upgrade to CS2 between Bow and Aldgate.
- 3.14 A set of designs for future Cycle Superhighways has been developed by TfL in line with the 'Mayor's Vision for Cycling in London', and in consultation with a large number of key stakeholders along the proposed routes. The proposed routes combine, on the one hand, an existing lack of facilities for cyclists with, on the other hand, some of the highest cycle flows in central London. Already, a cyclist is observed every two to three seconds in the AM peak hour at Parliament Square on the proposed East-West route and at Blackfriars Bridge on the

⁴ These are: Lack of Confidence, Fear and Vulnerability and Identification and Attractiveness of routes.

⁵ Source: DfT annual traffic counts

⁶ Source: DfT annual traffic counts

⁷ Identified through various research including annual Attitudes to Cycling surveys; Cycling in London (2008) and Cycling behavioural survey (2010)

⁸ Cycle Superhighways Evaluation Report, 2012

proposed North-South route – representing a vehicle modal share of 37 per cent at Parliament Square and 52 per cent at Blackfriars⁹.

- 3.15 The proposed designs demonstrate substantial safety benefits for cyclists (with over 110 fewer cyclist collisions expected every year), address recommendations from the London Assembly and campaign groups, and cater for the growing demand for cycling.

“Political will is needed to make cycling a mainstream form of transport that is supported by high quality, safe cycling routes. There could, and should, be more segregated cycle space in London. Currently, decisions to give cyclists protected space are often turned down because there is a lack of political will to take space from motorised traffic.”

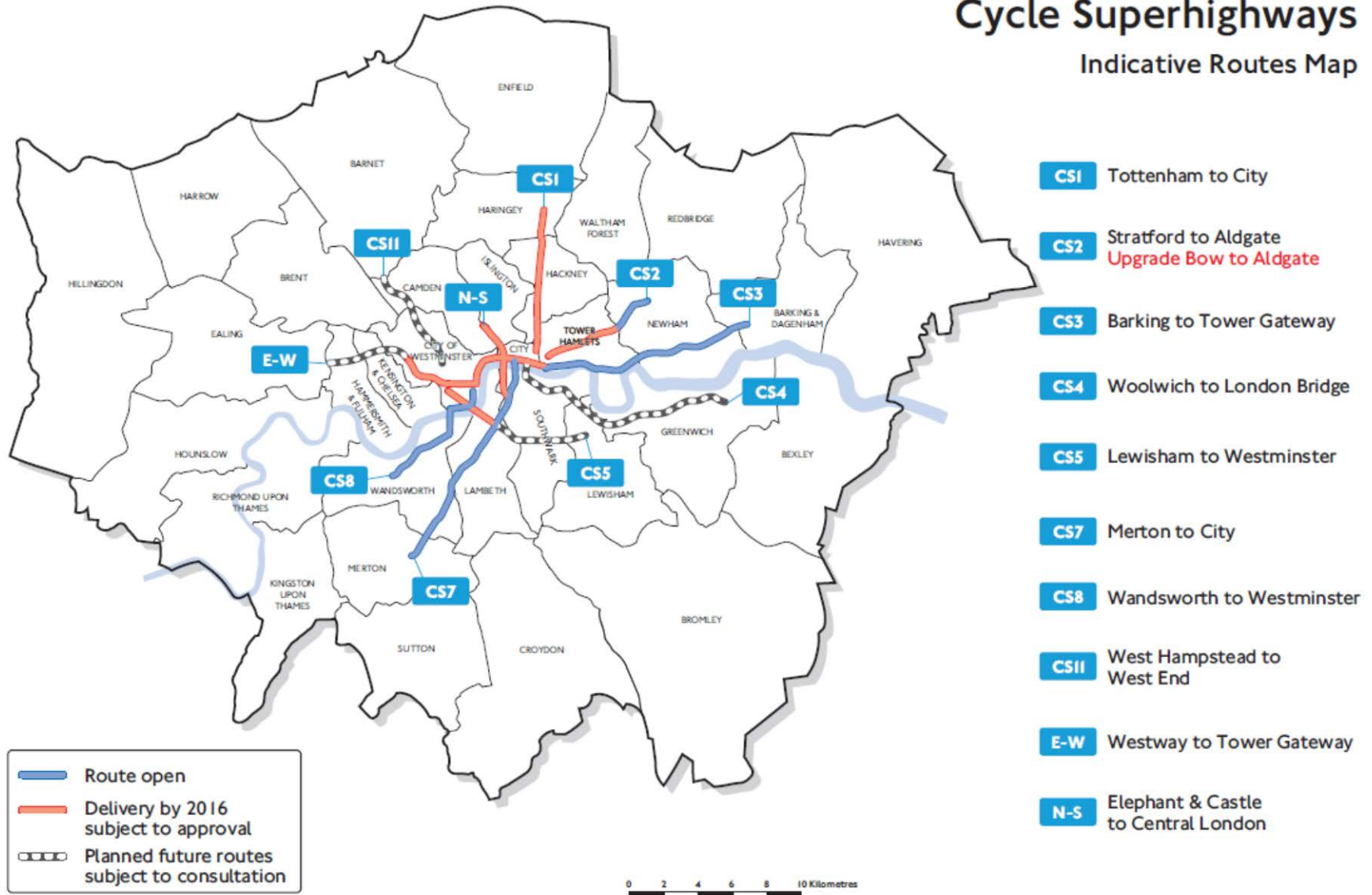
‘Gearing Up’, London Assembly Transport Committee, November 2012

⁹ ‘Cycle Census’, July 2013

4 The Proposed Schemes

Cycle Superhighways

Indicative Routes Map



The Cycle Superhighways programme will continue to evolve and is subject to further change

Version 4 - 14.1.15

- 4.1 The proposed routes have undergone extensive design optioneering to consider the needs of all road users in line with the 10 Surface Transport Outcomes.
- 4.2 The Mayor's Design Advisory Group was consulted at an early stage, and offered advice on innovative concepts for the new Cycle Superhighways and how these should translate into tangible high quality design and delivery. It was recommended that high specification materials and design should be a determining factor for the success of the schemes (for example, high quality lighting and paving), and that many conditions along the routes would require non-standard solutions to achieve the objective of creating better places for all.
- 4.3 The overarching design context has been driven by recommendations from the Roads Task Force relating to Street Family Types, which provide a consistent methodology for classifying different zones of London depending on the characteristics of the area (for example, an area with a medium 'movement' function and medium 'place' function is classified as a High Street; high 'movement' function, low 'place' function is an arterial road etc). These street types have been incorporated into the revised London Cycling Design Standards, along with recommendations regarding the type of cycling infrastructure likely to be suitable for a particular zone.
- 4.4 Key design features include:
- (a) Separation of cyclists from general traffic at junctions (where the majority of cyclist collisions occur), using innovative industry-leading solutions.
 - (b) Segregated or semi-segregated cycle lanes on the links, with two-way tracks proposed for the East-West, North-South and CS5 Inner routes (or use of quiet, low traffic routes).
 - (c) Facilities to help cyclists safely bypass bus stops.
 - (d) A net increase in the number of pedestrian crossings across the programme.
 - (e) Improvements to the urban realm.
- 4.5 The biggest single challenge in delivering the wider cycling programme is reduced road capacity, which potentially leads to changes in traffic patterns and traffic delay. The predicted benefits and impacts of the proposed routes have been documented following traffic modelling, and communicated to stakeholders through public consultation. Further information is provided in Appendices 2 and 3.
- 4.6 The traffic models, which have been used to evaluate the traffic impacts, take account of a new approach to using traffic signals to manage the movement of traffic at certain key locations. The timings and phasing at these signalised junctions will be changed to more effectively control the flow of traffic on certain routes, in specific directions and at different times. The objective of this operational programme is to ensure that traffic keeps moving around and through a number of other transformational road schemes which, subject to public consultations, are proposed for construction from 2015 and include the CS referenced in this paper.

- 4.7 TfL's £200m Bus Priority programme will support London's economy by reducing the impact from expected increases in traffic levels and congestion on bus journey times and reliability, by the easing of movement through key junctions along identified bus routes. It will also unlock Opportunity Areas identified in the London Plan, increasing the bus modal share at these locations. Achieving these aims will protect the bus passenger experience at designated locations throughout London; and enable London to continue moving, growing and working.
- 4.8 Funding from the Bus Priority programme has been ring-fenced to target improvements on those bus routes potentially impacted by new cycling infrastructure, in order to rebalance time lost and improve reliability. Proposals will help to safeguard bus journey times and reliability by easing traffic and movement at key junctions.
- 4.9 During design development, a number of stakeholders queried whether lighter infrastructure – for example, mandatory cycle lanes – would alleviate impacts on traffic. In the majority of cases a similar reduction in capacity would be required for dedicated mandatory cycle lanes (which comprise only coloured surfacing and lines) as for segregated infrastructure, with the latter offering substantially greater benefits, particularly for the “near market” (those with high potential to start cycling, but who do not yet do so). Data recently collected from the fully segregated CS2 between Bow and Stratford showed 95 per cent of cyclists in the PM peak used the segregated facilities.
- 4.10 Another consideration when developing the wider cycling programme is the impact on pedestrians. In many cases there will be an increase in signalised pedestrian crossings, bringing safety benefits. However, in some locations changes to signal timings would lead to longer wait times for pedestrians.

Public consultation

- 4.11 Following consultation with stakeholders during design development, public consultations were completed for the East-West, North-South, CS5 Inner and CS2 Upgrade routes throughout autumn 2014. Proposals were reviewed and substantially developed following feedback from the public and stakeholders. Both the benefits of the schemes – and their anticipated impacts on other modes – were detailed in the consultation materials. The proposals were publicised through the press, the TfL website, leaflet distributions to addresses in postcode sectors touching 0.25 miles of the routes (0.5 miles for East-West and North-South), as well as emails to many thousands of registered Oyster users, Cycle Hire members, and Congestion Charge payers (2 million emails for East-West and North-South). Over a hundred stakeholders were given individual briefings, and multiple events were held both on the routes and with specific stakeholder groups – such as the freight and taxi industries.
- 4.12 In collaboration with the Royal Parks, a separate consultation is planned on proposed cycle facilities in and around Hyde Park and St James's Park on the East-West route in early 2015. Comments were invited on the proposed route alignment and high-level design concept in Hyde Park as part of the September 2014 consultation.

- 4.13 A separate consultation is also planned on the detail of the northern section of the North-South route (north of Farringdon station), on the London Borough of Camden's roads. CS1 is planned to start consultation in February 2015.

Road Safety Audits

- 4.14 TfL follows robust Road Safety Audit (RSA) procedures for all highways projects – including the Cycle Superhighways - as set out in the Design Manual for Roads and Bridges. This process involves a complete examination of future road improvements by an independent, multidisciplinary team which estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users. The process spans a number of stages, with Stage 1 completed at the end of Preliminary Design and Stage 2 at the end of Detailed Design.
- 4.15 Draft Stage 1 RSAs were completed prior to public consultation, with a number of changes made to the designs to reflect safety auditor recommendations. Stage 1 RSAs are nearing completion, incorporating final design amendments following public consultation, as these design amendments will form part of the 'Client's Response' section of the safety audit documentation. In some cases where the post-consultation design changes are considered significant, new Stage 1 RSAs have been undertaken. Stage 2 RSAs will be finalised prior to construction start of each work package.

Equality target groups

- 4.16 In developing the designs of the routes, TfL closely considered the needs of all users throughout the design process. In particular TfL:
- (a) Undertook an Equality Impact Assessment (EqIA) at the outset of the project and throughout design development, to review potential impacts on equality target groups, including disabled people (see also Section 5 and the EqIAs at Appendix 5).
 - (b) Carried out public consultations, including targeted engagement with specific users such as (amongst many others): Royal National Institute of Blind People, Age Concern, Transport for All, and the National Autistic Society.
 - (c) Carried out PERS surveys at potential problem locations. PERS – or 'Pedestrian Environment Review System' – is a walking audit tool used to assess the level of service and quality provided for pedestrians across a range of pedestrian environments, with specific consideration of mobility impaired users.
 - (d) Considered non-motorised users throughout design development, to ensure schemes fully consider the accessibility, safety, comfort and convenience requirements of non-motorised users – with particular consideration given to the needs of disabled people, who may use equipment such as wheelchairs.
 - (e) Ensured compliance with established guidance – such as the Design Manual for Roads and Bridges – which includes detailed requirements for disabled people.

4.17 Further detail for each individual route is provided below:

East-West Cycle Superhighway (Phase 1 – Tower Hill to Westbourne Terrace)

CSEW Strategic Context

- 4.18 The proposed East-West Cycle Superhighway (CSEW) runs from Tower Hill in the east to Westbourne Terrace in the west. The future Phase 2, which is outside the scope of this paper, would further connect central London to west London via the A40 Westway flyover. A cyclist currently uses the proposed route every 2 seconds in the busiest areas (peak hour, both directions) – 2,270 cyclists in the AM peak have been counted at Parliament Square (eastbound)¹⁰. The route would connect with the proposed North-South route at Blackfriars, providing important connections to south London and King’s Cross. The route passes through the London Borough of Tower Hamlets, the City of London, the City of Westminster, and the Royal Parks, passing key destinations such as the Tower of London, Parliament Square and Buckingham Palace.
- 4.19 Four ‘Better Junctions’¹¹ are located on the route, to be completed by the end of 2016 – Tower Hill, Parliament Square, Spur Road Gyratory and Lancaster Gate Gyratory. These schemes are included in the CSEW scope.
- 4.20 The ‘Westminster Conservation Area Audit 2008’ concludes that Parliament Square suffers from the high volume of traffic on routes around it, which has an adverse effect on people using the square, especially the central area, and on the surrounding buildings – thus detracting from the visual amenity of the area and hampering access to its centre. Few pedestrians visit the central square, largely due to the lack of crossings. Consequently, Westminster City Council has committed to working with partner organisations to improve traffic management and landscaping. The CSEW design directly addresses many of these issues, by providing additional pedestrian crossings, more footway space for pedestrians, and reducing the number of traffic lanes around the square as well as dramatically improving cyclist safety.
- 4.21 CSEW forms part of Westminster City Council’s draft ‘Cycling Strategy’, and supports the aspirations set out in an independent report commissioned by Parliamentary Estates, ‘The Reintegration of the Westminster World Heritage Site’ – particularly in relation to improved pedestrian facilities.
- 4.22 City of London’s ‘City Together Strategy’ seeks to encourage walking and cycling safely – particularly to work – as well as to support sustainable tourism through promoting greater use of public transport, walking and cycling. CSEW supports these aims by providing safer cycling connections into the heart of the City, as well as an attractive, protected cycle route for tourists between key tourism hubs at the Tower of London and Parliament Square. Some negative impacts for pedestrians have been identified in the City of London, relating to footway cutbacks discussed later in this paper, balanced by the introduction of new pedestrian crossings.

¹⁰ ‘Cycle Census’, July 2013

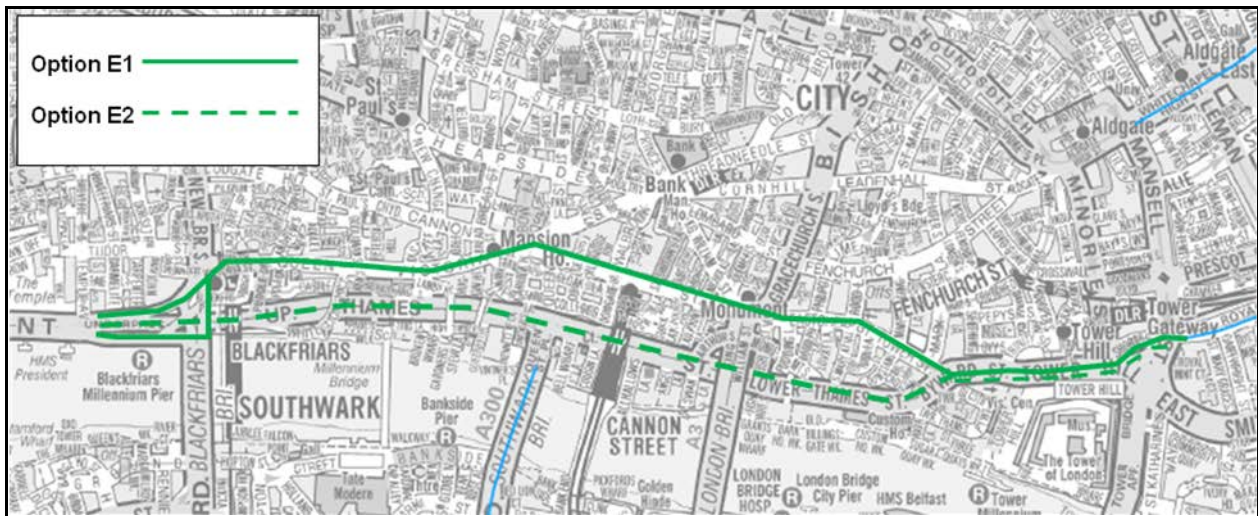
¹¹ A programme to substantially redesign 33 significant London junctions, to improve facilities for cyclists and pedestrians.

CSEW Design and Route Rationale

4.23 During the feasibility stage, numerous route options were considered incorporating the Victoria Embankment area, a key requirement set out in the 'Mayor's Vision for Cycling in London'. These included:

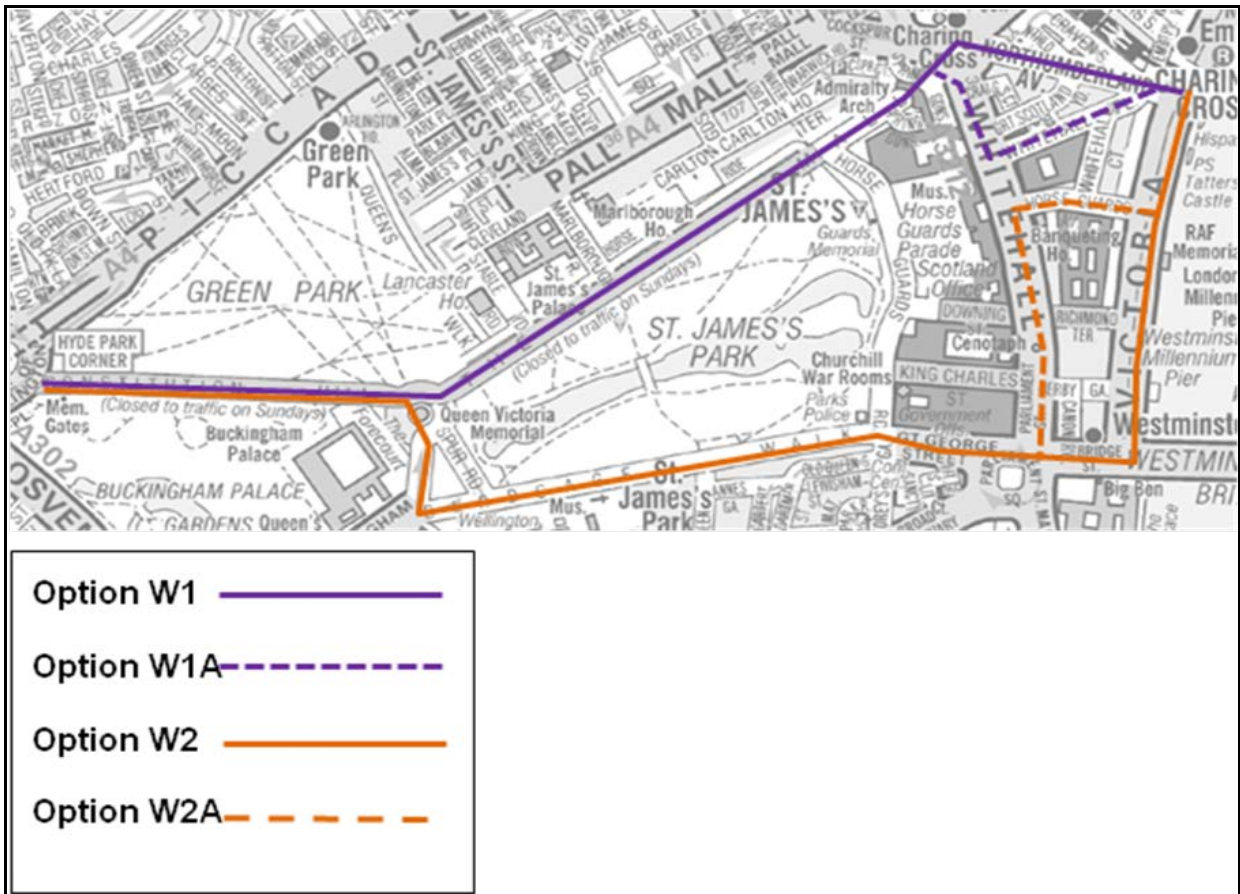
Eastern section (from Tower Gateway/CS3 to Victoria Embankment)

- (a) Option E1 via Queen Victoria Street and Cannon Street in City of London.
- (b) Option E2 via Upper and Lower Thames Street on TLRN.



Western section (from Victoria Embankment to Constitution Hill)

- (a) Option W1 via Northumberland Avenue, Trafalgar Square, The Mall.
- (b) Option W1A via Whitehall Place, Whitehall, Trafalgar Square, The Mall.
- (c) Option W2 via Bridge Street, Parliament Square, Birdcage Walk.
- (d) Option W2A via Horse Guards Ave, Whitehall, Parliament Square, Birdcage Walk.



- 4.24 An assessment was carried out to analyse the options, scoring the routes against positive and negative impacts on the Surface Outcomes and CS Programme objectives with consideration of deliverability risks. Key stakeholders in the affected areas were consulted during this process to help inform the recommendations, including the City of London and the City of Westminster where the routes included sections on borough highway.
- 4.25 Data from the 'Cycle Census' was analysed to help identify cyclist desire lines along the route, and collision data was overlaid to target areas for improved cycling infrastructure. The potential wider traffic impacts were also considered, with assumptions made about traffic lane removal and junction capacity along each route ahead of detailed traffic modelling at concept design stage.
- 4.26 Following the options assessment, options E2 and W2 were recommended to be taken forward to concept design stage. The recommendations were largely driven by:

Eastern section – E2

- (a) Strong preference from the City of London for an Upper and Lower Thames Street route rather than a Queen Victoria Street route.
- (b) Width constraints on Queen Victoria Street and Cannon Street – including areas with one narrow traffic lane in each direction, and narrow footways.
- (c) The higher number of bus services on route E1 compared to E2.

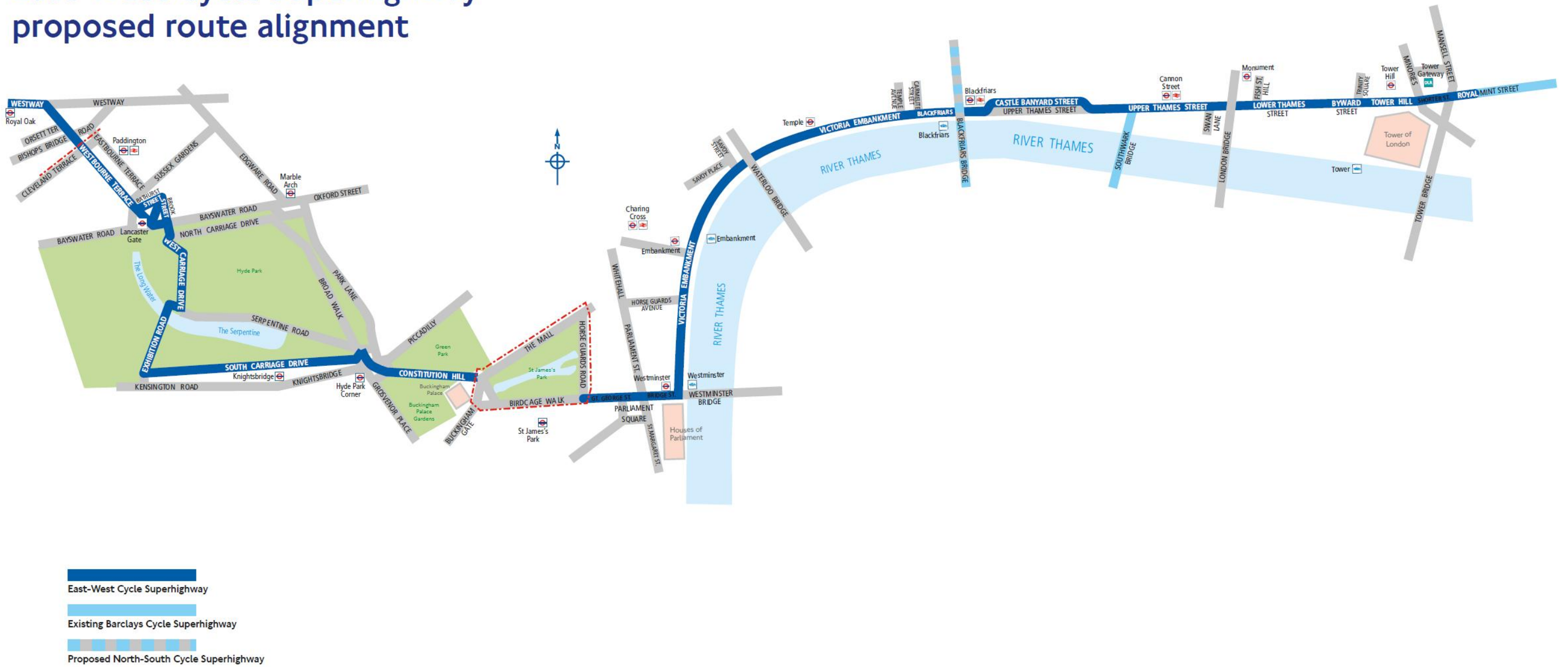
- (d) Higher volume of frontage activity on route E1 compared to E2; limited parking and loading provision on E2 compared to E1.

Western section – W2

- (a) W2 was judged to provide better connectivity to other popular cycle routes.
- (b) W1 provided less opportunity for physical segregation, a key requirement set out in the 'Mayor's Vision for Cycling in London'.
- (c) The significantly higher number of bus stands and stops on route W1 compared to W2: provision of bus stop bypasses or re-routing of bus operations was not feasible owing to the limited alternative locations and high pedestrian numbers, predominantly tourists.
- (d) W1 required the use of Trafalgar Square – one of the busiest junctions and a key network constraint.

4.27 The preferred alignment is provided on the map below:

East-West Cycle Superhighway – proposed route alignment



Note: Further consideration has been given to the route alignment at Lancaster Gate and Royal Parks following the 2014 public consultation. For further details, see paragraph 4.47.

- 4.28 During the subsequent concept design stage, overarching design principles were established with key stakeholders, based upon the new London Cycling Design Standards, safety considerations, and anticipated cycle flows. A core element of the overarching design principles was an evaluation of the benefits and disbenefits of providing cycle facilities either side of the highway compared to a two-way track on only one side, for each section of the route. An example of this is on Victoria Embankment, where a two-way track on the southern side of the highway was proposed where there are no side roads that would otherwise have safety implications for turning vehicles and cyclists. On Upper and Lower Thames Street this switches to the northern side of the highway, against the back of buildings where there is less impact on frontages and kerbside activity.
- 4.29 Throughout the development of the scheme the designs have been subject to continual review and optimisation through external stakeholder engagement, particularly with the London Boroughs. Key considerations included:

Interfaces with other projects

- (a) Interfaces with other developments along the route have been considered – particularly the Thames Tideway Tunnel, the proposed North-South Cycle Superhighway, the Central London Cycling Grid, the Bank Station Capacity Upgrade, Audit House and the Aldgate Gyratory project.

Ceremonial Requirements and Major Events

- (b) Parliament Square and St James's Park are directly affected by important national ceremonies, including the state Opening of Parliament, Trooping the Colour and Beating the Retreat. In addition there are other ceremonial events such as Changing the Guard and Wreath Laying ceremonies that occur at various times of year. Several major events overlap directly with sections of the route, including the London Marathon, Ride London, London Triathlon, Tour of Britain and the New Year's Eve Celebrations.
- (c) The requirements of these events informed not only the permanent design and layout of the route, but also how the cycle facility would be constructed and how it would operate.

Consultation and engagement on the CSEW initial proposals

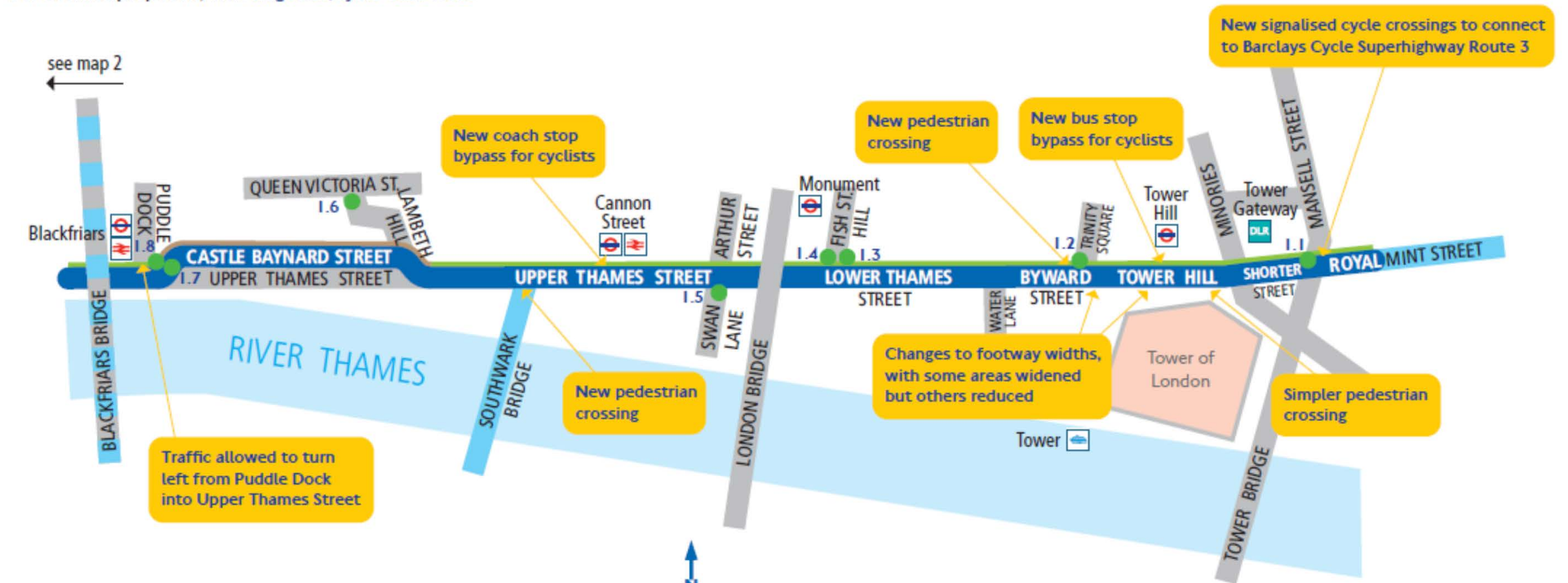
- 4.30 A public consultation was held on the CSEW Phase 1 proposals for over 9 weeks from 3 September to 9 November 2014. The consultation was started as early as possible, in anticipation of the high volume of responses expected from stakeholders and the general public. The original closing date was 19 October, but the deadline was extended owing to the large degree of interest generated by the proposals. A September start was chosen as schools had returned from the summer holiday, and the majority of people had settled back into their working routine. See Appendices 2 and 3 for details of the methods used to publicise the consultation, in addition to the 22 public events held along and near the CSEW route.
- 4.31 Detailed traffic modelling data was published on 25 September 2014 to ensure the latest information was available for public scrutiny. This complemented an overview of the potential traffic impacts, which was summarised in the main consultation leaflet and on the website. The website advised people to check







back for further traffic modelling information, and those who had already submitted responses and supplied email addresses were advised that further information was available, and were offered the opportunity to submit additional comments. Respondents with a particular interest in the traffic modelling data were invited to contact TfL Officers, and were provided with tailored detailed briefings and information.

- 4.32 Some key stakeholders requested additional time to formulate and submit a response, and TfL agreed an extension to 30 November 2014 for these responses.
- 4.33 Relevant extracts from the public consultation information – including the consultation brochure (which contains detailed maps of the consultation proposals), and the traffic modelling results – are contained in Appendix 2. The specific infrastructure proposed in the September 2014 public consultation is shown in the overview maps below:

Map 1 (Tower Hill - Blackfriars)

This map shows some of the main changes proposed along the route. For detailed proposals, visit tfl.gov.uk/cycle-east-west



-  East-West Cycle Superhighway
-  Existing Barclays Cycle Superhighway
-  Proposed North-South Cycle Superhighway
-  Segregated two-way cycle track replaces traffic lane
-  Non-segregated section on quieter roads
-  Proposed traffic restrictions (see table)

Proposed traffic restrictions on East-West Cycle Superhighway (Map 1)	
I.1	Shorter Street closed to all vehicles except buses and cycles
I.2	No access to Trinity Square from Tower Hill/Byward Street ●
I.3	No left turn from Fish Street Hill into Lower Thames Street *
I.4	No left turn from Lower Thames Street into Fish Street Hill ●
I.5	No right turn from Upper Thames Street to Swan Lane §
I.6	No access to Lambeth Hill from Queen Victoria Street * (Lambeth Hill becomes one-way from Castle Baynard Street)
I.7	Local access only to Castle Baynard Street *
I.8	No right turn from Puddle Dock (northbound) into Castle Baynard Street


● except cycles using cycle track * except cycles
§ except cycles (subject to trials of two stage right turn)


Map 2 (Blackfriars - Parliament Square)


This map shows some of the main changes proposed along the route. For detailed proposals, visit tfl.gov.uk/cycle-east-west

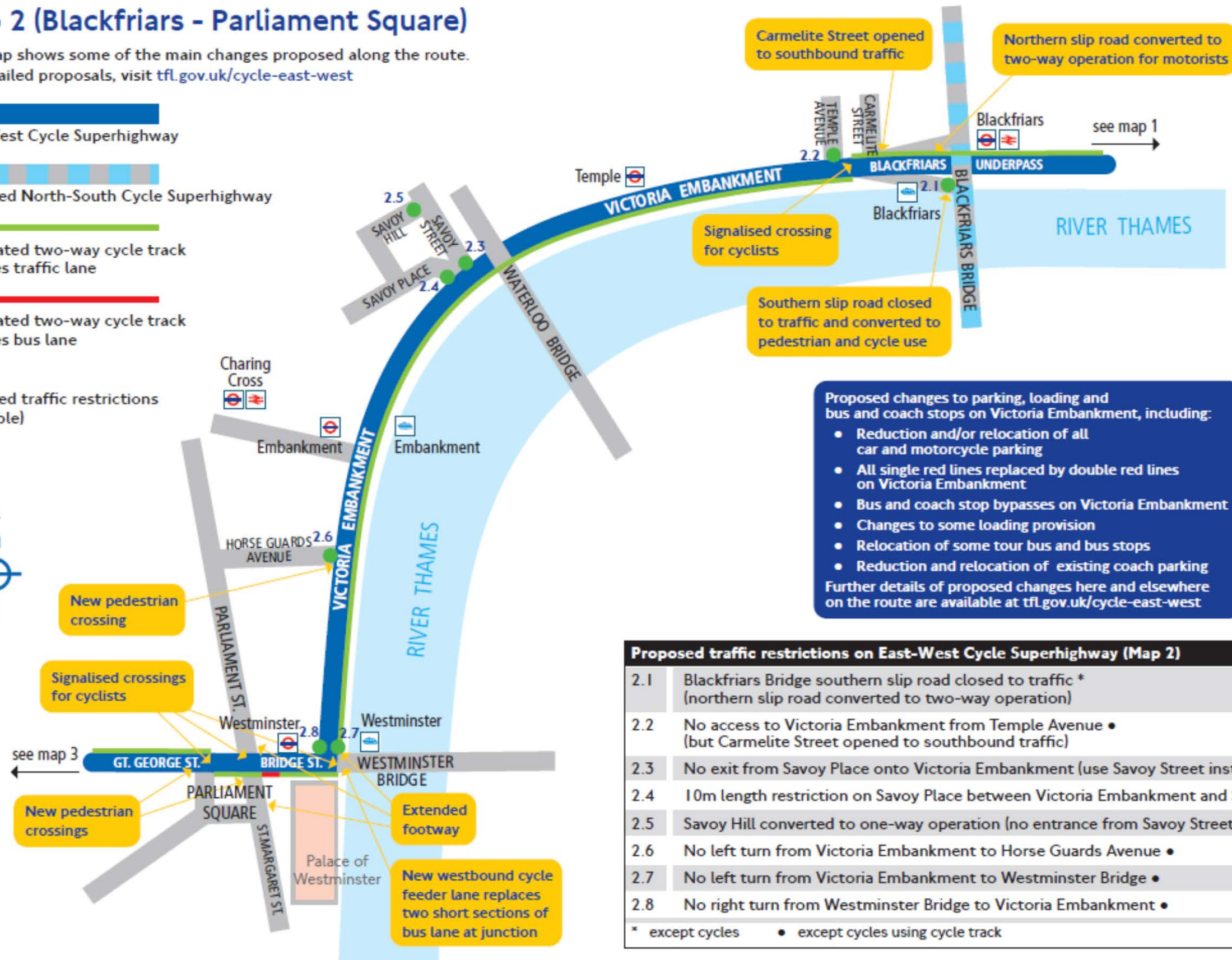
 East-West Cycle Superhighway

 Proposed North-South Cycle Superhighway

 Segregated two-way cycle track replaces traffic lane

 Segregated two-way cycle track replaces bus lane

 Proposed traffic restrictions (see table)



Proposed changes to parking, loading and bus and coach stops on Victoria Embankment, including:

- Reduction and/or relocation of all car and motorcycle parking
- All single red lines replaced by double red lines on Victoria Embankment
- Bus and coach stop bypasses on Victoria Embankment
- Changes to some loading provision
- Relocation of some tour bus and bus stops
- Reduction and relocation of existing coach parking

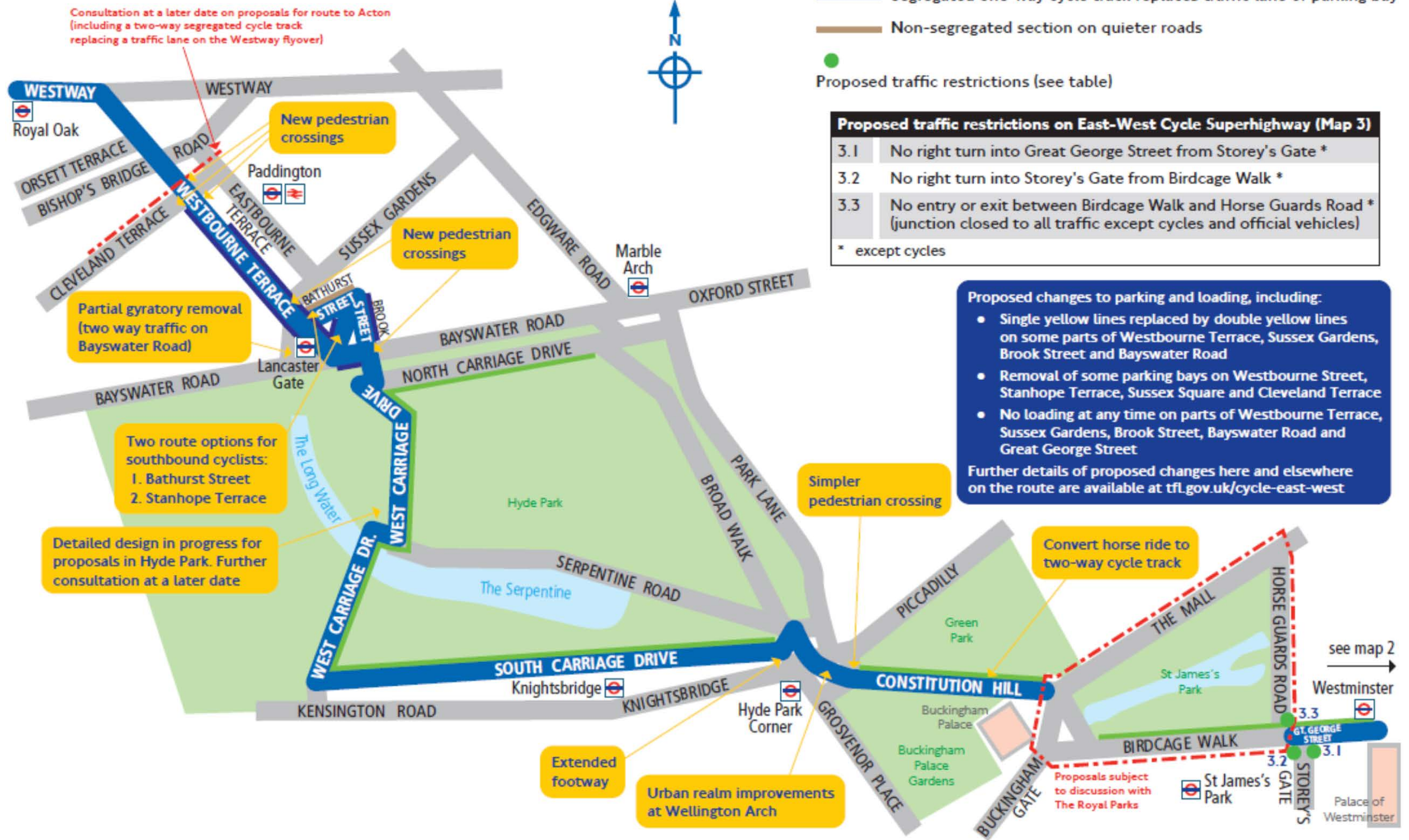
Further details of proposed changes here and elsewhere on the route are available at tfl.gov.uk/cycle-east-west

2.1	Blackfriars Bridge southern slip road closed to traffic * (northern slip road converted to two-way operation)
2.2	No access to Victoria Embankment from Temple Avenue • (but Carmelite Street opened to southbound traffic)
2.3	No exit from Savoy Place onto Victoria Embankment (use Savoy Street instead)
2.4	10m length restriction on Savoy Place between Victoria Embankment and Savoy Hill
2.5	Savoy Hill converted to one-way operation (no entrance from Savoy Street)
2.6	No left turn from Victoria Embankment to Horse Guards Avenue •
2.7	No left turn from Victoria Embankment to Westminster Bridge •
2.8	No right turn from Westminster Bridge to Victoria Embankment •

* except cycles • except cycles using cycle track

Map 3 (Parliament Square - Westway)

This map shows some of the main changes proposed along the route. For detailed proposals, visit tfl.gov.uk/cycle-east-west



4.34 These designs necessitated reallocation of carriageway space away from general traffic in order to provide space for cycling infrastructure and cyclist priority at junctions. This included a number of proposed traffic, parking and loading restrictions (including banned turns), which are shown in the consultation material in Appendix 2, to help manage traffic flows on the key corridors as far as practicable. As set out in paragraph 4.9, it is worth noting that if kerb-separated lanes were replaced with enforceable mandatory lanes on the links (comprising coloured surfacing and painted lines), traffic impacts would be expected to be broadly similar due to the space required to provide mandatory cycle lanes.

CSEW Final proposal (Phase 1)

4.35 A high level summary of the public consultation results is as follows, with submissions from the London Cycling Campaign (LCC) online petition separated out for information:

Responses (Do you support the proposals?)	Number	Yes	Partially	Yes and partially	No opinion	Not sure	No
East-West (direct responses)	8,847*	73%	5%	79%	0%	1%	20%
<i>East-West (with 5,650 LCC templates)</i>	<i>14,497</i>	<i>84%</i>	<i>3%</i>	<i>87%</i>	<i>0%</i>	<i>0%</i>	<i>12%</i>

**Note: includes 414 individual responses which also applied to the North-South route*

4.36 General themes from supporters included gratitude and excitement, suggestions that the proposals would improve safety, encourage more people to cycle, improve health, reduce congestion and enhance London more generally. Some supporters raised concerns about the number of signalised crossings and scepticism about the early start facilities for cyclists at junctions.

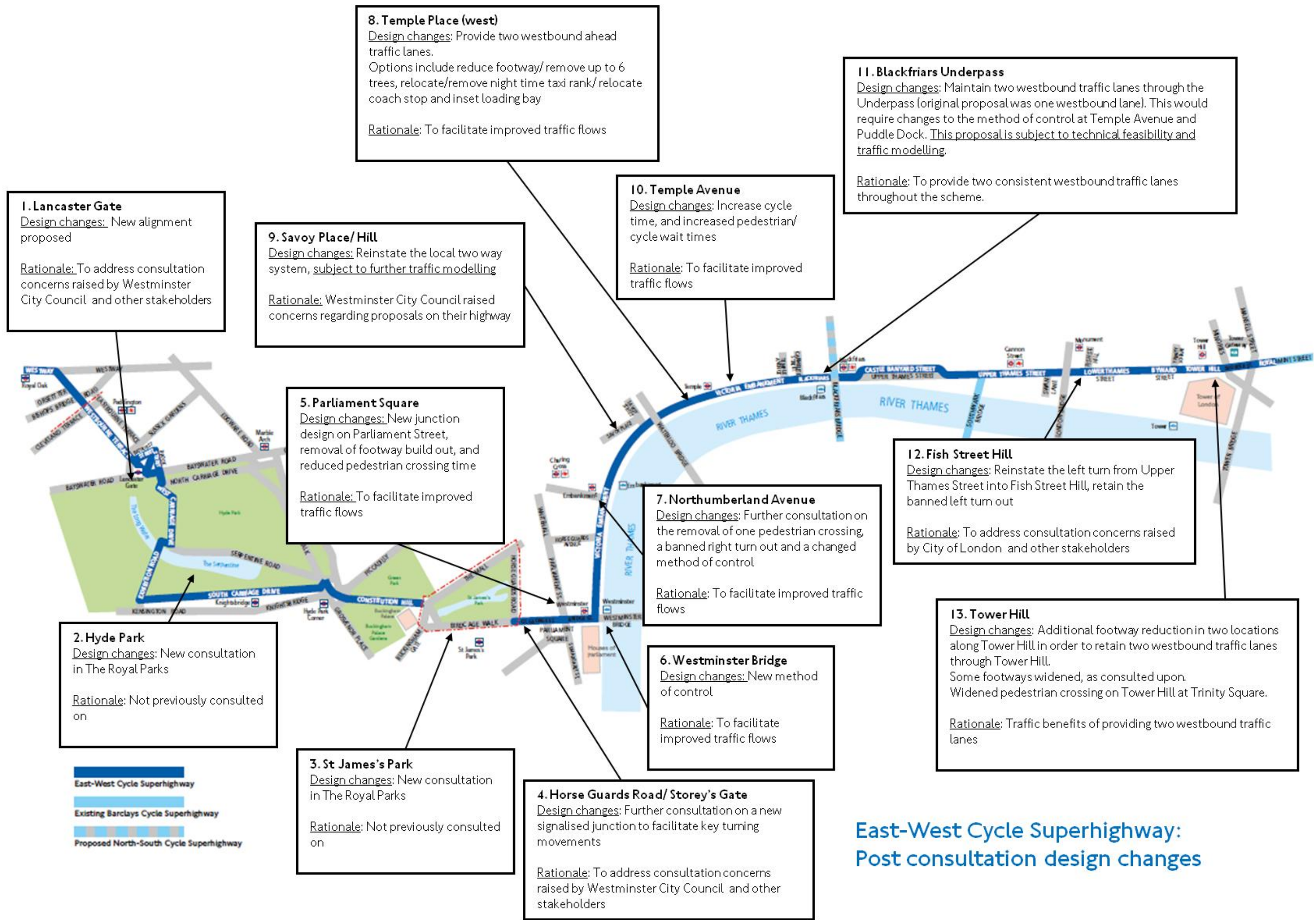
4.37 Concerns raised by those who did not support the proposals centred on traffic impacts – concerns about congestion, journey times, banned turns and impacts on public and logistical transport and powered two-wheelers. Also highlighted were the economic and environmental impacts of more congestion, and the rationale behind expenditure on this and other cycling related schemes. A number of comments focused on cyclist behaviour - for example, running red lights. A number of comments were received regarding kerbside access, and the associated impacts on businesses, freight, taxis and coaches. Some concerns were raised regarding the impacts on pedestrians, for example the potential for pedestrian conflict at shared space, longer and more complicated crossings, and concerns regarding bus stop bypasses.

4.38 Concerns relating to specific sections of the route included:

- (a) Traffic restrictions at Shorter Street, Trinity Square, Fish Street Hill, Westminster Bridge, Horse Guards Road.
- (b) Cyclist access to the route at several locations, particularly Tower Hill, Southwark Bridge and Hyde Park Corner.

- (c) Changes to existing shared space for pedestrians and cyclists at Hyde Park Corner.
 - (d) Requests for alternative or additional routes in Hyde Park.
 - (e) Both southbound options at Lancaster Gate, due to impact on local stables, parking and the perceived detour for cyclists.
 - (f) Junction design for cyclists on Westbourne Terrace.
- 4.39 Among stakeholders, key supporters included the London Boroughs of Newham and Enfield, City of London Police, CTC and other cycling campaign groups, Chartered Institute of Highways and Transportation, GLA Transport Committee, a number of businesses, venues, universities, colleges and a number of healthcare providers. Some requested that proposals are delivered quickly and/or not watered down.
- 4.40 Some stakeholders expressed support for the proposals in principle, but set out specific detailed requests. These stakeholders included: London Cycling Campaign, Sustrans, Living Streets, the London Fire Brigade, the Royal Mail and The Royal Parks.
- 4.41 Some stakeholders supported the routes in principle but expressed concerns about aspects of the proposals. These included the London Borough of Tower Hamlets, the City of London, the City of Westminster, the Royal Borough of Kensington and Chelsea, London TravelWatch, the Metropolitan Police, some freight, bus, coach and motoring groups, and some businesses and property developers. Concerns mainly focused on traffic impacts and associated impacts on journey times, public transport, the economy, businesses and environment; kerbside access; and impact on pedestrians.
- 4.42 Some stakeholders did not support the proposals. These included some organisations in the freight, taxi, motoring, bus, coach and tourism sectors organisations and operators, some businesses and motoring groups. Concerns mainly centred around traffic impacts and kerbside access.
- 4.43 Responses from pedestrian and accessibility groups included Guide Dogs for the Blind, Wheels for Wellbeing, Age UK, Thomas Pocklington Trust, and Disabled Motoring UK. Concerns were raised regarding bus stop bypasses, and potential for pedestrian/cyclist conflict. Requests included the need for the track to be useable by non-standard bicycles such as trikes and handcycles, and requests for more tactile paving.
- 4.44 The main business and freight groups who responded expressed concerns. Common themes included:
- (a) Request for evidence and background data prior to a decision being taken, including: cost-benefit and demand analysis, environmental and economic impact assessments.
 - (b) Traffic impact: objections to longer journey times on strategic roads, including impact of banned turns and 'gating' traffic in outer London.
 - (c) Kerbside changes: concern at loading across cycle lanes, reduction in parking and loading.

- (d) Economic impact: traffic and kerbside impacts reduce London's attractiveness to investors, and impede deliveries.
 - (e) Alternative suggestions for peak-only cycle lanes, semi-segregation, alternative routes, redesign including changes to kerbs and footway provision to increase traffic capacity.
 - (f) Concern at the scale and speed of the changes.
- 4.45 Further to the consultation process, TfL have taken into account responses and produced a Consultation Response Report [published on 27 January 2015] (a copy of which has been provided to Members separately and an Executive Summary of which is attached in Appendix 3). An Equality Impact Assessment (EqIA) has also been completed (see Section 5 for detail), and recommendations considered as part of the revised proposals. A number of design changes have been made to reflect comments received and the outputs of the EqIA.
- 4.46 This includes retaining two lanes of traffic along most of the westbound route between Tower Hill and Westminster Bridge, reducing forecast traffic delays along this section in the morning peak by around 60 per cent - from 16 minutes to under six and a half minutes along the core six and a half mile central section.
- 4.47 The final proposals for Phase 1 of CSEW are as follows (also shown on the map below):
- (a) A revised proposal to enable key turning movements at Horse Guard's Road, to address Westminster City Council's concerns and improve traffic throughput along main CSEW corridor.
 - (b) Adaptation of the cycle facilities at Parliament Street, to improve journey times for general traffic and buses.
 - (c) A new design has been proposed for Northumberland Avenue to ban the right turn onto Victoria Embankment and remove a pedestrian crossing. This proposal provides substantial journey time benefits for general traffic, and will be subject to further consultation.
 - (d) Proposal to provide two westbound traffic lanes at Temple West, to improve journey times for general traffic but with some trees likely to be removed.
 - (e) Proposals to amend the traffic signal timings at Temple Avenue to improve journey times for general traffic, but with some impact on pedestrian and cyclist wait times.
 - (f) Proposal to provide two westbound traffic lanes at Blackfriars Underpass to improve journey times for general traffic (subject to technical feasibility), but with some narrowing of the cycle track.
 - (g) New proposal to remove a previously banned turn at Fish Street Hill, enabling left turning traffic to access London Bridge from Upper/Lower Thames Street.
 - (h) New proposal for two westbound traffic lanes at Tower Hill to provide traffic journey time benefits, but with further cutbacks to the pedestrian footway.
 - (i) New route at Lancaster Gate proposed via Westbourne Street/A402, in light of concerns raised by local stakeholders and to provide a more direct route for cyclists. This alternative route is subject to further consultation.



**East-West Cycle Superhighway:
 Post consultation design changes**

- 4.48 Some features of the proposals about which some stakeholders raised concerns during the public consultation have been retained. The most notable of these are:
- (a) The proposed banned turns at Westminster Bridge remain, as to remove these would increase traffic queuing and substantially reduce the proposed pedestrian benefits at this location.
 - (b) The proposed banned turns at Trinity Square remain, due to significant negative impacts on traffic queues if they are removed.
 - (c) The proposed banned turn at Shorter Street remains, due to significant negative impacts on traffic queues and cycle facilities if it is removed.
 - (d) Additional locations for footway cutbacks at Tower Hill from those outlined in the September consultation proposals, in order to provide two westbound traffic lanes and improve journey times for traffic. However, the originally proposed footway cutbacks along Tower Hill have been reduced in order to optimise the footway widths and the pedestrian crossing across Tower Hill at Trinity Square will be widened.
 - (e) Providing two westbound traffic lanes along Tower Hill means requests from City of London to provide a new pedestrian crossing cannot be accommodated.
 - (f) Bus stop bypasses remain in the proposals as a means of reducing the potential for cyclist/bus conflict, as alternative designs negatively impact on both bus journey times and increase the potential for collisions between buses and cyclists. Monitoring of the bus stop bypasses on Cycle Superhighway Route 2 at Stratford has found that only two interactions out of 1,535 passing cycle movements resulted in the potential for a collision with a pedestrian. No injury collisions have been recorded since these bypasses were implemented in late 2013.
- 4.49 The final proposals (subject to the remaining outstanding public consultations) are considered to strike an appropriate balance between the objective to provide a safer, fast, direct, continuous and comfortable cycle route across central London – knitting together the wider network of cycling infrastructure, and capable of catering for high future demand – with the need to keep traffic flowing into and around central London. Some negative impacts remain for some modes in specific areas; in other areas, there are positive benefits for pedestrians, businesses and the urban realm. Overall, it is considered that the potential step change in safety benefits – and the importance of the East-West route to the overall network within the wider cycling portfolio business case – mean that it will make a substantial and positive contribution to ensuring the future viability of London’s transport network.
- 4.50 The business case assessment of the final East-West proposals is set out in Section 5.

The North-South Cycle Superhighway (Elephant & Castle to King’s Cross)

CSNS Strategic Context

- 4.51 The proposed North-South Cycle Superhighway (CSNS) runs from Elephant and Castle in the south to King’s Cross in the north. The corridor covered by CSNS sees a cyclist use the route every 2 seconds in the busiest areas (peak hour, both

directions) – 3,488 cyclists in the AM peak have been counted over Blackfriars Bridge on the proposed route¹². The route would connect with the proposed East-West Cycle Superhighway at Blackfriars junction, providing important connections to Tower Hill and the Royal Parks. The route passes through the London Borough of Southwark, the City of London, and the London Boroughs of Islington and Camden passing key destinations such as Elephant & Castle, Blackfriars Bridge, Ludgate Circus, Farringdon Crossrail station and King's Cross.

- 4.52 One 'Better Junction' is located on the route, committed for delivery by the end of 2016 – Blackfriars Junction. This scheme is included in the CSNS scope.
- 4.53 TfL and the London Borough of Southwark have worked together to develop 10 design principles for Blackfriars Road which aim to make the most of regeneration opportunities for the streetscape while ensuring individual schemes are part of a wider plan to bring together landscaping improvements in the public realm to enhance the identity of Blackfriars Road. These design principles have been embedded into the design of CSNS and TfL has worked closely with the London Borough of Southwark and development partners to ensure that their proposals complement the scheme and further support the delivery of these principles.
- 4.54 CSNS further supports the City of London's 'City Together Strategy' which seeks to encourage walking and cycling safely – particularly to work - as well as to support sustainable tourism through promoting greater use of public transport, walking and cycling. The CSNS supports these aims by providing safer cycling connections into the heart of the City, as well as an attractive, protected cycle route for tourists between key tourism hubs.

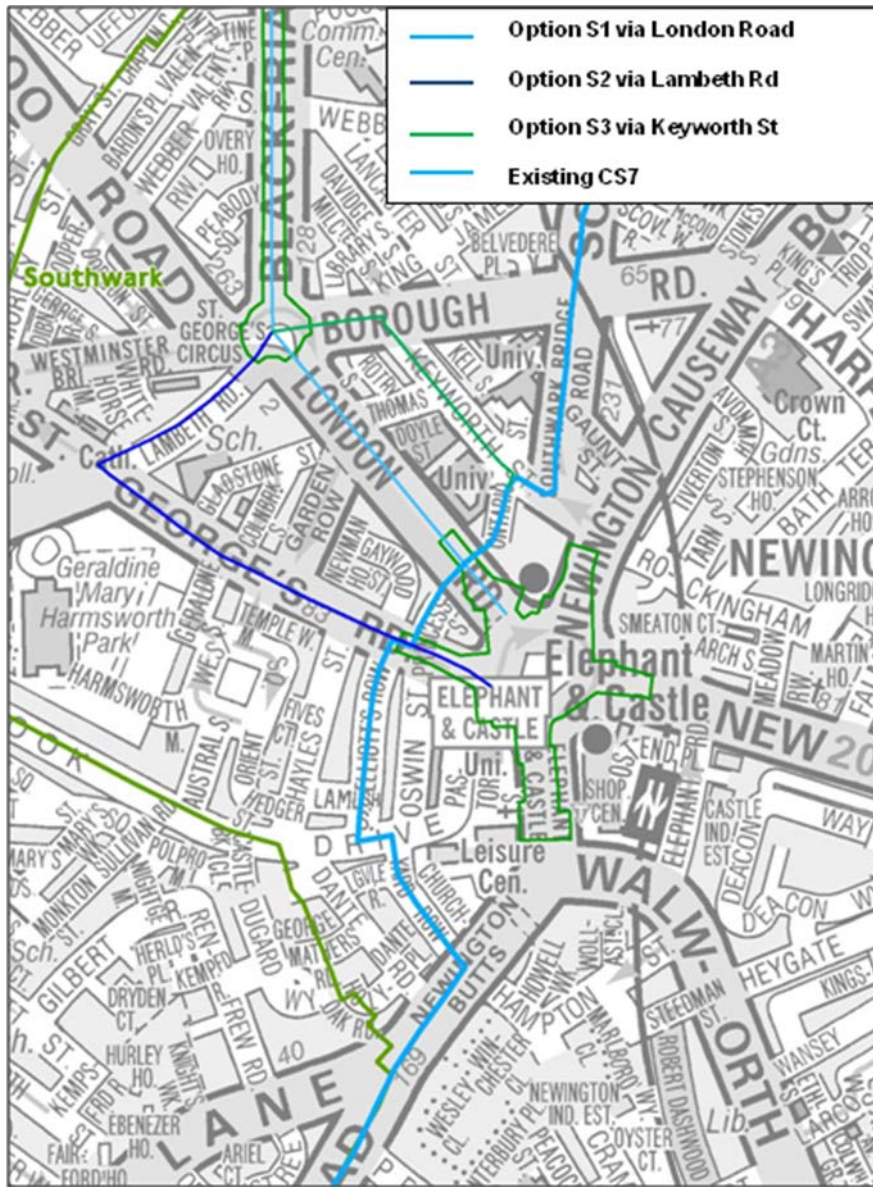
NS Design and Route Rationale

- 4.55 During the feasibility stage, numerous route options were considered for the alignment of the CSNS. These included:

Southern section (from Elephant & Castle to Blackfriars Bridge)

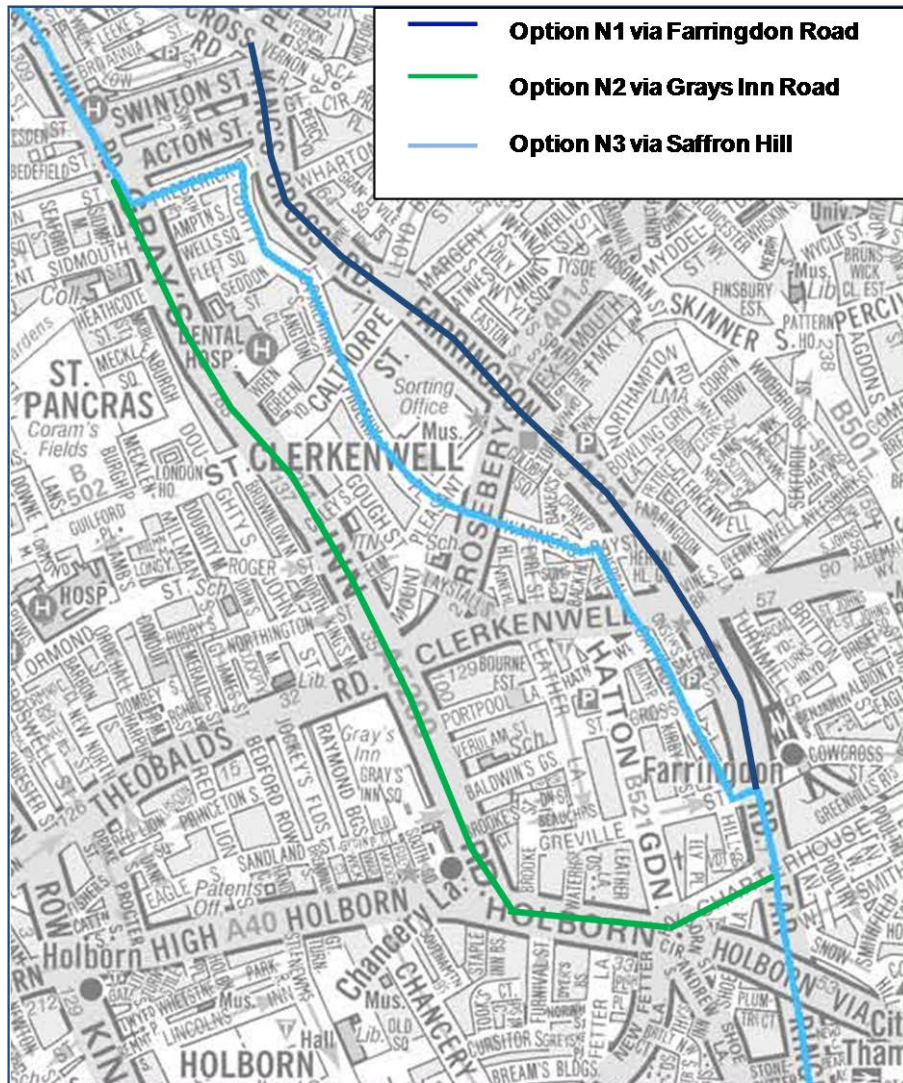
- (a) Option S1 via London Road.
- (b) Option S2 via St Georges Rd/Lambeth Rd.
- (c) Option S3 via Keyworth St.

¹² 'Cycle Census', July 2013



Northern section (from Blackfriars Bridge to King's Cross)

- (a) Option N1 via Farringdon Road.
- (b) Option N2 via Grays Inn Road.
- (c) Option N3 via Saffron Hill.



4.56 Key stakeholders in the affected areas were consulted to help inform the identification of the preferred route alignment, including the City of London, the London Borough of Camden, London Borough of Islington and London Borough of Southwark, where the routes covered sections on borough highway.

4.57 Options S2 and N3 were recommended to be taken forward to concept design stage. The recommendations were largely driven by:

Southern section – S2

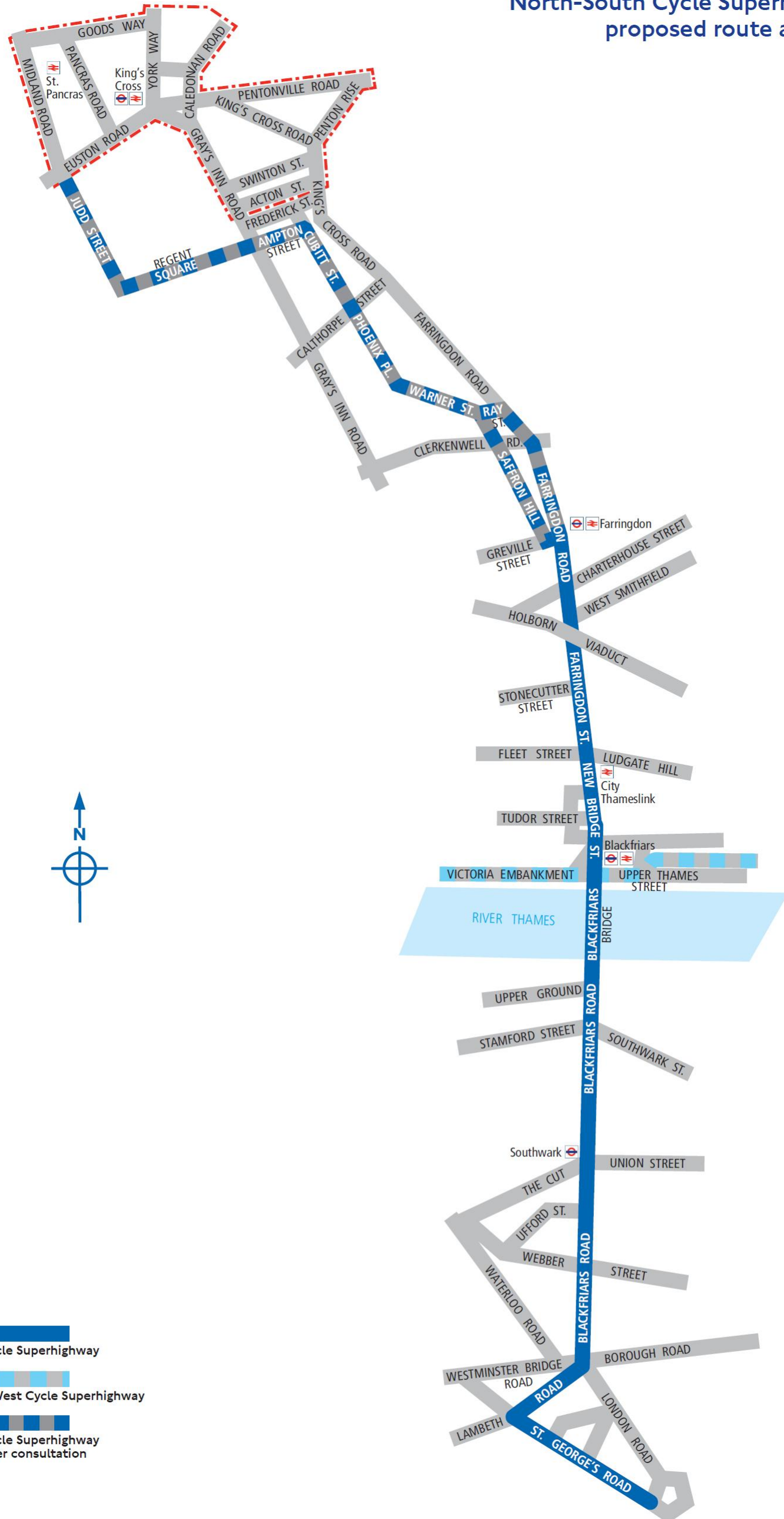
- (a) Preference from the London Borough of Southwark for a S2 route rather than a S3 route, with an overall preference for S1.
- (b) Cyclist movement could not be run in conjunction with the dominant traffic flow at Keyworth Street therefore an extra traffic stage would be needed. This would reduce the amount of green time given to cyclists and reduce the attractiveness of the facility for commuter cyclists.
- (c) St George’s Road offered segregated 2-way cycle provision and connected into plans for Elephant & Castle northern roundabout.
- (d) The S1 route had potentially higher impacts on bus services than the S2 route.

Northern section – N3

- (a) N3 was judged to provide better connectivity to the Central London Grid and Quietway routes to King's Cross.
- (b) Insufficient width on N1 to provide consistent cycle facilities and segregation north of Farringdon station, also a high demand for kerbside activity.
- (c) Insufficient width on N2 to provide consistent cycle facilities and segregation. Providing connectivity between Gray's Inn Road and the southern section of North-South was also extremely challenging due to carriageway widths and traffic volume.
- (d) N2 would also prohibit all motor traffic except buses between 7am-7pm. This would have a significant impact on local traders due to the high kerbside activity. It would also impact residents and taxis. The difficulty for cyclists accessing the route would also remain.

4.58 The preferred alignment is provided on the map below:

North-South Cycle Superhighway – proposed route alignment



- North-South Cycle Superhighway
- Proposed East-West Cycle Superhighway
- North-South Cycle Superhighway subject to further consultation

- 4.59 During the concept design stage, following confirmation of the preferred route alignment, design principles for the cycle facility were established with key stakeholders, based upon the new London Cycling Design Standards, safety considerations, and anticipated cycle flows. A core element of the overarching design principles for CSNS was evaluating the benefits and disbenefits of providing cycle facilities either side of the highway compared to a two-way track on only one side, for each section of the route. A two-way track was progressed as the preferred option for the route from Elephant & Castle to Stonecutter Street. The reason for this was that a two-way track uses less carriageway width than with-flow segregation as only one strip of segregation is required. It also enables access for the high cycle flows on The Cut, Upper Ground, Tudor Street, St Bride Street and Stonecutter Street.
- 4.60 Throughout the development of the scheme the designs have been subject to continual review and optimisation through stakeholder engagement, particularly with the London Boroughs. Key considerations included:

Interfaces with other projects

- (a) Interfaces with other developments along the route have been considered – particularly the Thames Tideway Tunnel, the East-West Cycle Superhighway, the Central London Cycling Grid, the Goldman Sachs development, the Farringdon Crossrail station development as well as various developments along Blackfriars Road such as One Blackfriars.

Ceremonial Requirements and Major Events

- (b) Blackfriars Junction and Ludgate Circus are directly affected by the Lord Mayor's Show. The requirement of this event has informed both the permanent design and layout of the route, but also how the route would be constructed and how the cycle facility would operate.

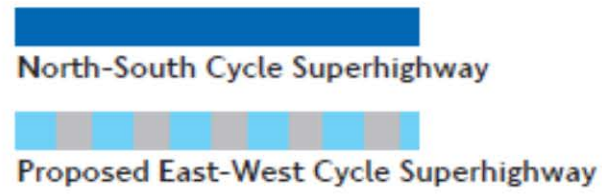
Consultation and engagement on the CSNS initial proposals

- 4.61 A public consultation was held for the CSNS proposals between Elephant & Castle and Farringdon station for over 9 weeks from 3 September to 9 November 2014. The original closing date was 19 October, but the deadline was extended owing to the large degree of interest generated by the proposals. September was chosen as schools had returned from the summer holiday, and the majority of people had settled into their working routine. See Appendices 2 and 3 for details of the methods used to publicise the consultation, in addition to the 17 public events held along the CSNS route.
- 4.62 The traffic modelling data (which is contained in Appendix 2) was released on 25 September 2014 to ensure the latest information was available for public scrutiny. This complemented an overview of the potential traffic impacts, which was summarised in the main consultation leaflet and on the website. The website advised people to check back for further traffic modelling information, and those who had already submitted responses and supplied email addresses were advised that further information was available, and were offered the opportunity to submit additional comments. Respondents with a particular interest in the traffic modelling data were invited to meet with TfL Officers, and were provided with tailored detailed briefings and information.

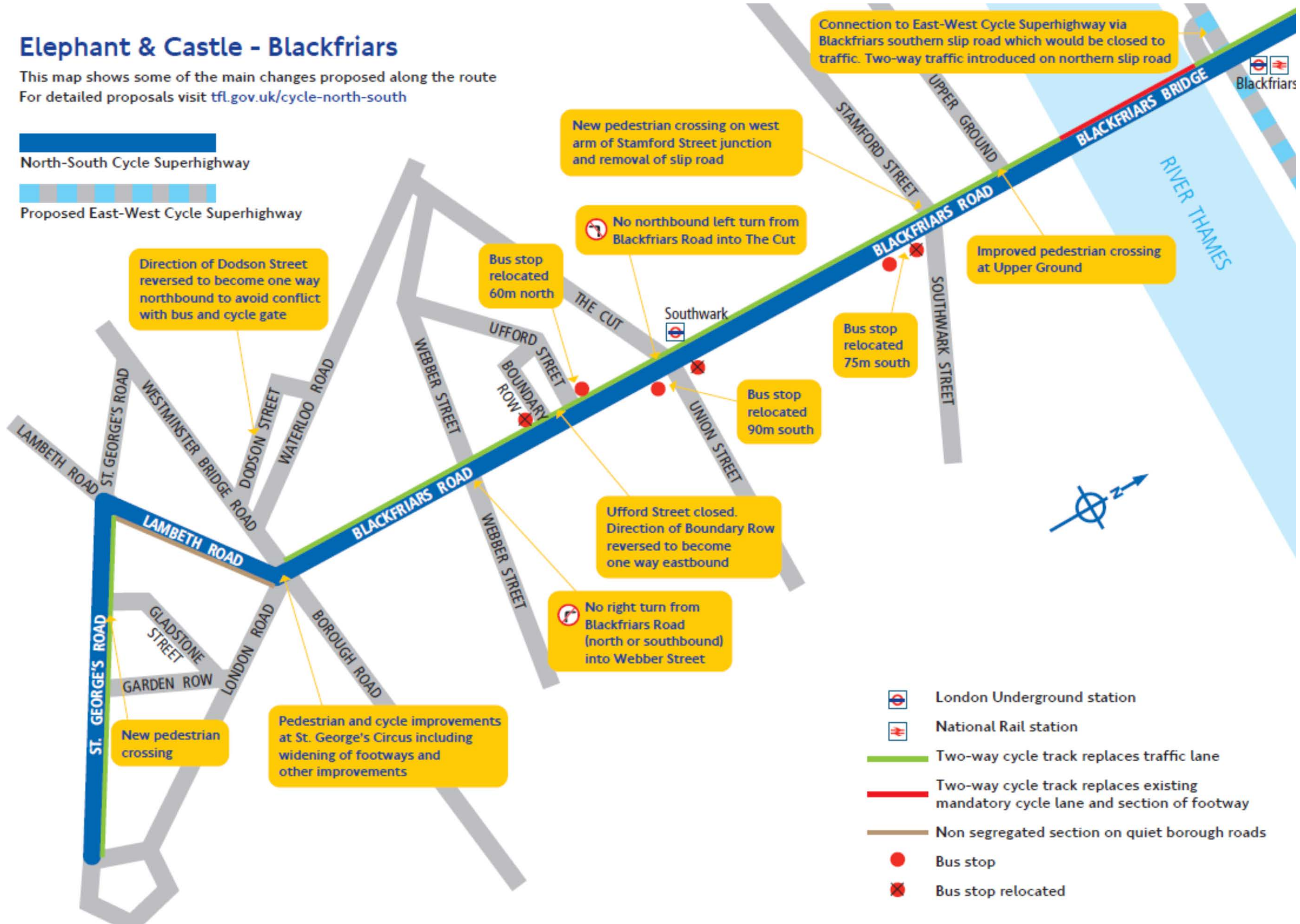
- 4.63 Some key stakeholders requested additional time to formulate and submit a response and TfL agreed an extension to 30 November 2014 for these responses.
- 4.64 The specific infrastructure proposed as part of the North-South route in the September 2014 public consultation is shown on the overview maps below:

Elephant & Castle - Blackfriars

This map shows some of the main changes proposed along the route
 For detailed proposals visit tfl.gov.uk/cycle-north-south












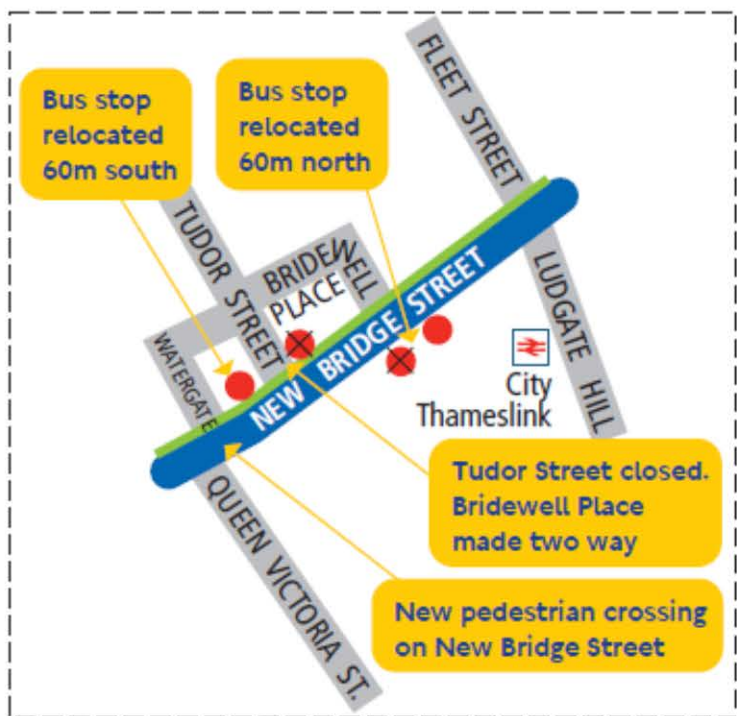
Page 35



Blackfriars - King's Cross

This map shows some of the main changes proposed along the route
 For detailed proposals visit tfl.gov.uk/cycle-north-south

-  North-South Cycle Superhighway
-  Proposed East-West Cycle Superhighway
-  North-South Cycle Superhighway subject to further consultation
-  London Underground station
-  National Rail station
-  Two-way cycle track replaces traffic lane
-  Two-way cycle track replaces existing mandatory cycle lane and section of footway
-  Bus stop
-  Bus stop relocated



4.65 These designs necessitated reallocation of carriageway space away from general traffic in order to provide space for cycling infrastructure and cyclist priority at junctions. This included a number of proposed traffic, parking and loading restrictions (including banned turns), which are shown in Appendix 2, to help manage traffic flows on the key corridors as far as practicable. There will be a separate consultation for the northern section of the route between Farringdon station and King’s Cross, on LB Camden’s roads.

Final proposal for the North-South Cycle Superhighway

4.66 A high level summary of the public consultation results is as follows, with submissions from the London Cycling Campaign (LCC) online petition separated out for information:

Responses (Do you support the proposals?)	Number	Yes	Partially	Yes and partially	No opinion	Not sure	No
North-South (direct responses)	6,309	86%	3%	89%	1%	1%	10%
<i>North-South (with 5,689 LCC templates)</i>	<i>11,998</i>	<i>93%</i>	<i>2%</i>	<i>94%</i>	<i>0%</i>	<i>0%</i>	<i>5%</i>

4.67 General themes from supporters included gratitude and excitement, suggestions that the proposals would improve safety, encourage more people to cycle, improve health, reduce congestion and enhance London more generally. Some supporters raised concerns about the impact on traffic and the ability to cross the cycle track to access bus stops.

4.68 Concerns raised by those who did not support the proposals centred on crossing the track, concerns about congestion, journey times, banned turns and impacts on public transport. Also highlighted were the economic and environmental impacts of more congestion. A number of comments focused on cyclist behaviour – for example, running red lights. A number of comments were received regarding kerbside access, and the associated business impacts. Some concerns were raised regarding the impacts on pedestrians, for example the potential for pedestrian conflict at shared space, longer and more complicated crossings, and concerns regarding bus stop bypasses.

4.69 Amongst stakeholders, key supporters included the London Borough of Southwark, City of London Police, London Cycling Campaign, Sustrans and other cycling campaign groups, Chartered Institute of Highways and Transportation, GLA Transport Committee, a number of universities and colleges, and a number of healthcare providers.

4.70 Some stakeholders expressed support for the proposals generally, but set out specific detailed requests. These stakeholders included: the London Borough of Camden, the Metropolitan Police, London Travelwatch, and Living Streets.

- 4.71 Stakeholders who did not support the proposals included taxi operators and unions, motoring groups and the City of London. Concerns mainly focused on kerbside access; journey time impacts for motorists, public transport and pedestrians; potential for pedestrian/cyclist conflict; and air quality impacts.
- 4.72 Responses from pedestrian and accessibility groups included Guide Dogs for the Blind, Wheels for Wellbeing, Age UK, Thomas Pocklington Trust, and Disabled Motoring UK. Concerns were raised regarding bus stop bypasses, and potential for pedestrian/cyclist conflict. Requests included the need for the track to be useable by non-standard bicycles such as trikes and handcycles, and requests for more tactile paving.
- 4.73 The main business groups who responded expressed concerns. Common themes included:
- (a) Request for evidence and background data prior to a decision being taken, including: cost-benefit and demand analysis, environmental and economic impact assessments.
 - (b) Traffic impact: objections to longer journey times on strategic roads, including impact of banned turns and 'gating' traffic in outer London.
 - (c) Kerbside changes: concern at loading across cycle lanes, reduction in parking and loading.
 - (d) Economic impact: traffic and kerbside impacts reduce London's attractiveness to investors.
 - (e) Alternative suggestions for peak-only cycle lanes, semi-segregation, alternative routes, redesign including changes to kerbs and footway provision to increase traffic capacity.
- 4.74 Further to the consultation process, TfL have taken into account all responses and produced a Consultation Response Report [published on 27 January 2015] (a copy of which has been provided to Members separately and an Executive Summary of which is in Appendix 3), which has informed revised proposals for the North-South route. A number of design changes have been made to reflect public comment, the most notable being:
- (a) A change in the design of crossing points at bus stop bypasses and pedestrian crossings to provide a flush crossing point and a colour differentiation.
 - (b) Relocation of a new pedestrian crossing on St George's Rd further north towards the Lambeth Rd junction to better suit pedestrian desire lines and the needs of a local school group.
 - (c) Straight-across crossings at Ludgate Circus, rather than staggered crossings.
 - (d) Changes to the location of loading, motorcycle and taxi parking along the route as a response to engagement with frontages and a greater understanding of their loading and parking requirements.

- (e) Removal of the proposed 7.5t weight restriction on Union Street due to a change in the placement of traffic signals making it possible for large vehicles to turn into and out of Union Street.

4.75 However, some features of the proposals which received negative feedback during the public consultation have been retained. The most notable of these are:

- (a) The proposed banned turns at The Cut and Webber Street remain, as to remove these would increase traffic queuing and substantially reduce the proposed cycling benefits at this location.
- (b) The proposed weight restrictions at Webber St and Union Street as the location of signal islands required for the design of these junctions make these turning movements for large vehicles not possible.
- (c) Bus stop bypasses remain in the proposals as a means of reducing the potential for cyclist/bus conflict. Monitoring of the bus stop bypasses on Cycle Superhighway route 2 at Stratford has found that only two interactions out of 1,535 passing cycle movements resulted in the potential for a collision with a pedestrian. No injury collisions have been recorded since these bypasses have been implemented.

4.76 Two options were consulted on for the CSNS route north of Stonecutter Street as this was dependent on the route alignment north of Farringdon station. TfL is continuing to explore options for this section of the route, taking into account the views of local stakeholders and the nearby developments such as Crossrail, and will consult on the details in the near future. This will not hold up construction of the North-South Cycle Superhighway between Elephant & Castle and Stonecutter Street.

4.77 In summary, the final proposals (subject to the remaining public consultation) are considered to strike an appropriate balance between the objective to provide a safer, fast, direct, continuous and comfortable cycle route across the most popular bridge for cyclists in London – with the need to keep traffic flowing into and around central London. Some negative impacts remain for some modes in specific areas; in other areas, there are positive benefits for pedestrians, businesses and the urban realm. Overall, it is considered that the potential step change in safety benefits - and the importance of the NS route to the overall network within the wider cycling portfolio business case – provides great potential to transform the Blackfriars Road area for pedestrians, cyclists and local residents and businesses, and to better connect thousands of existing and potential south London cyclists to the City.

4.78 The business case assessment of the final proposals is set out in Section 5.

Cycle Superhighway Route 5 Inner (Oval to Pimlico)

CS5i Strategic Context

4.79 CS5 Inner (CS5i) is proposed to pass through the City of Westminster and London Borough of Lambeth, connecting with the existing Cycle Superhighways 7 and 8 and key destinations such as The Oval and Vauxhall. The delivery of the route will play an important role in connecting the Central London Cycle Grid to several proposed Quietways on both sides of the Thames as well as itself

providing a greatly improved river crossing for cyclists. The route also connects two proposed 'Better Junctions' schemes at Oval Triangle and Vauxhall Gyratory, with the longer term plans for Vauxhall Gyratory.

- 4.80 Through providing a segregated cycle route CS5i seeks to overcome the significant barrier that Vauxhall Gyratory currently poses for many cyclists. The gyratory is a hostile traffic-dominated environment: large multi-lane roads require complex manoeuvres for cyclists among high traffic volumes and high flows of HGVs. Overcoming this obstacle is seen as a significant component of the 'Mayor's Vision for Cycling in London' and is key to unlocking cycling potential in many areas across south London.
- 4.81 The London Borough of Lambeth's 'Cycling Strategy' seeks to encourage more cycling and proposes that the only way to do this is to make cycling safe and attractive for a broader cross-section of people. It sets out a vision to become the 'most cycle-friendly' borough in London and to improve on the Mayor's target of a 1.5 million cycle journeys per day by aiming for 20 per cent of all trips to be made by bike by 2020. CS5i supports these aims by providing safer cycling connections across the Thames, as well as an attractive, protected cycle route through busy junctions such as Millbank and Vauxhall Cross (complemented by substantial improvements at Oval, a 'Better Junction' scheme).
- 4.82 CS5i also forms part of Westminster City Council's draft 'Cycling Strategy', which supports the aspirations set out by the 'Mayor's Vision for Cycling in London' and intends to help deliver them on a more local level, taking account of Westminster's unique circumstances and challenges. The Council aims to deliver safer routes for cyclists of different abilities: routes that are direct, legible, attractive and comfortable to use. CS5i supports these aims by providing a segregated cycle track that will allow cyclists and drivers to avoid one another, and offers major improvements in safety and comfort for all cyclists.

CS5i Design and Route Rationale

- 4.83 During the feasibility stage, numerous options were considered for CS5i including a fully segregated cycle route; a partially segregated route as far as Vauxhall Bridge; and on-carriageway lanes. Some of the options had sub-options based on priority for cyclists or priority for traffic; depending on the number of banned turns proposed and signal priorities for cyclists or vehicular traffic. The route alignment was consistent in all options due to the requirement to travel over Vauxhall Bridge and link into existing and future CS5 alignments and other cycling infrastructure.
- 4.84 The options considered are as follows:

Option 1: Bidirectional cycle track across whole route

- (a) 1a: priority for cyclists (6 banned turns).
- (b) 1b: priority for traffic (3 banned turns).

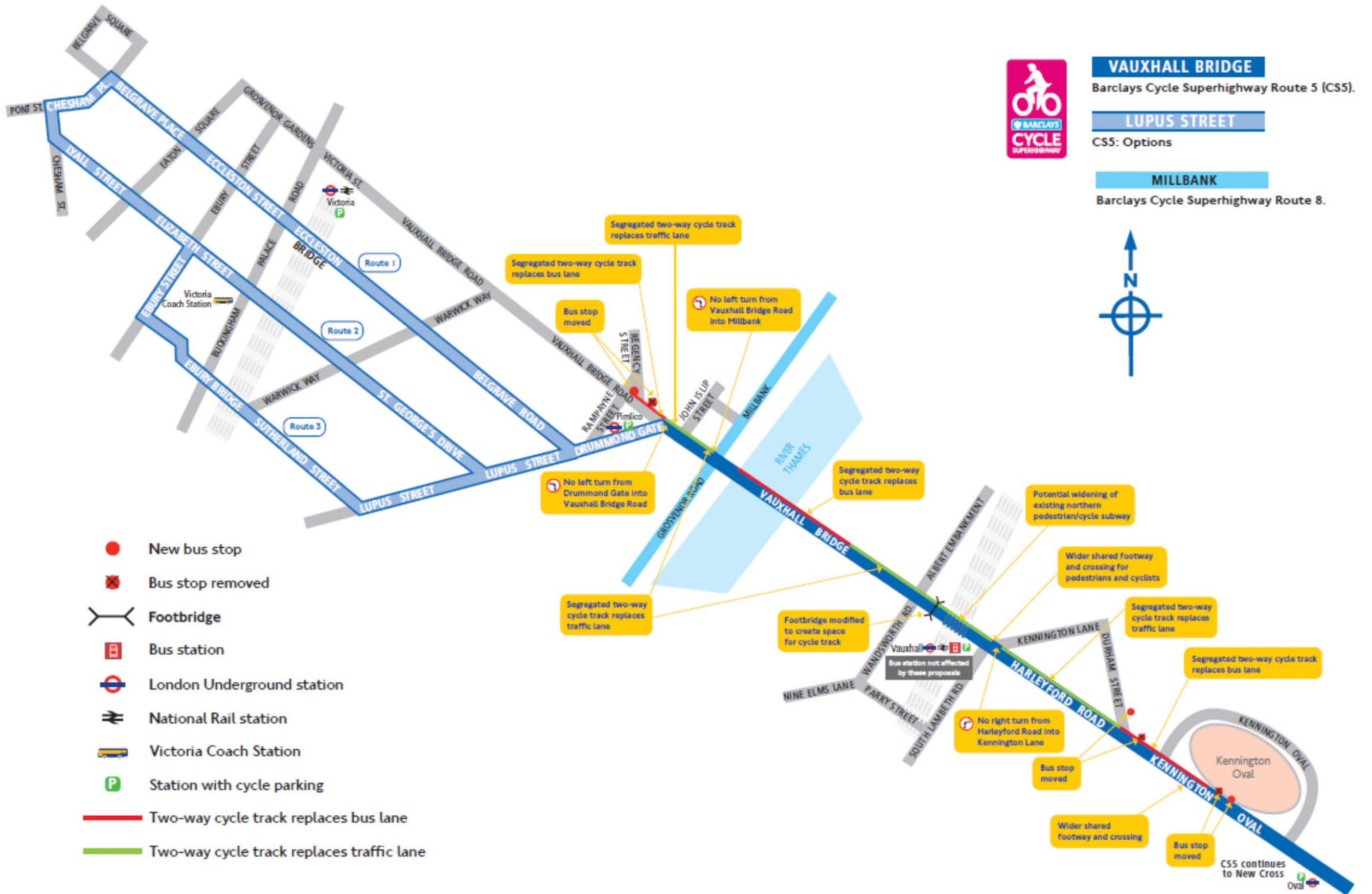
Option 2: Bidirectional cycle track and crossing for cyclists on Vauxhall Bridge

- (a) 2a: priority for cyclists (7 banned turns).
- (b) 2b: priority for traffic (5 banned turns).

Option 3: On carriageway cycle lanes across whole route

(c) 1 banned turn.

- 4.85 Option 1a was chosen to progress to concept design due to its significant benefits for cyclists and accordance with aims of the 'Mayor's Vision for Cycling in London'. During additional early design work, it became apparent that several of the proposed banned turns were either not possible due to road network impacts or in fact no longer required. This led to four of the banned turns being removed from the scope and a design more in line with Option 1b being developed.
- 4.86 Throughout the development of the scheme the designs have been subject to continual review and optimisation with stakeholders, such as the City of Westminster. The proposed design of CS5 between Oval and Drummond Gate put forward for public consultation is shown on the overview map below:



Consultation and engagement on the initial CS5i proposals

4.87 Between 9 July and 14 September 2014, TfL consulted on proposals for the route between Oval and Belgravia. Detailed information on the proposals was published on the TfL website, and a response to the consultation was also published in November 2014. In addition to the methods set out in Appendices 2 and 3, five public drop-in events were held near the proposed route. Key elements of the consultation and response are summarised below.

4.88 A high level summary of the public consultation results is as follows:

Responses (Do you support the proposals?)	Number	Yes	Partially	Yes and partially	No opinion	Not sure	No
CS5i	912	55%	17%	72%	1%	3%	24%

4.89 Of the 912 respondents who replied to the consultation, 665 (73 percent of the total) provided further comments in the open text box. Further detail on responses can be found in the Consultation Response Report (a copy of which has been provided to Members separately and an Executive Summary of which is in Appendix 3). Common issues raised included:

- (a) General support or praise.
- (b) Cycle track design.
- (c) Impact on buses.
- (d) Impact on congestion.
- (e) Impact on air pollution.
- (f) Route alignment.
- (g) Cyclist behaviour.

4.90 Having considered the issues raised in consultation, TfL announced its intention to proceed with the scheme between Oval and Pimlico with key changes to the design as outlined below (further details can be found in the published Consultation Response Report dated November 2014):

- (a) Proposal to move the two-way cycle track from the northern side of Harleyford Road and Kennington Oval to the southern side. This change removes the proposed banned right turn from Harleyford Road to Kennington Lane. The change also means cyclists are no longer routed through the shared area and crossings adjacent to the Royal Vauxhall Tavern with a dedicated cyclist crossing instead now proposed. The changes would also mean a new bus stop bypass for cyclists on Harleyford Road. A further consultation on these revised proposals was undertaken from 10 November until 14 December 2014 and a separate Consultation Response Report was published in January 2015. A copy of the January 2015 Consultation Response Report has been provided to Members

separately and an Executive Summary is in Appendix 3. 268 responses were submitted, of which 87 per cent supported or partially supported the revised proposals.

- (b) Proposals to help mitigate impacts of the banned left turn from Bessborough Gardens on to Millbank, including possible changes to the route of northbound bus route 88.
- (c) Proposals to remove the shared pedestrian/cyclist space between Millbank and Vauxhall Bridge.
- (d) Relocation of Bus stop D on Vauxhall Bridge Road to north of Rampayne Street.
- (e) Provision of a zebra crossing over cycle track at Bridgefoot (subject to Department for Transport approval).
- (f) Bus lane improvements on Vauxhall Bridge.
- (g) Relocating the cycle track to footway level along some sections of Harleyford Road and Kennington Oval.

Final proposal for CS5i

4.91 In 2015, TfL announced its intention to proceed with the scheme between Oval and Pimlico subject to the following additional changes:

- (a) Investigating the possibility of increasing time allowed for short-term parking in the bays on the west side of Durham Street from 20 to 60 minutes.
- (b) Provision of three additional zebra crossings over the cycle track at Albert Embankment and on Harleyford Road adjacent to the bus stop bypass (subject to Department for Transport approval).
- (c) Install a bus shelter without side panels at the stop on Harleyford Road that features a cycle track bypass, with the intention of increasing visibility for cyclists and pedestrians, as well improving bus stop access and capacity.
- (d) Adjust the bus cage (road markings) on Harleyford Road to move the southern extremity of the stop 5 metres southwards.
- (e) Extend the dropped kerb outside Harleyford Court by 4 metres to facilitate access to private parking bay.

4.92 During the two public consultations the following key concerns were raised and have been addressed:

- (a) Concerns from pedestrian groups over sections of shared space along the route with a review of all shared spaces subsequently conducted by scheme designers. This led to revised proposals at the largest shared space areas along the route, at Millbank and at Vauxhall gyratory.
- (b) Concerns over the impact of banned turns on traffic. As noted above, the banned turn from Harleyford Road to Kennington Lane has been removed from the revised scheme. To address concerns about the banned turn at Millbank a package of mitigation measures is being developed in partnership

with the City of Westminster and through discussions with local residents groups.

- (c) Concerns over the impact of the scheme on traffic and buses. Significant changes to the scheme have been made in order to minimise the impact on buses and traffic. The latest proposals (summarised in Appendix 3) have less impact on buses and traffic and are considered optimal when balanced against the safety and ambience benefits the scheme brings. Furthermore, a package of mitigation measures is being developed to address the schemes impact on buses across a wider area.

- 4.93 The section of CS5 between Pimlico and Belgravia is being developed in partnership with Westminster City Council. Having considered the consultation responses and undertaken further investigations, Westminster City Council considers that having a two-way cycle route along Belgrave Road, Eccleston Bridge, Eccleston Street and Belgrave Place ("Route 1" in the consultation) is probably not viable, as it is likely to require the narrowing of the footways and loss of some well-used residents' parking. Further discussions are therefore needed on a suitable alternative, which might include splitting the route between Route 1 and Vauxhall Bridge Road. The Council will consult on detailed proposals for this section of route in the future.
- 4.94 In summary, the final proposals have been amended to better manage impacts on buses and general traffic, while delivering a protected cycle route through a key major barrier for south London cyclists. Overall, it is considered that the step change in safety benefits arising from the proposals is essential in order to unlock the potential for south London commuter cyclists to make their journey to and from the central area as safely as possible.
- 4.95 The business case assessment of the final proposals is set out in Section 5.

Cycle Superhighway Route 2 Upgrade (Bow roundabout to Aldgate)

CS2U Strategic Context

- 4.96 CS2 from Bow roundabout to Aldgate was originally implemented in 2011, with a segregated extension from Stratford to Bow opening in 2013. The Bow to Aldgate section is currently predominantly a mix of blue surfacing in traffic lanes, blue surfacing through bus lanes, logos and advisory cycle lanes. The number of cyclists on CS2 increased by 32 per cent in the year after the route opened¹³.
- 4.97 There have been six cycle fatalities on or in the vicinity of CS2 (two in 2011 by the Bow Roundabout, four in 2013: one by the Bow Roundabout, two by Aldgate East station and one on Mile End Road).
- 4.98 While none of these fatalities were directly attributable to the road layout, these tragic events led to heightened concerns about the route. In November 2013 the Mayor announced a major upgrade to the route. However, the CS2 highway is a key transport corridor while also functioning as a local centre with businesses and residencies along its length hence these factors were given close consideration in the development of the proposals.

¹³ Source: TfL traffic counts, September 2010 - September 2012.

- 4.99 The 'Mayor's Vision for Cycling in London' stated that *'We will substantially improve the existing Barclays Cycle Superhighways'*. The Mayor has subsequently committed to the CS2 route being substantially segregated, with completion by 2016.
- 4.100 The London Borough of Tower Hamlets 'Cycling Connections' strategy notes that *'development and maintenance of appropriate and high quality cycle infrastructure is an essential part of encouraging more people to take up cycling, as well as improving conditions for existing cyclists'*. The Mayor of Tower Hamlets has since called on TfL to *'accelerate mitigating actions to make cycling safer within my borough and across London'* and asks that TfL *'undertake an urgent review into how to make the Cycle Superhighway in Tower Hamlets safer.'*

CS2U Design and Route Rationale

- 4.101 A similar design optioneering process was followed as for the East-West and North-South routes, with the London Cycling Campaign and the London Borough of Tower Hamlets closely involved in reviewing the design options.
- 4.102 Five options were considered, of which four were rejected on the basis that they did not satisfy the minimum requirement of providing segregated, safe cycle facilities without unacceptable impacts on bus and traffic capacity. The preferred option included kerb and wand-separated cycle tracks, bus stop bypasses and innovative junction designs to separate traffic and cyclist movements.
- 4.103 Throughout the development of the scheme the designs have been subject to continual review and optimisation through stakeholder engagement. Key considerations included interfaces with other projects such as the City of London's Aldgate Highway Changes and Public Realm Improvements Project, the London Borough of Tower Hamlet's Whitechapel Vision and TfL's 'Vision for Bow'.

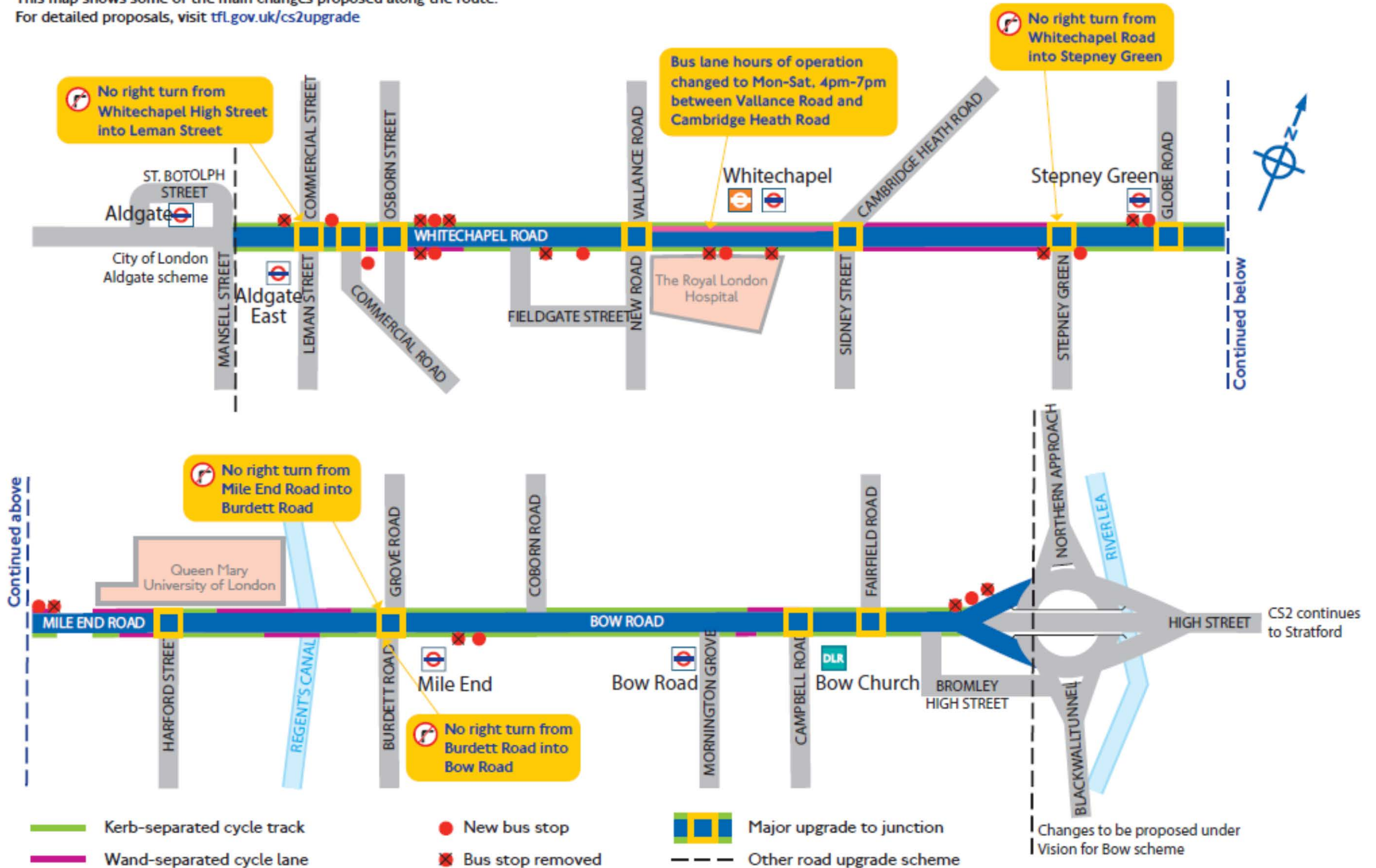
Consultation and engagement on the CS2U initial proposals

- 4.104 A public consultation was held on the CS2U proposals for over 6 weeks from 23 September to 2 November 2014. September was chosen as schools had returned from the summer holiday, and the majority of people had settled into their working routine. See Appendices 2 and 3 for details of the methods used to publicise the consultation, in addition to the five public events held along the CS2U route.
- 4.105 Detailed traffic modelling data (which is contained in Appendix 2) was released on 1 October 2014, to ensure the latest information was available for public scrutiny. This complemented an overview of the potential traffic impacts, which was summarised in the main consultation leaflet and on the website. The website advised people to check back for further traffic modelling information, and those who had already submitted responses and supplied email addresses were advised that further information was available, and invited to submit additional comments.
- 4.106 Some key stakeholders requested additional time to formulate and submit a response, and TfL agreed an extension to 4 November 2014 for these responses.
- 4.107 The specific infrastructure proposed as part of CS2U in the September 2014 public consultation is shown on the overview map below:

Barclays Cycle Superhighway Route 2 Upgrade

This map shows some of the main changes proposed along the route.
For detailed proposals, visit tfl.gov.uk/cs2upgrade

Page 47



- 4.108 The predicted impact of this scheme, derived from traffic modelling, indicated longer journey times for some motorists and on some bus routes at certain busy times of day.
- 4.109 The proposed traffic, parking and loading restrictions (including banned turns), are shown in Appendix 2, which would help manage traffic flows on this key corridor as far as practicable.
- 4.110 A high level summary of the public consultation results is as follows, with the LCC online petition separated out for information:

Responses (Do you support the proposals?)	Number	Yes	Partially	Yes and partially	No opinion	Not sure	No
CS2U (direct responses)	1,455	78%	11%	89%	1%	1%	9%
CS2U (with 2,215 LCC templates)	3,670	91%	4%	95%	1%	0%	4%

- 4.111 General themes from supporters included gratitude and excitement, suggestions that the proposals would improve safety, encourage more people to cycle and benefit the environment. Some supporters raised concerns about the section of the route which is unsegregated and uncertainty about the use of wands as a form of segregation.
- 4.112 Concerns raised by those who did not support the proposals centred on the four banned turns and the consequent impacts on local streets. A number of comments were received regarding the Whitechapel Markets which included impacts on the operation of the market and the traders' ability to load safely across the track. A number of comments were received regarding kerbside access, and the associated business impacts. Some concerns were raised regarding the impacts on pedestrians, for example the potential for pedestrian conflict at bus stop bypasses.
- 4.113 Among stakeholders, key supporters included the London Borough of Newham, London Cycling Campaign, Sustrans, Tower Hamlets Wheelers and other cycling campaign groups, English Heritage, and Queen Mary, University of London.
- 4.114 Some stakeholders expressed support for the proposals generally, but set out specific detailed requests. These stakeholders included: the London Borough Tower Hamlets, The City of London, the Metropolitan Police, Whitechapel Gallery, East London Mosque and Living Streets.
- 4.115 Stakeholders who did not support the proposals included residents' associations near the Mile End/Burdett Road junction, Whitechapel Business and Traders Association UK, taxi operators and unions, and freight groups and operators. Concerns mainly focused on kerbside access, parking and loading, and journey time impacts for motorists.

4.116 Responses from pedestrian and accessibility groups included Living Streets and Guide Dogs for the Blind. Concerns were raised regarding reduction in the footway width and the potential for pedestrian/cyclist conflict at bus stop bypasses.

Final proposal for CS2U

4.117 Further to the consultation process, TfL has taken into account responses and published a Consultation Response Report (a copy of which has been provided to Members separately and an Executive Summary of which is in Appendix 3), which has informed revised proposals for CS2U. A number of design changes have been made to reflect public comment, the most notable being:

- (a) Creating a five metre wide eastbound bus lane which will include a two metre wide mandatory cycle lane outside Whitechapel market to accommodate the specific needs of the market and its operation. Maintaining the existing inset loading bays and hours of operation and the existing bus stop designs rather than using bus stop bypasses at this location.
- (b) Extending the loading bays outside Whitechapel Gallery to ensure that exhibitions, and the deliveries and servicing of neighbouring local businesses, can continue smoothly.
- (c) Removing less pavement space in some areas, including outside Mile End station and west of Adler Street.
- (d) The 25 metre parking bay at Goulston Street will be changed to a loading bay to increase loading provision in the area and meet the requirements of local businesses.
- (e) Changes to the Barclays Cycle Hire docking station at New Road, including the removal of 10 docking points to leave 26 remaining.
- (f) Removing approximately 20 smaller trees and 2 larger trees. This number increased from 18 since consultation following changes to the design and further investigations. TfL will continue to investigate how to minimise the loss of trees and will look for new locations to replace trees in the local vicinity.
- (g) Angled kerbs throughout the majority of the route, which provide a greater effective width for cyclists.

4.118 However, some features of the proposals which received negative feedback during the public consultation have been retained. The most notable of these are:

- (a) The proposed banned turns from Mile End Road into Burdett Road and from Burdett Road into Mile End Road, Stepney Green and Leman Street to remain, as to remove these would increase traffic queuing and there would not be enough space for the cycle facility
- (b) Taxi bay removed outside Mile End station and relocated in order to provide a bus stop outside the station entrance.

- (c) The un-segregated section adjacent to Bancroft Road to remain in the proposals. Although using the land outside the Ocean Estate is outside the scope of CS2U, TfL will discuss the potential for future highway widening and potential for segregated cycle lanes with the London Borough of Tower Hamlets, the Ocean Estate and other interested parties
- (d) Bus stop bypasses remain in the proposals as a means of reducing the potential for cyclist/bus conflict. Monitoring of the bus stop bypasses on Cycle Superhighway route 2 at Stratford has found that only two interactions out of 1,535 passing cycle movements resulted in the potential for a collision with a pedestrian. No injury collisions have been recorded since these bypasses have been implemented.

4.119 The detailed proposals for CS2U are set out in the Consultation Response Report and in Appendices 2 and 3, which contain the route, detailed maps showing traffic restrictions/junction changes, and the Executive Summary to the Consultation Response Report. In summary, the final proposals are considered to strike an appropriate balance between the objective to provide a safer, fast, direct, continuous and comfortable cycle route, capable of catering for high future demand – with the need to keep traffic flowing into and around central London, and the needs of the thriving local communities along the route. Some negative impacts remain for some modes in specific areas; in other areas, there are positive benefits for buses, pedestrians and businesses. Overall, it is considered that the step change in safety benefits arising from the proposals is essential to reduce the potential for further collisions along this popular central London cycle route.

4.120 The business case assessment of the final proposals is set out in Section 5.

Cycle Superhighway Route 1 (Tottenham to the City)

CS1 Strategic Context

4.121 CS1 is proposed to run through the London Boroughs of Hackney, Haringey and Islington. 6.6 km of the route lies in Hackney, and 4.2 km in Haringey, with a short 0.2 km stretch through Islington where the route connects to the Central London Cycling Grid.

4.122 CS1, unlike the other Cycle Superhighways set out in this paper, is aligned largely on quieter borough roads. This approach is in accordance with the 'Mayor's Vision for Cycling in London' which states there is no absolute requirement that Cycle Superhighways need to run along busy arterial roads, and alternatives should be considered if they are available, appropriately direct and offer a suitable level of service.

4.123 A 'Better Junction' is located on the route (the Apex junction of Great Eastern Street, Old Street and Pitfield Street), and this is committed for delivery during the same timeframe as the rest of the route. The design of this junction is included in the CS1 scope.

- 4.124 Together, the three boroughs of Hackney, Islington and Haringey account for almost 21 per cent of journeys to work by bicycle in London¹⁴. Hackney in particular has a strong identity as a cycling Borough, with almost 15 per cent of all journeys to work made by bicycle – the highest mode share for any London borough. Consolidating this level of cycling and encouraging further growth is therefore key to meeting London’s ambitious cycling targets.
- 4.125 The implementation of CS1 aligns with current LB Hackney policy. The Hackney Transport Strategy 2014-2024 includes the following goal: *“To make Hackney’s roads the most attractive and safest roads for cycling in the UK, and a place where it is second nature for everyone, no matter what their age, background or ethnicity¹⁵.”*
- 4.126 Islington has the second highest cycling commuter mode share of any Borough in the city (9.2 per cent) and shares a strong commitment to ensuring cycling growth, stating that: *“Encouraging and making cycling safer is an important priority for Islington Council.¹⁶”*
- 4.127 Establishment of a Cycle Superhighway in these Boroughs is therefore in keeping with the strategic cycling objectives of both Hackney and Islington, and would help encourage further increases in their already high cycle mode share.
- 4.128 Haringey, in contrast, has a low cycle mode share and is a key target for future cycling growth. Despite its proximity to Hackney, under five per cent of journeys to work in the Borough are currently made by bicycle. The introduction of CS1, the associated provision of new cycle-friendly facilities and the greater publicity associated with the launch of a branded Superhighway route will therefore play an important role in unlocking suppressed demand for cycling in Haringey.
- 4.129 CS1 represents the most important cycling related scheme in the Borough, and is aligned with the objectives of the Borough’s Cycle Action Plan, which states that: *The Council’s aim is to maximise the role of cycling in Haringey within an overall framework of road danger and traffic reduction, and sustainable development.¹⁷”*
- 4.130 Across all areas that would be served by CS1, there are approximately 113,000 daily trips which could be cycled but are currently undertaken by mechanised modes of transport¹⁸. There is therefore significant latent demand for cycling in the CS1 area.

CS1 Design and Route Rationale

- 4.131 During the feasibility stage, two main alignment options for CS1 were considered in consultation with stakeholders such as the local Boroughs. These were:

¹⁴ ONS - 2011 Census

¹⁵ Hackney Transport Strategy 2014–2024 Cycling Plan Summer 2014

¹⁶ <http://www.islington.gov.uk/islington/walking-cycling/cycling/cycleschemes/Pages/default.aspx>

¹⁷ http://www.haringey.gov.uk/cycle_action_plan_1_.pdf

¹⁸ Cycle Superhighways Demand Analysis Report (June 2014). One third of these potentially cyclable trips originate in Hackney, 16 percent in Islington and 13 percent in Haringey

- (a) Option 1: Aligning the route along the A10 and A1010 TLRN main road route.
- (b) Option 2: Upgrading the existing LCN10 borough road alignment (preferred option).

Option 2 was selected, for the following reasons:

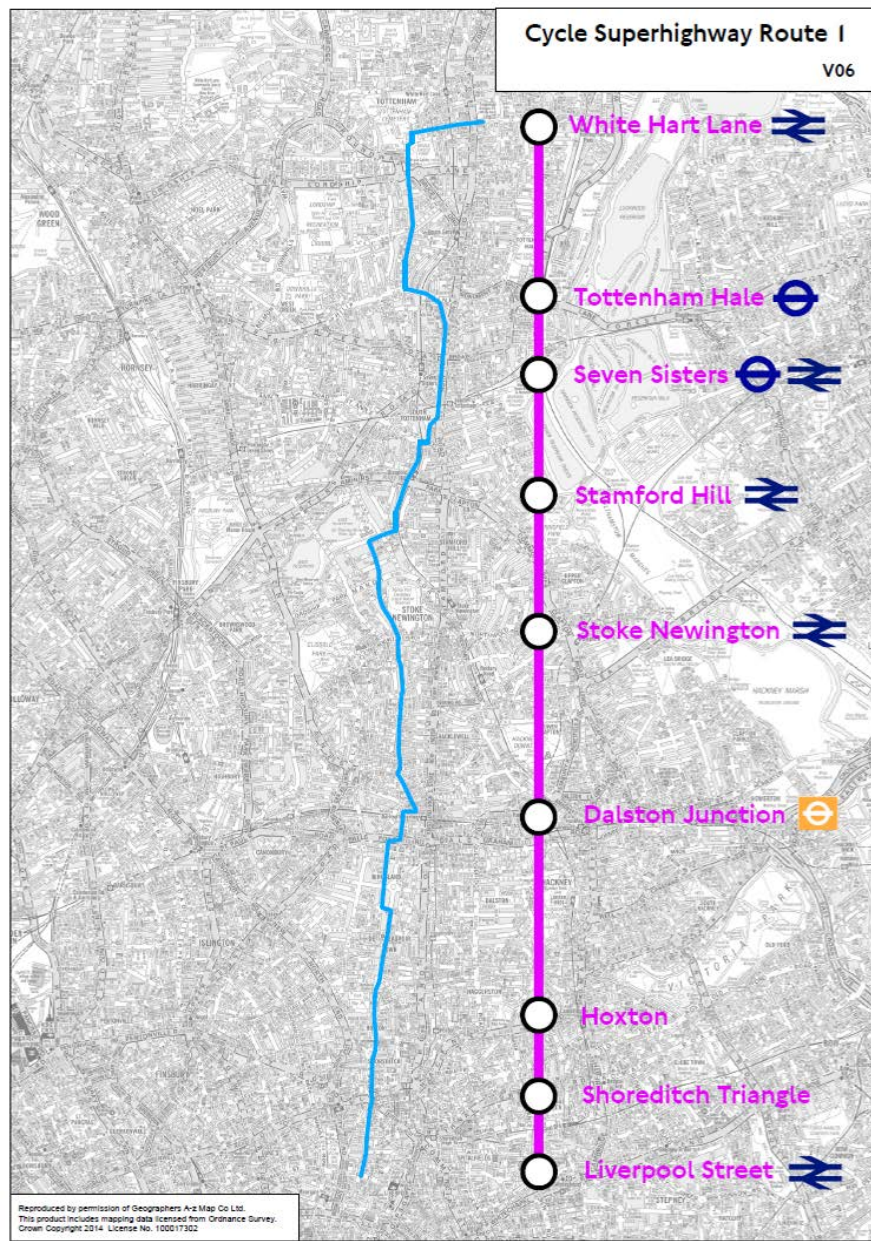
- (a) The Option 2 route is 12 minutes faster for cyclists, due to the significantly lower number of junctions (54 signalised junctions on the A10 compared to 8 signalised junctions on the preferred route)¹⁹.
- (b) Support from the boroughs for the option 2 alignment.
- (c) Significantly higher number of bus services and stops on the option 1 alignment, with provision of bus stop bypasses/rerouting of services not feasible due to high pedestrian numbers and/or narrow footway.
- (d) Higher volume of frontage and kerbside activity on the option 1 route.
- (e) The option 2 route was no less direct than option 1, and hence presented the potential for better value for money.

4.132 Option 2, which is aligned along quieter borough roads, is expected to draw cyclists away from the congested A10 alignment. The majority of the route is along roads with no bus services, little active frontage and kerbside activity, and with very low collision rates. Where infrastructure is required to delivery a high level of service, this can be delivered at much lower expense than on the option 1 alignment. Option 2 was therefore taken forward to concept design.

4.133 Throughout the development of the scheme the designs have been subject to continual review and optimisation with stakeholders. The London Borough of Hackney has led the designs on their roads, and the London Boroughs of Haringey and Islington have been closely involved in the design process.

4.134 The route alignment for CS1 is shown below, with key destinations and transport interchanges shown on the right-hand side.

¹⁹ Source: 'CS1 Cyclist Speed Survey'



4.135 The specific infrastructure proposed as part of CS1 will comprise:

- (a) 27 new raised entry treatments on side roads and raised junction tables would calm traffic to improve safety for all road users, especially cyclists and pedestrians.
- (b) Three new public realm schemes would be created along the route, with around 60 new street trees planted, plus new seating and more attractive paving.
- (c) 7.5 metre deep ASL boxes would be installed at junctions to make cyclists more visible.
- (d) 7600m² of carriageway resurfacing would make journeys more comfortable for all road users, with road drainage also improved.
- (e) 60 existing speed humps would be replaced with smoother shaped humps to make journeys more comfortable for all road users.

- (f) 21 new or improved pedestrian crossing facilities would make walking journeys safer and more convenient.
 - (g) Throughout the route cycle logos on the carriageway and improved signage would show cyclists where to go.
- 4.136 At certain locations along the route, motor vehicle parking bays would be relocated or removed to make cycling safer. The net reduction in parking is approximately 30 spaces along the 11km route.
- 4.137 CS1 has minimal impact on traffic operations over its 11km length, as the majority of the route runs along quiet borough roads and without a requirement for significant engineering interventions. This is underlined by the fact that CS1 is proposed to pass through just eight signalised junctions along its entire length, with two of these at the start and endpoints.
- 4.138 There are, however, some localised changes proposed to traffic operations, as follows:
- (a) Closure of Pitfield Street to motorised traffic, between its junction with Old Street and Boot Street.
 - (b) No through motor traffic between Culford Road and Ardleigh Road.
 - (c) Removal of a short section of bus lane on Balls Pond Road.
 - (d) No through motor traffic between Boleyn Road and Wordsworth Road.
 - (e) Relocation of four bus stops.
 - (f) No northbound right turn from Broadwater Road into Lordship Lane.
 - (g) No southbound right turn from Church Lane into Lordship Lane.
- 4.139 Designs for the section of route underneath the South Tottenham Railway Bridge are dependent on Network Rail removing the bridge pillars as part of bridge renewal works by January 2015. Network Rail have committed to completion of this work in January, and liaison is ongoing to ensure that TfL is kept up-to-date with progress. Additionally, interfaces with other developments along the route have been considered – particularly the Central London Cycling Grid, the Tottenham Hale Gyratory project, and the development of a new hotel at the Apex junction.
- 4.140 CS1's alignment is largely on Borough roads, and following public consultation proposals on these roads will be subject to approval from the relevant Borough. A draft agreement has been agreed with the London Borough of Hackney which (subject to the outcome of the public consultation) will allow the Borough to receive funding from TfL to carry out detailed design and construction on its own roads subject to TfL's agreement to proposed measures. A draft agreement has also been agreed with LB Haringey which (again, subject to public consultation) will allow TfL to carry out detailed design and construction on Haringey roads subject to approval from Borough Officers for proposed measures.

Consultation and engagement on the initial CS1 proposals

- 4.141 Public consultation for CS1 is scheduled to commence in February 2015, so there are no results to share at this stage. Stakeholders will be invited to review and comment on CS1 proposals between 16 February and 29 March 2015. TfL will host the online consultation, with the three boroughs providing links to it from their own websites. Along with the promotional activities as used on the other routes, there will be three public exhibitions at different venues across Hackney and Haringey.

Final proposal for CS1

- 4.142 Any changes to the design of CS1 will be considered following public consultation and summarised in the Consultation Response Report, due to be completed by May 2015.

Upgrades to routes 3, 7 and 8 (CS378U)

CS378U Strategic Context

- 4.143 Four Cycle Superhighways were launched before the publication of the 'Mayor's Vision for Cycling in London', and are as follows:
- (a) Cycle Superhighway Route 2 (CS2), between Bow and City, launched in 2011 (covered in paragraph 4.96).
 - (b) Cycle Superhighway Route 3 (CS3), between Barking and Tower Hill, launched in 2010.
 - (c) Cycle Superhighway Route 7 (CS7), between Merton and City, launched in 2010.
 - (d) Cycle Superhighway Route 8 (CS8), between Wandsworth and Westminster, launched in 2011.
- 4.144 The publication of the 'Mayor's Vision for Cycling in London' marked a change in the quality of cycling infrastructure expected for CS and committed to substantially improving these existing CS. The London Boroughs where upgrade works are proposed (Wandsworth, Kensington & Chelsea, Westminster, Lambeth, Southwark and Tower Hamlets) all highlight the importance of encouraging cycling in their transport strategies. CS378U supports these aims by enhancing existing provision in these Boroughs.

CS378U Design

- 4.145 To upgrade routes CS3, 7 and 8, a series of smaller schemes at key locations on the route alignments are proposed for delivery on a rolling basis, with construction to be substantially complete by 2016, subject to the outcome of public consultation. The primary objective of this project is to ensure these routes remain safe, direct and continuous for cyclists while aligning them with the standards set out in the 'Mayor's Vision for Cycling in London'.
- 4.146 Post-implementation Road Safety Audits have been undertaken on CS3, 7 and 8. These audits analyse collisions reported since the routes were launched. Where trends are identified, these audits recommend measures to tackle them. CS378U

will ensure that all such recommendations are addressed, and in many cases provide additional measures to bolster those recommended at audit.

CS378U Consultation and Final proposals

- 4.147 Concept design and detailed traffic modelling are underway for schemes proposed under CS378U, which will enable quantification of the overall benefits. The schemes are subject to public consultation prior to completion of all design work. This would be undertaken on a rolling, scheme-by-scheme basis.

5 Impacts and Business Case

- 5.1 The business cases for these schemes take account a range of benefits and disbenefits that will arise from their implementation. This is in line with TfL's Business Case Development Manual (BCDM), which states that business cases should include:
- (a) Strategic narrative that provides the compelling story of why a particular course of action is required.
 - (b) Multi-criteria analysis, which is a framework for evaluating strategies.
 - (c) Formal benefit:cost analysis (the benefit to cost ratio).
- 5.2 For each CS, quantified appraisals have been completed. However, business cases are much more than the benefit to cost ratio, and the strategic importance of a project and the qualitative benefits need to be considered alongside the quantified elements. It is also important to note that several important benefits arising from Cycle Superhighways cannot be monetised so cannot be captured in the quantified benefit to cost ratio (BCR). These include:

Reduced peak-time demand on public transport services

- 5.3 The majority of the cycling mode shift in central London will come from public transport. Around 120,000 trips a day in the central zone are estimated to shift from bus and rail (including the Underground) once the cycle trip target set out in the 'Mayor's Vision for Cycling in London' is reached. The CS routes are the Cycling Vision's critical infrastructure projects in central London, as the Central London Grid does not provide the same level of segregation or direct access to the key destinations. Of the four routes launched to date, 13 per cent had switched mode from buses and 39 per cent had switched mode from the Tube²⁰.
- 5.4 In principle, this could create benefits through reduced crowding levels and reduced demand for some services, which could lead to a reduction in kilometres required to be operated. However, the space freed up on public transport by passengers switching to bike – particularly in central London – is highly likely to be taken up by new demand due to expected population and employment growth. This allows TfL to take a least-cost planning approach in investing in other transport schemes and capacity increases, for example delaying or possibly removing the requirements for capacity increases on certain TfL services.

²⁰ Cycle Superhighways Monitoring Report, 2012

- 5.5 Cycling can help relieve pressure on the public transport system when implemented as part of an integrated transport strategy, for example, where capacity is limited (e.g. some bus routes), or where additional capacity programmes would be extremely expensive (Underground, rail). In particular, the East-West and North-South routes can play a particularly important role in catering for significant numbers of commuters during the peak hours.

Making efficient use of existing surface transport capacity in central London

- 5.6 Cycle Superhighways can substantially increase overall capacity and flow rate on busier roads. Cycling is substantially more efficient at transporting individuals within the same road space than any other surface transport mode except buses, particularly as the average speeds by mode during peak travel times are similar.
- 5.7 As noted in the Cycling Vision Portfolio Business Case (approved by the Board in 2014), impacts on other road users will negatively impact on the BCR of individual cycling routes when measured against traditional time-based criteria. However the overall benefits that a step change in cycling can bring are more easily understood and captured at a portfolio and programme wide level, with the Cycling Vision Portfolio Business Case, presented to the Board in February 2014, reflecting an overall BCR of 2.9:1. Disbenefits to traffic at a specific junction location, for example, could be outweighed by the network-wide capacity improvements for cyclists, improvements to cyclists' safety and the longer-term environmental, health and economic benefits. It is therefore important to reference the individual route BCRs against the wider Cycling Portfolio Business Case, and the key role the Cycle Superhighways programme has in delivering the Cycling Vision.
- 5.8 A summary of the economic appraisal and benefits is provided below:

Journey time benefits and disbenefits

- 5.9 TfL's analysis of cycling potential found that the majority of potentially cyclable trips in the central sub-region are primarily made by bus, Underground and rail at present. Cycling is the fastest transport mode for many journeys, offering journey time savings for new cyclists switching from other modes of transport. 67 per cent of Cycle Superhighways users now cycle because it is quicker than their previous mode and 70 per cent said that the route improved the reliability of their journeys.
- 5.10 Subject to the outcome of relevant consultations it is anticipated that by December 2016, 21 major transformational road schemes will have been delivered, or be close to completion in central and inner London. Traffic models have been used to quantify the overall impact on general traffic in central and inner London of all 21 schemes by the end of 2016. The traffic flows in these models therefore take into account of the impact of these schemes on each other. For the purpose of CS route-level business case assessments, journey time impacts for each route have been extracted and evaluated. These have been used for the purpose of calculating the BCR (rather than assessing the cumulative impacts of all 21 schemes).
- 5.11 The models take account of a draft proposed mitigation strategy, referred to as advanced traffic signal management, which changes the timings at certain key traffic signal junctions to manage the flow of traffic into and around central

London. The models do not take account of future traffic growth to 2016, nor do they quantify the impact of other tactical and strategic traffic management measures such as travel demand management, enforcement, freight management and bus priority measures. It is also worth noting that sensitivity modelling at the overall cycling portfolio level shows that if the cycle mode share target is met, the resulting additional number of cyclists on the roads is likely to lead to an increase in the journey times for other road users across the central London road network (assuming no mitigation measures) regardless of the infrastructure provided. While CS infrastructure takes road space away from traffic on some roads, strategically it moves a large number of cyclists off the highway and onto specific routes – reducing the overall road user network impact of the increased cycling levels. This effect has been demonstrated in New York case studies where traffic speeds remained the same or improved after segregated cycle lanes were put in, even with the same vehicle volume levels. Again, this impact has not been included in the modelled data. Journey time benefits for each individual route have been measured, quantified, and set out in paragraph 5.53.

Environmental impacts

- 5.12 Environmental evaluations have been completed for each route incorporating independent advice from AECOM on anticipated air quality and noise effects, based on the pre-consultation traffic modelling results. The environmental evaluations follow TfL Surface Transport's Project Environmental Evaluation procedure, part of its Environmental Management System. Where applicable, the environmental evaluations are guided by the Department for Transport's Analysis Guidance (TAG) and Design Manual for Roads and Bridges (DMRB). The assessment was based on the change in traffic flows, distribution and speeds expected due to implementation of the schemes compared with a do-minimum scenario in 2016. The traffic data used in the assessments covered a large part of London (16,800 links), so that the effect of traffic diverting onto alternative routes could be considered. The Environmental Evaluations for each route are provided in Appendix 4, with a summary for each route set out below:

East-West

- 5.13 Based on an Environmental Evaluation completed prior to public consultation, the East-West route is not expected to have a significant environmental impact on townscape, ecology, cultural heritage, water environment, or ground conditions. Based on a simple comparison of the total length of road links with moderate or major impacts on noise, the scheme is expected to bring greater beneficial impacts than adverse impacts on the basis of length of road link.
- 5.14 Within a study area focussing on the cycle route and affected roads surrounding the route, emissions are expected to decrease marginally. Traffic would redistribute on the existing highway network due to the CSEW but it is not expected to result in increased emissions. Overall, a much greater length of the London road network is predicted to have significant²¹ beneficial impacts than significant adverse impacts.

²¹ Impacts are assigned a magnitude according to the absolute change in pollutant concentrations, derived from the predicted change in pollutant concentrations relative to the specific air quality standard for that area.

- 5.15 Many of the affected road links with increases or decreases in traffic are within the Air Quality Focus Areas. These are Areas that the GLA has identified as being priority areas for improvements in air quality due to existing concentrations within those areas and population exposure. Within the Focus Areas, a much greater length of the road network is predicted to have significant beneficial impacts than significant adverse impacts. Total emissions within the affected Focus Areas are expected to decrease with the Scheme.
- 5.16 Overall, having regard to both the adverse and beneficial impacts, the proposals have no significant effect on the environment.

North-South

- 5.17 The North-South route is not expected to have a significant environmental impact on townscape, ecology, cultural heritage, water environment, or ground conditions. Based on a simple comparison of the total length of road links with significant impacts on noise, the scheme is expected to bring slightly more beneficial impacts than adverse impacts on the basis of length of road link.
- 5.18 Within the study area focussing on the cycle route and affected roads surrounding the route, emissions of nitrogen oxides and particulate matter are expected to decrease marginally. Traffic would redistribute on the existing highway network due to the CS but it is not expected to result in an increase in emissions of local air pollutants. While there are some localised adverse impacts, a greater length of the road network is predicted to have significant beneficial impacts than significant adverse impacts. Many of the affected road links with increases or decreases in traffic are within the Air Quality Focus Areas. Total emissions within the affected Focus Areas are expected to decrease with the scheme.
- 5.19 Overall, having regard to both the adverse and beneficial impacts, the proposals have no significant effect on the environment.

CS5 Inner

- 5.20 Based on an Environmental Evaluation completed prior to public consultation, CS5i is not expected to have a significant environmental impact on townscape, ecology, cultural heritage, water environment, or ground conditions. Changes in noise levels as a result of traffic redistribution arising from the scheme are expected to be minor. While some significant beneficial and adverse air quality impacts have been identified, in both the scheme study area and in the Air Quality Focus Areas, the beneficial impacts are predicted to outweigh adverse impacts – and the area affected is small.
- 5.21 Overall, having regard to both the adverse and beneficial impacts, the proposals have no significant effect on the environment.

CS2 Upgrade

- 5.22 CS2U is not expected to have a significant environmental impact on townscape, ecology, cultural heritage, water environment, or ground conditions. Changes in noise levels as a result of traffic redistribution arising from the scheme are expected to be minor.
- 5.23 In terms of air quality, moderate beneficial impacts have been identified on 0.2 km of road. Although a moderate beneficial impact is generally considered to be

significant, in light of the small amount by which the minor/moderate threshold is exceeded and the small area affected, TfL's external advisors have concluded that there are no significant changes expected to air quality arising from the scheme. Overall, the CS2U route has limited potential to cause significant environmental effects.

CS1

- 5.24 The Environmental Evaluation of CS1 is underway, and is being developed iteratively as the proposals are finalised for public consultation. To date, no significant impacts have been identified, and overall impacts are expected to range from slight adverse to moderate beneficial.
- 5.25 It should be noted that the wider health and air quality benefits are more accurately quantified at a strategic scale across the whole Cycling Portfolio. At portfolio level, the impact of the 'Mayor's Vision for Cycling in London' on the environment is anticipated to be positive; arising from the estimated 52,000 daily trips in the central London area that are expected to switch to cycling from private modes once the 1.5 million cycle journeys per day target is reached – which equates to over 135,000 km per day not driven.

Equality Impacts

- 5.26 TfL is subject to the general public sector equality duty set out in section 149 of the Equality Act 2010, which requires it to have due regard to the need to eliminate discrimination, advance equality of opportunity and foster good relations by reference to people with protected characteristics. The protected characteristics are: age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex and sexual orientation. As part of its decision-making process on the proposals for Cycle Superhighways, TfL has had due regard to any impacts on those with protected characteristics and the need to ensure that their interests are taken into account.
- 5.27 As the detail of the proposals has developed, informed by the responses to public and stakeholder consultation, these matters have been kept under review. In line with its Public Sector Equality Duty, TfL has carried out Equality Impact Assessments (EqIAs) for all CS routes (see Appendix 5).
- 5.28 It is anticipated that the majority of cyclists using the routes would be from those groups who cycle the most at present – white males aged 25-44, white females aged 45-59, black Caribbean and black Other, people of mixed race, and some younger people cycling to school. However there would also be an opportunity to encourage other people to use the proposed routes. TfL intends to integrate the proposed schemes with local borough initiatives to help engage people in some of the main equality target groups such as ethnic minorities, women, disabled people and older and younger people. The EqIAs for all routes show positive impacts for black and ethnic minority groups, females, disabled cyclists, and cyclists under 25 and over 65 years of age.
- 5.29 On all routes with bus stop bypasses, some potential negative impacts have been identified for disabled users and over 65s, as pedestrians will need to cross the cycle track to access the bus stop platform. These issues have been mitigated in the designs through the use of flush crossing points, tactile paving, wide segregated bus stop islands, and consistent location of street furniture.

5.30 A summary of the EqlA results is as follows:

East-West CS

5.31 Positive impacts have been identified for disabled pedestrians, as the scheme involves a number of improvements to pedestrian facilities including enhanced crossing facilities, increased footway widths and new pedestrian crossings. Some negative impacts have been identified where footways are cut back, however the minimum 2 metre standard for footway widths has been maintained.

5.32 Some negative impacts were identified for disabled drivers due to a reduction in and relocation of parking facilities, for example on Victoria Embankment. Following comments received during consultation, TfL has reviewed proposals and will reinstate all existing disabled parking.

North-South CS

5.33 Positive impacts have been identified for disabled pedestrians, as the scheme involves a number of improvements to pedestrian facilities including enhanced crossing facilities, increased footway widths and new pedestrian crossings. Some negative impacts have been identified where footways are cut back, however the minimum 2 metre standard for footway widths has been maintained.

5.34 Disabled parking bays are currently provided along the route. The scheme design retains these and provides additional bays, but relocates the bays which are on the side of the cycle track, to the segregation island. Disabled people will, therefore, need to cross the cycle track in order to access the footway. In order to mitigate this potential negative impact, a flush crossing point will be provided so that wheelchair users will not be required to negotiate a kerb upstand.

CS5 Inner

5.35 Positive impacts have been identified for disabled pedestrians, as the scheme includes a number of improvements to pedestrian facilities including enhanced crossing facilities, increased footway widths and new pedestrian crossings. The scheme includes moving a loading/disabled bay approximately 50 metres from Harleyford Road to Durham Street. No comments were received about this relocation during the public consultation.

CS2 Upgrade

5.36 Some negative impacts have been identified for disabled pedestrians in relation to footway cutbacks, pedestrian wait times, and bus stop relocations. However, five standalone staggered crossings will be converted to straight across 16 metre wide crossings, to simplify crossing movements. All footways will be maintained at least at the minimum width required for two wheelchairs to comfortably pass and the reduction in footway widths at some locations will be offset as much as possible by de-cluttering of street furniture.

5.37 Some negative impacts have been identified for faith groups, where the footway width outside the London Muslim Centre has been reduced (but not to below the required 2 metre width). However, a positive impact has also been identified at the East London Mosque as the length of parking bays immediately outside the mosque is proposed to be extended. In addition, the pedestrian crossing to the

west of Fieldgate Street is being converted from staggered to straight across, which will simplify some pedestrian trips to the mosque.

CS1

- 5.38 The EqIA is currently in draft form, subject to the final outcome of the February public consultation. However, the EqIA process has started with a review of the initial designs. Positive impacts have been identified for disabled pedestrians and pedestrians generally, with 21 new or improved pedestrian crossings. 27 raised entry treatments at junctions also have a positive impact for disabled pedestrians. One minor impact has been identified for disabled drivers, with the relocation of a disabled parking bay.
- 5.39 Overall, having had due regard to the positive and negative impacts of the proposals on those with protected characteristics, the steps taken to mitigate the negative impacts and the very significant benefits of the proposals for London, it is considered that the proposals should be implemented.

Safety impacts

- 5.40 Collisions at junctions present the highest overall risk to cyclists, but two of the most common collision types for cyclists do not involve turning movements. Perception of safety is a major barrier to cycling with many cyclists feeling less confident on routes where they are mixed in with general traffic.
- 5.41 Through use of segregation kerbs, quiet backstreet routes, and by physically separating cyclists in space and time along links and at junctions, the proposed CS routes would seek to substantially reduce the interactions between cyclists and motor traffic and eliminate or substantially reduce the existing numbers of collisions. International experience has shown that modern segregated cycle tracks are strongly associated with a substantial objective decrease in the number of cyclist injuries. This type of infrastructure is attractive to cyclists and generally leads to increased usage. The decrease in injury volume is therefore almost always set against a background of greatly increased usage, thus substantially improving the cyclist injury rate in these locations. For example, the decreased injury volumes and increase usage mean that overall injury rate of cycle tracks in Vancouver and Toronto is around one-tenth (11 per cent) that of comparable roads without cycling facilities.
- 5.42 The anticipated cyclist safety benefits of the routes, based upon the last 36 months of available collision data and using the value of preventing a casualty as prescribed in the BCDM, have been calculated for the benefit cost ratios (BCR) shown in paragraph 5.53.
- 5.43 The approximate levels of physical segregation on each route are shown below:
- (a) CSEW: 91 per cent
 - (b) CSNS: 69 per cent
 - (c) CS5i: 95 per cent
 - (d) CS2U: 75 per cent
 - (e) CS1: 13 per cent - but route is substantially on quieter, back-street roads

- 5.44 While some traffic will be displaced from the Cycle Superhighways routes onto other adjacent routes, this is not expected to affect the overall collision rate, as historical data shows that implementation of Cycle Superhighways attracts cyclists from adjacent routes²². Customer research further demonstrates that cyclists are willing to change their route and travel further to access high quality infrastructure²³. Consequently, while some adjacent roads are expected to experience increases in traffic flows, fewer cyclists are expected to use those roads following implementation of the proposals. Furthermore, implementation of the other infrastructure proposals set out in the 'Mayor's Vision for Cycling in London – specifically the Central London Grid, and a network of Quietway routes – will provide connecting infrastructure to help cyclists access the Cycle Superhighways. The junction designs along the Cycle Superhighways seek to meet the needs of those joining and leaving the routes, as well as those travelling along them.
- 5.45 In addition, a number of improvements to pedestrian safety will be made as part of the proposals, including the introduction of 30 new signalised pedestrian crossings across the programme.

Health impacts

- 5.46 From TfL's research on the reasons why people cycle, London cyclists (and non-cyclists) consistently identify health and fitness as the top reason for travelling by bicycle. Physical activity has beneficial effects on many aspects of morbidity (illness), including coronary heart disease, stroke, diabetes, and some types of cancer²⁴. Reduced morbidity benefits many parts of society (e.g. the NHS, and employers) as well as the individual. The benefits of regular cycling still substantially outweigh the disbenefits that may result as a result of injury on the roads while cycling.²⁵ The effect of physical activity on reducing mortality has been calculated for the BCR using the TfL – and the Department for Transport (DfT) – approved World Health Organisation Health Economic Assessment Tool (HEAT).

Economic impacts

- 5.47 The Cycle Superhighways programme is expected to enhance the attractiveness of the urban realm for walking and cycling which is likely to strengthen the economic vitality of commercial streets²⁶, and is seen as an important means of sustaining London's competitiveness as a place to do business.
- 5.48 TfL has not produced an economic impact assessment for the East-West route, as this type of assessment is usually only completed if a project requires planning

²² Cycle Superhighways Evaluation Report, 2012

²³ Cycle Route Choice Survey, 2012

²⁴ Physical Activity Guidelines Advisory Committee. *Physical Activity Guidelines Advisory Committee Report 2008*. Washington, DC, US Department of Health and Human Services, 2008. Cited in WHO HEAT tool explanatory document *Health economic assessment tools (HEAT) for walking and for cycling* http://www.euro.who.int/__data/assets/pdf_file/0003/155631/E96097rev.pdf

²⁵ The health benefits of switching from car to cycling can save up to £1,121 per person/year – Cavill, N. and Davis, A (2007), *Cycling and Health – what's the evidence?*, Cycling England, and The British Medical Association report *Cycling: Towards Health and Safety* (1992)

²⁶ 'The economic benefits of Sustainable Streets' – New York City Department of Transportation, 2013.

permission. Canary Wharf Group have submitted an Economic Impact Assessment of the proposals based on the traffic modelling data provided during the East-West public consultation. This report highlights the negative economic impacts of increased congestion. Many of the points arising from this assessment have been addressed following the design changes set out in the Consultation Response Report on the East-West route, notably the reduction in predicted traffic delay at the eastern end of the project.

- 5.49 It is worth noting that historically, large projects resulting in displaced traffic have not had a proven material impact on London's economy. Specifically in relation to the London Congestion Charge scheme, annual studies undertaken for five years after the event showed there was no general evidence of any measurable differential impact on business and economic activity, at the aggregate level, based on analysis and surveys conducted by TfL²⁷. The main conclusion of the research was that events in the wider economy were far more significant in determining the performance of businesses in the charging zone than any effect of charging itself.

Urban Realm

- 5.50 The Cycling Portfolio Business Case identifies the positive impact cycling infrastructure will have upon the urban realm in London, providing more space for physically active modes of transport, helping people from all walks of life feel safer, more relaxed and more likely to choose to walk and cycle.
- 5.51 Through reallocation of road space and urban realm improvements such as improved lighting and planting, the proposed CS routes would contribute to enhancing the urban realm along the routes. A financial assessment of these 'ambient' benefits is calculated using the values from the BCDM, predominantly for cyclists, but also for pedestrians and bus users in key locations.
- 5.52 For cyclists, 'ambient' benefits relate to the attractiveness of the route, including the separation from traffic, width of the cycle track, wayfinding, road surface quality and maintenance, provision of cycle parking and junction improvements. The segregated nature of some of the routes is expected to attract the "near market" – potential cyclists who may have been deterred by perceptions that cycling in London is unsafe.

²⁷ 'Central London Congestion Charging – Impacts Monitoring', July 2008.

Benefit to Cost Ratio (BCR)

5.53 The summary of the costs, benefits, journey time impacts and increases to bus operating costs as a result of predicted delays for each route, are shown below.

		CS1	CS2U	CS5i	NS	EW
Cost	EFC (£k)	17,012	24,666	10,464	17,485	41,321
	Discounted NPV EFC (£k)	16,060	23,037	9,837	16,293	38,194
Benefits (p/a)	Safety (£k)	297	4,340	1,441	2,400	3,258
	Health (£k)	132	255	460	317	1,266
	Ambience – cyclists (£k)	1,049	1,489	2,220	2,242	8,236
	Ambience – pedestrians (£k)	20	-	652	1,019	13,868
	Ambience – others (£k)	-	-	101	2,614	5,404
	Modal Shift (£k)	21	-	35	-	-
	Reduced Absenteeism (£k)	112	255	184	318	1,271
	Journey Times – all modes (£k)	-336	-1,838	-2,539	-1,455	-36,746
	Bus Operations (£k)	-	-	-1,050	-2,700	-4,950
	Total Annual Benefits (£k)	1,349	4,502	1,504	4,755	-8,393
Total Discounted Benefits over 30 years (£k)		30,086	102,472	36,867	107,632	-200,675
Benefit : Cost Ratio		1.9:1	4.4:1	3.7:1	6.6:1	Negative

5.54 As referenced in paragraph 5.7, it is important to consider the overall benefits of a step change in cycling at a portfolio and programme wide level. For example, although not captured within the individual business cases – which are treated in isolation – CSEW would have a direct impact and benefit to other schemes in the cycling portfolio. For example, the North-South Cycle Superhighway would expect to receive a direct uplift in the number of cyclists as a result of the connection to the high quality infrastructure of the East-West route at Blackfriars junction, which cyclists will use for their onward journey. It is therefore important to reference the individual CSEW BCR against the wider Cycling Portfolio Business Case. Furthermore, whilst not included in the individual assessment, as referenced in paragraph 5.11 there is a range of proposed tactical and strategic traffic management measures such as travel demand management, enforcement, freight management and bus priority measures that are planned to be delivered in parallel to the 21 schemes planned for construction in central London by 2016 which it is anticipated will improve the overall impact and changes to journey times from CSEW, the overall cycling portfolio, and other schemes being developed by TfL and third parties.

5.55 Whilst the benefit to cost ratio is not positive for the proposed East-West Cycle Superhighway based on the monetised benefits that can be captured, this does not mean that the project is poor value for money. This scheme is an essential part of the wider cycling network and re-allocates space from motorised modes to cycling, allowing more people to travel on the system as a whole

6 Delivery Strategy

6.1 The detailed design and construction of the Cycle Superhighways on the Transport for London Road Network (TLRN) would be undertaken through the London Highways Alliance Contract (LoHAC). Where works take place on borough roads, two approaches are proposed depending on local requirements:

- (a) Works delivered through the relevant borough's framework contactors (or LoHAC for those boroughs who have signed up to it), led by the borough under a Section 278 agreement with TfL.
- (b) Works delivered by TfL on borough roads through LoHAC, under a Section 8 agreement with the borough.

6.2 Risks have been assessed at both the programme and project level, with a Quantified Risk Assessment (QRA) undertaken for projects at detailed design stage.

6.3 Key milestones are shown in the table below:

Route	Target Dates	
	Construction Start	Construction End
East-West (Phase 1)	Apr 2015	July 2016
North-South	Apr 2015	May 2016
CS5 Inner	Feb 2015	Oct 2015
CS2 Upgrade	Feb 2015	Apr 2016
CS1	Jul 2015	Apr 2016
Upgrades to Routes 3, 7 & 8	Rolling Programme of works. Detailed design to start in March 2015.	

6.4 A full TfL team is in place to deliver and sponsor the schemes, supported by LoHAC resources at the Detailed Design and Construction stage. Internal resources will be deployed on other major projects budgeted in TfL's long term investment programme post-2016.

6.5 TfL seeks to balance views that cycle safety improvements should be delivered as quickly as possible, with the need to construct the routes at a pace acceptable to London's residents and businesses. Construction plans are currently being finalised which, subject to Board approval, would enable work to start in February 2015 on those schemes seeking approval now.

6.6 In line with TfL's Network Management Duty, TfL is collaborating with a number of third party developers and projects to ensure that construction works are coordinated, and that congestion and disruption to vehicles and pedestrians would be kept to a minimum as far as possible. For example, TfL Officers meet frequently with developers such as Thames Tideway Tunnels Ltd to develop mutually compatible construction programmes, and explore opportunities for 'piggy backing' temporary road closures to avoid multiple traffic diversions.

Disruption to major events – such as the London Marathon and Trooping the Colour – would be avoided.

- 6.7 It would be necessary to formally advertise proposed changes to Traffic Management Orders (which is effectively a further consultation) on specific localised proposals such as removal or relocation of parking and loading.
- 6.8 Construction would cause some disruption, although TfL would seek to minimise the impact as much as possible. Customers and road users potentially impacted by the construction activity would be informed of plans and progress, including writing to local residents and businesses before undertaking work in their area. Road traffic information would be provided to help customers and road users better plan their journeys and make informed choices about how, where and when they travel and to help reduce possible impact on their journeys.

7 Financial Implications

- 7.1 The table below shows the current forecast expenditure, which is fully budgeted within the Cycling Portfolio in the TfL Business Plan. The projects have existing Gate 1-4 Project and Procurement Authority which enables completion of public consultation and detailed design.

Route	Prior Yrs (£m)	14/15 (£m)	15/16 (£m)	16/17 (£m)	17/18 (£m)	Total (£m)
East West (Phase 1)	1.03	4.98	20.67	5.00	9.64	41.32
North South	0.40	2.09	11.33	3.66		17.48
CS5 Inner	0.25	1.58	8.63	0.00		10.46
CS2 Upgrade	0.23	3.84	17.29	3.29		24.65
CS1	0.10	1.56	8.46	6.89		17.01
CS Upgrade (3,7 & 8)	0.02	0.49	4.92	0.00		5.42
Total	2.03	14.53	71.31	18.84	9.64	116.35

2014 Business Plan	2.03	19.49	70.12	16.77	7.76	116.17
Variance*	0.00	-4.96	1.19	2.06	1.88	0.18

* Variance relates to later than forecast start to construction in early 2015 carrying costs into FY 2015/16, rephrasing of risk budget, and an £0.18 increase in EFC to CS5i. Cost savings elsewhere in the programme mean there is no net increase to the programme-wide budget.

- 7.2 The cost estimates were built up through Early Contractor Involvement via the LoHAC contractors, using their knowledge base to enable robust estimates to be developed for specific packages of work. The estimates were then reviewed by the TfL Commercial team to ensure accuracy and consistency with the LoHAC Schedule of Rates.
- 7.3 The total risk value for the projects is set out below:

Route	£m	Comments
East-West (Phase 1)	9.57	QRA P50 (Oct 2014) ²⁸
North-South	3.03	QRA P50 (Oct 2014)
CS5 Inner	1.66	QRA P50 (Oct 2014)
CS2 Upgrade	2.58	QRA P50 (Oct 2014)
CS1	3.35	QRA P50 (Oct 2014)
CS3, 7 & 8 Upgrade	1.46	Fixed % of EFC
Total	21.64	

7.4 A summary of the costs by category is provided below:

Costs and Funding Out-turn (£m)	Prior Yrs (£m)	14/15 (£m)	15/16 (£m)	16/17 (£m)	17/18 (£m)	Total (£m)
Feasibility and Design	1.13	7.41	1.36	0.31	0.00	10.21
Implementation	0.01	3.14	62.18	7.77	0.00	73.10
Other costs*	0.01	0.56	0.44	0.04	0.07	1.11
Inflation	0.00	0.00	2.00	0.83	0.00	2.84
Risk	0.00	0.00	3.13	8.94	9.57	21.64
Estimated Final Cost	2.03	14.53	71.31	18.84	9.64	116.35

* Other costs relate to workstreams such as data collection & monitoring, marketing & public consultation and powers & consents.

7.5 Project Authority calculations are provided in Appendix 1. A summary of the Procurement Authority for each route is provided below:

Route	£m
East-West (Phase 1)	26.2
North-South	10.9
CS5 Inner	7.3
CS2 Upgrade	18.7
CS1	11.2
CS3, 7 & 8 Upgrade	3.2
Total	77.5

8 Commercial Information

8.1 Given the restricted timeframe for the commencement of works in February 2015 to achieve route opening in 2016, the London Highways Alliance Contract (LoHAC) was selected. Additionally, a full competitive tender through OJEU is not believed to provide better value for money than the existing OJEU-compliant LoHAC. The LoHAC is a framework of collaborative highways services contracts covering a variety of tasks from early contractor involvement, detailed design and build from one of the framework contractors which avoids the need to tender

²⁸ Quantitative Risk Assessment with risk exposure at 50 per cent probability

individual routes or services while affording the flexibility to “pick and mix” service provision in a collaborative working environment.

8.2 The LoHAC framework allows schemes to be ordered on one of three pricing options:

- (a) Lump Sum
- (b) Re-measure
- (c) Target Cost

8.3 The option chosen to deliver the contract is Target Cost. This will be set via negotiations between TfL and LoHAC contractors using rates within the LoHAC Schedule of Rates.

8.4 A target cost approach promotes a collaborative environment within which project risks can be mitigated and best value incentivised, building upon the use of Early Contractor Involvement at design stage. The ability to align both TfL and the LoHAC contractor’s objectives creates the opportunity to reduce costs and promote savings. The target cost approach has been used successfully on the LoHAC contract on other projects such as Euston Circus and Hogarth Flyover.

8.5 Task orders and instructions will be administered via an open book approach with the LoHAC contractors paid defined (actual) costs plus a fee percentage for carrying out the work. The risk of over spends and opportunity for efficiencies will be actively managed by both parties through the pain/gain share mechanism. Additionally, an open-book costing approach will provide useful benchmarking and estimating data for future Cycle Superhighway schemes.

9 Assurance Information

9.1 An Integrated Assurance Review of the proposals was carried out in September 2014. The Independent Investment Programme Advisory Group (IIPAG) concluded that the review was thorough, and covered all the main points required in the lines of enquiry specified for the review. The IIPAG further noted that the Cycle Superhighways programme is well managed by a competent and motivated team.

List of appendices to this report:

Appendix 1	Project Authority Calculations
Appendix 2	Consultation Materials and Detailed Proposals
Appendix 3	Consultation Response Reports: Executive Summaries
Appendix 4	Environmental Evaluations
Appendix 5	Equality Impact Assessments

List of Background Papers:

Paper 1	'The Cycling Vision Portfolio', TfL Board, February 2014
Paper 2	Consultation Response Reports
Paper 3	'Integrated Assurance Review Contract Award Review of Cycle Superhighways', TfL Independent Investment Programme Advisory Group, September 2014.
Paper 4	'Cycle Superhighways Contract Award - Integrated Assurance Review', TfL Project Management Office, October 2014.
Paper 5	'Management response for Cycle Superhighways Contract Award IAR', Programme Management Team, October 2014.

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