

# Annex 1

<b>Committee(s):</b>	<b>Date(s):</b>
Planning & Transportation	14 October 2014
<b>Subject:</b> Cycle Superhighways – The City’s interim response to the public consultation	<b>Public</b>
<b>Report of:</b> Director of the Built Environment	<b>For Decision</b>

## Summary

The Mayor of London is currently consulting on his two Cycle Superhighway proposals (the East-West and the North-South routes). Further proposals for Cycle Superhighways within London are due for consultation throughout the autumn. Some of these routes, CS1, CS2 and CS4 terminate close to or on the City boundary. These proposals have significant benefits as well as implications. It represents a major change in the way cycling facilities on the public highway should be provided. However, the proposals could lead to implications that cannot easily be reversed such as the re-instatement of turning movements or the way junctions operate.

Part of the E-W proposals is on Castle Baynard Street and therefore requires the City of London to exercise its Highway powers. Many changes to Traffic Orders are required as well as listed building consent. This would also require the City of London to exercise its Traffic and Planning powers. The City can, should Members choose, delay or stop the introduction of both Cycle Superhighways.

The proposals are heavily biased towards cycling but results in negative impacts on some other users. The overall impact of the current proposals on pedestrians, local access and the environment are not in keeping with the Mayor of London’s Vision to ‘create better places for everyone’.

This report represents officer’s initial views of the consultation proposals. Further data is promised but yet to be released therefore a further paper is proposed to agree the City’s final consultation response.

## Recommendation(s)

Members are asked to:

- Note this report.
- Agree to the key requirements as detailed in para 44.
- Agree that officers seek an extension to the consultation period of at least one week and that if this is not agreed, the final response to the consultation be agreed by the Policy & Resources Committee and then by the Planning & Transportation Committee through urgency provisions.

## **Main Report**

### **Background**

1. The Mayor of London launched his Vision for Cycling in London in March 2013. One of his four key themes was a tube network for the bike. The Mayor is currently consulting on his proposals for two segregated Cycle Superhighways that run through the City of London. He has acknowledged that there will be benefits as well as impacts on other road users.
2. In March 2014, this Committee agreed 'in principle' with the routes of the Superhighways. It also agreed that 'in principle' certain City streets could form part of the superhighway.
3. The Mayor is now consulting on his two Cycle Superhighways and has set out his intention to start building in early 2015. Further proposals for Cycle Superhighways within London are due for consultation throughout the autumn. Some of these routes, CS1, CS2 and CS4 terminate within the City, close to or on the City boundary. Appendix 1 provides details of the E-W proposals through the City. Appendix 2 provides details of the N-S proposals through the City.
4. In addition to the Cycle Superhighways, there is also an extensive network of cycle "quietways" proposed throughout Central London. The routes in the City have been agreed in principle by the Streets & Walkways Sub-Committee earlier this year. Appendix 5 provides a plan showing all the various proposed cycle routes.
5. The original deadline for responses was 19<sup>th</sup> October but due to the significance of the proposals and the delayed release of the technical information, it has been extended until 9<sup>th</sup> November 2014.
6. This report provides Members with detailed information (as far as it is available to officers) and suggests the City's requirements.
7. Responding to highway proposals is within the remit of the Streets & Walkways Sub-Committee. However due to the overall significance of the issues, it is proposed that the response be made by the Policy and Resources Committee and the Planning and Transportation Committee on behalf of this Committee. A paper on this matter was considered by the Policy and Resources Committee at their meeting on the 2nd October.

### **Current Position**

8. The City has been working with TfL since August 2013, to try to ensure that the proposals developed provide the best possible outcome for the City. The proposals will provide many benefits but due to Mayor's design objectives, there are also negative implications for the City and the whole of London.
9. The Mayor has acknowledged that the analysis shows that the proposals would mean longer journey times for motorists as well as longer waits for pedestrians at crossings in a number of locations. He proposes to mitigate these impacts through the use of "wider traffic management plans". The City

has not been made aware of what the wider traffic management plans will include. Some of the improvements for pedestrians include new pedestrian crossings, which are discussed later.

10. TfL promised to release traffic modelling information during the course of the public consultation; to inform the public of the effects of its proposals. The modelling work is a major and complex piece of work and is key to understanding the implications. This data was released on 24<sup>th</sup> September 2014 but it does not provide sufficient detail at a local level, nor does it show the overall implications for movement throughout London.
11. It is now understood that further modelling information will be made available to officers and in order to consider that information thoroughly, officers will be seeking a further extension to the consultation deadline beyond the 11<sup>th</sup> November (which is the date this Committee next meets). If this is not secured, the City's response will need to be agreed at the Policy & Resources Committee on the 6<sup>th</sup> November and then by the Planning & Transportation Committee under the urgency provisions.
12. The design of both the N-S and E-W Cycle Superhighways are intended to be for higher volume, faster routes for cyclist. They will run mostly on TfL roads, be direct and largely segregated. At junctions, conflicts between motor vehicles and cyclists will be removed. In order to achieve these design objectives, the reallocation of road space, amended signal times and restricted access is proposed. The City considers that the proposals are too heavily biased towards cyclists with insufficient consideration given to the needs of other users. Key changes are therefore needed before officers would recommend that the City should offer its support.

## **Key Issues & Analysis**

13. TfL has provided a summary of the modelling results and has described the benefits and disadvantages of the proposal. These are shown in Appendices 3 & 4. The results generally detail implications at a wider, strategic level as well as at a few key City locations. Officers believe that further information is still missing, such as the operation of each junction and link, collision analysis, impacts on the rest of the City, and the process to manage traffic flows and signal operations in the future.
14. Officers believe that TfL's proposals will have a significant adverse impact on the City. In particular to pedestrians, traffic flow, access and network resilience. It also fails to sufficiently address other challenges such as casualty reduction, air quality and the built environment.

### **Pedestrians**

15. The two Cycle Superhighways will provide 10 new signalised pedestrian crossings and change the level of service at four existing crossings. The changes to the crossings are shown in the table below.

Location	Existing crossing facility	Proposed crossing type
Trinity Square	Large refuge island and contrasting carriageway	Single stage
Queen Street Place	Refuge island	Stagger (2-stage)
Temple Avenue	Refuge island	Single stage
Victoria Embankment	Single stage	Stagger (2-stage)
New Bridge Street by Watergate	Large traffic island	Stagger (2-stage)
Fleet Street/Ludgate Circus	Refuge island	Stagger (2-stage)
Ludgate Hill/Ludgate Circus	Refuge island	Stagger (2-stage)
Charterhouse Street (east)/Farringdon Street	Refuge island	Single stage
Charterhouse (west)/Farringdon Street	Refuge island	Single stage
Farringdon Street/Charterhouse Street	Refuge island	Stagger (2-stage)
Farringdon Road/Charterhouse Street	Refuge island	Single stage
Tower Hill/Minories	3 stage	Single stage
Shorter Street/Minories	Single stage	Stagger (2-stage)
Minories/Tower Hill	3 stage	Remove one crossing arm

16. Whilst most of these new crossings are welcomed and long overdue, a number of them are proposed to be the “stagger” type crossings. These are crossings where pedestrian will need to cross in two attempts (two stages) and are therefore less than ideal.
17. Officers consider that the existing stagger crossings at Ludgate Circus do not work effectively. At both crossing points, many pedestrians simply cross outside the crossing area and “green” man phase. They choose instead to cross in a straight line rather than use the narrow stagger islands. The current long pedestrian wait times also increases non-compliance with the pedestrian facilities provided thereby increasing road danger.
18. Also at Ludgate Circus, the width of the existing stagger on the southern arm is proposed to be reduced. It is already substandard in width to accommodate the number of pedestrians using it and reducing it further would make this an unusable facility. Because it is so narrow, people in wheel chairs or pushing a buggy will struggle to negotiate around the stagger and the necessary signal poles. On the other arms, new islands are also proposed to be of a similar substandard width. It is therefore considered that the proposals to retain the existing stagger crossing as well as to provide two new stagger crossings coupled with longer wait times is inappropriate. These crossings need to be significantly improved.



19. Over the last decade or so, pedestrian wait times at signal crossings have gradually increased. These increases have been made by TfL in order to maintain capacity for motor vehicles. It involves increasing signal cycle times which means it will take longer for the “green” man to appear. This also means that many pedestrians now ignore the “green” man and cross when they can, again increasing road danger.
20. Signal sequence times and pedestrian wait times are already excessive and encourage many pedestrians to cross outside of the green man phase. This increases risk. These Cycle Superhighway proposals will lead to a situation where pedestrians will be required to wait even longer before their opportunity to cross is given. A summary of the maximum wait times proposed are shown in the table below.

Location	Existing max wait times	Proposed max wait times	Change
Tower Hill/Minories	82 seconds	90 seconds	+ 8 seconds
Upper Thames St/Queen Street Place	98 seconds	98 seconds	No change
Blackfriars Station (westbound exit)	90 seconds	114 seconds	+ 24 seconds
Ludgate Circus	90 seconds	114 seconds	+ 24 seconds
Farringdon St/Charterhouse St	No existing facility	114 seconds	N/A

21. From the table above, it can be seen that the increased wait times at Ludgate Circus and Blackfriars Station are unreasonably excessive. The wait times at the other locations including the new crossings are also increased or considered too long. A reduction in wait times are needed rather than increased or at worst they should remain the same.
22. There is also a significant issue and a huge missed opportunity to improve pedestrian access to the City. As part of the Thames Tideway project, it is proposed to re-locate the existing Blackfriars Pier to Puddle Dock. The pier will bring more pedestrian activity into this area but their routes into and from the City are extremely limited. In addition, access for people with disabilities has not been provided at all (whether as part of the Thames Tideway or the Cycle Superhighway projects). Although pedestrian facilities along Puddle Dock are very poor, the width of the highway provides significant opportunities to make this a much better route. If the E-W proposals were implemented as proposed, it would preclude this opportunity. There are already pedestrians using this route. They cross the traffic lanes and climb over the wall to access the riverside. The new pier will only make the need for this missing pedestrian route that much more obvious.
23. Although the proposals provide more pedestrian space, they are not necessarily at the locations where they are most needed such as the large islands north of Ludgate Circus or the islands forming the cycle lane segregation. In fact, the proposal looks to reduce footway space, particularly outside areas where high pedestrian flows exist such as at the Tower of London, Trinity Square Gardens, Queen Street and Ludgate Circus.

24. The proposals expect and plan for an increase in cycling activity. The City is planning for a significant uplift in the number who work in and visit the City. Therefore, the proposals must be able to cater for an uplift of between 25% and 50% in the number of pedestrians using key junctions. The current proposals do not seem to be able to accommodate this increase.

#### Traffic flow, local access and network resilience

25. The E-W route is a very important strategic route for general traffic movement. It is an arterial route carrying large volumes of traffic through the City. A significant proportion of these are essential traffic such as vans, lorries and coaches. The route also provides for local access to residential and business premises.
26. Currently the route is often congested in both directions but TfL have adopted a design which seeks to retain two westbound traffic lanes for most of the length of the route through the City, but only one lane eastbound. It is not clear why this design has been adopted but officers believe that the extra westbound lane will be used to stack excess traffic; that can then be released slowly into the rest of central London. This would be detrimental to air quality in the City.
27. The N-S route is less significant in terms of strategic traffic movement but still carries quite a large volume of traffic. The proposals will reduce traffic capacity and lead to longer journey times along the route.
28. According to TfL's modelling, journey times for the E-W route will take up to an additional 16 minutes w/b and 7:30 minutes e/b. TfL also claims that on some routes they predict that journey times will actually reduce in the eastbound direction. It is hard to understand the reasons for this, especially as it is the eastbound carriageway that is being taken up to make way for the cycle lane. The N-S journey times could take an additional 12 minutes n/b and be quicker by over 2 minutes in the southbound direction. A summary of this is provided in the table below.

Route	Direction	Current		Proposed		Change	
		AM	PM	AM	PM	AM	PM
Limehouse Link Tunnel to Hyde Park Corner	W/B	34:34	30:51	50:28	44:20	15:54	13:29
	E/B	27:51	30:38	35:29	35:06	7:38	4:28
East Smithfield Street to Margaret Street	W/B	18:15	17:06	18:34	23:14	0:19	6:08
	E/B	14:50	16:37	11:51	12:45	-2:59	-3:52
Elephant & Castle to Farringdon Station	N/B	11:28	10:56	12:09	15:12	0:41	4:16
	S/B	10:50	12:17	9:42	9:13	3:53	2:03
Stamford Street to Queen Victoria Street (Journey starts on Stamford St)	N/B	3:45	3:20	15:43	12:41	11:58	9:21
	S/B	5:50	5:22	3:39	3:41	-2:11	-1:41

29. One of the design parameters is to remove conflict between cyclists and motorists at junctions. TfL proposes to achieve this by providing either dedicated signal phases/advanced green time for cyclists or to prohibit certain movements. A large number of prohibited movements are proposed. Some have more impact than others. A summary of the prohibited movements are detailed below.
30. These include:-
- a. Shorter Street – Bus and cycles only street. This would mean that any southbound traffic on Mansell Street (Inner Ring Road) will not be able to proceed westbound. Instead they will need to find alternative routes. It is likely that this traffic will either divert onto streets in Tower Hamlets (Leman Street) or the City (Aldgate High Street, Fenchurch Street, etc). Traffic flows using this route are not high but it is inappropriate to direct strategic traffic, in particular large vehicles onto the City's streets. This change would also impact on Cleansing vehicles from accessing Walbrook Wharf from that area.
  - b. Trinity Square – No access from Byward Street/Tower Hill. The alternative access would therefore be at Puddle Dock (this is the closest junction for eastbound traffic before arriving at Trinity Square) or Minories. It would then involve motorists negotiating very narrow and pedestrian dominated streets such as Crutched Friars and Cooper's Row. Although the number of motorists using this area is fairly small (TfL counts of ~200 vehicles during the peak hour), there are many businesses such as hotels that require access for larger vehicles. It is inappropriate to divert more traffic onto these streets. These streets are also not suitable to accommodate larger vehicles.
  - c. Fish Street Hill – No left turn onto Fish Street Hill or from Fish Street Hill onto Lower Thames Street. The left turn onto Fish Street Hill provides a useful route for vehicles wishing to head south over the Thames. It would now mean motorists will have to either use Puddle Dock or cross over the Thames using Blackfriars Bridge. The number of vehicles affected by this is small (TfL counts of ~120 during the peak hour). The impact would be greatest for drivers of HGV's. The alternative route for them after Blackfriars Bridge will be a lot more limited and may need to go a lot further east before they can head south. The banned left turn onto Lower Thames Street is less of a concern as the alternative route would be for vehicles to use Eastcheap and Great Tower Street.
  - d. Swan Lane – No right turn into Swan Lane. This would mean that access into Swan Lane can only be achieved from the east or Arthur Street (if coming from the south). Westbound traffic would need to use Puddle Dock, turning round at Fish Street Hill. This proposal would only impact on a small number of motorists (~37 vehicles during the peak hour), and is therefore considered to be acceptable.
  - e. Caste Baynard Street (local access only) and Lambeth Hill (one-way northbound). These proposals are not expected to have any significant impacts as access and alternative routes are being maintained.

- f. Puddle Dock – banned right turn into Castle Baynard Street. This would only impact motorists wishing to access Castle Baynard Street from Upper Thames Street. The alternative route is cumbersome but the number of motorist likely to be impacted is very low. However, one of those that are impacted includes vehicles used by the Open Spaces Department to access their depot. TfL has assured officers that vehicles in the service of the Local Authority can use the right turn only for buses at Blackfriars Junction.
  - g. Temple Avenue – cycles only. To enable motorists to exit this area, Carmelite Street will be made into an exit only street instead of the current closure. It will require police camera technology to maintain the integrity of the security cordon, but will mean that all current movements (albeit a slightly longer eastbound diversion) can be retained. The impact of this proposed change is therefore not considered to be significant.
  - h. Tudor Street (cycles only) and Bridewell Place (two-way). This will mean that access into this area can be made from Bridewell Place (for northbound traffic only) or from Fleet Street via Ludgate Circus (for southbound traffic). The proposals will also divert more traffic onto Watergate, as this is the only route onto New Bridge Street that would now permit traffic to proceed northbound. Although, motorists are being diverted onto other routes, some of which are less than ideal (such as Watergate and Bridewell Place), it is thought that this change is not significant.
  - i. Charterhouse Street – no right turn for southbound traffic. TfL has two options for the Cycle Superhighway north of Stonecutter Street. This is because the route alignment in Islington and Camden has not yet been agreed. One of the options therefore prohibits motorists from turning right at Charterhouse Street towards Holborn Circus. The diversionary route for these motorists will be to continue to Ludgate Circus, use the one-way system around Smithfield Market or make the diversion a lot earlier. This would impact on a small number of vehicles, and is not thought to be significant.
31. No information has been made available regarding the volume of traffic and the routes that motorists might seek to take on City Streets. It is not yet possible to say whether the proposals will add more traffic to the local streets in the City and the rest of central London. However, increases on traffic flows, in particular larger vehicles trying to use local streets to effect turning movements that will be banned on the major street network, will be undesirable and inappropriate.
32. There are implications in relation to current and imminent building developments in the City including 33 King William Street, Fleet Building, Thames Tideway Tunnel, 10 Trinity Square, etc. It is not clear how the works to construct the Cycle Superhighway will affect these developments but consideration will need to be given so that these developments are not unreasonably impacted.

33. The proposals will include removable street infrastructure to facilitate certain special events such as the Lord Mayor's Show or along ceremonial routes. However, increasing the level of street infrastructure that needs to be removed will take longer to safely deliver each time and this will increase costs and disruption. Some events may need to be rerouted, relocated, rescheduled or cancelled altogether as a result of the works or the permanent change. Further details about the impact of the proposals on special events will be reported to Members in due course.
34. The impact on the road network during the Superhighway construction is still uncertain, mainly because the methodology cannot be agreed until the detailed design is finalised following the current consultation. However, preliminary discussions on construction and programming would suggest that extensive lane closures and contra-flows will be required, effectively removing capacity from the network for the build programme that will mirror the permanent design. Several side roads will have to be temporarily closed, including Puddle Dock, Fish St Hill, Eastcheap and Trinity Square, and some directional closures of the superhighway route itself may be required. The direct and combined impact of these works will have the potential to impact other projects and works in the City, and a further report on the network impact of major works taking place in the City will be provided to Members of this Committee later this year.
35. The segregation design would significantly compromise network resilience. The "hard" engineering measures to create the separation will mean that it will be much more difficult for the network to adapt to incidents or to facilitate routine and emergency road works. The problem would be further exacerbated by the proposed prohibited movements and will therefore lead to more frequent and severe congestion occurring. It will not take much for this to happen.
36. TfL has stated that they will be engaging a number of traffic management measures to mitigate the impacts. What measures they will use has not been shared with the City, but it is expected to be similar to those used during the Olympics. One of these measures is likely to involve either constraining the traffic flow coming into central London or increasing them in other locations. It is not clear what level of traffic restriction, if any, has been used for the modelling.

#### Safety, casualty reduction and prevention

37. Recent cycling fatalities involving cyclists has put pressure on the Mayor to deliver safer measures for cyclists. However, it is not clear how these proposals will improve road safety on the specific routes or the implications on road safety as a result of the wider impacts caused by the proposals.
38. In the absence of any information from TfL, officers consider that cyclists' safety will be significantly improved along most parts of the proposed routes through the City. However, it is considered that at two locations, safety could be compromised.
  - a. Blackfriars Station. This junction currently has a very high collision rate. One of the reasons for this is likely to be because of the complex

layout. The proposal retains that layout but with the addition of the two-way cycle lane on the western side (increasing the confusion and complexity of the junction significantly) and the excessive wait times, it is considered that risks and collisions will increase.

- b. Ludgate Circus. This is the most dangerous location in the City. It is already a location where many pedestrians ignore the pedestrian crossings. The proposed stagger crossings, reduced refuges island widths, excessive increases in wait times and the additional two-way cycle lane running through the junction, will add further risks and collisions, particularly to pedestrians.
39. There is also the possibility that collisions will generally transfer to other locations and to other user groups, particularly pedestrians and powered two wheelers. If pedestrian wait times increase, it is more likely that they will risk crossing the road outside the “green” man. Similarly, if there are longer delays for motor vehicles, it is likely that more powered two wheelers will weave in and out of stationary or slow moving traffic and expose themselves to higher risks.

#### Environmental (air, noise and the built environment)

- 40. TfL has not provided any information on the effects of the proposal on air and noise pollution, other than claim that it would shift traffic noise and fumes further from pedestrians. It is however conceivable that air and noise pollution could improve due to the fact that less traffic can actually access and use these streets. However, if the route and surrounding roads become so congested, the balance could swing towards a more polluting environment.
- 41. Some of the proposals include greening and planting but there is also some loss of trees. Some of these belong to the City so it would be a requirement that TfL provides a replacement of these either along the route or elsewhere.
- 42. Environmental considerations need to go beyond air and noise pollution and should consider the impact on the wider built environment. The layout of the proposals at Blackfriars, the stagger crossings and use of islands throughout are excessively over-engineered and traffic dominated measures. These contribute to a poor built environment.
- 43. The proposal will impact on some existing listed structures including City of London Dragons, Blackfriars Bridge lamp columns and the Queen Victoria Statue at Blackfriars. Works to these will require listed building consent. The issues surrounding this will be separately considered.

#### **Key needs**

- 44. The proposals could lead to implications that cannot easily be reversed. Once implemented, it would be very difficult to effect change, such as the re-instatement of turning movements or the way signalised junctions operate. Whilst key data is still missing and it is unlikely that these will be provided in time to inform Members prior to the expiry date of the consultation. It is

therefore appropriate based on the information that is available, to request TfL to consider the following:-

- a. Pedestrian wait times are not made worse at key locations. In some locations wait times need to be reduced. The locations include Ludgate Circus, Blackfriars Station junction and Upper Thames Street/Queen Street Place.
  - b. A maximum cycle time at traffic signals is set at no more than 88 seconds. At existing locations where cycle times already exceed this, they should be reduced.
  - c. Pedestrian crossings need to be simple, straightforward and useable. At Ludgate Circus, they need to be single stage crossings. In other locations, they should also ideally be single stage crossings.
  - d. Local access (or convenient and appropriate diversions) must be provided at a number of locations including at Shorter Street, Trinity Square and into Fish Street Hill (for traffic heading over the Thames).
  - e. Provide a pedestrian link along Puddle Dock to the new river pier at Blackfriars.
  - f. Redesign of Blackfriars junction to improve streetscape, remove confusion and improve safety for all road users.
  - g. Consider alternative design measures to ensure a resilient, road network and demonstrate how the network will accommodate planned and unplanned road works.
  - h. Any traffic management measure used by TfL does not increase traffic on the City's streets.
  - i. The cycling proposals do not prejudice the City's ability to implement current projects such as at Bank junction, Museum of London gyratory, Fleet Street and Ludgate Hill; as well as projects associated with Crossrail.
  - j. Agree a process that will be used to manage traffic flows into and out of the City.
  - k. TfL and City officers work together to achieve an acceptable outcome. This may require changes in the process and governance that TfL has adopted up to now, an extension to the consultation deadline so that the further modelling information can be fully assessed, the needs of building developments, special events and construction impact mitigation.
45. These are not expected to detract from the Mayors' plans for the segregated cycle routes. They should provide a much more balanced and better outcome for the City and for London.

## **Corporate & Strategic Implications**

46. The Cycle Superhighways fully accords with the City's strategic and corporate policy objectives. The reduction in motor vehicles could deliver components of

the Air Quality Strategy, the Climate Change Mitigation Strategy, the Health and Wellbeing Strategy and the Noise Strategy. The proposals could also help to deliver greater safety on the City's streets.

## **Implications**

47. The delivery of Cycle Superhighways is very important for the Mayor of London. It would be in the interest of City to facilitate TfL's proposals.
48. Part of the E-W route is on Castle Baynard Street which is part of the City's highway. In order to deliver the E-W superhighway, the Mayor therefore requires the City to exercise its Highway & Traffic powers. Other parts of the routes may also need the City to exercise those powers, but these are likely to have less impact. Where the proposals impact on listed structures, listed building consent from the City will also be required.
49. Members have already agreed in principle that Castle Baynard Street can be used for the superhighway. Without it, it would not be possible, if at all, for TfL to deliver the Cycle Superhighway as it currently stands. The Cycle Superhighway proposals will change significantly the way that surface transport operates throughout London. This accords with the Mayor's Transport Strategy but the pace of change is of concern to some.

## **Conclusion**

50. TfL's proposals have significant benefits as well as implications. However, those benefits are heavily biased towards cycling. This unbalanced approach leads to significant implications for other users. Some key changes and agreed processes are required in order for the City to be able to support the proposals. These do not detract from the Mayor's plan for the segregated cycle routes and should provide a better balanced outcome.

## **Appendices**

- Appendix 1 – E-W proposals in the City
- Appendix 2 – N-S proposals in the City
- Appendix 3 – E-W modelling information
- Appendix 4 – N-S modelling information
- Appendix 5 - Proposed cycle routes in Central London

## **Sam Lee**

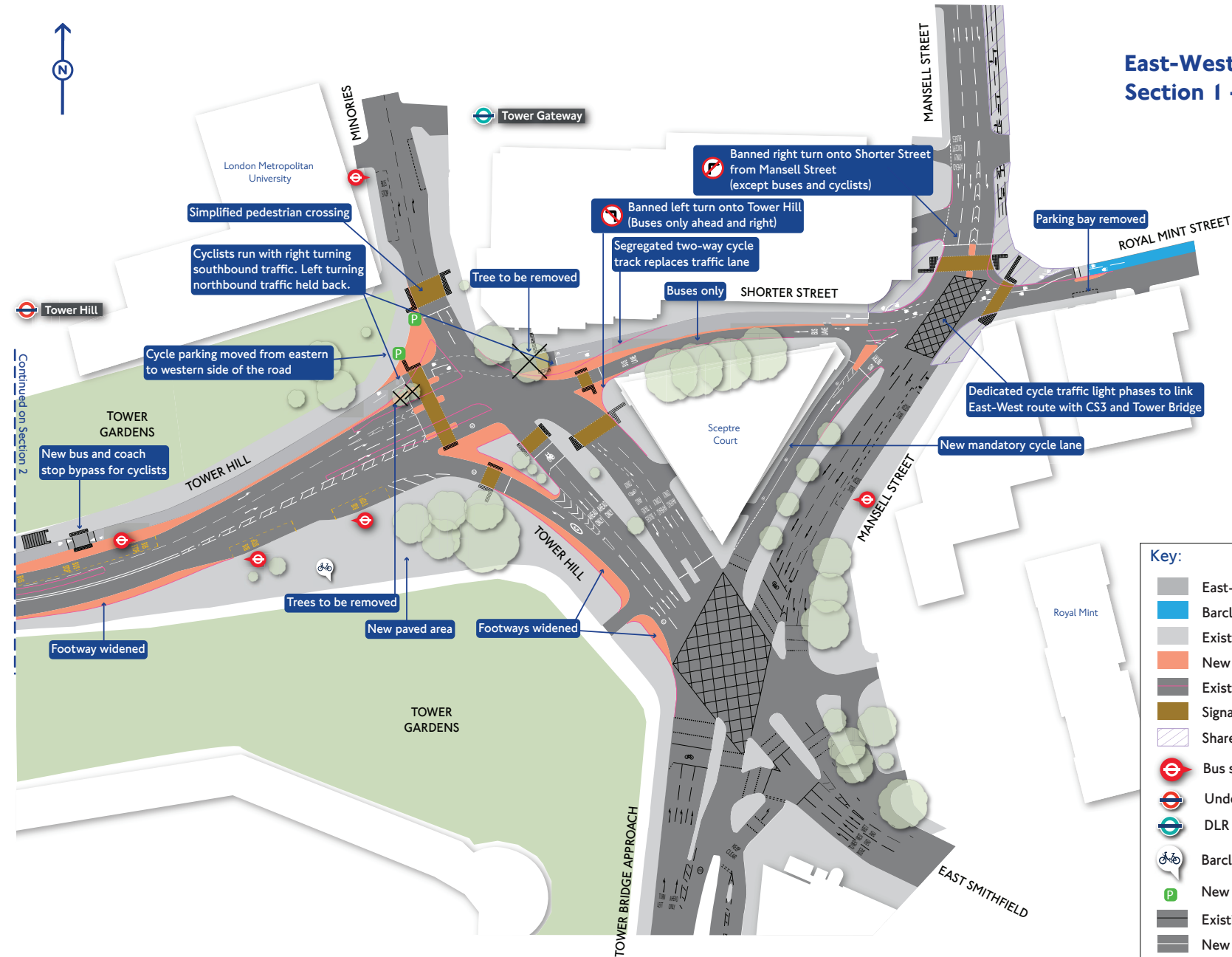
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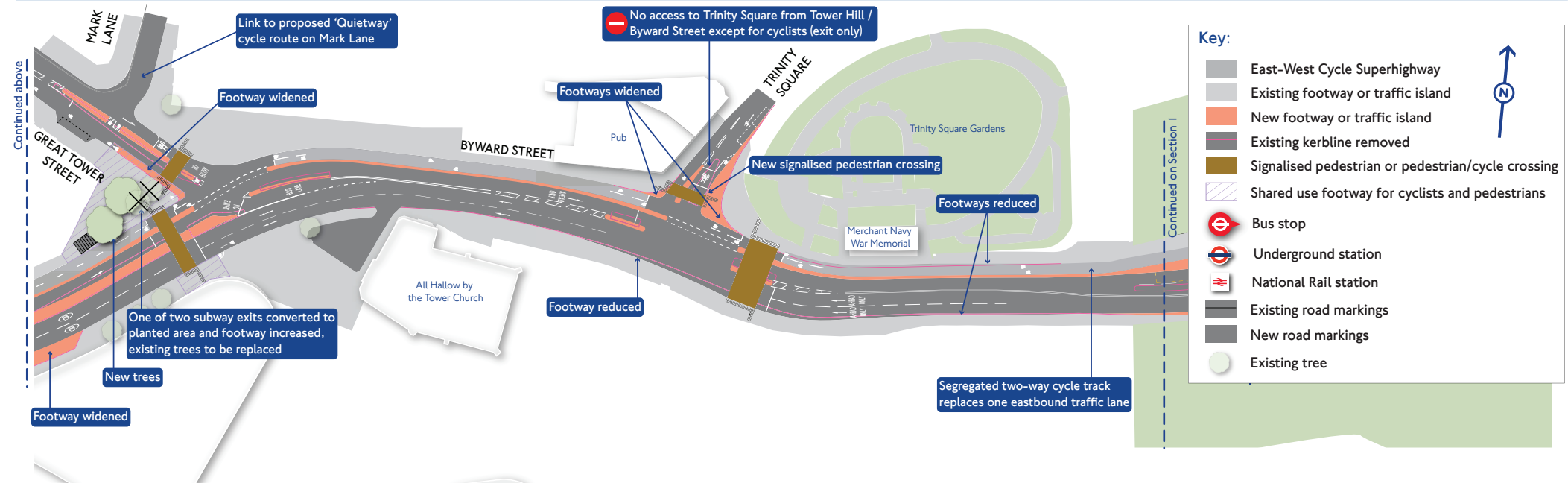
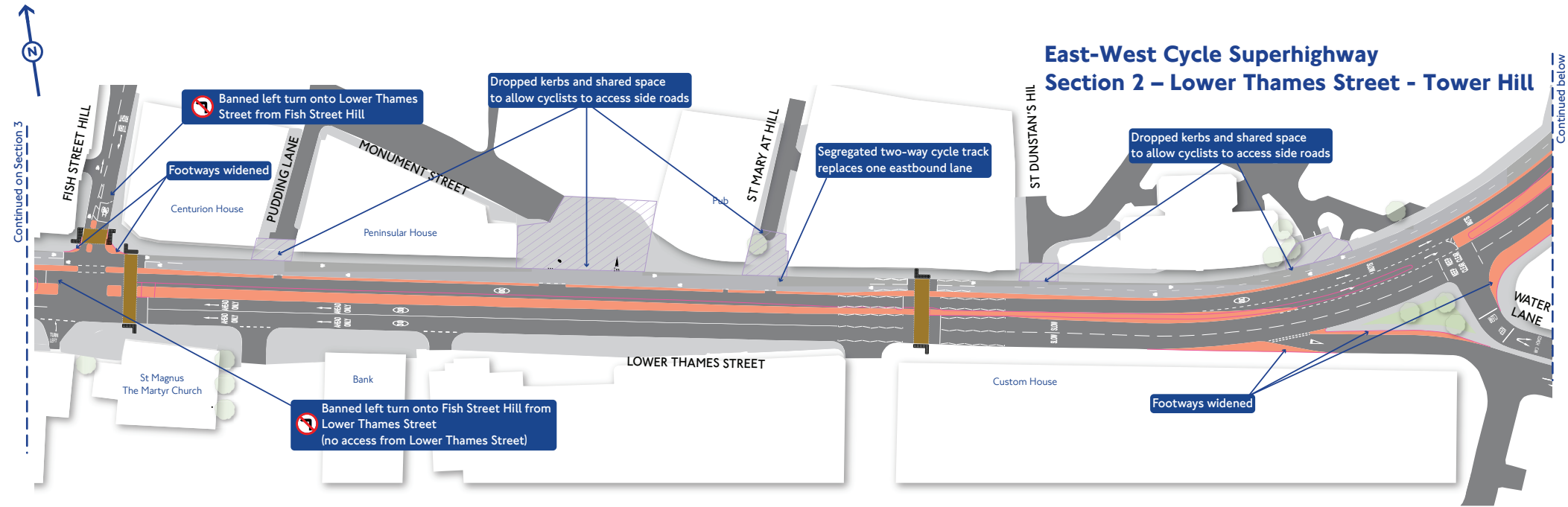
## East-West Cycle Superhighway Section 1 – Tower Hill



### Key:

-  East-West Cycle Superhighway
-  Barclays Cycle Superhighway Route 3
-  Existing footway or traffic island
-  New footway or traffic island
-  Existing kerbline removed
-  Signalised pedestrian or pedestrian/cycle crossing
-  Shared use footway for cyclists and pedestrians
-  Bus stop
-  Underground station
-  DLR station
-  Barclays Cycle Hire docking station
-  New cycle parking
-  Existing road markings
-  New road markings
-  Existing tree

## East-West Cycle Superhighway Section 2 – Lower Thames Street - Tower Hill



### Key:

- East-West Cycle Superhighway
- Existing footway or traffic island
- New footway or traffic island
- Existing kerbline removed
- Signalised pedestrian or pedestrian/cycle crossing
- Shared use footway for cyclists and pedestrians
- Bus stop
- Underground station
- National Rail station
- Existing road markings
- New road markings
- Existing tree

Continued below

Continued on Section

- HIGH TIMBER STREET

Footway reduced

Extended right turn pocket

Cycle 'early-start' facility replaces one northbound traffic lane at junction approach

Continued on Section 2

Continued above


Footway reduced

Princess House

Governors House

Footway widened

**Pedestrian crossing relocated slightly east**

 Banned right turn onto Swan Lane from Lower Thames Street



London Blackfriars

Banned right turn onto Castle Baynard Street from Puddle Dock

Cyclists to run with eastbound traffic, turning traffic held back

Segregated two-way cycle track replaces traffic lanes

Traffic allowed to turn left from Puddle Dock onto Upper Thames Street

Planted area reduced

3 trees removed

Loading area to be removed or relocated (tbc)

UPPER THAMES STREET

One eastbound traffic lane removed through tunnel to maintain consistent road space along route

## East-West Cycle Superhighway Section 4 - Upper Thames Street/ Puddle Dock/ Castle Baynard Street

CASTLE BAYNARD STREET

Two-way cycling on carriageway along Castle Baynard Street (low traffic flows)



QUEEN VICTORIA ST

Banned left turn onto Lambeth Hill from Queen Victoria Street (Lambeth Hill becomes one-way)

New crossing area for cyclists

Cycle contraflow

LAMBETH HILL

ST MARY'S CHURCH

CASTLE BAYNARD STREET

UPPER THAMES STREET

Two-way cycling on carriageway along Castle Baynard Street (low traffic flows)

One eastbound traffic lane removed through tunnel to maintain consistent road space along route














Thames Street Block

HIGH TIMBER STREET

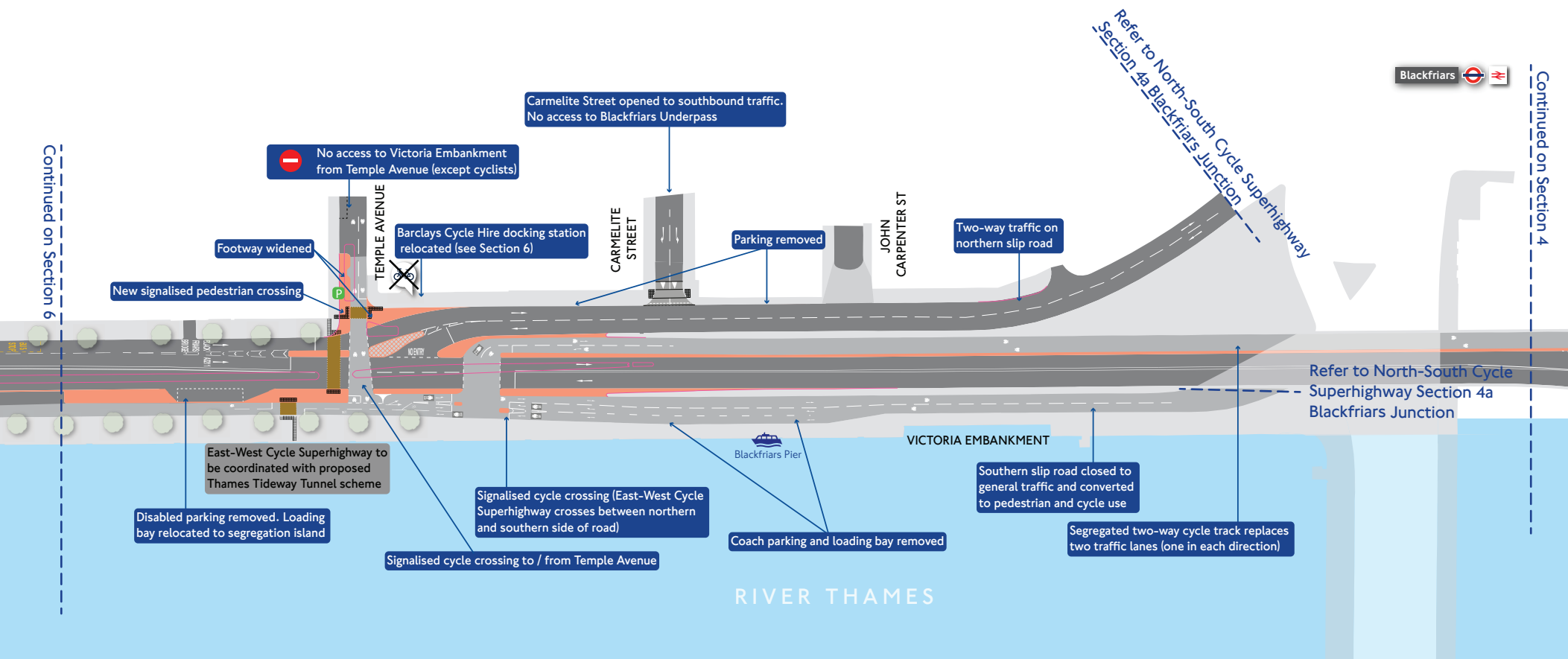
### Key:

- East-West Cycle Superhighway
- Existing footway or traffic island
- New footway or traffic island
- Overrun/flush area
- Existing kerbline removed
- Signalised pedestrian or pedestrian/cycle crossing
- Bus stop
- Underground station
- National Rail station
- Existing road markings
- New road markings
- Existing tree

Key:

- |   |  |   |                        |
|---|--|---|------------------------|
|  | East-West Cycle Superhighway                       |  | National Rail station  |
|  | Existing footway or traffic island                 |  | Underground station    |
|  | New footway or traffic island                      |  | Pier                   |
|  | Overrun/flush area                                 |  | Existing road markings |
|  | Existing kerbline removed                          |  | New road markings      |
|  | Signalised pedestrian or pedestrian/cycle crossing |  | New cycle parking      |
|   |  |  | Existing tree          |

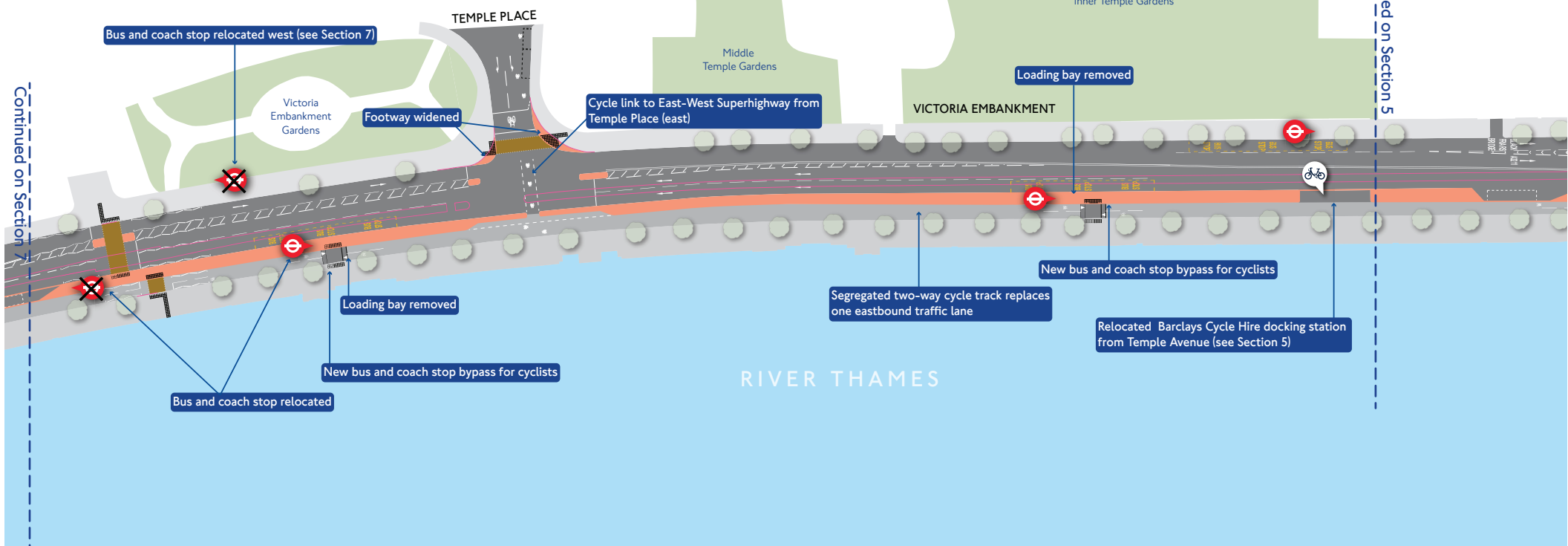
## East-West Cycle Superhighway Section 5 – Victoria Embankment (Temple Avenue - Blackfriars)



# Key:

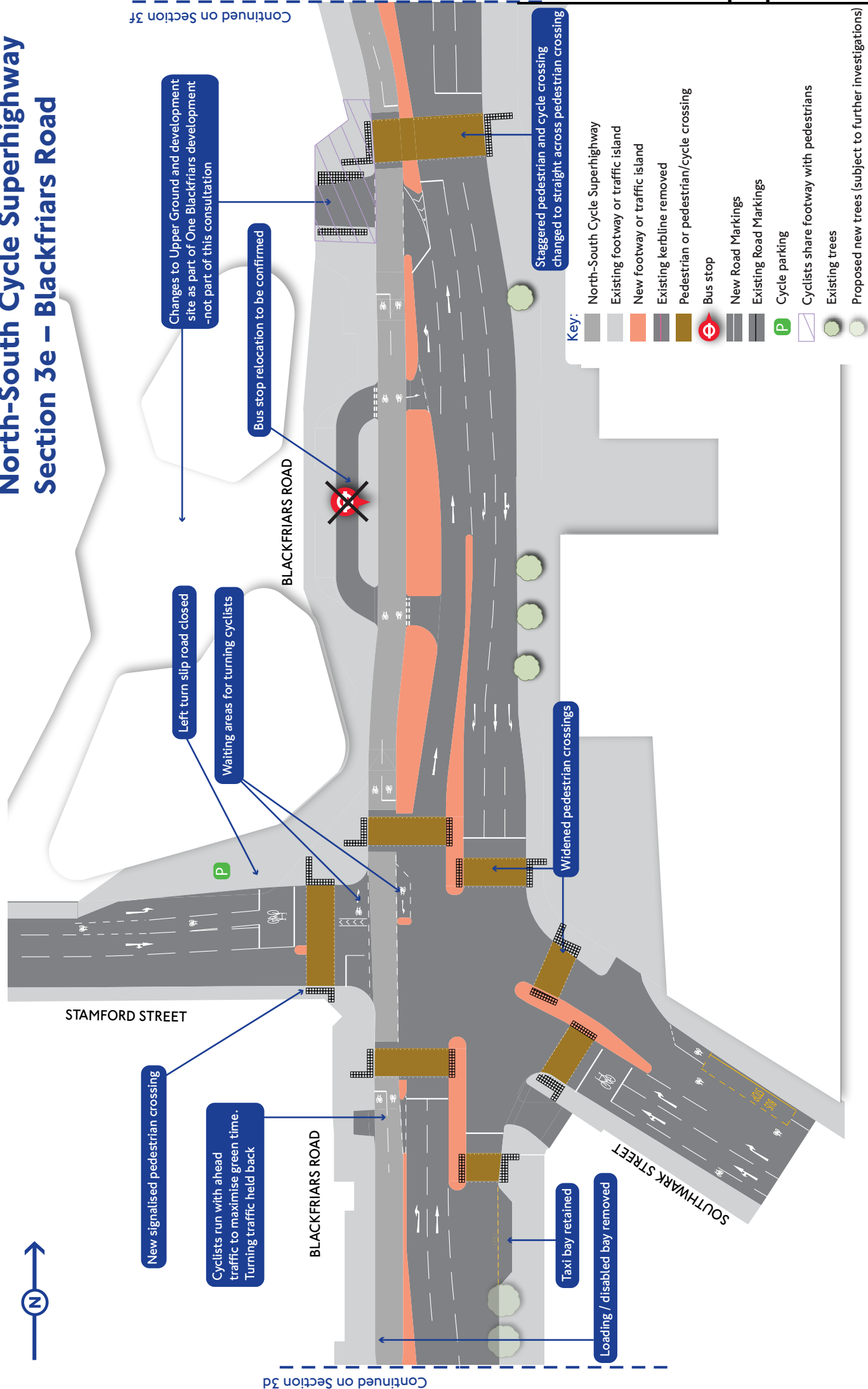
- East-West Cycle Superhighway
- Existing footway or traffic island
- New footway or traffic island
- Existing kerbline removed
- Signalised pedestrian or pedestrian/cycle crossing
- Barclays Cycle Hire docking station
- Bus stop
- Existing road markings
- New road markings
- Existing tree

## East-West Cycle Superhighway Section 6 - Victoria Embankment/ Temple Place (east)





# North-South Cycle Superhighway Section 3e – Blackfriars Road



# North-South Cycle Superhighway Section 3f – Blackfriars Bridge



BLACKFRIARS BRIDGE









New bus stop bypass for cyclists

Bus stop relocated to segregation island

Bus stop relocated

Bus stop relocated

## Key:

-  North-South Cycle Superhighway
-  Existing footway or traffic island
-  New footway or traffic island
-  Existing kerbline removed
-  Pedestrian or pedestrian/cycle crossing
-  Bus stop
-  New Road Markings
-  Existing Road Markings









Continued on Section 4a

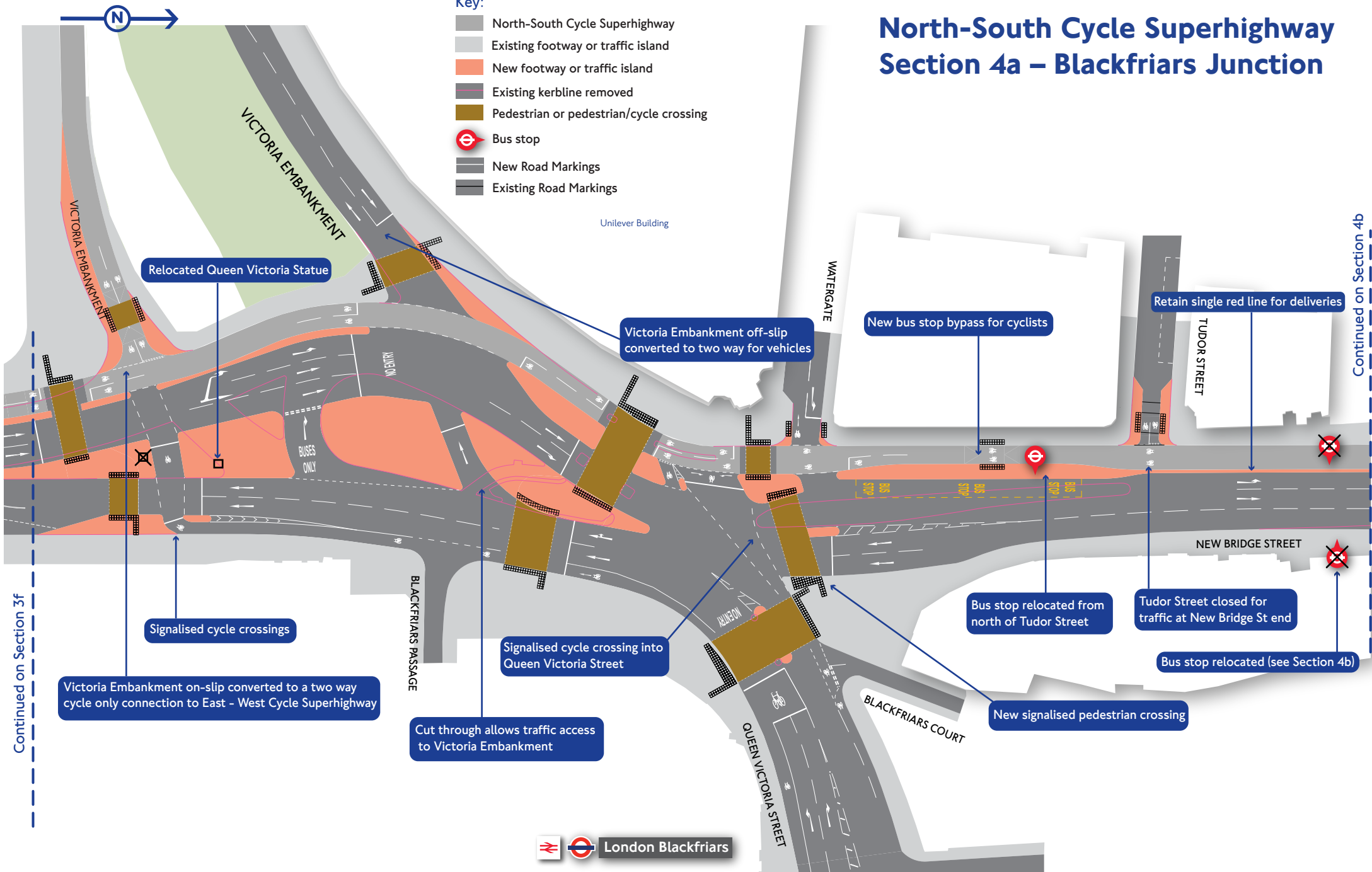
Continued on Section 3e



# North-South Cycle Superhighway Section 4a – Blackfriars Junction

Key:

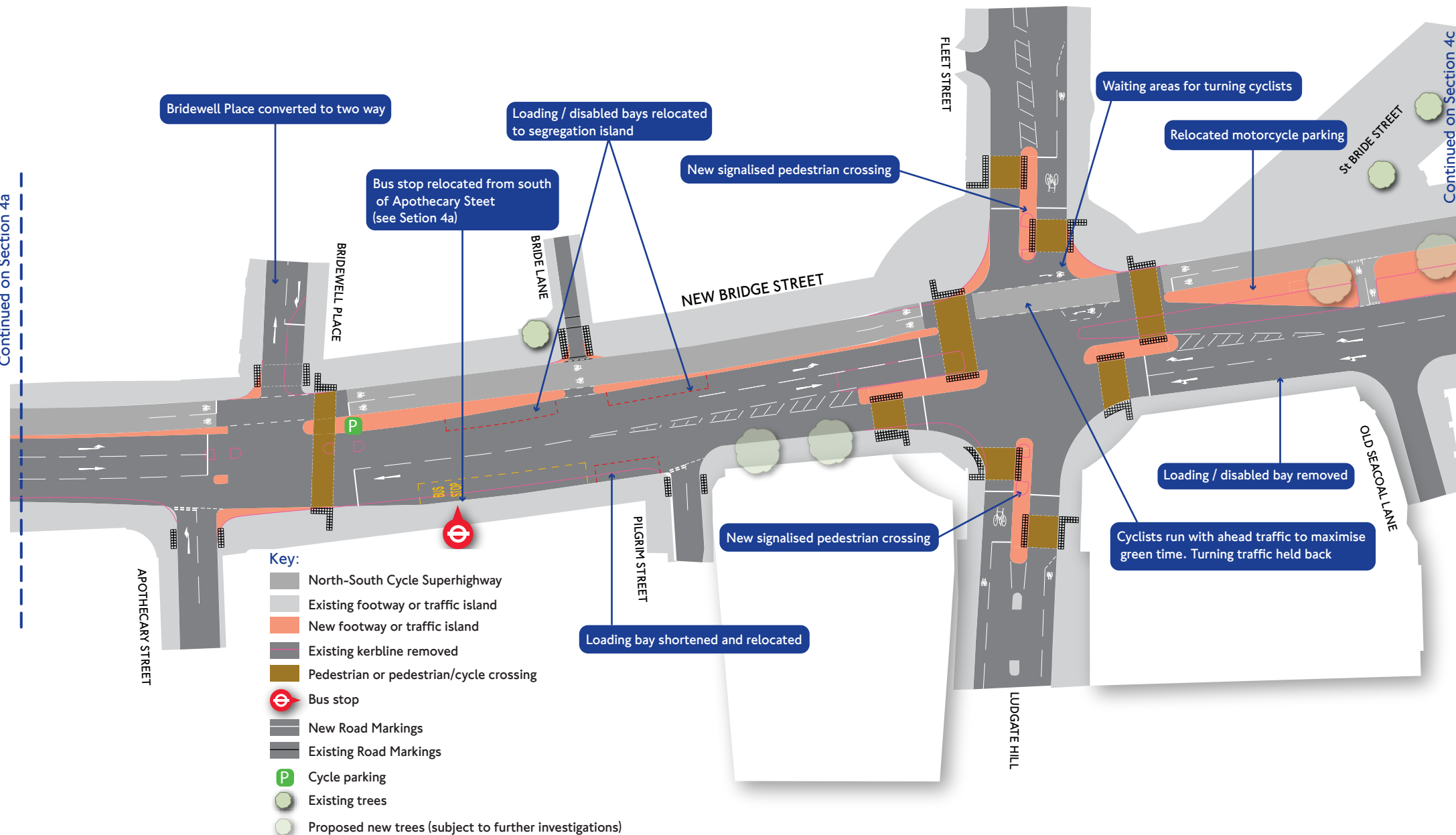
-  North-South Cycle Superhighway
-  Existing footway or traffic island
-  New footway or traffic island
-  Existing kerbline removed
-  Pedestrian or pedestrian/cycle crossing
-  Bus stop
-  New Road Markings
-  Existing Road Markings





# North-South Cycle Superhighway Section 4b – New Bridge Street

Continued on Section 4a



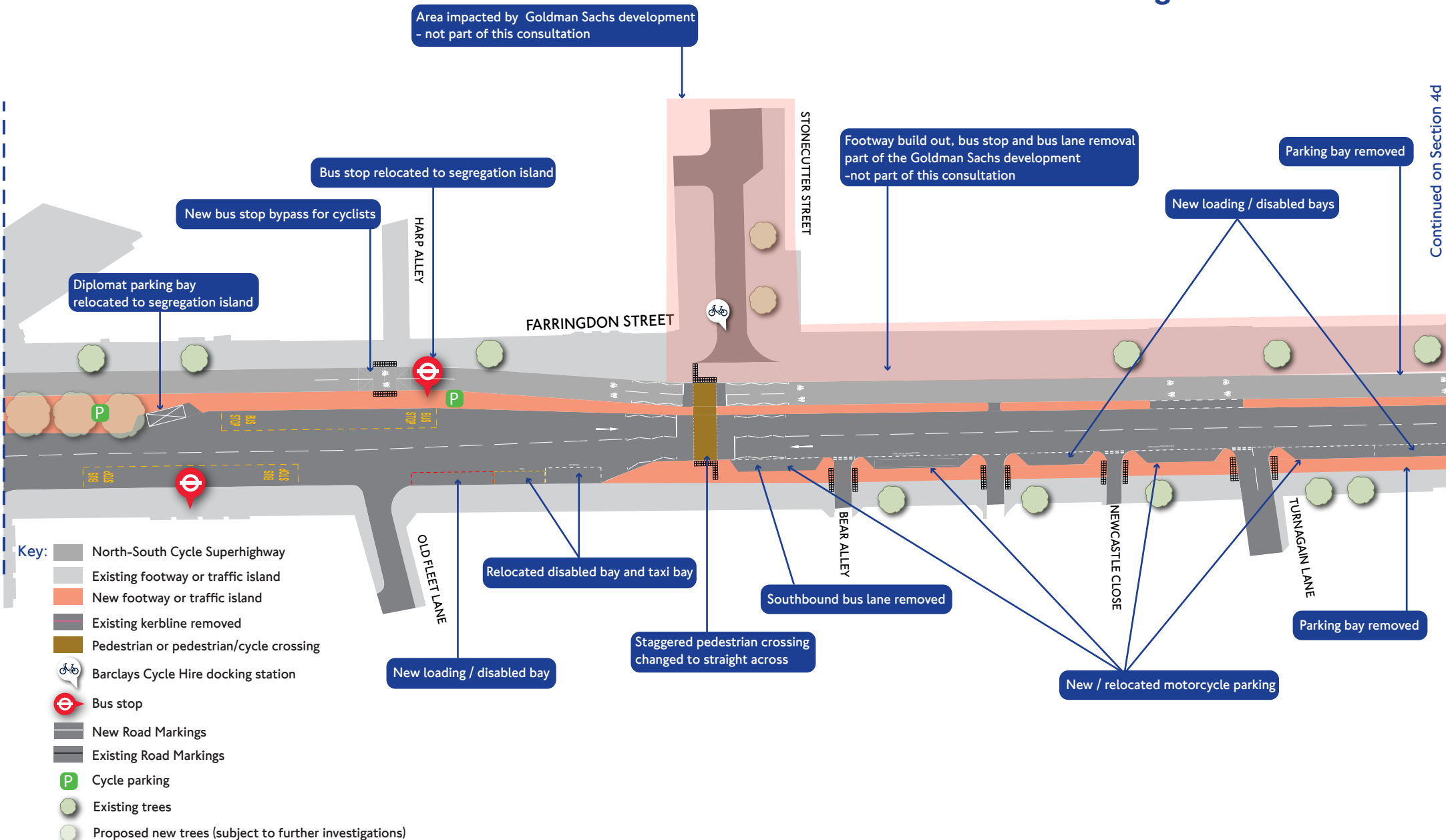
Continued on Section 4c



# North-South Cycle Superhighway Section 4c – Farringdon Street

Continued Section 4b

Continued on Section 4d





# North-South Cycle Superhighway Section 4d – Farringdon Street

Continued on Section 4c

Continued on Section 4e

HOLBORN VIADUCT

Bus lane removal part of the Goldman Sachs development - not part of this consultation

Gaps in segregation to allow connection with proposed Quietway on West Smithfield - not part of this consultation

Cyclists run with ahead traffic to maximise green time. Turning traffic held back

New bus stop bypass for cyclists

Parking bay removed

FARRINGDON STREET

Waiting area for turning cyclists

CHARTERHOUSE STREET

Connection to Quietway - not part of this consultation

Bus stop relocated to segregation island

Maintain existing loading bay

New signalled pedestrian crossings on all arms

Banned right turn into Charterhouse Street (west)

Loading / disabled bay relocated to segregation island

Relocated taxi bay

Smithfield Market

SNOW HILL

WEST SMITHFIELD

CHARTERHOUSE STREET

## Key:

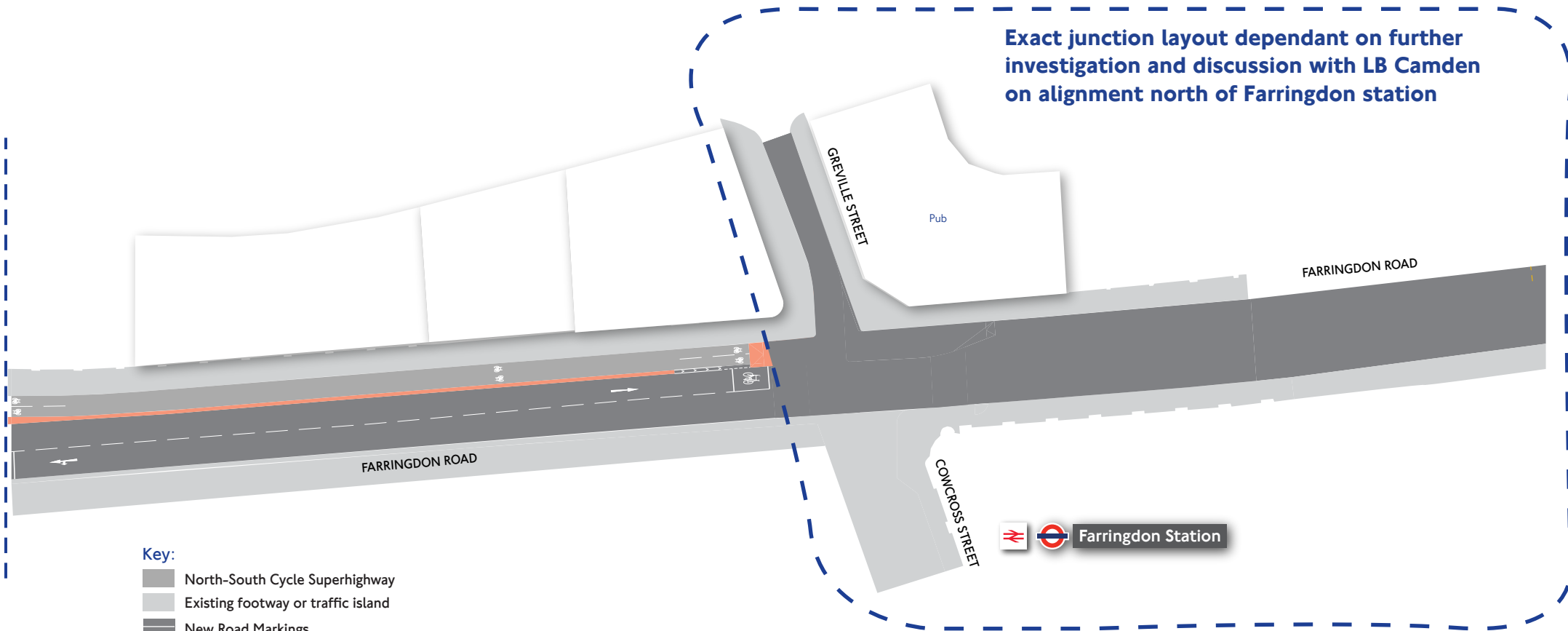
- North-South Cycle Superhighway
- Existing footway or traffic island
- New footway or traffic island
- Existing kerbline removed
- Pedestrian or pedestrian/cycle crossing
- Bus stop
- New Road Markings
- Existing Road Markings
- Existing trees



# North-South Cycle Superhighway

## Section 4e – Farringdon Road

Continued on Section 4d



Key:

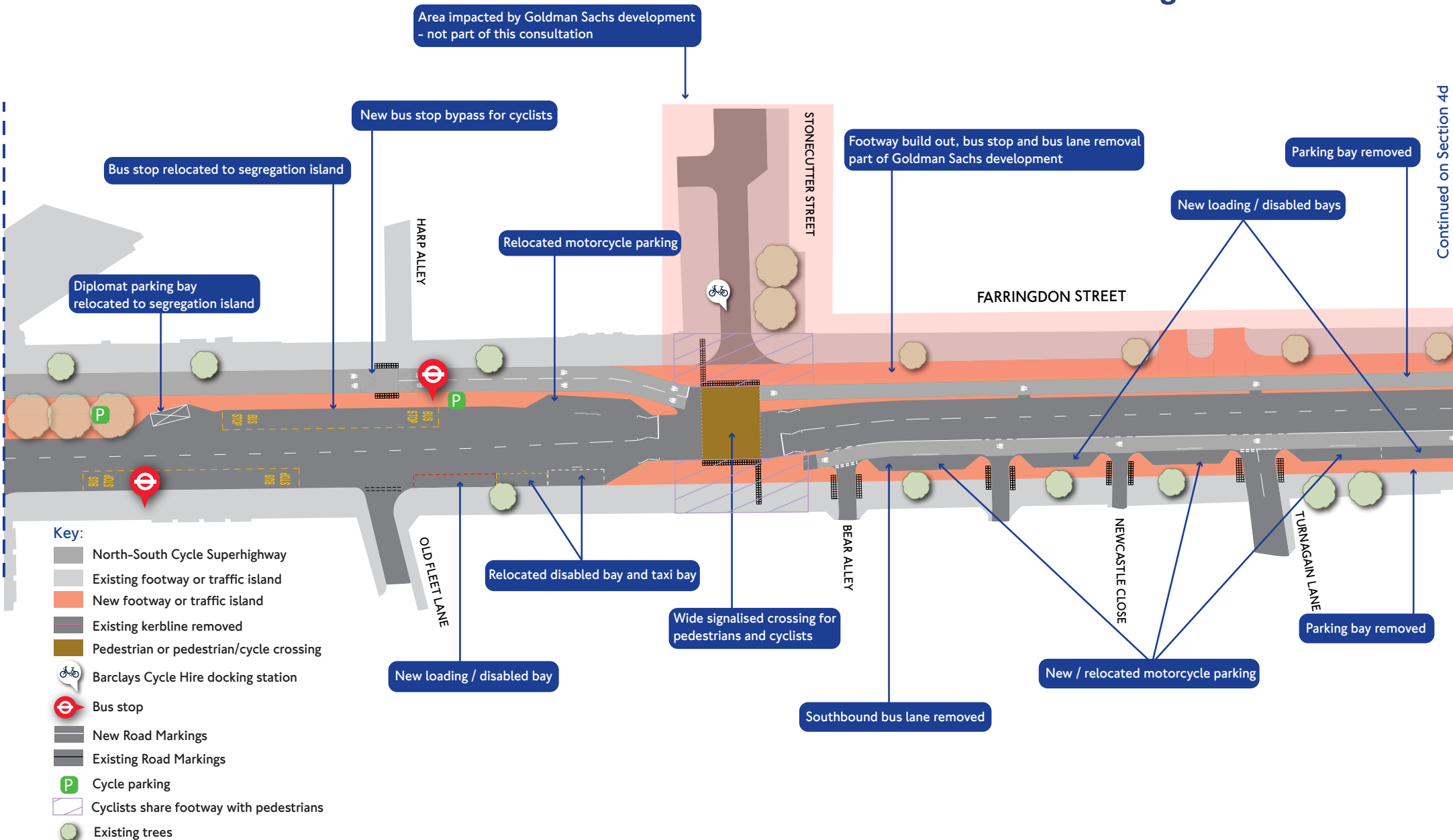
- North-South Cycle Superhighway
- Existing footway or traffic island
- New Road Markings
- New footway or traffic island



# North-South Cycle Superhighway Section 4c – Farringdon Street

Continued Section 4b

Continued on Section 4d





# North-South Cycle Superhighway Section 4d – Farringdon Street

Continued on Section 4c

Continued on Section 4e

Bus lane removal part of the Goldman Sachs development - not part of this consultation

Gaps in segregation to allow connection with Quietway on West Smithfield - not part of this consultation

Parking bay removed

Cyclists run with ahead traffic to maximise green time. Turning traffic held back

New bus stop bypass for cyclists

Bus stop relocated to segregation island

Waiting area for right turning cyclists

Connection to proposed Quietway - not part of this consultation

Loading / disabled bay relocated to segregation island

Relocated taxi bay

New bus stop bypass for cyclists

Loading bay removed

Waiting area for right turning cyclists

New signalised pedestrian crossings on all arms

- Key:
- North-South Cycle Superhighway
  - Existing footway or traffic island
  - New footway or traffic island
  - Existing kerline removed
  - Pedestrian or pedestrian/cycle crossing
  - Bus stop
  - New Road Markings
  - Existing Road Markings
  - Existing trees

HOLBORN VIADUCT

FARRINGTON STREET

CHARTERHOUSE STREET

CHARTERHOUSE STREET

SNOW HILL

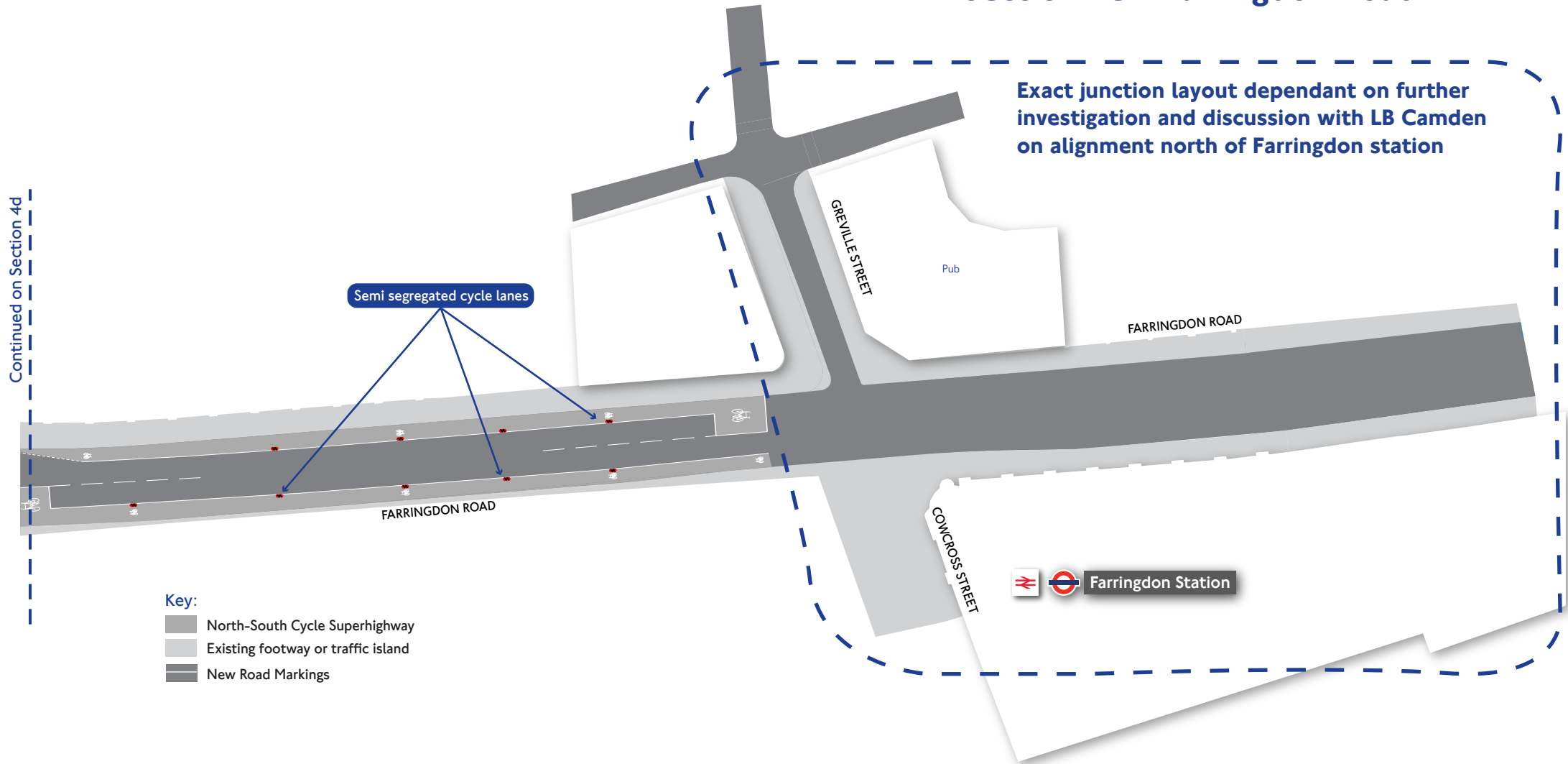
WEST SMITHFIELD

Smithfield Market



# North-South Cycle Superhighway Section 4e – Farringdon Road

Continued on Section 4d



## Key:

- North-South Cycle Superhighway
- Existing footway or traffic island
- New Road Markings



## APPENDIX 3 - E-W modelling information

### **Web copy**

### **East-West Cycle Superhighway – benefits and impacts to road users**

#### **Overall context**

Two broad trends have been seen on central London's roads over the last eight years: a significant reduction in motor traffic and a significant rise in cycling. Motor traffic in central London has fallen by around 17% per cent since 2006/07. On many of the routes covered by the superhighway, the reduction has been greater: traffic has fallen by 28 per cent on Victoria Embankment and by 30 per cent on Upper Thames Street, for instance. However traffic flows in central London have stabilised in the last year.

Cycling in London has more than doubled in the last decade. Bikes now make up around a quarter of rush hour traffic in central London - but there are few special routes or facilities for them.

This scheme aims to allocate road space more in line with the actual usage of the road network. The great majority of the road space would still be for motorists but part would be reallocated to cyclists. It aims to reduce conflict between cyclists and motor vehicles and to provide safer, more comfortable journeys for cyclists.

The route of the Superhighway has been chosen to minimise impacts to other users. Far less of it is served by buses than most other main roads and there is much less business loading or residential parking along it, for example. However, there are impacts – both benefits and disadvantages - for other users, which this document describes in more detail. The information is accompanied by a table of data ([LINK](#)). The numbers included in the text below are taken from column D, showing the difference between the current situation on-street and the situation expected if the scheme were to be implemented. Column B outlines the expected situation by December 2016 if the scheme were not built, taking account of the impact of other schemes planned for delivery by this date.

#### **Pedestrians and environment**

There would be a net increase of over 4,000 square metres of pedestrian space – widened footway, traffic islands, bus and coach stops - along the route.

On the Victoria Embankment, the wide dividing island between the narrowed road and the cycle lane would shift traffic noise and fumes further from pedestrians and the river. The scheme would give the street more of a boulevard appearance.

At Parliament Square, the scheme would provide two long-demanded new pedestrian crossings into the middle of the square, realising more of its potential as a pedestrian space. New, wider pedestrian islands would be created at the Westminster end of Westminster Bridge to cope with high numbers of tourists.

A new traffic-free pedestrian boulevard would be created on Horse Guards Road, removing a major barrier between Whitehall / Horse Guards Parade and St James's Park.

On Constitution Hill, the scheme would remove conflict on the shared pedestrian/ cycle track. Pedestrians and cyclists would get their own more clearly separated tracks.

High quality materials would be used to enhance the look of the streets and reflect their importance. On parts of the scheme, the segregation will be removable for state occasions.

Waiting times for pedestrians to cross the route would either remain the same as now, or increase slightly, by no more than 9 seconds. Some 25 crossings would be shortened and four crossings, which are currently two-stage (requiring pedestrians to wait in the middle of

the road), would become one-stage to allow pedestrians to cross entirely in one movement. Pedestrian countdown would be installed at 18 signalised crossings along the route and there would be 14 new traffic light controlled crossings pedestrians. Collectively, these changes would offer significant safety improvements for pedestrians crossing at those points.

### **General traffic (excluding buses)**

There would be longer journeys for motor vehicles at the busiest times of day on several parts of this route, and on routes heading towards the Cycle Superhighway. However, journey times on much of the route would increase only slightly and some journeys would be shorter.

The traffic modelling analysis looks at journey times at the busiest single hour in the morning and evening peaks. The model assumes that traffic volumes in central London will remain at current levels. Traffic in central London has fallen over the last eight years, though it has recently stabilised. It also includes the impact of the advanced traffic signal management programme which will change signal phasing to more effectively regulate the flow of traffic into central London.

Travelling westbound from East Smithfield (east of Tower Hill) to St Margaret Street on Parliament Square, journey times in the morning would increase very slightly from 18 minutes 15 seconds to 18 minutes 34 seconds. Those journeys in the opposite direction in the morning would be quicker by 2 minutes 59 seconds, reducing from 14 minutes 50 seconds to 11 minutes 51 seconds. In the evening, journey times for those vehicles heading eastbound would also reduce from 16 minutes 37 seconds to 12 minutes 45 seconds. For general traffic heading westbound on this route in the evening, journey times would increase from 17 minutes 6 seconds to 23 minutes 14 seconds.

For general traffic heading from Westminster Bridge southern roundabout to Hyde Park Corner westbound through Parliament Square along the route, journey times would remain at today's levels of 8 minutes 3 seconds in the morning. Westbound journeys in the evening would increase very slightly from 8 minutes 1 second to 8 minutes 34 seconds. For general traffic heading east on this route, journeys would increase from 7 minutes 2 seconds to 16 minutes in the morning. The same journey in the evening would increase from 7 minutes 37 seconds to 13 minutes 59 seconds.

On the Bayswater section, northbound from Lancaster Gate to the Westway (Harrow Road) on Westbourne Terrace, average journey time in the evening peak would fall slightly, from 5 minutes 4 seconds to 4 minutes 53 seconds. The same journey in the morning would also fall, from 4 minutes 36 seconds to 4 minutes 20 seconds. Travelling southbound from Westway to Lancaster Gate, average journey time in the morning peak would increase from 4 minutes and 36 seconds to 6 minutes 16 seconds. A journey southbound in the evening would take slightly longer from 4 minutes 51 seconds to 5 minutes 18 seconds.

The Westway flyover section of the Superhighway is being consulted on separately next year and journey time impacts for that section will be published then.

The biggest changes to journey times would not occur in central London or on the superhighway section, but on the A1203 and A13 east of Tower Hill, where road space would remain the same as now but westbound traffic will be held longer at various points to control the flow on to Tower Hill and Upper Thames Street. To evaluate the scale of these impacts, we have modelled a journey between the eastern end of the Limehouse Link Tunnel and Hyde Park Corner. The current journey time westbound is currently 34 minutes 34 seconds in the morning and 30 minutes 51 seconds in the evening. Once the scheme is built, journeys for general traffic in this direction would be 50 minutes 28 seconds in the

morning and 44 minutes 20 seconds in the evening. The same journey eastbound is 27 minutes 51 seconds in the morning and 30 minutes 51 seconds in the evening. Once the scheme is built, these journey times would increase to 35 minutes 29 seconds in the morning and 35 minutes 6 seconds the evening.

We plan to further reduce journey time delays using a number of other techniques which we successfully used during the Olympic Games. These include:

- greatly increased enforcement against illegal parking and loading on these routes to keep unplanned disruption to a minimum;
- a freight management and consolidation strategy, which encourages freight operators (on these and other routes) to plan their activity to avoid the busiest times and locations;
- a behaviour change strategy (on these and other routes), which encourages drivers to use alternative forms of transport; and
- a travel demand management strategy to provide more comprehensive and specific travel advice to road users, which would help them make informed journey choices to avoid busy times and busy locations.

The figures given above do not include the effects of these further techniques. However, experience of pilot schemes suggests they could be of substantial help in further reducing journey time impacts.

### **Parking and loading**

On most of the route, there is no residential parking. On the northern section from Lancaster Gate, some residential parking would be removed, as well as small amounts of parking on some side roads.

The public parking on the Victoria Embankment would also be removed. Changes to parking and loading on the Embankment can be found at <https://consultations.tfl.gov.uk/cycling/3cd789da>

### **Buses and tourist coaches**

The vast majority of the new Superhighway will run on roads which are not served by TfL buses. However, four short sections – Tower Hill, Parliament Square, Hyde Park Corner and Lancaster Gate/ Westbourne Terrace – are served by buses. Traffic modelling has been undertaken for four bus routes which go through the scheme area at these points and which broadly represent the impact of the scheme on bus journeys.

- **Bus route 15** between Tower Hill and Byward Street - only journeys heading west in the morning would be affected, taking up to one minute extra at the busiest hour. Journeys heading east in the morning would not change. Journeys in the evening would benefit in both directions by up to two minutes heading west and by up to one minute heading east. The overall effect is positive.
- **Bus route 453** between Westminster Bridge and Trafalgar Square - journeys towards Trafalgar Square in the busiest hour in the morning would be 2-5 minutes longer than now. Heading in the opposite direction towards Westminster Bridge from Trafalgar Square, journeys during the busiest hour in the morning would be 7-10 minutes longer than now. Journeys in the evening on this route would experience an extra 1-2 minutes in both directions. The overall effect in the immediate scheme area is negative. However, we are introducing a new bus priority point at Westminster Bridge Road, just west of Elephant and Castle, to avoid buses travelling in a south / east direction being further delayed at this point.
- **Bus route 16** from Grosvenor Place to Park Lane via Hyde Park Corner – journey times would increase by less than a minute in the busiest peak hours for most

journeys except those heading north in the morning, where the journey would be quicker by up to one minute.

- **Bus route 94** from Lancaster Gate to Marble Arch - the remodelling of the gyratory would benefit eastbound journeys, which would be up to 2 minutes quicker in both the morning and the evening. Westbound journeys, however, would be 1-2 minutes longer in the morning and 2-5 minutes longer in the evening. The overall effect is slightly negative.

Where there are negative impacts on journey times for bus routes impacted by the scheme, a programme of work is being developed to save time elsewhere along the affected route by addressing delays and giving priority to buses at certain pinch-points. Floating or "island" bus stops would be provided for TfL bus stops, tourist bus stops and commuter coaches, where these stops are alongside the cycle track.

### **Reassignment of cyclists**

We expect that cyclists currently using other roads east-west through the West End and City, would transfer to the new route, reducing the potential for conflict between motorists and cyclists on these mixed-traffic streets.

### **Broader public transport benefits**

The cycle superhighway would have a capacity of around 3000 cyclists an hour in both directions. This is the equivalent of the capacity of 10 trainloads (based on seating capacity) or around two and a half trainloads (based on crush-standing capacity), on the District and Circle Underground lines that run beneath a large part of the Cycle Superhighway. Adding this additional capacity to London's transport network would complement the improvements we are already making to the District and Circle lines, by offering Londoners a different transport option to make their journeys through central London.

### **Explanatory note on accompanying traffic modelling data table**

TfL has used traffic modelling techniques to calculate the expected journey time changes on certain routes through the scheme area at the busiest hour in both the morning and evening peak. The data table attached ([LINK](#)) outlines the expected journey times through three modelled stages;

- **Base model (column A)** – current situation on street. Journey times for general traffic and cyclists are taken from TRANSYT models. Journey times for buses are taken from Hyperion data
- **Future base model (column B)** – Expected situation for general traffic in December 2016 if the East-West and North-South Cycle Superhighway schemes were not built, but taking account of the impact of all other TfL road schemes delivered by this date. Without the scheme, traffic signal timings in the scheme area would not change, so pedestrian wait times would remain as they are currently
- **Future journey times with scheme (column C)** – Expected on-street conditions in December 2016 once the East-West and North-South Cycle Superhighway schemes are built. These journey times taking account of the advanced traffic signal management programme, which will change signal phasing to more effectively regulate the flow of traffic at certain locations to keep central London moving

The attached data table includes information for four sample routes through the scheme area for general traffic, four bus routes which go through the scheme area to represent the impact of the scheme on bus journeys, four cycling routes along the Cycle Superhighway route and four example pedestrian crossings.

Further detailed modelling information is available on request by emailing your requirements and contact details to [trafficmodelling@tfl.gov.uk](mailto:trafficmodelling@tfl.gov.uk).

### **Complementary Measures**

The impacts calculated through the traffic models do not take account of a range of additional complementary measures that would have beneficial impacts on journey times for buses and general traffic.

- Where there are negative impacts on journey times for bus routes shown in the table, a programme of work is being developed to save time elsewhere along the affected route by addressing delays and giving priority to buses at certain pinch-points
- Road users can expect more comprehensive and specific travel advice to help them to make informed journey choices to avoid busy times and locations
- We will continue our work with freight and servicing companies to support them to plan their activity to avoid the busiest times and locations, evaluate quieter technology to enable more deliveries to take place out of hours and investigate the benefits of consolidation centres
- Through the creation of the new Roads and Transport Policing Command, we will target enforcement at the busiest locations and known hot spots to reduce hold-ups and delays and keep traffic moving

-: ends :-

East-West Cycle Superhighway - Modelling Results

Correct as at 23 September 2014	(A) Base Model - current situation on street				(B) Future base model - Expected situation on-street Dec 2016 without scheme				(C) Future journey times Dec 2016 with scheme				(D) Difference between Future with scheme (C) and base (A)		(E) Difference between future with scheme (C) and future base (B)	
	Current journeys		AM	PM	Journeys modelled		AM	PM	Journeys modelled		AM	PM	AM	PM	AM	PM
Traffic	Limehouse Link tunnel to Hyde Park Corner	Westbound	34:34	30:51	Westbound	Limehouse Link tunnel to Hyde Park Corner	32:39	26:55	Westbound	Limehouse Link tunnel to Hyde Park Corner	50:28	44:20	15:54	13:29	17:49	17:25
	Eastbound	27:51	30:38	26:06	Eastbound	East Smithfield to St Margaret Street (Parliament Square exit)	16:30	31:49	Eastbound	East Smithfield to St Margaret Street (Parliament Square exit)	35:29	35:06	7:38	4:28	9:23	3:17
	Westbound	18:15	17:06	16:30	Westbound	Westminster Bridge to Hyde Park Corner (Knightsbridge)	12:25	15:54	Westbound	Westminster Bridge to Hyde Park Corner (Knightsbridge)	18:34	23:14	0:19	6:08	2:04	9:56
	Eastbound	14:50	16:37	8:01	Eastbound	Westminster Bridge to Hyde Park Corner (Knightsbridge)	7:51	7:42	Eastbound	Westminster Bridge to Hyde Park Corner (Knightsbridge)	11:51	12:45	-2:59	-3:52	-0:34	-3:09
	Westbound	8:03	8:03	7:37	Westbound	Lancaster Gate to A40 Westway	4:36	5:04	Westbound	Lancaster Gate to A40 Westway	4:20	4:53	-0:16	-0:11	-0:21	-0:17
Buses	Northbound	7:02	7:02	4:41	Northbound	Southbound	4:30	4:16	Northbound	Southbound	6:16	5:18	1:40	0:27	1:46	1:02
	Southbound	4:36	4:51	9:54	Southbound	Route 15 (between Tower Hill and Byward Street)	Westbound	9:54	Westbound	Route 15 (between Tower Hill and Byward Street)	Westbound	Westbound	0-1m	-2-5m		
	Westbound	10:00	7:18	8:06	Westbound	Route 453 (between Westminster Bridge and Trafalgar Square, via Parliament Square)	5:06	7:18	Westbound	Route 453 (between Westminster Bridge and Trafalgar Square, via Parliament Square)	Eastbound	Eastbound	-0-1m	-0-1m		
	Eastbound	5:06	7:18	10:48	Eastbound	Route 16 (between Park Lane and Grosvenor Place)	8:24	10:48	Eastbound	Route 16 (between Park Lane and Grosvenor Place)	Northbound	Northbound	2-5m	1-2m		
	Northbound	8:24	10:48	2:12	Northbound	Route 94 (between Lancaster Gate and Westbourne Terrace)	2:06	2:12	Northbound	Route 94 (between Lancaster Gate and Westbourne Terrace)	Southbound	Southbound	7-10m	1-2m		
Cycling	Southbound	2:06	2:12	3:30	Southbound	Route 15 (between Tower Hill and Byward Street)	2:24	2:42	Southbound	Route 15 (between Tower Hill and Byward Street)	Westbound	Westbound	-0-1m	0-1m		
	Westbound	3:18	3:30	5:48	Westbound	Royal Mint Street to Hyde Park Corner	8:48	5:48	Westbound	Royal Mint Street to Hyde Park Corner	Westbound	Westbound	0-1m	0-1m		
	Eastbound	8:48	5:48	32	Eastbound	Royal Mint Street to St Margaret Street (Parliament Square exit)	31	31	Eastbound	Royal Mint Street to St Margaret Street (Parliament Square exit)	Eastbound	Eastbound	1-2m	2-5m		
	Westbound	32	32	31	Westbound	Parliament Square to Hyde Park Corner	20	20	Westbound	Parliament Square to Hyde Park Corner	Eastbound	Eastbound	-1-2m	-1-2m		
	Eastbound	21	21	12	Eastbound	Lancaster Gate to A40 Westway	7	7	Eastbound	Lancaster Gate to A40 Westway	Westbound	Westbound	-1-2m	-1-2m		
Pedestrians	Southbound	7	7	7	Southbound	Tower Hill - Minorities - Shorter Street	88	88	Southbound	Tower Hill - Minorities - Shorter Street	30	29	-2	-3		
	Max. cycle time	Max. cycle time	88	88	Max. cycle time	Max. cycle time	88	88	Max. cycle time	Max. cycle time	31	29	0	-2		
	Max. wait time	Max. wait time	82	82	Max. wait time	Max. wait time	82	82	Max. wait time	Max. wait time	19	17	-1	-3		
	Max. cycle time	Max. cycle time	104	104	Max. cycle time	Max. cycle time	104	104	Max. cycle time	Max. cycle time	17	16	-4	-5		
	Max. wait time	Max. wait time	98	98	Max. wait time	Max. wait time	98	98	Max. wait time	Max. wait time	11	11	0	-1		
Traffic signal cycle times and associated wait times (seconds)	Max. cycle time	Max. cycle time	10	10	Max. cycle time	Max. cycle time	10	10	Max. cycle time	Max. cycle time	15	13	5	3		
	Max. wait time	Max. wait time	7	7	Max. wait time	Max. wait time	7	7	Max. wait time	Max. wait time	5	4	-2	-3		
	Max. cycle time	Max. cycle time	7	7	Max. cycle time	Max. cycle time	7	7	Max. cycle time	Max. cycle time	5	5	-2	-2		
	Max. wait time	Max. wait time	7	7	Max. wait time	Max. wait time	7	7	Max. wait time	Max. wait time	96	96	8	8		
	Max. cycle time	Max. cycle time	88	88	Max. cycle time	Max. cycle time	88	88	Max. cycle time	Max. cycle time	90	90	8	8		
NOTE: Future base would be same as current base without scheme	Max. wait time	Max. wait time	82	82	Max. wait time	Max. wait time	82	82	Max. wait time	Max. wait time	104	104	0	0		
	Max. cycle time	Max. cycle time	104	104	Max. cycle time	Max. cycle time	104	104	Max. cycle time	Max. cycle time	98	98	0	0		
	Max. wait time	Max. wait time	98	98	Max. wait time	Max. wait time	98	98	Max. wait time	Max. wait time	120	112	8	0		
	Max. cycle time	Max. cycle time	112	112	Max. cycle time	Max. cycle time	112	112	Max. cycle time	Max. cycle time	114	106	9	1		
	Max. wait time	Max. wait time	105	105	Max. wait time	Max. wait time	105	105	Max. wait time	Max. wait time	96	104	0	8		

## APPENDIX 4 - N-S modelling information

### **Web copy**

### **North-South Cycle Superhighway – benefits and impacts to road users**

#### **Overall context**

Two broad trends have been seen on central London's roads over the last eight years: a significant reduction in motor traffic and a significant rise in cycling. Motor traffic in central London has fallen by around 17% per cent since 2006/07. Along the Superhighway route, the reduction has been greater, with motor traffic levels falling by 24% since 2006. However traffic flows in central London have stabilised in the last year.

Cycling in London has more than doubled in the last decade. Bikes now make up around a quarter of rush hour traffic in central London - but there are few special routes or facilities for them.

This scheme aims to allocate road space more in line with the actual usage of the road network. At present, around 50% of all traffic going across Blackfriars Bridge in the morning period is cyclists. The great majority of the road space would still be for motorists but part would be reallocated to cyclists. It aims to reduce conflict between cyclists and motor vehicles and to provide safer, more comfortable journeys for cyclists.

However, there are impacts – both benefits and disadvantages - for other users, which this document describes in more detail. The information is accompanied by a table of data ([LINK](#)). The numbers included in the text below are taken from column D, showing the difference between the current situation on-street and the situation expected if the scheme were to be implemented. Column B outlines the expected situation by December 2016 if the scheme were not built, taking account of the impact of other schemes planned for delivery by this date.

#### **Pedestrians and environment**

There would be a net increase of over 3,000 square metres of pedestrian space – widened footway, traffic islands and bus stops - along the route.

New street furniture and planting, including nine new benches and 38 new trees would create a more pleasant and pedestrian-friendly boulevard environment on Blackfriars Road. There will be a wide central island, with some of the new trees on it, separating the traffic and the cycle lane, shifting traffic noise and fumes further from pedestrians on the western pavement.

A number of changes would be made to pedestrian crossings, which collectively would offer significant safety improvements for pedestrians crossing at those points. Six crossings would be shortened. Three crossings are currently two-stage (requiring pedestrians to wait in the middle of the road); these would become one-stage to allow pedestrians to cross in a single movement. Pedestrian countdown would be installed at 12 signalised crossings along the route and there would be 10 new traffic light controlled pedestrian crossings. Signal timings would be altered at some existing crossings, which would increase the time pedestrians wait to cross the road by up to 24 seconds in some locations.

#### **General traffic (excluding buses)**

There would be longer journeys for motor vehicles at the busiest times of day on this route, and for some roads which cross the route.

The traffic modelling analysis looks at journey times at the busiest single hour in the morning and evening peaks. The model assumes that traffic volumes in central London will remain at current levels. Traffic in central London has fallen over the last eight years, though it has recently stabilised. It also includes the impact of the advanced traffic signal management



programme which will change signal phasing to more effectively regulate the flow of traffic into central London.

Travelling northbound from Elephant & Castle to Farringdon Station, average journey time in the morning peak would rise by 41 seconds, from 11 minutes 28 seconds to 12 minutes 9 seconds. In the evening, in the same direction, journey times would increase from 10 minutes 56 seconds to 15 minutes 12 seconds. Travelling southbound from Farringdon Station to Elephant & Castle, average journey time in the morning peak would rise from 10 minutes 50 seconds to 14 minutes 43 seconds. This journey in the evening would increase slightly from 12 minutes 17 seconds to 14 minutes 20 seconds.

We have also modelled a journey for general traffic between Stamford Street and Queen Victoria Street, across Blackfriars Bridge. Journeys for general traffic travelling north from Stamford Street to Queen Victoria Street would increase from 3 minutes 45 seconds to 15 minutes 43 seconds in the morning, and from 3 minutes 20 seconds to 12 minutes 41 seconds in the evening. Journeys heading south in the opposite direction would be quicker by 2 minutes 11 seconds in the morning and by 1 minute 41 seconds in the evening.

We plan to further reduce journey time delays using a number of other techniques which we successfully used during the Olympic Games. These include:

- greatly increased enforcement against illegal parking and loading on these routes to keep unplanned disruption to a minimum;
- a freight management and consolidation strategy, which encourages freight operators (on these and other routes) to plan their activity to avoid the busiest times and locations;
- a behaviour change strategy (on these and other routes), which encourages drivers to use alternative forms of transport; and
- a travel demand management strategy to provide more comprehensive and specific travel advice to road users, which would help them make informed journey choices to avoid busy times and busy locations.

The figures given above do not include the effects of these further techniques. However, experience of pilot schemes suggests they could be of substantial help in further reducing journey time impacts.

### **Parking and loading**

Although there would be a 45 metre reduction in parking for general traffic, there would be an additional 90 metres of dedicated loading bay and an additional 6 metres of motorcycling parking.

### **Buses**

Traffic modelling has been undertaken for four bus routes which go through the scheme area and which broadly represent the impact of the scheme on bus journeys.

- Route 45 between Charterhouse Street and Elephant and Castle heading north in the morning would see a reduction in journey time of between 2-5 minutes. The same journey in the evening northbound would increase by 1-2 minutes. Journeys on this same bus route travelling south in morning would increase between 2-5 minutes and between 5-7 minutes in the evening.
- Route 381 crossing the North-South cycle superhighway route between Southwark Street and Stamford Street could experience an increase of 2-5 minutes in both directions at the busiest times.
- Route 100 between Elephant & Castle and Queen Victoria Street would experience a drop in journey time of between 5-7 minutes in the morning heading north and a drop of between 2-5 minutes in the evening in the same direction. Southbound journeys



along the route in the morning would be up to one minute longer, but in the evening would be 1-2 minutes quicker.

- Route 11 travelling between Ludgate Hill and Fleet Street could experience an increase of 2-5 minutes crossing the route westbound in the morning, and an increase of 1-2 minutes eastbound in the morning and both directions in the evening.

A new bus gate on Westminster Bridge Road would help minimise delays on bus routes 12, 53, 148, 453 and C10 heading southeast along London Road towards Elephant and Castle.

Where there are negative impacts on journey times for bus routes impacted by the scheme, a programme of work is being developed to save time elsewhere along the affected route by addressing delays and giving priority to buses at certain pinch-points. Floating or "island" bus stops would be provided for TfL bus stops where these stops are alongside the cycle track.

### **Broader public transport benefits**

The cycle superhighway would have a capacity of around 3000 cyclists an hour in both directions. This is the equivalent of the capacity of 10 London Underground trainloads (based on seating capacity) or around two and a half trainloads (based on crush-standing capacity). Adding this new capacity to London's transport network provides a viable alternative transport option for those making journeys north-south through the city.

### **Explanatory note on accompanying traffic modelling data table**

TfL has used traffic modelling techniques to calculate the expected journey time changes on certain routes through the scheme area at the busiest hour in both the morning and evening peak. The data table attached ([LINK](#)) outlines the expected journey times through three modelled stages;

- **Base model (column A)** – current situation on street. Journey times for general traffic and cyclists are taken from TRANSYT models. Journey times for buses are taken from Hyperion data
- **Future base model (column B)** – Expected situation for general traffic in December 2016 if the East-West and North-South Cycle Superhighway schemes were not built, but taking account of the impact of all other TfL road schemes delivered by this date. Without the scheme, traffic signal timings in the scheme area would not change, so pedestrian wait times would remain as they are currently
- **Future journey times with scheme (column C)** – Expected on-street conditions in December 2016 once the East-West and North-South Cycle Superhighway schemes are built. These journey times taking account of the advanced traffic signal management programme, which will change signal phasing to more effectively regulate the flow of traffic at certain locations to keep central London moving

The attached data table includes information for two sample routes through the scheme area for general traffic, four bus routes which go through the scheme area to represent the impact of the scheme on bus journeys, one cycling route along the Cycle Superhighway route and five example pedestrian crossings.

Further detailed modelling information is available on request by emailing your requirements and contact details to [trafficmodelling@tfl.gov.uk](mailto:trafficmodelling@tfl.gov.uk).

### **Complementary Measures**

The impacts calculated through the traffic models do not take account of a range of additional complementary measures that would have beneficial impacts on journey times for buses and general traffic.

- Where there are negative impacts on journey times for bus routes shown in the table, a programme of work is being developed to save time elsewhere along the affected route by addressing delays and giving priority to buses at certain pinch-points
- Road users can expect more comprehensive and specific travel advice to help them to make informed journey choices to avoid busy times and locations
- We will continue our work with freight and servicing companies to support them to plan their activity to avoid the busiest times and locations, evaluate quieter technology to enable more deliveries to take place out of hours and investigate the benefits of consolidation centres
- Through the creation of the new Roads and Transport Policing Command, we will target enforcement at the busiest locations and known hot spots to reduce hold-ups and delays and keep traffic moving

-: ends :-

North-South Cycle Superhighway - Modelling Results

Correct as at 23 September 2014	(A) Base Model - current situation on street				(B) Future base model - Expected situation on-street Dec 2016 without scheme				(C) Future journey times Dec 2016 with scheme				(D) Difference between Future with scheme (C) and base (A)		(E) Difference between future with scheme (C) and future base (B)	
	Current journeys		AM	PM	Journeys modelled		AM	PM	Journeys modelled		AM	PM	AM	PM	AM	PM
Traffic	Elephant & Castle to Farringdon Station	Northbound	11:28	10:56	Elephant & Castle to Farringdon Station	Northbound	10:22	09:37	Elephant & Castle to Farringdon Station	Northbound	12:09	15:12	0:41	4:16	1:47	5:35
		Southbound	10:50	12:17		Southbound	09:42	09:13		Southbound	14:43	14:20				
	Stamford Street to Queen Victoria Street	Northbound	3:45	3:20	Stamford Street to Queen Victoria Street	Northbound	03:43	03:25	Stamford Street to Queen Victoria Street	Northbound	15:43	12:41	11:58	9:21	12:00	9:16
		Southbound	5:50	5:22		Southbound	05:03	03:25		Southbound	3:39	3:41				
Buses	Route 100 (between Elephant & Castle and Ludgate Hill)	Northbound	14:12	13:06	Future base data available for general traffic journeys only	Route 100 (between Elephant & Castle and Queen Victoria Street)	Northbound		Northbound	Northbound	Northbound	Northbound	-(5-7m)	-(2-5m)	Future base data available for general traffic journeys only	
		Southbound	10:12	11:00			Southbound	Southbound								Southbound
	Route 381 (between Stamford Street and Southwark Street)	Eastbound	1:54	1:54		Route 381 (between Stamford Street and Southwark Street)	Eastbound		Eastbound	Eastbound	Eastbound	Eastbound	2-5m	2-5m		
		Westbound	1:12	1:06			Westbound	Westbound								Westbound
	Route 11 (between Fleet Street and Ludgate Hill)	Eastbound	1:12	2:06		Route 11 (between Fleet Street and Ludgate Hill)	Eastbound		Eastbound	Eastbound	Eastbound	Eastbound	1-2m	1-2m		
		Westbound	1:54	2:06			Westbound	Westbound								Westbound
	Route 45 (between Elephant & Castle and Charterhouse Street)	Northbound	15:24	12:36		Route 45 (between Elephant & Castle and Charterhouse Street)	Northbound		Northbound	Northbound	Northbound	Northbound	Northbound	-(2-5m)		1-2m
		Southbound	13:18	14:36			Southbound	Southbound								
Cycling	Elephant & Castle to Farringdon Station	Northbound	18	17	Elephant & Castle to Farringdon Station	Northbound	19	14	Elephant & Castle to Farringdon Station	Northbound	19	14	1	-3		
		Southbound	14	15		Southbound	14	20		Southbound	14	20			0	5
Pedestrians	St George's Circus	Max. cycle time	NO SIGNALISED FACILITIES		St George's Circus	Max. cycle time	NO SIGNALISED FACILITIES		St George's Circus	Max. cycle time	112	120	N/A		N/A	
		Max. wait time		Max. wait time			Max. wait time	106		114						
	Southwark Tube station	Max. cycle time	88	88	Southwark Tube station	Max. cycle time	88	88	Southwark Tube station	Max. cycle time	104	104	16	16	16	16
		Max. wait time	82	82		Max. wait time	82	82		Max. wait time	98	98	16	16	16	16
	Blackfriars Station (westbound exit)	Max. cycle time	96	96	Blackfriars Station (westbound exit)	Max. cycle time	96	96	Blackfriars Station (westbound exit)	Max. cycle time	120	120	24	24	24	24
		Max. wait time	90	90		Max. wait time	90	90		Max. wait time	114	114	24	24	24	24
	Ludgate Circus (east-west) No facilities north-south	Max. cycle time	96	96	Ludgate Circus (east-west) No facilities north-south	Max. cycle time	96	96	Ludgate Circus (east-west) No facilities north-south	Max. cycle time	120	120	24	24	24	24
		Max. wait time	90	90		Max. wait time	90	90		Max. wait time	114	114	24	24	24	24
	Farringdon Street-Charterhouse Street	Max. cycle time	NO SIGNALISED FACILITIES		Farringdon Street-Charterhouse Street	Max. cycle time	NO SIGNALISED FACILITIES		Farringdon Street-Charterhouse Street	Max. cycle time	120	120	N/A		N/A	
		Max. wait time		Max. wait time			Max. wait time	114		114						



## Proposed Central London Cycle Grid - Routes for completion by December 2016

