



Markets Committee

Date: WEDNESDAY, 30 NOVEMBER 2016
Time: 11.30 am
Venue: COMMITTEE ROOMS, 2ND FLOOR, WEST WING, GUILDHALL

4. **PUBLIC MINUTES OF THE REFERENCE SUB (MARKETS) COMMITTEE**
To receive the public minutes of the meeting held on 22 November 2016.

For Information
(Pages 1 - 2)

11. **ANY OTHER BUSINESS THAT THE CHAIRMAN CONSIDERS URGENT**
- **NORTH – SOUTH CYCLE SUPERHIGHWAY PHASE 2: THE CITY'S RESPONSE**
Report of the Director of the Built Environment.

For Information
(Pages 3 - 80)

14. **NON-PUBLIC MINUTES OF THE REFERENCE SUB (MARKETS) COMMITTEE**
To receive the non-public minutes of the meeting held on 22 November 2016.

For Information
(Pages 81 - 84)

Items received too late for circulation in conjunction with the Agenda.

John Barradell
Town Clerk and Chief Executive

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REFERENCE SUB (MARKETS) COMMITTEE Tuesday, 22 November 2016

Minutes of the meeting of the Reference Sub (Markets) Committee held at
Committee Room - 2nd Floor West Wing, Guildhall on Tuesday, 22 November 2016
at 1.45 pm

Present

Members:

John Scott (Chairman)
Randall Anderson
Michael Hudson
Deputy Jamie Ingham Clark
Deputy Joyce Nash

Officers:

Gemma Stokley	-	Town Clerk's Department
Julie Smith	-	Chamberlain's Department
Steven Chandler	-	City Surveyor's Department
Nicholas Sommerville	-	City Surveyor's Department
Matthew Hill	-	Superintendent, Smithfield Market
Mona Lewis	-	City Procurement Team

1. APOLOGIES

Apologies for absence were received from James Tumbridge (Deputy Chairman) and Professor John Lumley.

2. MEMBERS' DECLARATIONS UNDER THE CODE OF CONDUCT IN RESPECT OF ITEMS ON THE AGENDA

There were no declarations.

3. QUESTIONS ON MATTERS RELATING TO THE WORK OF THE COMMITTEE

There were no questions.

4. ANY OTHER BUSINESS THAT THE CHAIRMAN CONSIDERS URGENT

There were no additional, urgent items of business for consideration.

5. EXCLUSION OF THE PUBLIC

RESOLVED – That under Section 100A(4) of the Local Government Act 1972, the public be excluded from the meeting for the following items of business on the grounds that they involve the likely disclosure of exempt information as defined in Paragraph 3 of Part I of Schedule 12A of the Local Government Act as follows:-

Item	Paragraph
6	3

6. **POULTRY MARKET MAJOR REPAIRS PROJECT - GATEWAY 4 - DETAILED OPTIONS APPRAISAL**

The Sub-Committee considered and approved a report of the City Surveyor on the Poultry Market major Repairs Project – Gateway 4 – Detailed Options Appraisal.

7. **NON PUBLIC QUESTIONS ON MATTERS RELATING TO THE WORK OF THE COMMITTEE**

There were no questions raised in the non-public session.

8. **ANY OTHER BUSINESS THAT THE CHAIRMAN CONSIDERS URGENT AND WHICH THE COMMITTEE AGREE SHOULD BE CONSIDERED WHILST THE PUBLIC ARE EXCLUDED**

There were no additional, urgent items of business for consideration in the non-public session.

The meeting ended at 2.50 pm

Chairman

Contact Officer: Gemma Stokley
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gemma.stokley@cityoflondon.gov.uk

Committee(s):	Date(s):
Markets Committee	30 November 2016
Streets & Walkways Sub-Committee For Decision	6 December 2016
Subject: North – South Cycle Superhighway Phase 2: The City’s response	Public
Report of: Director of the Built Environment	For Information
Report Author: Sam Lee	
<p style="text-align: center;">Summary</p> <p>TfL, on behalf of the Mayor of London, carried out a public consultation exercise on proposals to extend their North – South Cycle Superhighway to Kings Cross in early 2016. A number of major concerns were expressed by the City. However, since then, TfL has worked with City officers to improve the proposals. The current layout, which is under further consultation, addresses most of the City’s concerns but a few minor issues remain.</p> <p>Officers consider that the revised proposals offer substantial safety benefits, good and safer cycling route connectivity between the Cycle Quietways and the Cycle Superhighway and provide for the much needed pedestrian crossing facilities at the Farringdon Street/West Smithfield and the Farringdon Road/Charterhouse Street junctions. However, the SMTA and the Markets and Consumer Protection Department have all expressed concern with the proposed banned left turn into West Smithfield and have met with TfL and requested that they permit this left turn during the main hours of market operation.</p> <p>Officers are also concerned at the cycle lane separation as proposed at Stonecutter Street where the southbound cycle lane is proposed to become bi-directional, running alongside the northbound carriageway.</p> <p>On balance, officers recommend that the City supports the proposals but also that Members agree that officers should carry out further work with TfL to establish if a timed removal of the left turn ban should be permitted during key market hours and whether the cycle lane separation could be improved at Stonecutter Street .</p> <p>Recommendation(s)</p> <p>Members are asked to:</p> <ul style="list-style-type: none"> • Support the Mayor’s proposals, as set out in this report and Appendix 3; • Direct officers to continue to work with TfL to establish if a timed suspension of the banned left turn is practicable during key market operating times, and also to consider how the cycle lane separation at Stonecutter Street might be improved; • Agree that officers work with TfL to facilitate introducing the proposals using the 	

powers and authority, including entering into any relevant legal agreements, available to the City Corporation.

Main Report

Background

1. In March 2016, Members were informed of TfL's consultation on proposals to extend the North – South Cycle Superhighway from Stonecutter Street to Kings Cross. Appendix 1 provides a plan of these proposals in the City.
2. The City Corporation expressed some fundamental local concerns over these proposals. The main issues were:-
 - a. the proposals did not address the existing danger which results in a high number of pedal cycle collisions;
 - b. poor provision for cyclists interchanging with the Cycle Quietways;
 - c. the lack of appreciation of lorry movements associated with Smithfield Market;
 - d. the lack of appropriate pedestrian facilities;
 - e. concerns regarding the arrangement at Stonecutter Street
3. Members therefore agreed that officers should continue to engage with TfL to ensure that the best possible outcome could be achieved for the City.
4. Since then TfL and City officers have been working together to develop and improve the proposals. As part of this, further engagements with key City stakeholders such as the Smithfield Market Traders Association, Market Superintendent and the Museum of London, have also taken place to ensure that their needs are captured and accommodated where ever possible.

Current Position

5. On 2nd November 2016, TfL, on behalf of the Mayor, launched a further consultation on revised proposals for the Farringdon Street/West Smithfield junction. A copy of the consultation is provided in Appendix 2. The response deadline is 13th December 2016.
6. Officers consider that TfL's revised proposals have significantly improved over those previously presented and addressed many of your officer's concerns, particularly around safety and cycle connectivity. However, a few concerns

remain, particularly the diversionary routes for traffic seeking to access a small number of businesses located in the south-western corner of the market or Snow Hill.

TfL's Proposals

7. TfL's current proposals for the Farringdon Street junction with West Smithfield are shown in Appendix 3 and include:-
 - a. Signalisation of the junction, but also include a banned left turn into West Smithfield for motor vehicles.
 - b. A new pedestrian "green man" crossing over Farringdon Street and a raised "uncontrolled" pedestrian crossing over West Smithfield/Snow Hill.
 - c. Mostly segregated cycle lanes on each side of Farringdon Street including bus stop by-passes and amendments to the bridge protection measures under Holborn Viaduct to maximise the carriageway space.
8. Other measures which are proposed and relevant to the City include:-
 - a. A full pedestrian "green man" crossing facility at the Farringdon Road/Charterhouse Street junction.
 - b. A banned right turn into Charterhouse Street (west) for southbound traffic.
 - c. Retaining the split of the bi-directional cycle track at the Stonecutter Street junction.
9. Detailed concept plans of the proposals are shown in Appendix 3. The impact of the revised proposals have also been traffic modelled by TfL and they claim that there are virtually no adverse impacts on traffic, buses and cycling journey times and that there is a significant improvement for pedestrians through the provisions of five signalled crossings. This assessment is also shown in the table in Appendix 2.
10. A road safety audit of the March 2016 scheme has been carried out and a copy of this is shown provided in Appendix 4. A further audit of the revised proposals at the West Smithfield junction is currently being carried out and will be made available to the City once completed.

Key Benefits and Issues

11. The revised proposals provide many positive benefits but also raise some concerns. The benefits include:-
 - a. The signalisation of the West Smithfield junction will control all conflicting movements and provide a much better and safer cycling interchange between the Cycle Superhighway and the Cycle Quietway.
 - b. In the last 3 years (to March 2016), there have been 17 injury collisions which have resulted in 19 casualties at the West Smithfield junction. Six of these were serious. TfL has estimated that 15 of these collisions

would have been avoided with the revised proposals. Appendix 5 provides further details of the collision assessment at this junction.

- c. At the Farringdon Road/Charterhouse Street junction, there have been 15 collisions (resulting in 18 injuries) in the last 3 years (to March 2016). Two of these were serious. TfL's accident analysis suggests that the current proposals would have avoided three of these collisions and with a further 9 having a greater chance of being avoided. See Appendix 6 (TfL's accident analysis of the Charterhouse Street junction) for further details of this assessment.
 - d. Farringdon Street by West Smithfield is currently very wide (about 16 metres) and being a major highway, is very highly trafficked. It is also on a pedestrian desire line. The pedestrian "green man" crossing facility over Farringdon Street will therefore provide significant improvement for pedestrians, especially those with mobility or sight impairments.
 - e. The signalisation of the West Smithfield junction will provide gaps in the traffic flow and, together with the pedestrian island, will provide pedestrians with better opportunities to cross over West Smithfield. The raised carriageway will provide further benefits for those with mobility impairments and reduce approaching traffic speeds.
 - f. The current Farringdon Road/Charterhouse junction has no formal pedestrian facilities. Pedestrians have been asking for a better facility for a long time. The analysis also identified five pedestrian injury collisions. The proposal to provide "green man" crossing on all arms of the junction would therefore be a very valuable benefit.
 - g. The proposal for the Cycle Superhighway is very much in line with the Museum of London's aspirations to make the museum the most accessible museum for all modes of transport but particularly for pedestrians and cyclists. The pedestrian crossings and cycling proposals would therefore substantially deliver this aspiration for the Museum.
12. The main concerns relate to the two banned turns and the retention of the cycle lane separation at Stonecutter Street.
- a. The banned left turn (for motor vehicles) into West Smithfield for southbound traffic.
- TfL consider this is necessary to enable the signalisation of the junction to work effectively and safely. Although not an existing collision problem, it will remove the risk of the common "left hook" collision between motor vehicles and pedal cyclists. To accommodate the left turn, the introduction of either, an additional traffic lane, traffic light sequence or omission of a bus stop by-pass would be required. However, in this layout, there is insufficient width to accommodate another traffic lane and an additional traffic light sequence is likely to add to considerable and unacceptable delays on the network for TfL. Removing the bus stop by-pass would offer no cycling improvements which is not consistent with TfL's overall scheme objectives.

- b. The banned right turn at the Farringdon Road into Charterhouse Street (west).

This is necessary for safety and capacity reasons. It removes the risk of conflict with some traffic including cyclists.

- 13. To assess the traffic impacts of the ban turns, traffic surveys at locations agreed with the SMTA and the Market Superintendent have been carried out. A summary of the assessment is provided in Appendix 7 and 8. This shows traffic turning left at West Smithfield to be very low compared to the flows on the other arms. The average weekday left turn is 465 vehicles over 24 hours (lower during the weekend) and during the main market operating hours (midnight to 8am), the average total number of left turning vehicles is 201 over 8 hours or 25 vehicles per hour.
- 14. The SMTA and the Markets and Consumer Protection Department have both expressed concern with the banned left turn, as this would send more traffic to travel around the market. Their concerns are that this would add further congestion to an already congested network, safety implications and would result in a much longer diversion for some traders. An ability to enable the left turn during peak market activities (e.g. between 9pm – 5am) has been suggested but currently not supported by TfL because they consider this will introduce additional road danger.
- 15. The level of southbound right turning traffic into Charterhouse Street (west) is also low when compared to the other movements. The average daily (24hrs) weekday flow is 1,820 vehicles. A summary of the traffic flows around the Market are shown in Appendix 8. A full set of traffic count data can be supplied to Members on request.
- 16. The nearest and simplest diversionary routes for both banned turns would be to turn left into Charterhouse Street (east) and to proceed around the market. Alternatively, traffic can continue down Farringdon Street and then turn left or right at Ludgate Circus and then use other City streets to reach their destination. There are also other good diversionary routes available further north, such as using Rosebury Avenue, the Inner Ring Road, and other streets. These routes would be more appropriate for some of the diverted traffic. Appendix 9 provides a map of the diversionary routes.
- 17. At the Stonecutter Street junction, the bi-directional cycle track separates to enable the cycle lanes to be on each side of the street. See Appendix 3 for details. However, some local concerns regarding the safety and convenience of this layout, particularly for pedestrians crossing still remain.

Corporate & Strategic Implications

- 18. The proposals accord fully with many of the City's strategic and corporate policy objectives. The proposals should also lead to a reduction in casualties within the City.

Implications

19. TfL are the strategic and traffic authority for London and Farringdon Street. Therefore, they will be exercising their powers in relation to most of the proposals. However, they may also request the City to exercise some its highway and traffic powers. For example, the making of Traffic Regulation Orders, and in these circumstances, the City will retain its right to determine the outcome of any objections based on their merit.
20. There will also be a need to enter into relevant legal agreements or amendments of existing agreements, for example, under s.8 of the Highways Act 1980 (providing for agreements between local authorities in relation to certain highway works).
21. There are no financial implications for the City as TfL has agreed to cover all of our costs.

Conclusion

22. Since earlier this year, TfL has been actively engaging with the City Corporation to improve their North-South Cycle Superhighway proposals.
23. The current proposals offer substantial safety benefits, good and safer cycle route connectivity between the Cycle Quietways and Cycle Superhighway, and provide much needed pedestrian crossing facilities. There are some access concerns relating to the banned turns and the separation of the cycle lane at Stonecutter Street. Overall officers believe that the reduced road danger and other benefits outweigh the concerns as set out above.
24. It is therefore recommended that the City supports the Mayor's proposals. However, directs officers to continue to work with TfL to establish if a timed suspension of the banned left turn is practicable during key market operating times, and establish if it is possible to improve the cycle lane separation at Stonecutter Street.

Appendices

- Appendix 1 – Original March 2016 proposals
- Appendix 2 – TfL's November 2016 consultation material
- Appendix 3 – Detailed concept plans
- Appendix 4 – Road Safety Audit
- Appendix 5 - TfL's injury collision assessment at the Farringdon Street/West Smithfield junction.
- Appendix 6 - TfL's injury collision assessment at the Farringdon Road/Charterhouse Street junction.
- Appendix 7 – TfL's traffic count assessment
- Appendix 8 – Plan of traffic flows around the market.

- Appendix 9 – Map of diversionary routes

Background Papers:

- Report and minutes of the Director of the Built Environment on TfL's consultation on proposals to extend the North – South Cycle Superhighway from Stonecutter Street to Kings Cross. March 2016

Sam Lee

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Department of the Built Environment

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North-South Cycle Superhighway (CS6) Section 1 - Farringdon Street

North - South Cycle Superhighway continues south to Elephant & Castle (in construction)

Page 11

Key:

- North-South Cycle Superhighway
- Existing footway or traffic island
- New footway or traffic island
- Existing kerbline removed
- Signalised pedestrian or pedestrian/cycle crossing
- Contrasting coloured surface at informal crossing
- Bus stop
- New cycle parking
- Existing road markings
- New road markings
- Trees
- Development not part of consultation
- Santander Cycle Hire docking station
- Direction of Cycle Superhighway

Stonecutter Street closed for traffic.
Area impacted by another development
- not part of this consultation

Consulate parking bay

Bus stop bypass for cyclists

Loading / disabled bay

Stepped cycle track

Relocated taxi parking bay

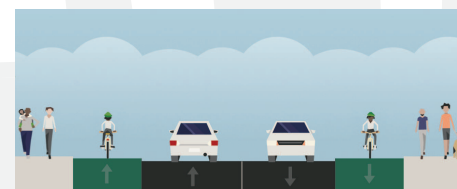
Existing loading / disabled bay

Existing taxi parking bay

Existing disabled bay

Signalised cycle crossing

Relocated motorcycle parking



Stepped cycle track

Section A-A

Continued on Section 2



Camden



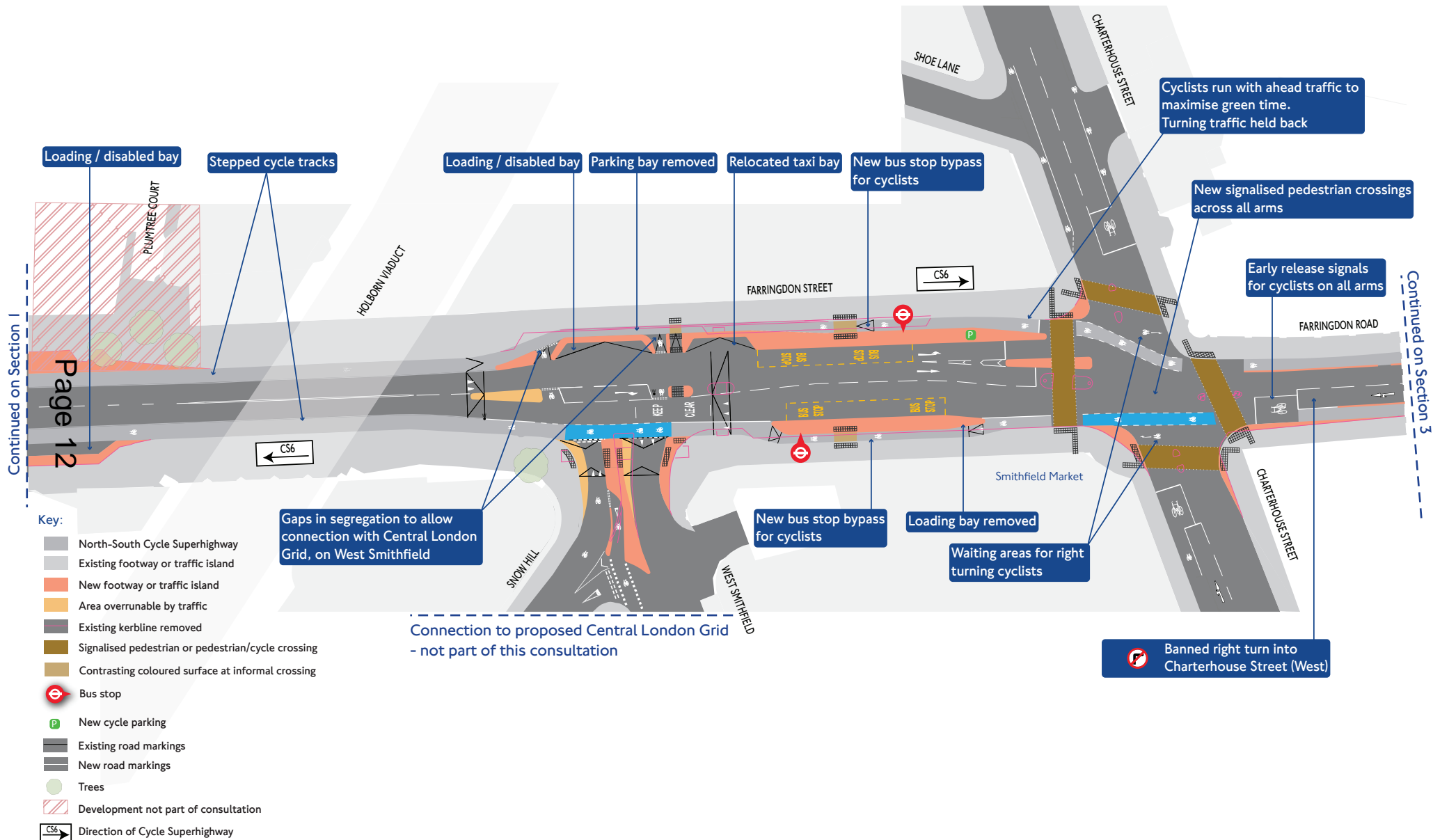
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EVERY JOURNEY MATTERS



North-South Cycle Superhighway (CS6) Section 2 - Farringdon Street



Proposed changes to the junction of Farringdon Street and West Smithfield / Snow Hill as part of the North-South Cycle Superhighway

Closes 13 Dec 2016

Opened 2 Nov 2016

Contact

consultations@tfl.gov.uk (mailto:consultations@tfl.gov.uk)

Overview

Following the recent publication of our response to issues raised report for the North-South Cycle Superhighway (CS6) between Stonecutter Street and King's Cross, we are proposing further changes to the junction of Farringdon Street / West Smithfield / Snow Hill. The proposals include a new controlled cycle crossing which would provide a cycle link between CS6 and the Central London Grid cycle route through West Smithfield. In addition, a new signal-controlled pedestrian crossing across Farringdon Street and traffic signals at the junction are proposed. The proposals would also create space for new segregated cycle tracks under Holborn Viaduct. Our proposals would address many of the current conflict points between motor traffic, cyclists and pedestrians and provide dedicated priority for all road users.

What are we proposing?

The scheme would include the following measures:

Pedestrian crossings

- A new pedestrian crossing on Farringdon Street to provide pedestrians with a signal-controlled crossing point
- Raising the existing uncontrolled pedestrian crossing across Snow Hill and West Smithfield to footway level to provide a level crossing point
- Widening the footway on the north side of the West Smithfield arm of the junction to reduce the crossing distance for pedestrians

Signal-controlled cycle link between CS6 and the Central London Grid

- A new cycle link to provide cyclists with a controlled crossing point between CS6 and the Central London Grid on West Smithfield, including a segregated cycle feeder lane on West Smithfield and a link to Snow Hill

Segregated cycle tracks under Holborn Viaduct

- Segregated cycle tracks (at least 1.5 metres wide) behind the existing protective kerbs under Holborn Viaduct, creating extra road space for motor traffic and cyclists

Traffic signals on Farringdon Street, Snow Hill and West Smithfield

- New traffic signals for motor vehicles to separate movements between Farringdon Street and West Smithfield / Snow Hill
- A 1.8 metre wide segregated cycle track behind the loading / disabled parking bay to allow northbound cyclists to bypass the signals
- A segregated cycle track for southbound cyclists, who would proceed with southbound traffic to maximise green time

Banned left turn into West Smithfield except cycles

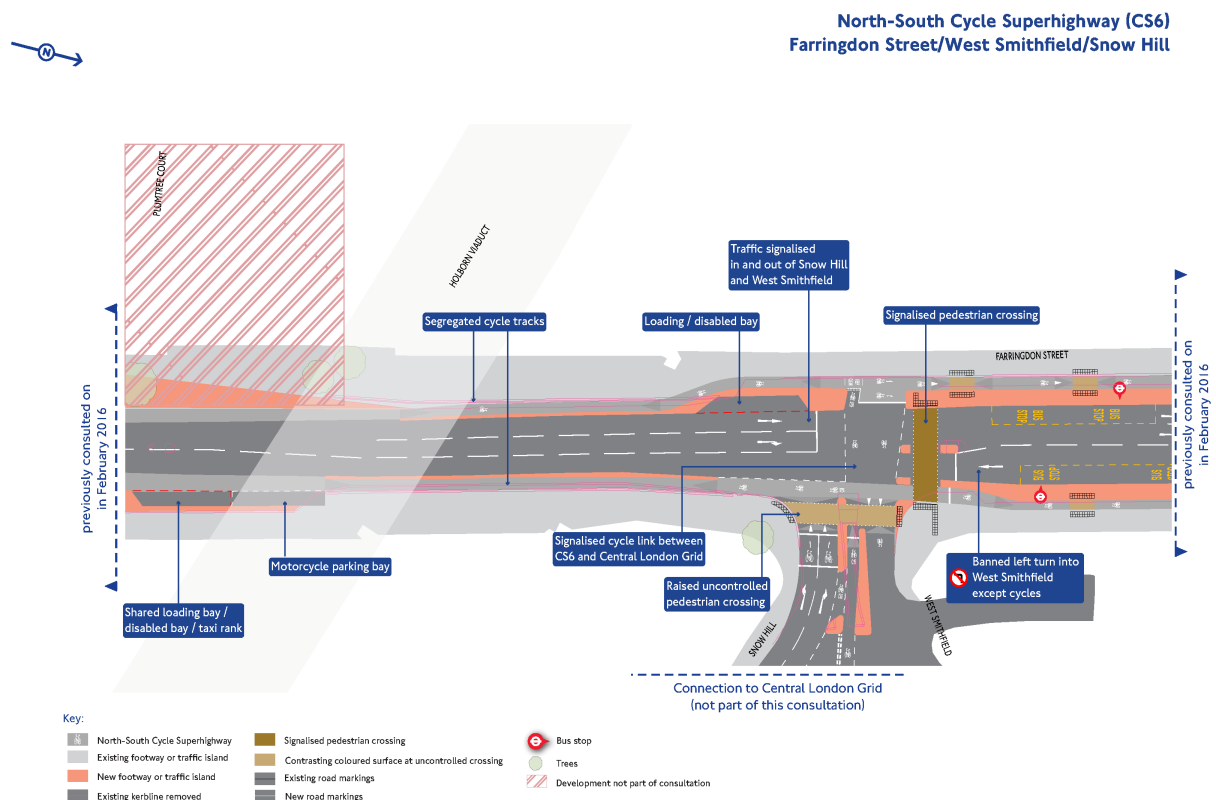
- A banned turn for southbound traffic turning left from Farringdon Street into West Smithfield to remove the risk of 'left hook' conflicts

between turning motor vehicles and cyclists travelling ahead at the junction

- Traffic counts show that a maximum of 40 vehicles per hour make this movement. Alternative routes are available nearby

Changes to parking and loading

- The loading / disabled bay previously proposed on the west side of Farringdon Street, north of Holborn Viaduct would be retained



Click here to view a larger version of the above map (PDF).

(https://consultations.tfl.gov.uk/roads/west-smithfield/user_uploads/ns-west-smithfield-consultation-drawing.pdf)

We would no longer be able to introduce the previously proposed taxi rank on the west side of Farringdon Street as the space would be needed for the new pedestrian crossing. However, as detailed in the response to the North-South Cycle Superhighway consultation, the bay on the east side of

Farringdon Street, south of Holborn Viaduct will be a shared taxi rank / loading bay and we propose switching its position with the motorcycle parking bay to improve visibility from the north. The total net loss of taxi rank length for this scheme is 2.3 metres. You can find details of the original North-South Cycle Superhighway (CS6) between Stonecutter Street and King's Cross consultation at <https://consultations.tfl.gov.uk/cycling/northsouth> (<https://consultations.tfl.gov.uk/cycling/northsouth>).

Traffic impacts

Our traffic modelling shows this scheme would have largely neutral impacts on traffic and bus journey times on Farringdon Street.

It is important to note that our traffic reassignment modelling is only ever indicative - it is intended to give an idea of where the impacts of changes in journey choice are most likely to be felt. It assumes that drivers have perfect knowledge of the network and will always choose the quickest route available. The reassignment is a picture of what the network may look like once the on-street proposals and associated driver behaviour has had a chance to bed in.

We would actively monitor and manage traffic conditions on the roads following the delivery of the scheme, and would aim to mitigate and manage traffic reassignment following implementation using the technology and tools we have at our disposal such as SCOOT dynamic signal control. We are investing in advanced traffic signal technology to allow us to better manage traffic depending on differing conditions at any given time, and we are working to improve road user information so people can make informed journey choices before they travel.

North-South Cycle Superhighway Extension

Journey Time & Pedestrian Wait Times

Correct as at 24 October 2016	Future Base - Dec 2016 (including North-South CSH phase 1)				North-South CSH phase 2 proposals (including the signalisation of Snow Hill)				Difference between proposed and future base	
	Journeys modelled		AM	PM	Journeys modelled		AM	PM	AM	PM
Traffic Average journey times (minutes:seconds)	Elephant & Castle to Acton Street	Northbound	15-20m	20-25m	Elephant & Castle to Acton Street	Northbound	15-20m	15-20m	0-30s	-(30-60)s
		Southbound	15-20m	20-25m		Southbound	10-15m	20-25m	-(30-60)s	-(2-3)m
	Clerkenwell Road (Hatton Garden to Britton Street)	Eastbound	30-60s	30-60s	Clerkenwell Road (Hatton Garden to Britton Street)	Eastbound	30-60s	30-60s	No change	No change
		Westbound	1-2m	1-2m		Westbound	30-60s	30-60s	-(0-30s)	No change
Buses A sample of journey times on four routes through the scheme area (minutes:seconds)	Route 63 (Upper Ground & Mount Pleasant)	Northbound	10-15m	10-15m	Route 63 (Upper Ground & Mount Pleasant)	Northbound	10-15m	10-15m	-(0-30s)	No change
		Southbound	10-15m	15-20m		Southbound	10-15m	15-20m	-(30-60)s	-(0-30s)
	Route 55 (between Clerkenwell Green and Herbal Hill)	Eastbound	1-2m	1-2m	Route 55 (between Clerkenwell Green and Herbal Hill)	Eastbound	30-60s	1-2m	-(0-30s)	0-30s
		Westbound	1-2m	1-2m		Westbound	1-2m	1-2m	0-30s	0-30s
Cycling Average journey times (minutes)	Stonecutter Street to Ray Street	Northbound	3-5m	3-5m	Stonecutter Street to Ray Street	Northbound	3-5m	3-5m	0-1m	1-2m
		Southbound	3-5m	3-5m		Southbound	3-5m	3-5m	0-1m	0-30s
Pedestrians Traffic signal cycle times and associated wait times (seconds)	Farringdon Street / Snow Hill / Westsmithfield	Max. cycle time	NO SIGNALISED FACILITIES		Farringdon Street / Snow Hill / Westsmithfield	Max. cycle time	120	120	N/A	
		Max. wait time				Max. wait time	108	110		
	Farringdon Road / Charterhouse Street	Max. cycle time	NO SIGNALISED FACILITIES		Farringdon Road / Charterhouse Street	Max. cycle time	120	120	N/A	
		Max. wait time				Max. wait time	114	114		
	Farringdon Station	Max. cycle time	96	96	Farringdon Station	Max. cycle time	60	60	-36	-36
		Max. wait time	71	71		Max. wait time	50	50	-21	-21
	Farringdon Road / Clerkenwell Road	Max. cycle time	96	96	Farringdon Road / Clerkenwell Road	Max. cycle time	96	96	0	0
		Max. wait time	90	90		Max. wait time	90	90	0	0
	Farringdon Road / Ray Street / Farringdon Lane	Max. cycle time	NO SIGNALISED FACILITIES		Farringdon Road / Ray Street / Farringdon Lane	Max. cycle time	96	96	N/A	
		Max. wait time				Max. wait time	90	90		

Click here to view a larger version of the above table (PDF).

(https://consultations.tfl.gov.uk/roads/west-smithfield/user_uploads/ns-west-smithfield-traffic-modelling-table.pdf)

Have your say

We would like to know what you think about our proposals.

Please give us your views by completing the online survey below by **Tuesday 13 December 2016**.

Alternatively, you can:

- Email us at consultations@tfl.gov.uk (mailto:consultations@tfl.gov.uk), with 'Cycle Superhighway North South – West Smithfield'

- or write to us at FREEPOST TFL CONSULTATIONS, 'Cycle Superhighway North South – West Smithfield'

To request a copy of this information in braille, large-text or another language, please contact us (<mailto:consultations@tfl.gov.uk?subject=West%20Smithfield%20-%20accessibility>).

Have your say

Online Survey >

(<https://consultations.tfl.gov.uk/roads/west-smithfield/consultation/>)

Areas

Islington

Audiences

Anyone from any background

Interests

Cycling Junction Improvements

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(<http://twitter.com/share?url=https%3A%2F%2Fconsultations.tfl.gov.uk%2Froads%2Fwest-smithfield%2F&text=Have+a+look+at+this+consultation+from+%23citizenspace%3A>)



(<https://www.facebook.com/sharer/sharer.php?u=https%3A%2F%2Fconsultations.tfl.gov.uk%2Froads%2Fwest-smithfield%2F>)

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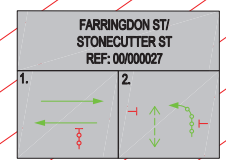
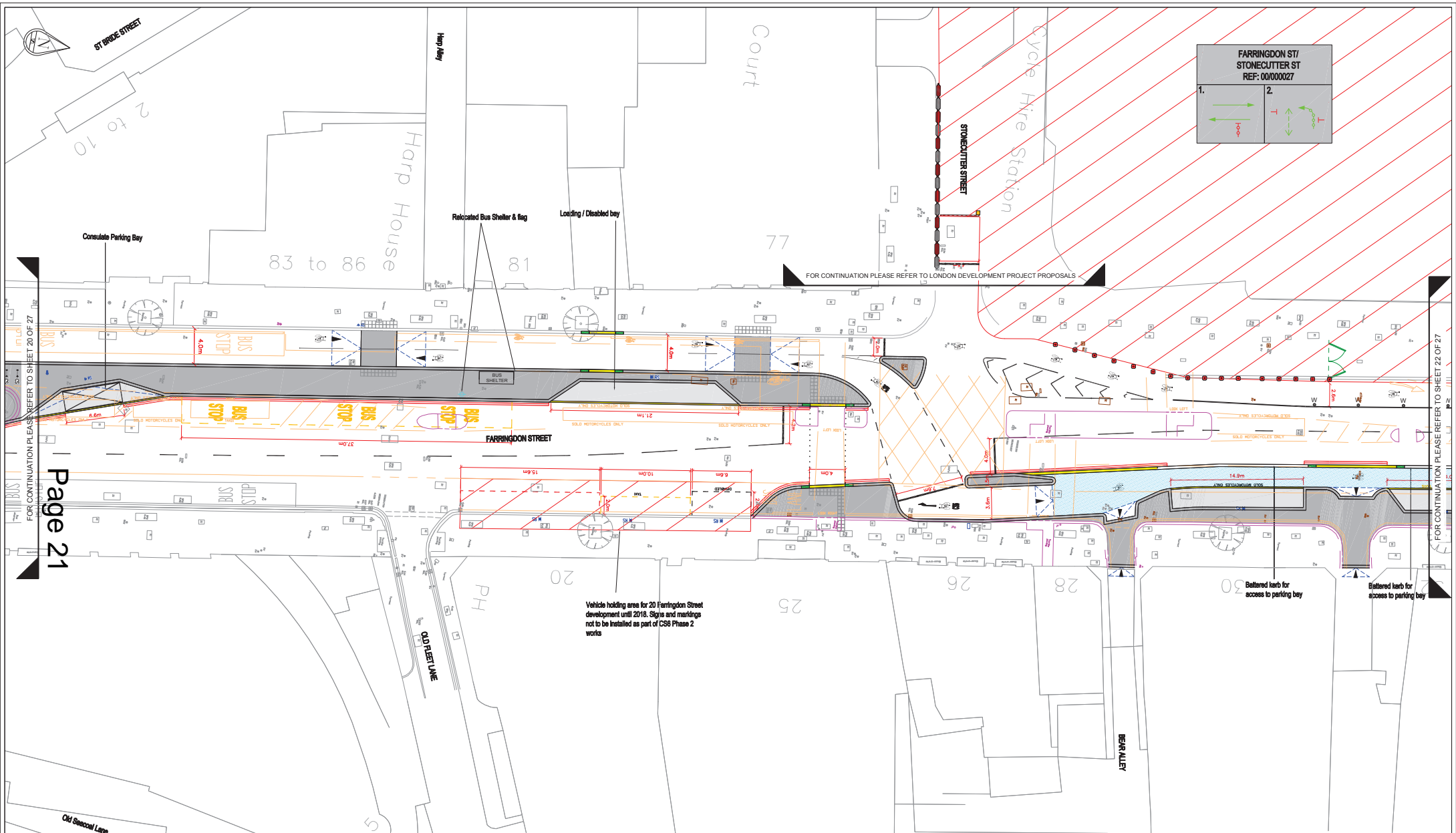
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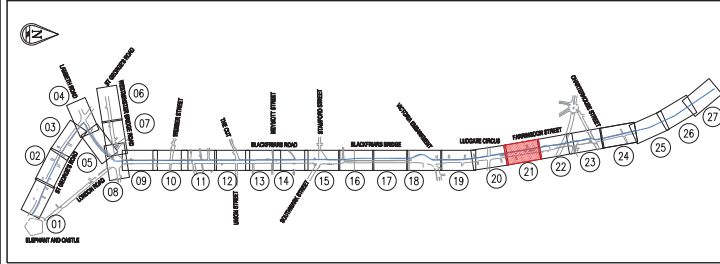
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Citizen Space (<http://www.citizenspace.com>) from Delib (<http://www.delib.net>)

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- KEY**
- Road Markings to be Removed
 - Guardrail to be removed
 - Street furniture to be removed
 - Kerb / Tactile to be removed
 - Retained Infrastructure
 - Proposed Road Markings
 - Proposed red lines
 - Proposed yellow lines
 - Proposed transition kerb
 - Proposed dropped kerb
 - Proposed kerbs
 - Proposed CS cycle logo
 - Proposed red tactile paving
 - Proposed charcoal tactile paving
 - Proposed concrete tactile paving
 - Proposed footway hardscape
 - Proposed flush area
 - Proposed Sheffield cycle stand
 - Proposed sign face (TBC)
 - Proposed bus shelter
 - TURN Boundary
 - Gully affected by proposals
 - Bull surface dressing
 - Proposed lighting column (TBC)
 - Sign face to be removed (TBC)
 - Proposed sign post (TBC)
 - Proposed bus stop flag
 - Proposed wind
 - Proposed ramp
 - Blue Surfacing
 - Intermediate Level Cycle Track
 - Footway Level Cycle Track
 - Potential tree pit
 - Proposed backless bench
 - Proposed bench
 - Proposed bin
 - Proposed delineator strip
 - Proposed legible London logo
- NOTES**
- All designs to be in accordance with TLM and appropriate Highway Authority Streetworks Guidance.
 - All lighting and signing to be in accordance with the current Traffic Signs Regulations and General Directions (TSRGD).
 - All dimensions in metres, unless otherwise stated.
 - All signs to be mounted on existing lighting columns / sign posts where possible (subject to structural assessment).
 - Signs on footway to be mounted at a height to ensure a minimum vertical clearance of 2.3m to bottom of sign where cycling is permitted on the footway, elsewhere to 2.1m.
 - All signs to have a minimum horizontal clearance of 400mm from face of trafficked kerb.
 - All signal heads to be mounted at a height to ensure a minimum vertical clearance of 2.3m to bottom of signal head where cycling is permitted on the footway.
 - All existing signs & lines to be retained unless otherwise stated.
 - Critical dimensions to be checked at detailed design stage.
 - Lighting to be assessed at detailed design stage.
 - Proposed traffic signal positions are indicative only and are subject to detailed signal design.
 - Recessed covers to be considered for inspection chambers within areas of tactile paving.
 - Assess carriageway condition at detailed design stage.
 - Re-instate existing road markings adjacent to kerb and carriageway works.
 - Changes to drainage are subject to detail design.
 - Drawing based on topographical survey provided by CVU & David Webb.
 - All existing gullies to be retained in cycle track / lane to be converted to 'cycle friendly'.
 - Statutory Underpasses equipment impacted by the works are not fully identified on these drawings. Some that require assessment have been highlighted in brown. Detailed checks should be made at Detailed Design.
 - All close locations to be assessed as part of signal audit.
 - All ramp lengths to be dictated by existing proposed kerb height.

THESE DRAWINGS HAVE BEEN PREPARED FOR EARLY CONTRACTOR INVOLVEMENT.

THEY ARE NOT THE FINAL PRELIMINARY DESIGN DRAWINGS. THEY DO NOT SHOW THE FULL DETAIL OF THE PROPOSED SCHEME, INCLUDING SIGNAL INFRASTRUCTURE.

THESE DRAWINGS ARE SUBJECT TO CHANGE.

REV	DATE	BY	CHK	APP	DESCRIPTION
01	15/11/20	JAC	MA		FOR RWA 1 and T1 Design
02	15/11/20	JAC	MA		FOR RWA 1 and T1 Design

Transport for London
Surface Transport

Highways Management
Outcomes Design Engineering

100 Blackhorse Road
London
E9 6JL

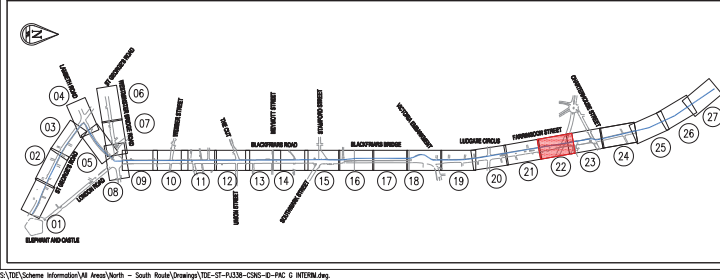
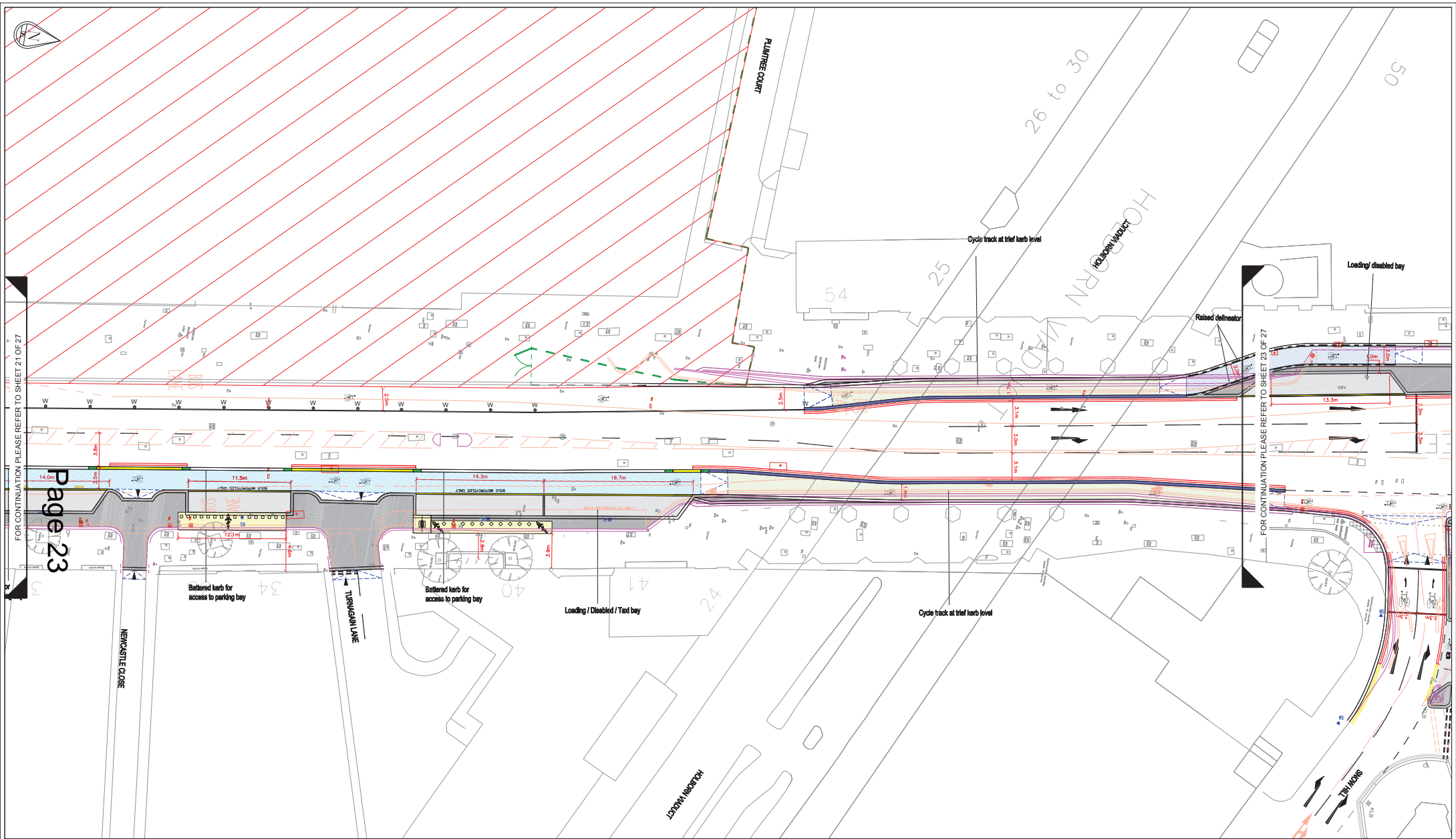
scheme
CYCLE SUPERHIGHWAY
ROUTE NORTH - SOUTH PHASE 2
DRAWING 21 OF 27
CONCEPT DESIGN (INTERIM V2)

date scale dnm chk app
NOV 15 1:200 @ A1 JAC CG HA

Dwg No TDE-ST-PJ338-CSNS-ID-21
INTERIM

28.1

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- KEY**
- Road Markings to be Removed
 - Guardrail to be removed
 - Street furniture to be removed
 - Kerb / Tactile to be removed
 - Related Infrastructure
 - Proposed Road Markings
 - Proposed red lines
 - Proposed yellow lines
 - Proposed transition kerb
 - Proposed dropped kerb
 - Proposed kerb
 - Proposed trial kerb
 - Proposed CS cycle logo
 - Proposed red tactile paving
 - Proposed charcoal tactile paving
 - Proposed corduroy tactile paving
 - Proposed footway bulbout/land
 - Proposed flush area
 - Proposed Sheffield cycle stand
 - Proposed sign face (TBC)
 - Proposed bus shelter
 - TURN Boundary
 - Gullyhead affected by proposals
 - Rail surface dressing
 - Proposed lighting column (TBC)
 - Sign face to be removed (TBC)
 - Proposed sign post (TBC)
 - Proposed Blue Stop Sign
 - Proposed bollard
 - Proposed ward
 - Proposed ramp
 - Blue Surfacing
 - Intermediate Level Cycle Track
 - Footway Level Cycle Track
 - Trial kerb Level Cycle Track
 - Potential tree pit
 - Proposed backless bench
 - Proposed bench
 - Proposed bin
 - Proposed delineator strip
 - Proposed lightable London token
- NOTES**
- All designs to be in accordance with TLM and appropriate Highway Authority Streetworks Guidance.
 - All lighting and signing to be in accordance with the current Traffic Signs Regulations and General Directions (TSRGD).
 - All dimensions in metres, unless otherwise stated.
 - All signs to be mounted on existing lighting columns / sign posts where possible (subject to structural assessment).
 - Signs on footway to be mounted at a height to ensure a minimum vertical clearance of 2.2m to bottom of sign where cycling is permitted on the footway, elsewhere to 2.1m.
 - All signs to have a minimum horizontal clearance of 400mm from face of trafficked kerb.
 - All signal heads to be mounted at a height to ensure a minimum vertical clearance of 2.2m to bottom of signal head where cycling is permitted on the footway.
 - All existing signs & trees to be retained unless otherwise stated. Critical dimensions to be checked at detailed design stage.
 - Lighting to be assessed at detailed design stage.
 - Proposed traffic signal positions are indicative only and are subject to detailed signal design.
 - Recessed covers to be considered for inspection chambers within areas of tactile paving.
 - Assess carriageway condition at detailed design stage.
 - Re-instate existing road markings adjacent to kerb and carriageway works.
 - Changes to drainage are subject to detail design.
 - Drawing based on topographical survey provided by CVU & David Webb.
 - All existing gullies to be retained in cycle track / lane to be converted to 'cycle friendly'.
 - Statutory Underpasses equipment impacted by the works are not fully identified on these drawings. Some that require assessment have been highlighted in brown. Detailed checks should be made at Detailed Design.
 - All signs locations to be assessed as part of signal audit.
 - All ramp lengths to be dictated by existing proposed kerb height.

THESE DRAWINGS HAVE BEEN PREPARED FOR EARLY CONTRACTOR INVOLVEMENT.

THEY ARE NOT THE FINAL PRELIMINARY DESIGN DRAWINGS. THEY DO NOT SHOW THE FULL DETAIL OF THE PROPOSED SCHEME, INCLUDING SIGNAL INFRASTRUCTURE.

THESE DRAWINGS ARE SUBJECT TO CHANGE.

Transport for London
Surface Transport

Public Rights of Way
100 Blackman Road
E11 6LJ

scheme
**CYCLE SUPERHIGHWAY
ROUTE NORTH - SOUTH PHASE 2
DRAWING 22 OF 27
CONCEPT DESIGN (INTERIM)**

date	scale	dm	chk	app
NOV 15	1:200 @ A1	JMG	CG	HA

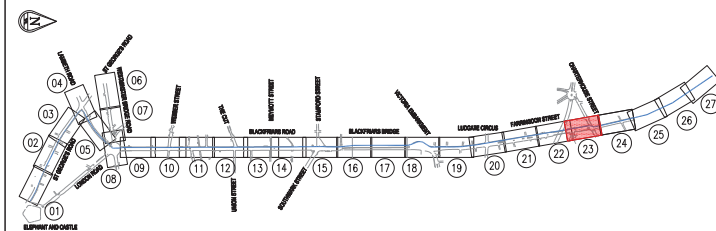
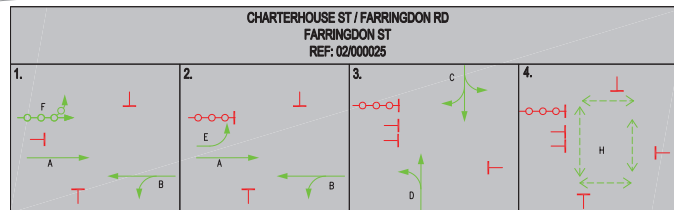
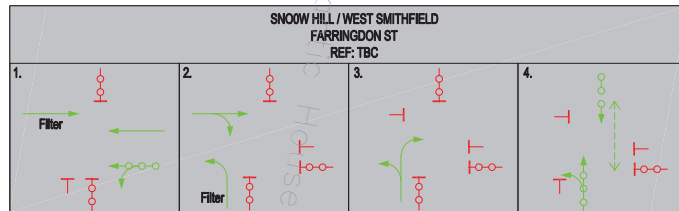
Dwg No: **TDE-ST-PJ338-CSNS-ID-22**
INTERIM

REV	BY	DATE	DESCRIPTION	CHK	APP
26.1	TP/WH	For W&A 1 and T1 Design	CG	HA	
26.1	GH/VS	FOR BACKLOGGING AND CONSULTATION	JC	HA	
REV	4/2020	26/04/20		CHK	APP

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- | KEY | NOTES | | | |
|--------------------------------|----------------------------------|--|---|--|
| Road Markings to be Removed | Proposed charcoal tactile paving | Proposed Blue Slip Flag | 1. All designs to be in accordance with TL and appropriate Highway Authority Design Guidance | 10. Lighting to be assessed at detailed design stage. |
| Guardrail to be removed | Proposed ordinary tactile paving | Proposed bollard | 11. All lining and signing to be in accordance with the current Traffic Signs Regulations and General Directions (TSRGD) | 11. Proposed tactile signal positions are indicative only and are subject to detailed signal design. |
| Street Furniture to be removed | Proposed footway bulbhead/light | Proposed warden | 12. All dimensions in brackets, unless otherwise stated. | 12. Raised covers to be considered for inspection chambers with areas of tactile paving. |
| Kerb / Tactile to be removed | Proposed flush area | Proposed ramp | 13. All signs to be mounted on existing light columns / sign posts where possible (subject to structural) | 13. Assess carryover condition at detailed design stage. |
| Retained Infrastructure | Proposed Staffed cycle stand | Blue Surfacing | 14. All signs to be mounted at a height to ensure a minimum vertical clearance of 2.3m to bottom of sign when cycling is permitted on the footway, elsewhere to 2.1m | 14. Re-install existing road markings adjacent to kerb and carriageway works. |
| Proposed Road Markings | Proposed sign area (TBC) | Intermediate Level Cycle Track | 15. Signs on footway to be mounted at a height to ensure a minimum vertical clearance of 2.3m to bottom of sign when cycling is permitted on the footway, elsewhere to 2.1m | 15. Change lane markings are subject to detail design. |
| Proposed red lines | Proposed sign face (TBC) | Footway Level Cycle Track | 16. All signs to have a minimum horizontal clearance of 450mm from face of trafficked lane. | 16. Drawing based on topographical survey provided by CNU4 at David Webb |
| Proposed yellow lines | TULN Boundary | Tied Rail Level Cycle Track | 17. All signal heads to be mounted at a height to ensure a minimum vertical clearance of 2.3m to bottom of sign when cycling is permitted on the footway, elsewhere to 2.1m | 17. All existing gullies to be retained in cycle track / lane to be converted to 'cycle friendly' |
| Proposed transition lines | GULLY Boundary | Potential free pit | 18. All signal heads to be mounted at a height to ensure a minimum vertical clearance of 2.3m to bottom of sign when cycling is permitted on the footway, elsewhere to 2.1m | 18. Statutory Underdrains equipment impacted by the works are not fully identified on these drawings. Signs that require assessment have been highlighted in brown |
| Proposed dropped kerbs | Tactile paving by proposals | Proposed bench bench | 19. All existing signs to be retained unless otherwise stated. | 19. All tactile checks should be made at detailed design stage |
| Proposed kerbs | Blue surface dressing | Proposed backless bench | 20. All existing signs to be retained unless otherwise stated. | 20. All other locations to be assessed as part of signal work. |
| Proposed kerbs | Proposed lighting column (TBC) | Proposed bin | 21. All existing signs to be retained unless otherwise stated. | 21. Off set signage to be decided by existing proposed kerb height |
| Proposed Tied Rail | Sign face to be removed (TBC) | Proposed delineator aid | 22. All existing signs to be retained unless otherwise stated. | 22. Off set signage to be decided by existing proposed kerb height |
| Proposed CS cycle logo | Proposed sign post (TBC) | Proposed legible London Transport sign | | |
| Proposed red tactile paving | | | | |

- THESE DRAWINGS HAVE BEEN PREPARED FOR EARLY CONTRACTOR INVOLVEMENT.
- THEY ARE NOT THE FINAL PRELIMINARY DESIGN DRAWINGS. THEY DO NOT SHOW THE FULL DETAIL OF THE PROPOSED SCHEME, INCLUDING SIGNAL INFRASTRUCTURE
- THESE DRAWINGS ARE SUBJECT TO CHANGE.

Prepared for: London
Surface Transport




**Road Space Management
Outcomes Design Engineering**

**Phase 1
107 Whitehall Road
London
SE1 8NL**

scheme

CYCLE SUPERHIGHWAY
ROUTE NORTH - SOUTH PHASE 2
DRAWING 23 OF 27
CONCEPT DESIGN

REV	DATE	DETAILS	CHK	APP
26.1	REVISED	FOR H&A 1 and 11 Design	CG	HA
26	200705	RENDER CHANGED PORT COMBINATION	CG	HA
26.2	200705	RENDER CHANGED FOLLOWING H&A	JC	HA
26.1	200705	FOR MICROPLANNING AND COMBINATION	JC	HA
rev	date	details	CHK	APP



DATE 11 NOV 11

TIME 12:00 @ A1

Dwg No. **T06-ST-P-0338-CNSN-ID-03**

dmn

chk

app

rev

28.1

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CS North-South Cycle Route (Phase 2)

Concept Design (Rev 2A.1)

Stage 1 Road Safety Audit

Ref: 2462/VAR/A201/TLRN/2016

Prepared for:

Sponsorship, TfL Road Space Management Directorate

By:

Road Safety Audit, TfL Asset Management Directorate

Prepared by: Andrew Coventry, Audit Team Leader

Checked by: Shane Martin, Audit Team Member

Approved by: Chris Gooch

Version	Status	Date
A	Audit report issued to Client	12/01/2016



1.0 INTRODUCTION

1.1 Commission

- 1.1.1 This report results from a Stage 1 Road Safety Audit carried out on the CS North-South Cycle Route (Phase 2), Concept Design (Rev 2A.1) proposals.
- 1.1.2 The Audit was undertaken by TfL Road Safety Audit in accordance with the Audit Brief issued by the Client Organisation on 4th January 2016. It took place at the Palestra offices of TfL on 8th January 2016 and comprised an examination of the documents provided as listed in Appendix A, plus a visit to the site of the proposed scheme.
- 1.1.3 The visit to the site of the proposed scheme was made on 8th January 2016. During the site visit the weather was raining and the existing road surface was wet.

1.2 Terms of Reference

- 1.2.1 The Terms of Reference of this Audit are as described in TfL Procedure SQA-0170 dated May 2014. The Audit Team has examined and reported only on the road safety implications of the scheme as presented and how it impacts on all road users and has not examined or verified the compliance of the designs to any other criteria. However, to clearly explain a safety problem or the recommendation to resolve a problem the Audit Team may, on occasion, have referred to a design standard without touching on technical audit. An absence of comment relating to specific road users / modes in Section 3 of this report does not imply that they have not been considered; instead the Audit Team feels they are not adversely affected by the proposed changes.
- 1.2.2 This Safety Audit is not intended to identify pre-existing hazards which remain unchanged due to the proposals; hence they will not be raised in Section 3 of this report as they fall outside the remit of Road Safety Audit in general as specified in the procedure SQA-0170 dated May 2014. Safety issues identified during the Audit and site visit that are considered to be outside the Terms of Reference, but which the Audit Team wishes to draw to the attention of the Client Organisation, are set out in Section 4 of this report.
- 1.2.3 Nothing in this Audit should be regarded as a direct instruction to include or remove a measure from within the scheme. Responsibility for designing the scheme lies with the Designer and as such the Audit Team accepts no design responsibility for any changes made to the scheme as a result of this Audit.
- 1.2.4 In accordance with TfL Procedure SQA-0170 dated May 2014, this Audit has a maximum shelf life of 2 years. If the scheme does not progress to the next stage in its development within this period, then the scheme should be re-audited.
- 1.2.5 Unless general to the scheme, all comments and recommendations are referenced to the detailed design drawings and the locations have been indicated on the plan located in Appendix B.
- 1.2.6 It is the responsibility of the Design Organisation to complete the Designer's response section of this Audit report. Where applicable and necessary it is the responsibility of the Client Organisation to complete the Client comment section of this Audit report. Signatures from both the Design Organisation and Client Organisation must be added within Section 5 of this Audit report. A copy of which must be returned to the Audit Team.

1.3 Main Parties to the Audit

1.3.1 Client Organisation

Client contact details: Stephanie Groot – TfL Sponsorship

1.3.2 Design Organisation

Design contact details: TfL Outcomes Design Engineering

1.3.3 Audit Team

Audit Team Leader: Andrew Coventry – TfL Road Safety Audit

Audit Team Member: Shane Martin – TfL Road Safety Audit

Audit Team Observer: None present

1.3.4 Other Specialist Advisors

Specialist Advisor Details: None present

1.4 Purpose of the Scheme

- 1.4.1 The purpose of the scheme is to extend the Cycle Superhighway North-South Route from Stonecutter Street to Ray Street*.

*Taken directly from the Audit Brief.

1.5 Special Considerations

- 1.5.1 The Audit Team has no special considerations to raise.

2.0 ITEMS RAISED IN PREVIOUS ROAD SAFETY AUDITS

The Audit Team is not aware of any other Audits having been carried out on the proposals.

3.0 ITEMS RAISED AT THIS STAGE 1 ROAD SAFETY AUDIT

This section should be read in conjunction with Paragraphs 1.2.1, 1.2.2 and 1.2.3 of this report.

3.1 CYCLE FACILITIES

3.1.1 PROBLEM

Location: General to scheme, multiple locations

Summary: Insufficient provision for cyclists to join the cycle track from the signalised side roads

The Audit Team is concerned that no measures are provided to assist cyclists to join the cycle track from the signalised side roads. Cyclists are likely to attempt to join the cycle track from within the junction, potentially performing manoeuvres unlikely to be anticipated by other road users. This is of particular concern where a significant left-turn flow by general traffic is required to be crossed by cyclists travelling ahead. A lack of priority for cyclists may result in an increased potential for left-hook type conflicts.

RECOMMENDATION

Modify the traffic signals to enable cyclists to access the cycle track safely. This may require the provision of an early-release type facility for cyclists or the provision of separately signalised traffic stages for cyclists.

Design Organisation Response	Accepted
<p>Accepted: There are two junctions where cyclists can join the cycle track via a signalised side road. These are at the Charterhouse Street junction and the Clerkenwell Road junction. The side roads at the Ray Street junction allow cycles only to join Farringdon Road so there is no conflict with motor traffic.</p> <p>Cyclists at all signalised side roads will have early release signals for cyclists and 7.5m deep advanced stop lines (ASLs) to reduce the risk of left turn hook collisions.</p> <p>At Clerkenwell Road there is insufficient road space to separately signal cyclists while at Charterhouse St the low cycle flows (approx. 100-150/peak hr/arm) do not justify the additional signal stage and delays to other road users. In addition, a separate stage for cyclists approaching from the side road would receive a low green time owing to the low flow which may discourage use.</p> <p>The early release signals are not intended to benefit cyclists turning right into the cycle track. Those wishing to turn right must wait and gap accept as normal if there is no two-stage right turn facility. Generally there is no two-stage right turn facility where the approach is a single lane because the right turn is relatively simple to perform with cyclists just having to adjust their lane position rather than change lanes. Adding the facility would require pedestrian crossing setbacks, increased intergreen times, and increased infrastructure. In addition, the staging sequence is such that the all-red pedestrian stage is after the side roads, which means that cyclists would be required to wait a long time to complete their second stage of the turn. Many would be tempted to cross during the all-red instead, increasing the risk of pedestrian-cyclist conflict.</p> <p>At the Clerkenwell Road junction, the right turn movements are prohibited for general traffic and two very busy cycle routes meet. There the two stage turns proposed to allow cyclists to perform all right turn movements. This improves the permeability of</p>	

the cycle network.

Client Organisation Comments

Accepted. Agree with designer's response.

At Charterhouse Street, early release signals and 7.5m ASLs are provided for cyclists joining from the signalised side roads. Two stage right turns are also provided for cyclists turning from Farringdon Road NB and SB right onto Charterhouse Street.

At Clerkenwell Road, two stage right turn facilities are provided on all arms as well as early release signals and 7.5m ASLs.

3.1.2 PROBLEM

Location: General to scheme, multiple locations

Summary: Hybrid track design may pose a hazard to cyclists and riders of other two wheeled vehicles

The Audit Team is concerned that a hybrid track is proposed with the provision of a 50mm upstand from the carriageway. It is assumed that the track will not be provided in colour, to be consistent with the remainder of the north-south cycle route. As a result the hybrid track may have little differentiation from the adjacent carriageway and may appear to be a consistent surface at a similar level. Cyclists and riders of two wheeled vehicles particularly may fail to appreciate the presence of the kerb upstand, with an exacerbated potential to become unseated with an associated potential for injury as a result.

RECOMMENDATION

Ensure the hybrid track is adequately visible to all road users. This may require the provision of additional road markings to define the edge of the carriageway and perhaps the use of a different surface material and/or colour.

Design Organisation Response

Accepted

Accepted: The double red line no stopping restrictions highlight to users where the edge of carriageway is and at the edge of carriageway users are accustomed to a kerb height. 50mm kerb heights are increasingly common across London, especially in busy high street contexts and confusion has not been raised as an issue. Cycle logos will be provided at 50m intervals along the cycle track and the kerb will have a colour contrast with the cycle track material.

The potential point of confusion is at the start of the hybrid (or stepped) cycle track. It is proposed that a triangular ramp marking (diag1062), a cycle logo, and a retroreflective yellow wand will highlight the presence of the track and level change. In addition, taper markings are provided to align vehicles other than cyclists away from the track starting point.

(See Rev2A.2 drawings)

Client Organisation Comments

Accepted. Agree with the designer's response. Double red lines will be present along the edge of the carriageway parallel to the cycle track. This will provide a visual indication of where the edge of the carriageway is. Cycle logos in the track will provide additional visual indication that there is a cycle track beyond the double red lines.

Additional features have also been proposed at the start of the cycle track to ensure that the track is adequately visible to all road users.

3.1.3 PROBLEM

Location: General to scheme, multiple locations

Summary: Commencement point of the segregation island may pose a hazard to road users

The cycle segregation is proposed at a width of 300mm with what appears to be a 100mm traffic wand at the commencement point. The Audit Team are concerned that the wand may not be adequately visible to approaching road users due to the narrowness of the vertical feature and the minimal lateral clearance to both the cycle track and the carriageway. Approaching drivers / riders may fail appreciate the presence of the island with an exacerbated potential for conflict and associated potential for personal injury as a result.

RECOMMENDATION

Ensure the segregation is adequately visible to approaching road users. This may require the provision of a wider island with a wider vertical illuminated feature at the commencement point. It may also be beneficial to ensure adequate lateral clearance is provided to both cyclists and users of the general traffic lane.

Design Organisation Response	Part Accepted
<p>Part Accepted: There are two start points of the 300mm wide segregation, the northbound start point at the Charterhouse St junction and the southbound start point at the Greville St crossing. The latter is a crossing with no turning vehicles and the alignment of the carriageway means that vehicles would not normally be heading for the segregation strip but it is still important that it is visible. The start point at the southern end (Charterhouse St junction) is a higher risk because of vehicles turning onto Farringdon Rd northbound may not expect to see the segregation. Cycle logos, double red line no stopping restrictions, white lining, and the retro-reflective wands (similar to the photo below) highlight the segregation strip.</p>	



Maintaining a wide cycle facility is vital to the success of the scheme and narrowing the track at the most critical point, the start, would reduce usage at busy times. The cycle tracks are approximately 2m wide and to narrow them any further would mean cyclists would not be able to ride two abreast or overtake, which could discourage cyclists from using the dedicated cycle track in favour of the general traffic lane, where provisions for cyclists have not been accommodated. The traffic lanes are already as narrow as operationally possible. For these reasons, the segregation strip is consistently narrow. The resulting situation is similar to where standalone wands are provided as semi-segregation and zero lateral clearance is required.

Also, any increase in the lateral clearance between the wand and the vehicles either side would reduce the physical space for those vehicles. A 0.8m wide length of segregation would be required to provide the lateral clearance specified in guidance and this would reduce the cycle track to 1.5m width. To mitigate against striking by handlebars and wing mirrors, the wands will be limited to 1m height above carriageway level. It should be noted that the wands are self-correcting.

It will be recommended to the detailed designers to add further visibility of the segregation start point by painting the vertical edge of the kerb with retro-reflective white paint.

Client Organisation Comments

Part accepted. Agree with the designer's response. Segregation will be adequately visible to approaching road users by means of retro-reflective wands, cycle logos on the cycle track side and double red lines on the carriageway side. The standard lateral clearance of 45mm is not proposed for vertical features such as this would require narrowing of the cycle lane leading to a reduced facility. The vertical wands are proposed to be self-correcting to reduce the impact of any strikes.

3.1.4 PROBLEM

Location: A – Farringdon Road junction with Greville Street

Summary: Alignment of segregated facility may promote non-compliance with the pedestrian crossing facility

The Audit Team is concerned that the alignment of the segregated facility at the junction with Greville Street may encourage cyclists to ignore or fail to appreciate the pedestrian crossing facilities. The layout through the crossing facility is at a similar level and a straight alignment, therefore no measures are provided to encourage cyclists to curtail their speed and stop when required. Hence cyclists may fail to appreciate the necessity to stop at these locations either accidentally or deliberately. A potential for conflict with pedestrians may exist as a result.

RECOMMENDATION

Provide measures to assist with compliance by cyclists. This may require the provision of a change in surface levels in advance of the crossing point where cyclists are required to stop or give-way to pedestrians.

Design Organisation Response

Accepted

Accepted: The proposals omitted the zig-zag markings in the northbound cycle track. This is a drafting error and has been corrected. The signalised crossing now includes all the standard features. (See Rev2A.2 drawings)

The pedestrian crossing at Greville St is a signalised crossing with associated stopline and signal head visible to northbound cyclists. The proposal also shows that the pedestrian crossing area is raised to footway level to highlight the crossing and improve the pedestrian level of service. A ramp road marking (diag 1062) helps to reinforce this. The pedestrian crossing area will also be surface dressed in a buff colour.

Client Organisation Comments

Accepted. Agree with the designer's response. The design of the crossing has been amended to include all standard features required on approach to a crossing and is proposed to be raised to footway level.

3.1.5 PROBLEM

Location: B – Farringdon Road junction with Greville Street

Summary: Alignment of segregated facility may exacerbate a potential for conflict with other road users on the exit from the segregated facility

The Audit Team is concerned that the alignment of the carriageway at the exit from the segregated cycle facility may exacerbate a potential for conflict with cyclists. As soon as the cycle segregation terminates, buses and other road users are likely to try and enter the bus lane. Drivers performing this manoeuvre may be unaware of the presence of cyclists approaching on the nearside, particularly when congested and the approach speed of cyclists exceeds that of the general traffic lane. An exacerbated potential for cyclists to be squeezed against the kerb, with an associated potential for injury may exist as a result.

RECOMMENDATION

Modify the layout of the cycle track to provide protection for cyclists at the end of the segregated facility. This may require the provision of an island on the north side of the crossing point together with an extended length of mandatory cycle lane to enable cyclists to re-integrate with general traffic.

Design Organisation Response

Part Accepted

Part Accepted: Continuing the physical protection for cyclists is not recommended because there is only space for a short and narrow length of segregation which may encourage pedestrians waiting at the crossing to cross part-way (the cycle track) and seek refuge in a narrow strip of segregation (300m). This could put those choosing to wait at the island in a vulnerable position with no clearance from the narrow traffic lane.

The nearside lane is marked as a bus lane Mon-Sat 7am to 10am and 4pm to 7pm, therefore during the peaks when traffic is at its heaviest general traffic (except buses) will be forced to use the offside lane, reducing any potential conflicts with northbound cyclists. As both adjoining side roads 'Greville Street' and 'Cowcross Street' are closed to motor traffic, the only traffic travelling northbound will have done so directly adjacent to the cycle track since Charterhouse Street (at least) if not for the duration of Farringdon Road. Therefore northbound general traffic should be aware of the likelihood of nearside northbound cyclists, even after the segregation has curtailed and as aforementioned the presence of the bus lane should discourage traffic from entering the nearside lane after the crossing.

In addition an extra set of (offside) zigzag markings and cycle logo have been added

to northbound crossing exit to visually continue the cycle facilities through to the northbound bus lane . (See Rev2A.2 drawings)

Client Organisation Comments

Part accepted. Agree with designer's response. At Greville Street, cyclists will be directed to turn off Farringdon Road to continue north rather than continuing north on Farringdon Road. However for any cyclists who do choose to continue north on Farringdon Road, additional cycle logos and zigzag markings have been provided for additional visibility of cyclists north of the crossing.

3.1.6 PROBLEM

Location: C – Farringdon Road outside number 20

Summary: Cycle lane and bus stop layout may pose a hazard to cyclists

The Audit Team is concerned that the alignment of the carriageway at the exit from the cycle segregation requires cyclists to transition around buses over a very short distance. As soon as the cycle segregation terminates, buses are likely to try and access the bus stop. Drivers performing this manoeuvre may be unaware of the presence of cyclists approaching on the nearside, particularly when congested and the approach speed of cyclists exceeds that of the general traffic lane. An exacerbated potential for cyclists to be squeezed against the kerb, with an associated potential for injury may exist as a result.

Furthermore, southbound cyclists may attempt to re-join the general traffic lane from the hybrid track to pass a stationary bus, unaware of the change in surface levels. An exacerbated potential for riders to become unseated with an associated potential for injury may exist as a result.

RECOMMENDATION

Modify the layout of the cycle track to provide protection for cyclists at the end of the segregated facility. This may require the provision of an extended length of mandatory cycle lane to enable cyclists to re-integrate with general traffic and choose an appropriate point to join the general traffic lane to pass a stationary bus.

Design Organisation Response

Accepted

Accepted: The current proposals include a 12m mandatory cycle lane before the 36m bus cage begins. The designs have been altered so that the mandatory cycle lane is now 23m long and the bus cage is 25m long so that there is a longer length of re-integration space.

Client Organisation Comments

Accepted. Agree with designer's response. An extended length of mandatory cycle lane has been provided to enable cyclists to re-integrate with general traffic.

3.2 POWERED TWO WHEELERS

3.2.1 PROBLEM

Location: General to scheme, multiple locations

Summary: Use of battered kerbs to access solo motorcycle bays may pose a hazard to powered two wheeler riders

It is proposed to provide battered kerbs for powered two wheelers to cross the cycle track and access the parking bay. The Audit Team are concerned that riders of powered two wheeled vehicles may attempt to access the parking bay at an acute angle, and the presence of the battered kerb may destabilise the rider. An exacerbated potential for the rider to become unseated, with an associated potential for personal injury may exist as a result.

RECOMMENDATION

Provide a smoother transition for powered two wheelers to access the parking bay. This may require the provision of a conventional dropped kerb or other similar measure.

Design Organisation Response	Accepted
<p>Accepted: The current proposals show an angled 150mm wide kerb but given the concern noted, the new proposed angled kerb is 300mm wide with the same 50mm upstand. (See Rev2A.2 drawings)</p> <p>An example of the angled kerbs is shown in the image below. These have a gradient of 1 in 6 because the whole kerb is angled rather than just the edge battered. This type of solution will be recommended to the detailed designers.</p>	



Client Organisation Comments
Accepted. Agree with designer's response.

3.3 TRAFFIC SIGNALS

3.3.1 PROBLEM

Location: General to scheme, multiple locations

Summary: Traffic signal locations may not be immediately visible to cyclists

The proposals require cyclists to adopt a carriageway position away from the normal primary stop-line at the two stage right turns. Encouraging cyclists to adopt this

position may mean they are located in front or away from the primary traffic signal, relying heavily on the visibility of the secondary traffic signal to decide when to progress.

The absence of primary traffic signal visibility may lead to cyclists failing to appreciate when it is safe to continue, with an exacerbated potential for conflict as a result. This is particularly the case if the secondary traffic signal is obscured or not operational.

RECOMMENDATION

Ensure cyclists are located in a position to observe the primary traffic signals for the manoeuvre they wish to undertake. If this cannot be achieved it may be beneficial to provide additional cycle specific traffic signals at the position they are most likely to be observed.

Design Organisation Response	Rejected
<p>Rejected: Findings from the TfL trials outlined that the optimal position for the signal for two-stage turns is a far sided secondary signal. This layout has already been applied at many other junctions across London within the Cycle Superhighway and Better Junction programmes and is continued on CSNS for consistency.</p> <p>Two-stage right turn facilities will be monitored as part of the Cycle Superhighways Monitoring Strategy. If this reveals that alterations need to be made to their operation and/or layout then locations along CSNS will be updated to reflect this.</p>	
Client Organisation Comments	
Agree with the designer's response.	

3.4 PARKING AND LOADING FACILITIES

3.4.1 PROBLEM

Location: D – Farringdon Street opposite West Smithfield

Summary: Loading bay location may hamper visibility for pedestrians and cyclists

The Audit Team is concerned that the proposed loading / disabled bay may restrict visibility to / from pedestrians and cyclists. The pedestrian and cycle facilities are located immediately downstream of the bay, hence any vehicle located within the bay is likely to impact on the forward visibility from these facilities. Pedestrians and cyclists may fail to appreciate when it is safe to proceed due to the reduced visibility, entering the carriageway injudiciously. Pedestrians and cyclists entering the carriageway injudiciously may be at a exacerbated potential for conflict with vehicles.

RECOMMENDATION

Increase the visibility for pedestrians and cyclists. This may require building out the footway at the location of the crossing points and modifying the layout of the loading / disabled bay.

Design Organisation Response	Accepted
<p>Accepted: An overrunable area adjacent to the loading bay and pedestrian crossing refuge has been incorporated in the design. This encourages northbound vehicles to align themselves with the centre of the carriageway as opposed to the nearside. Through use of this area, visibility is improved for cyclists and pedestrians wishing to cross the carriageway as they can see around any vehicle in the bay. (See Rev2A.2 drawings)</p>	

A full buildout with extended kerb upstands is not recommended as this may encourage vehicles to park closer to the traffic lane thus removing the benefits of the improved visibility. The full buildout would also create problems for large vehicles turning right out of Snow Hill.

Client Organisation Comments

Accepted. Agree with designer's response.

3.5 CARRIAGEWAYS

3.5.1 PROBLEM

Location: E – Farringdon Street approach to West Smithfield

Summary: Carriageway alignment may pose a hazard to road users

The Audit Team is concerned that the southbound carriageway in proximity to the bus stop guides road users into the central pedestrian refuge island. Should a bus be located within the bus stop, road users passing the bus may fail to appreciate the abrupt requirement to deviate around the pedestrian island. An exacerbated potential for conflict with the feature, with associated potential for personal injury may exist as a result.

RECOMMENDATION

Increase the distance between the bus stop and the pedestrian refuge to provide a greater transition length. If this cannot be achieved it may be beneficial to maximise the visibility of the pedestrian island.

Design Organisation Response

Accepted

Accepted: Keep left bollards are proposed on the pedestrian refuge island to maximise its visibility with diag1004 hazard markings guiding them around the island (See Rev2A.2 drawings). The informal crossing is on a desire line and cannot be relocated owing to the right turn pocket to the south and the bus stop to the north. The refuge is of benefit to the crossing pedestrians and removing it would create a greater collision risk in comparison.

Client Organisation Comments

Accepted. Agree with designer's response.

End of list of problems identified and recommendations offered in this Stage 1 Road Safety Audit

4.0 ISSUES IDENTIFIED DURING THE STAGE 1 ROAD SAFETY AUDIT THAT ARE OUTSIDE THE TERMS OF REFERENCE

Safety issues identified during the audit and site inspection that are considered to be outside the Terms of Reference, but which the Audit Team wishes to draw to the attention of the Client Organisation, are set out in this section. It is to be understood that, in raising these issues, the Audit Team in no way warrants that a full review of the highway environment has been undertaken beyond that necessary to undertake the Audit as commissioned.

4.1 ISSUE

Location: 1 - Farringdon Street junction with Stonecutter Street

Reason considered to be outside the Terms of Reference: Detailed design issue

It is proposed to provide a pedestrian crossing at the junction with Stonecutter Street together with a crossing for cyclists to tie into the end of the bi-directional cycle track. Cyclists using the cycle track and pedestrians crossing west-east are likely to reach the central island at broadly comparable times if they proceed concurrently. This may lead to pedestrians attempting to crossing into the path of cyclists. It may be beneficial to allow cyclists a number of seconds head-start so they clear the junction and the pedestrian crossing point before pedestrians reach the central island.

Design Organisation Response	Part Accepted
<p>Part accepted: The majority of southbound cyclists will have passed the uncontrolled pedestrian crossing before the westbound pedestrians reach it. The distance for cyclists is 26m and at a slow speed of 12km/h this would take them 7.9s. The crossing pedestrians have to cover 19m but at a slower speed of 1.2m/s this would take them 15.8s. In addition, the shorter intergreens to the cycle crossing mean that cyclists do get a green signal one second before the pedestrians.</p> <p>This uncontrolled section of the crossing will be constructed with ducts to enable a conversion to signal control should the issue be realised. Monitoring will take place once all of the developments in the area are complete and pedestrian and cycle flows are established.</p>	
Client Organisation Comments	
Agree with designer's response. When released from the southbound stop line, cyclists will clear the crossing area much quicker than pedestrians crossing from the eastbound side in the same phase.	

4.2 ISSUE

Location: 2 – Farringdon Street north of West Smithfield

Reason considered to be outside the Terms of Reference: Detailed design issue

It is proposed to provide a bus shelter within the floating bus stop island. It would appear that the bus shelter is located in close proximity to the cycle track. It may be beneficial to ensure adequate lateral clearance is provided to the rear of the shelter to ensure the feature does not pose a hazard to cyclists.

Design Organisation Response	Accepted
------------------------------	----------

Accepted – Adequate clearance of 250mm is provided between the kerb edge and the back of the shelter.

Client Organisation Comments

Accepted. Agree with designer's response

4.3 ISSUE

Location: 3 – Farringdon Street junction with Charterhouse Street

Reason considered to be outside the Terms of Reference: Detailed design issue

It is proposed to provide a segregated island with a wand at the commencement point of the northbound segregation on Farringdon Street. This island and wand appears to be within the swept path for vehicles turning left from Charterhouse Street. It may be beneficial to relocate the island after the pedestrian crossing to reduce the potential for the island to be struck by turning vehicles.

Design Organisation Response	Accepted
------------------------------	----------

Accepted: Short section of segregation to the south of the crossing has been removed, the 1010 marking has been extended. (See Rev2A.2 drawings)

Client Organisation Comments

Agree with designer's response.

4.4 ISSUE

Location: 4 – Greville Street junction with Farringdon Road

Reason considered to be outside the Terms of Reference: Not safety related

It is proposed to provide an uncontrolled pedestrian crossing facility across the cycle track on Greville Street. Due to the number of pedestrians likely to use this footway it is highly likely that pedestrians will cross without giving regard to the presence of cyclists. Whilst unlikely to result in personal injury due to the very low speed cyclists will need to be travelling to make this manoeuvre. It may be beneficial to provide measures to facilitate cyclists to pass through Greville Street less impeded. At peak times the number of cyclists waiting to pass may block the facility for other cyclists.

Design Organisation Response	Part Accepted
------------------------------	---------------

Part Accepted: Cyclists have priority at the crossing but will be slowed down with ramps and very tight geometry to reduce the severity of any collision with a pedestrian. Another element of mitigation is that there are more and higher quality pedestrian crossings to the south to encourage footfall on the opposite side of Farringdon Road. In addition the eastern footway will be open once Crossrail is completed which will help to disperse pedestrians.

Given the large number of uncertainties regarding the future of this area and the impacts of the developments and transport upgrades, TfL will monitor this location and will adapt the layout and operation if the proposed design proves to be unsuitable.

Client Organisation Comments

Accepted. Agree with the designer's response. The provision of additional pedestrian crossings at Charterhouse Street and wider footways in the area, including on Greville Street where the road is proposed to be closed, will provide more space for pedestrians to distribute leading to fewer people crossing the cycle track on Greville Street.

5.0 SIGNATURES AND SIGN-OFF

5.1 AUDIT TEAM STATEMENT

We certify that we have examined the drawings and documents listed in Appendix A. to this Safety Audit report. The Road Safety Audit has been carried out in accordance with TfL Procedure SQA-0170 dated May 2014, with the sole purpose of identifying any feature that could be removed or modified in order to improve the safety of the measures. The problems identified have been noted in this report together with associated suggestions for safety improvements that we recommend should be studied for implementation.

No one on the Audit Team has been involved with the design of the measures.

AUDIT TEAM LEADER:

Name: Andrew Coventry
BEng (Hons), MCIHT MSoRSA

Signed: 

Position: Road Safety Audit Manager

Date: 12/01/2016

Organisation: Transport for London, Road Safety Audit
Asset Management Directorate

Address: 4th Floor Palestra, 197 Blackfriars Road, London, SE1 8NJ

Contact: andrewcoventry@tfl.gov.uk (020 3054 2237)

AUDIT TEAM MEMBER:

Name: Shane Martin MCIHT, MSoRSA

Signed: 

Position: Principal Road Safety Auditor

Date: 12/01/2016

Organisation: Transport for London, Road Safety Audit
Asset Management Directorate

Address: 4th Floor Palestra, 197 Blackfriars Road, London, SE1 8NJ

Contact: shane.martin@tfl.gov.uk (020 3054 2590)

5.2 DESIGN TEAM STATEMENT

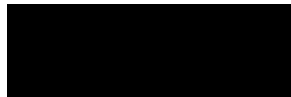
In accordance with SQA-0170 dated May 2014, I certify that I have reviewed the items raised in this Stage 1 Safety Audit report. I have given due consideration to each issue raised and have stated my proposed course of action for each in this report. I seek the Client Organisation's endorsement of my proposals.

Name: Joel Cockhill

Position: Lead Design Engineer

Organisation: Outcomes Design Engineering, Road Space Management, TfL

Signed:



Dated: 5/2/16

5.3 CLIENT ORGANISATION STATEMENT

I accept these proposals by the Design Organisation.

Name: Stephanie Groot

Position: Senior Sponsor

Organisation: RSM - Sponsorship

Signed:



Dated: 13/04/2016

5.4 SECONDARY CLIENT ORGANISATION STATEMENT (where appropriate)

I accept these proposals by the Design Organisation.

Name: Lucy Godfrey

Position: Portfolio Sponsor

Organisation: TfL

Signed:



Dated: 13/04/2016

APPENDIX A

Documents Forming the Audit Brief

DRAWING NUMBER

TDE-ST-PJ338-CSNS-ID-21
TDE-ST-PJ338-CSNS-ID-22
TDE-ST-PJ338-CSNS-ID-23
TDE-ST-PJ338-CSNS-ID-24
TDE-ST-PJ338-CSNS-ID-25
TDE-ST-PJ338-CSNS-ID-26
TDE-ST-PJ338-CSNS-ID-27

DRAWING TITLE

Drawing 21 of 27
Drawing 22 of 27
Drawing 23 of 27
Drawing 24 of 27
Drawing 25 of 27
Drawing 26 of 27
Drawing 27 of 27

DOCUMENTS

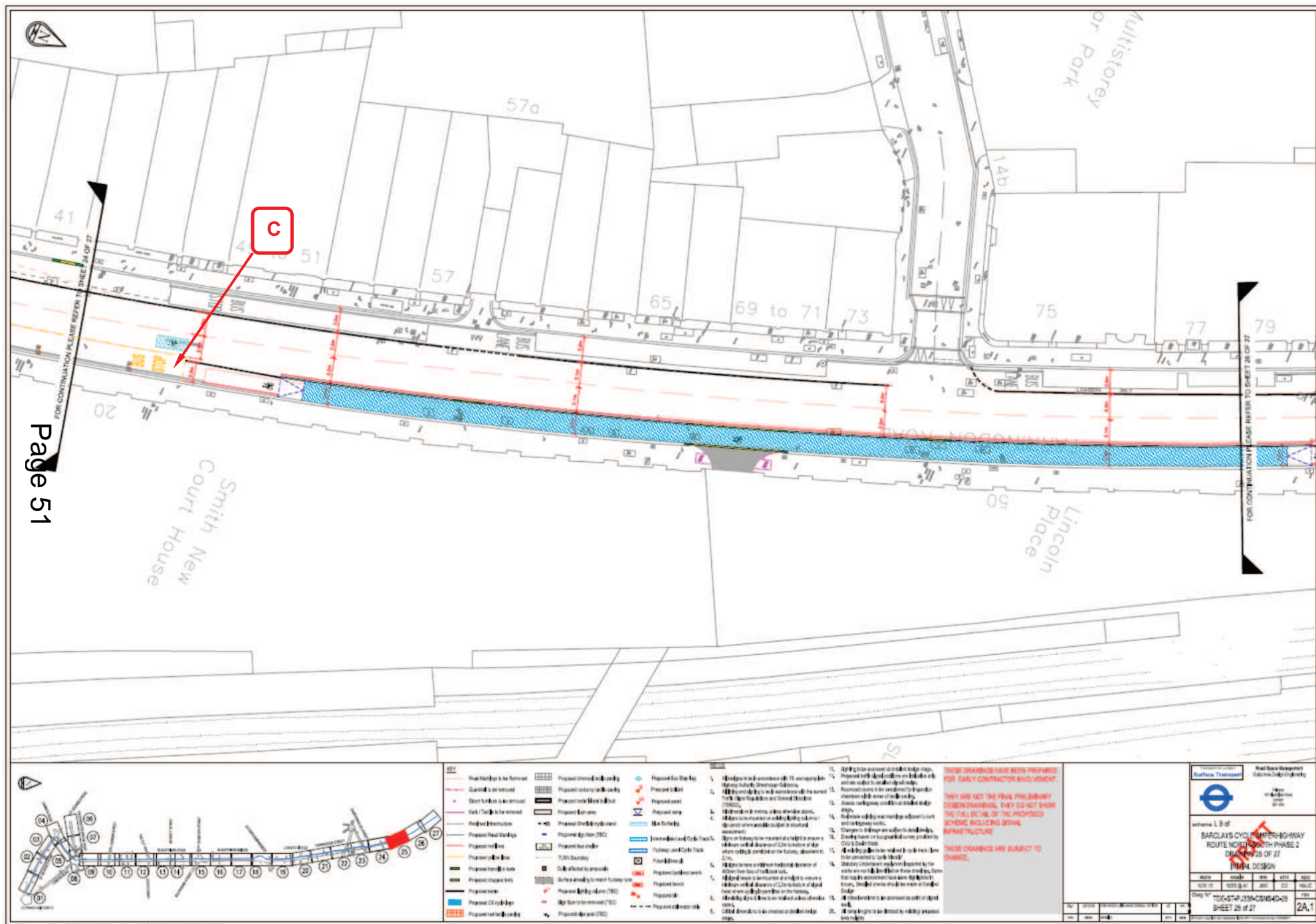
- ☐ Safety Audit Brief
- ☐ Site Location Plan
- ☐ Traffic signal details
- ☐ TfL signal safety checklist
- ☐ Departures from standard
- ☐ Previous Road Safety Audits
- ☐ Previous Designer Responses
- ☐ Collision data
- ☐ Collision plot
- ☐ Traffic flow / modelling data
- ☐ Pedestrian flow / modelling data
- ☐ Speed survey data
- ☐ Other documents

DETAILS (where appropriate)

APPENDIX B

Problem Locations





Legend

- Proposed cycle lane
- Proposed cycle path
- Proposed cycle track
- Proposed cycle way
- Proposed cycle route
- Proposed cycle network
- Proposed cycle facilities
- Proposed cycle services
- Proposed cycle amenities
- Proposed cycle features
- Proposed cycle elements
- Proposed cycle components
- Proposed cycle parts
- Proposed cycle sections
- Proposed cycle details
- Proposed cycle specifications
- Proposed cycle standards
- Proposed cycle guidelines
- Proposed cycle best practice
- Proposed cycle recommendations
- Proposed cycle advice
- Proposed cycle information
- Proposed cycle documentation
- Proposed cycle records
- Proposed cycle data

Notes

1. All proposed cycle infrastructure shall be constructed in accordance with the relevant standards and specifications.
2. All proposed cycle infrastructure shall be constructed in accordance with the relevant standards and specifications.
3. All proposed cycle infrastructure shall be constructed in accordance with the relevant standards and specifications.
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18. All proposed cycle infrastructure shall be constructed in accordance with the relevant standards and specifications.
19. All proposed cycle infrastructure shall be constructed in accordance with the relevant standards and specifications.
20. All proposed cycle infrastructure shall be constructed in accordance with the relevant standards and specifications.

Warnings

THESE DRAWINGS HAVE BEEN PREPARED FOR EARLY CONTRACTOR INVOLVEMENT. THEY ARE NOT THE FINAL PRELIMINARY DESIGN DRAWINGS. THEY DO NOT SHOW THE FULL DETAIL OF THE PROPOSED SCHEME INCLUDING OTHER INFRASTRUCTURE.

THESE DRAWINGS ARE SUBJECT TO CHANGE.

Barclays Cycle Superhighway

Route North South Phase 2

Drawn 25 OF 27

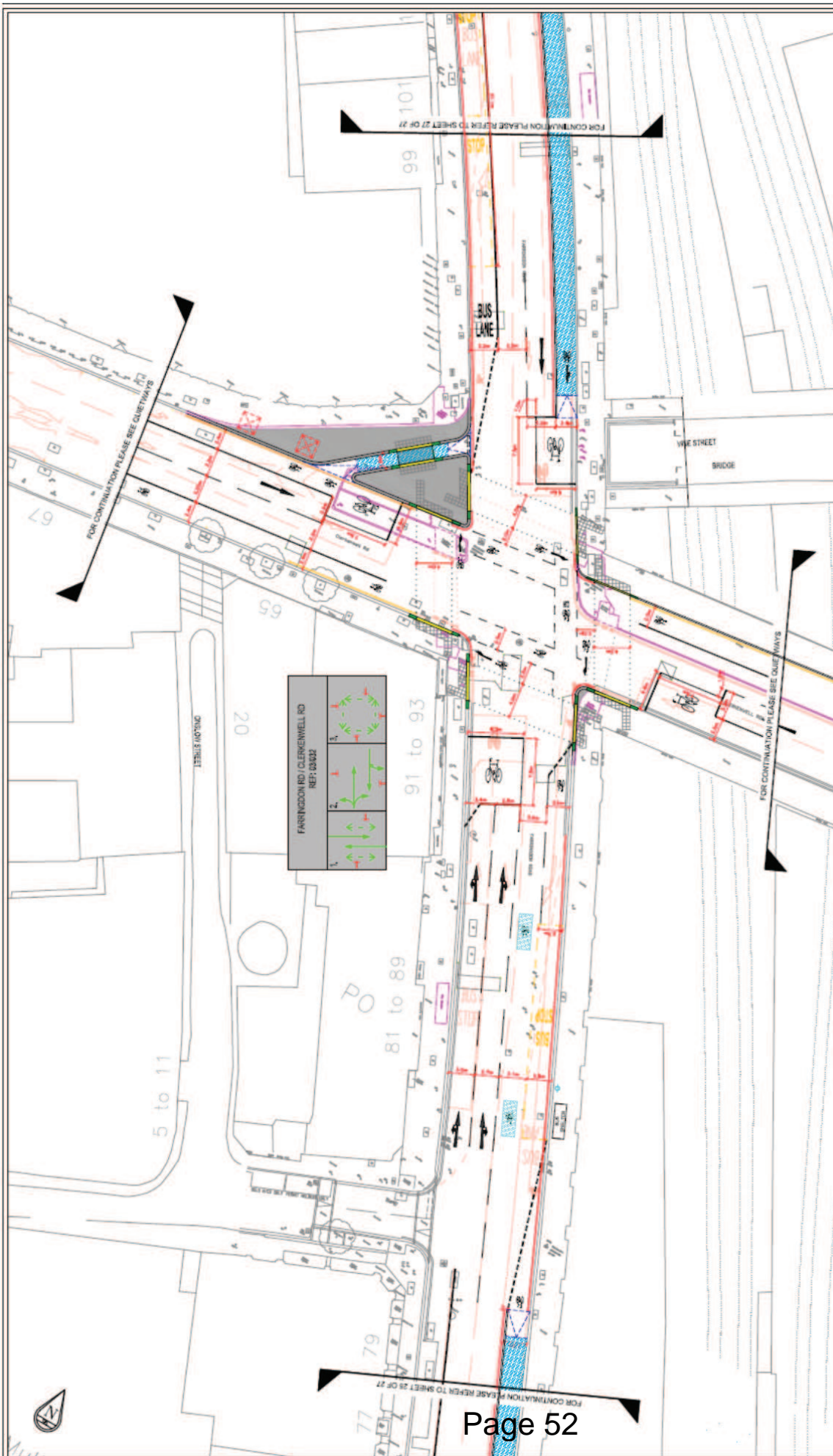
Initial Design

Scale 1:1000

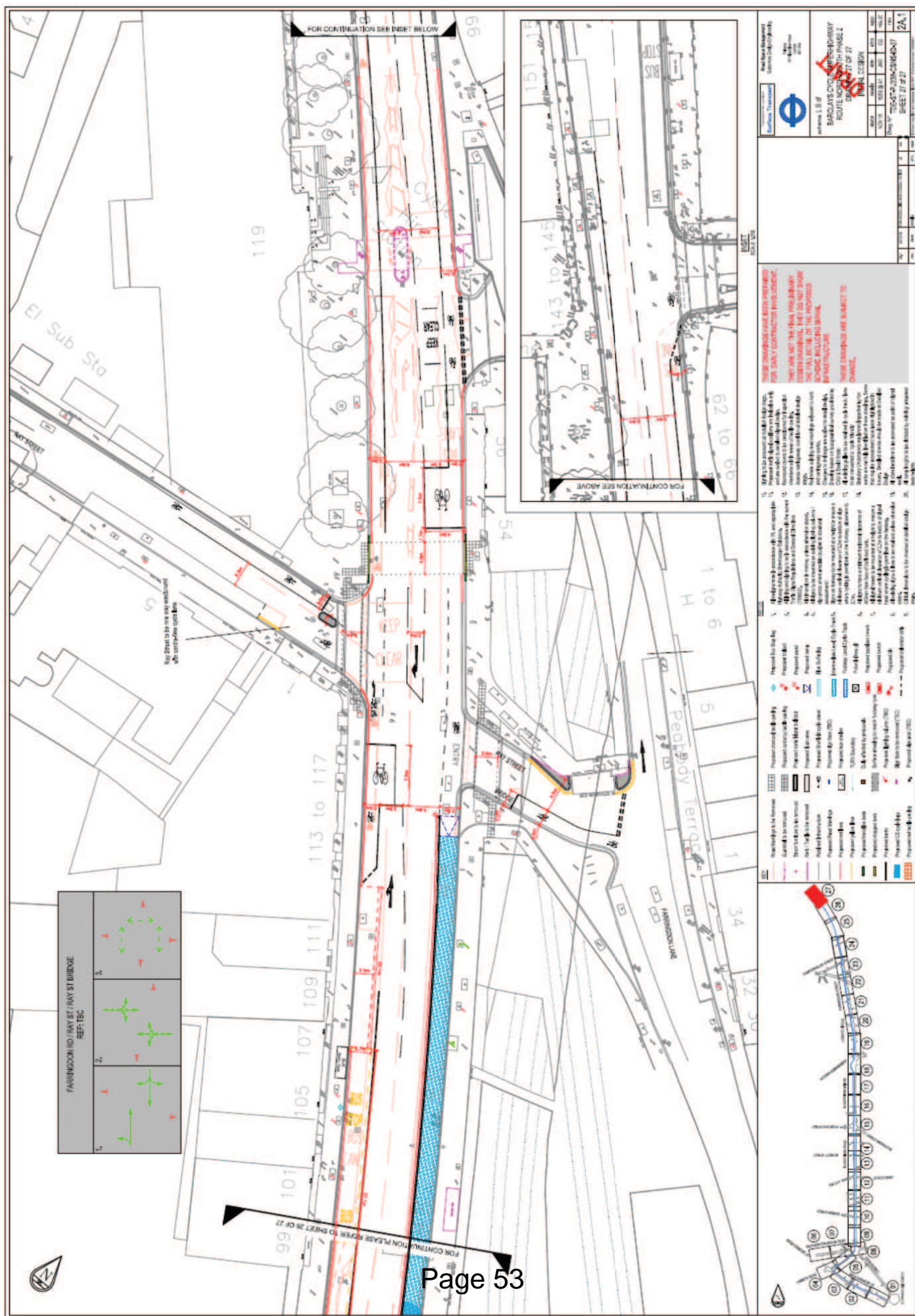
North Arrow

Sheet 25 OF 27

2A,1



The drawing is a technical plan view of a bridge structure. It shows a long bridge with multiple spans, numbered 1 through 22. A red section is highlighted on the left side. The bridge is supported by several piers and abutments. The drawing includes various dimensions and labels for different parts of the bridge. The bridge is shown in a perspective view, with the spans and supports clearly visible. The drawing is a technical drawing, showing the bridge structure in a plan view. The bridge is shown in a perspective view, with the spans and supports clearly visible. The drawing includes various dimensions and labels for different parts of the bridge. The bridge is shown in a perspective view, with the spans and supports clearly visible. The drawing includes various dimensions and labels for different parts of the bridge.



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North-South Cycle Superhighway: Snow Hill- West Smithfield Collision Analysis

ODE Technical Note 2016	
Author	Chris Woodger
Date	13/09/2016
Version	1

Both Snow Hill and West Smithfield join Farringdon Street on its eastern side between Charterhouse Street to north and Holborn viaduct to the south. Snow Hill is exit only for both left and right turns and West Smithfield is entry only from both directions of the Farringdon St. The proposed North-South Cycle Superhighway Phase 2 passes through the junction along Farringdon St and will take the form of with flow cycle tracks on either side of the street.

Site Observations:

- Uncontrolled pedestrian crossings on the Snow Hill (SE) and West Smithfield (NE) arms
- High number of right turners into West Smithfield

Collision analysis [36 months to March 2016]:

- In the 3 year period covered by the accident data there were 17 collisions.
- There were 19 casualties as a result of these collisions, 6 were serious.

Classification of collisions and LB City of London comparisons

Of the 17 collisions in the 3 year period there were:

Type of collision	Frequency of each category involved in collisions	Percentage
KSI	6	35%
Pedestrian	0	0%
Cyclist	13	76%
Powered 2 wheeler	5	29%
Right turner	12	71%
Non-dry	3	18%
Dark	2	12%

Average rates of collisions at Give Way/ Uncontrolled junctions in LB City of London and Inner London Boroughs per year:

Type of collision	Comparative Percentage (LB COL)	Comparative Percentage (Inner London)
KSI	15%	11%
Pedestrian	26%	21%
Cyclist	48%	31%
Powered 2 wheeler	26%	27%
Right turner	25%	30%
Non-dry	13%	18%
Dark	28%	29%

Snow Hill/ West Smithfield/ Farringdon St Collisions Compared to LB City of London and Inner London give way/ uncontrolled junctions:

Type of collision	Compared to LB City of London percentages	Compared to Inner London percentages
KSI	233%	318%
Pedestrian	0%	0%
Cyclist	158%	245%
Powered 2 wheeler	112%	107%
Right turner	284%	236%
Non-dry	138%	100%
Dark	42%	41%

Therefore at Snow Hill/ West Smithfield/ Farringdon St collisions involving **KSIs**, **cyclists** and **right turners** are significantly above the LB City of London average and inner London Boroughs average rates at give way/ uncontrolled junctions.

Trends

- Of the 17 collisions 4 (24%) were a vehicle turning from south to east i.e. Farringdon Street to West Smithfield and colliding with a southbound cyclist on Farringdon Street. **This is the most common accident type for this junction.**

Cyclists

- Total cyclist collisions 13
- Total cyclist casualties: 14 (5 serious)
- Out of the 13 cyclist collisions 2 (15%) involved a vehicle turning left from Snow Hill
- Out of the 13 cyclist collisions 4 (31%) involved a vehicle turning right from Snow Hill
- Out of the 13 cyclist collisions 4 (31%) involved a vehicle turning right into West Smithfield

Right turners

- 12 collisions involving right turns
- 6 (50%) of all right turn collisions involved a right turn from Snow Hill to Farringdon St
- 6 (50%) of all right turn collisions involved a right turn from Farringdon Street to West Smithfield
- 8 (66%) of all right turn collisions involved a cyclist being hit by a right turning vehicle
- 4 (33%) of all right turn collisions involved a cyclist being hit by vehicle turning right from Snow Hill to Farringdon St.
 - 3 (25%) of these were southbound cyclists

- 1 (8%) of these were northbound cyclists
- 4 (33%) of all right turn collisions involved a cyclist hit by a right turning vehicle from Farringdon St to West Smithfield
 - 4 (33%) of these were southbound cyclists

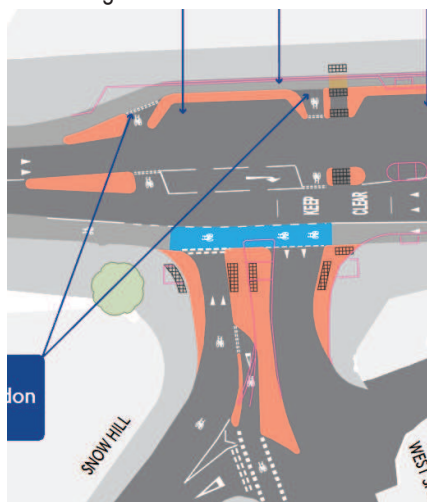
Affects of North-South:

There are options for both an uncontrolled and signalised junction for the Farringdon Street with Snow Hill and West Smithfield junction.

Uncontrolled

- Of the 17 collisions 2 (12%) should have been avoided with the current design for an uncontrolled junction. Of these 2 :
 - 1 (6%) collision involving a southbound cyclist hit from the rear (assumes cyclist uses new cycle track)
 - 1 (6%) collision involving a vehicle turning right from Snow Hill colliding with a northbound cyclist (assumes cyclist uses new cycle track)
- Of the 17 collisions 10 (59%) should have had a greater chance of being avoided with the current design for an uncontrolled junction. Of these 10:
 - 9 (53%) collisions involving southbound cyclists and vehicles turning into Snow Hill or out of West Smithfield. The proposed improved visibility of the cycle lane through cycle symbols and blue paint could have addressed the failure of the vehicles to spot cyclists.
 - 1 (6%) collision involving a northbound powered 2 wheeler and cyclist turning right onto West Smithfield. The proposed new right turn from the cycle track may reduce the chance of a vehicle hitting a right turning cyclist.

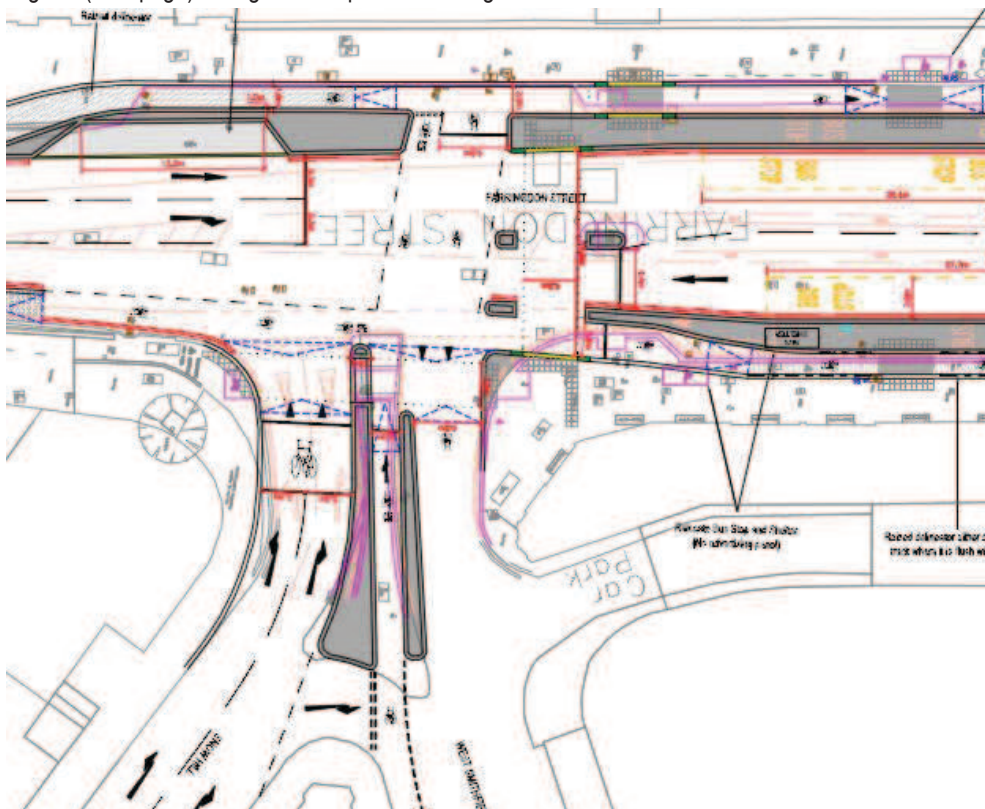
Layout for current proposed uncontrolled junction at Farringdon Street/ Snow Hill/ West Smithfield:

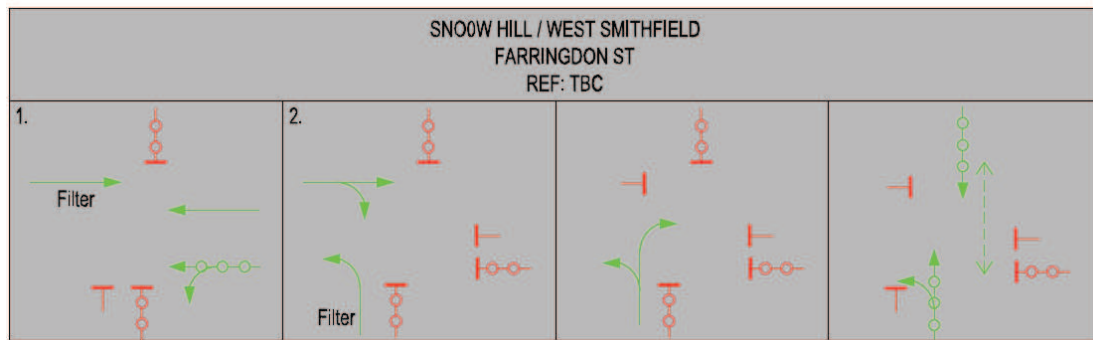


Signalised

- Of the 17 collisions 15 (88%) should have been avoided if there were a signalised junction. Of these 15:
 - 12 (71%) collisions involving vehicles turning right from Snow Hill or right into West Smithfield
 - 2 (12%) collisions involving vehicles turning left from Snow Hill
 - 1 (6%) collision involving an overtaking cyclist hit in the rear by a car (assumes cyclist uses new cycle track)
- The 2 collisions that the new layout could not have prevented were:
 - 2 cyclists carelessly colliding with the report stating “V1 and V2 unsure how they collided with each other”. Clearer Cycle signing and more space should reduce the chance of cyclists colliding but without knowing the exact cause of the accident it is difficult to explain how the scheme is directly help avoid it.
 - P2W skidding on oil after a car braked suddenly. Whilst NS P2 could resurface the junction and increase skid resistance the spillage of oil is not something that could be avoided.

Layout and phase diagram (next page) for signalised option at Farringdon Street/ Snow Hill/ West Smithfield:





Key Accident Data:

See the following drawing for the 17 collisions plotted at the Snow Hill/ West Smithfield/ Farringdon St junction.

North-South Cycle Superhighway:

Farringdon Road/ Charterhouse Street Collision Analysis

ODE Technical Note 2016	
Author	Chris Woodger
Date	19/09/2016
Version	1

Charterhouse St runs north east to south west intersecting with Farringdon Rd which runs north to South creating a crossroads. The North arm of the junction is known as Farringdon Rd and the south arm is Farringdon St. All 4 arms of the junction are 2 way however right turns are banned from Farringdon St (S) to Charterhouse St (NE) and from Charterhouse St (NE) to Farringdon Rd (N).

Site Observations:

- Smithfield Market concerned with left turning HGV and other vehicles accessing the market in conflict with southbound cyclists from Farringdon Rd.
- High number of pedestrians from Farringdon Station
- Crossrail site currently occupies eastern footway on Farringdon Road (north junction arm)

Collision analysis [36 months to March 2016]:

- In the 3 year period covered by the accident data there were 15 collisions.
- There were 18 casualties as a result of these collisions, 2 were serious.

Classification of collisions and LB City of London comparisons

Of the 15 collisions in the 3 year period there were:

Type of collision	Frequency of each category involved in collisions	Percentage
KSI	2	13%
Pedestrian	5	33%
Cyclist	6	40%
Powered 2 wheeler	5	33%
Right turner	6	40%
Left turner	1	7%
Non-dry	5	33%
Dark	8	53%

Average rates of collisions at ATS junctions in LB City of London and Inner London Boroughs per year:

Type of collision	Comparative Percentage (LB COL)	Comparative Percentage (Inner London)
KSI	15%	12%
Pedestrian	27%	23%
Cyclist	44%	28%
Powered 2 wheeler	25%	23%
Right turner	21%	22%
Left turner	10%	10%
Non-dry	13%	17%
Dark	30%	35%

Farringdon Road/ Charterhouse Street Collisions Compared to LB City of London and Inner London give way/ uncontrolled junctions:

Type of collision	Compared to LB City of London percentages	Compared to Inner London percentages
KSI	87%	108%
Pedestrian	122%	143%
Cyclist	91%	143%
Powered 2 wheeler	132%	143%
Right turner	190%	182%
Left turner	70%	70%
Non-dry	254%	194%
Dark	177%	151%

The Inner London Boroughs dataset is the larger of the two so rates are more reliably compared to it. Therefore at Farringdon Road/ Charterhouse Street collisions involving **Pedestrians, cyclists, powered 2 wheelers, right turners, non-dry and dark conditions** are above the inner London Boroughs average rates at ATS junctions. It should be noted that the rates at the Farringdon Road/ Charterhouse Street junction are particularly high for **non-dry conditions**.

Trends

- Out of the 15 collisions 3 (20%) involved a vehicle turning from N to SW and a vehicle heading straight from S to N. **This is the most common accident type.**
- Out of the 15 collisions 5 (33%) involved a vehicle heading straight across the junction and hitting, or swerving to avoid, a pedestrian on various arms on the junction.
- Of the 15 collisions 3 (20%) were due to a banned turn movement. Of these 3:
 - 2 (66%) were a banned NE to N right turn
 - 1 (33%) were a banned S to NE right turn

Cyclists

- Total cyclist collisions 6
- Total cyclist casualties: 6 (1 serious)
- Out of the 6 cyclist collisions 2 (33%) involved a right turning vehicle.
- Out of the 6 cyclist collisions 1 (17%) involved a vehicle turning left across the path of a cyclist heading straight (car turning left from NE to S, cyclist heading NE to SW).
- The remaining 3 collisions were all singular accidents¹ (31%) involved a pedestrian crossing in front of a cyclist, 1 (31%) involved a front to rear cyclist to cyclist collision and the remaining 1 (31%) involved a front to rear car to cyclist collision.

Pedestrian

- Total pedestrian collisions 5 (1 'collision' involved a vehicle which swerved to avoid a pedestrian)
- Total pedestrian casualties: 4 (1 serious)
- Out of the 5 collisions 5 (100%) involved a vehicle heading straight across the junction and hitting, or swerving to avoid, a pedestrian.
 - Of these 5 collisions 2 (40%) were a vehicle heading N to S.
 - Of these 5 collisions 2 (40%) were a vehicle heading S to N.
 - Of these 5 collisions 1 (20%) were a vehicle heading SW to NE.
- Out of the 5 pedestrian collisions 4 (80%) involved a westbound pedestrian.
- Out of the 5 pedestrian collisions 3 (60%) involved a westbound pedestrian on the north arm of the junction
- Out of the 5 pedestrian collisions 1 (20%) was adjudged to be not partly or entirely the pedestrians fault.

Right turners

- Total right turner collisions 6
- Total casualties in right turner collisions: 9 (0 serious)
- Out of the 6 right turn collisions 3 (50%) involved vehicle turning from N to SW and a vehicle heading straight from S to N. None of these accidents involved a cyclist.
- Out of the 6 right turn collisions 1 (17%) involved vehicle turning from S to NE. **This turn is currently banned.**
- Out of the 6 right turn collisions 1 (17%) involved vehicle turning from SW to S
- Out of the 6 right turn collisions 2 (33%) involved vehicle turning from NE to N, however both of these accidents involved no other vehicle. In one a taxi hit a bollard and the other a bus passenger fell off his seat due to the right turn. **This turn is currently banned.**

Left turners

- Total right turner collisions 1
- Total casualties in right turner collisions: 1 (0 serious)
- Out of the 1 left turner collisions 1 (100%) involved a cyclist.

The data appears to show that the left turn hook from Farringdon Rd (N) to Charterhouse St (NE) is not currently an issue but should be monitored closely as the changes that North-South will make to the surrounding Junction layout may increase the issue as discussed in the following section.

Non-dry

- Total right turner collisions 5
- Total non-dry casualties 7 (1 serious)
- Out of the 5 non-dry collisions 3 (60%) involved a pedestrian
- Out of the 5 non-dry collisions 1 (20%) involved a right turner
- Out of the 5 non-dry collisions 1 (20%) involved a left turner

Effects of North-South:

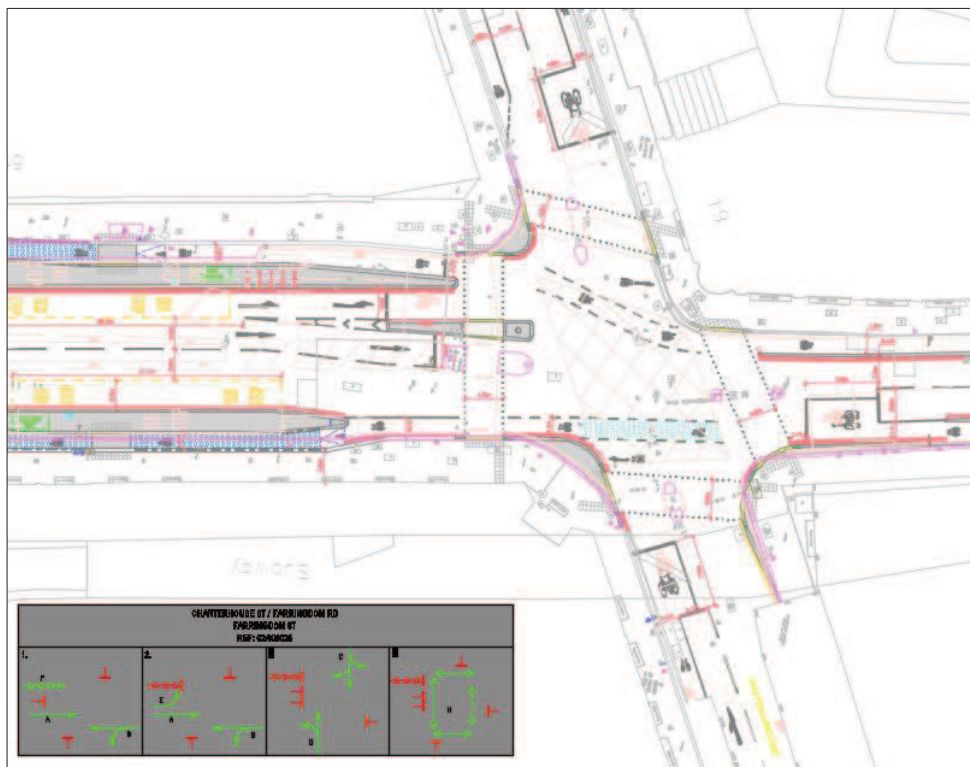
The design for the Farringdon Road/ Charterhouse Street junction is an ATS design is shown on the next page.

- Of the 15 collisions 3 (20%) should have been avoided if the current North South proposal was in place. All 3 of these collisions would be avoided through banning the Farringdon Rd to Charterhouse St (N to SW) right
- Of the 15 collisions 9 (60%) should have had a greater chance of being avoided if the current North South proposal was in place. Of these 9:
 - 5 (83%) involved a pedestrian and would have had a possible reduction in likelihood because the new proposals have controlled (currently uncontrolled) crossings which could encourage pedestrians to wait for the green pedestrian phase.
 - 1 (17%) involved a cyclist being hit from the rear by a vehicle on the approach to the junction (northern arm). The proposed design includes a wider cycle lane on the approach and across the junction which would have reduced the likelihood a vehicle hitting the rear of a cyclist.
 - 1 (17%) is a left hook as a car travelled NE to S while the cyclist attempted to go NE to SW. New lane markings and a wider cycle lane will improve visibility. An early release will enable cyclists to clear the turn before traffic and the tighter radius of the left turn will slow vehicles down.
 - 1 (17%) is a car making a SW to S right turn hits a NE to SW cyclist. Signal phasing will not remove the conflict but increase cycle lane markings in the junction will improve visibility and an early release will enable cyclists to clear the junction before right turners reach the middle of the junction.
 - 1 (17%) is due to a cyclist clipping another cyclist (both N to S) causing one of them to fall. The

likelihood of this should be reduced as the width of cycle lanes and depth of ASLs will increase room for cyclists. An Early release signal will also allow cyclists more time and potentially reduce rushed careless riding.

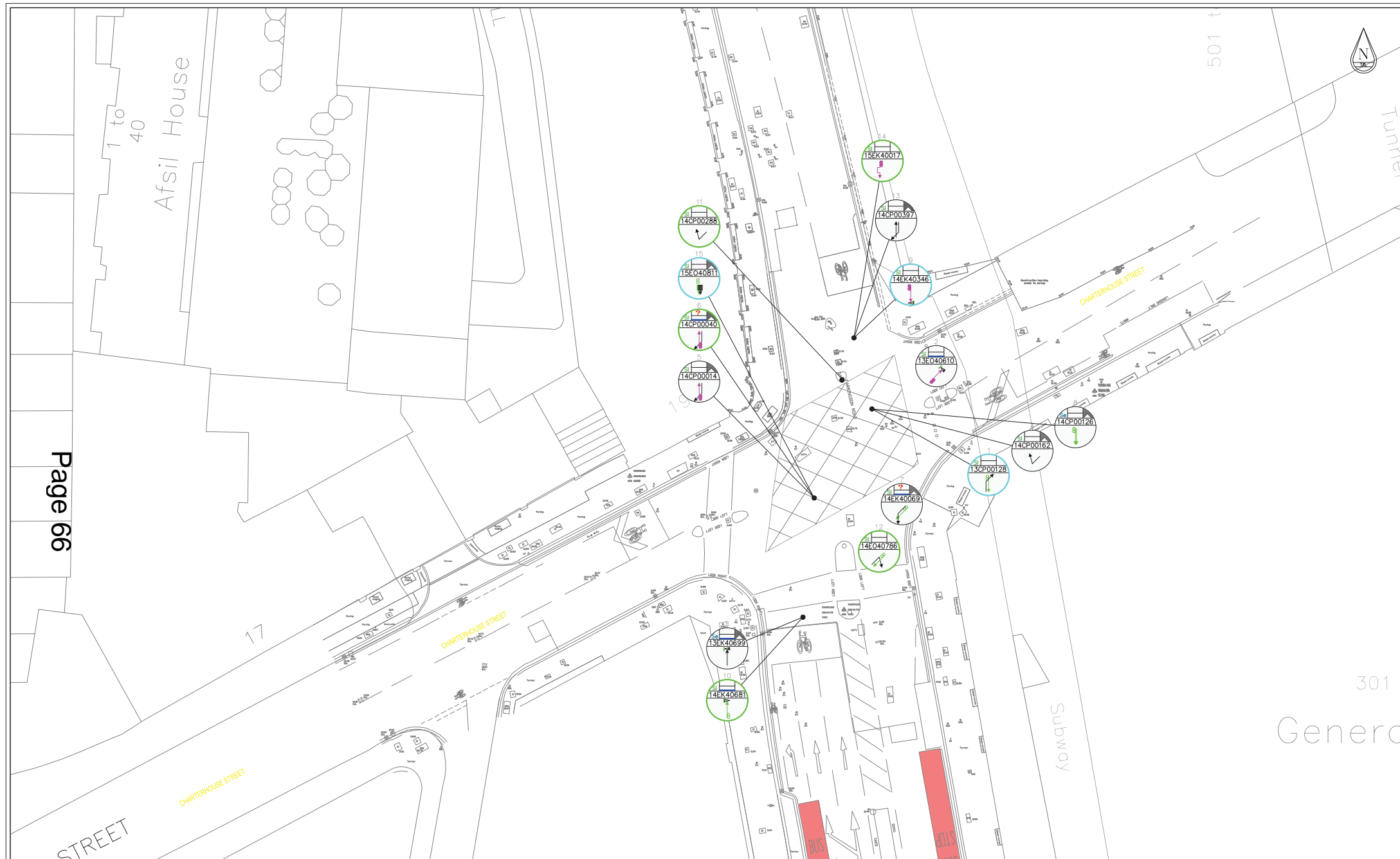
- Of the 3 collisions that the North South proposal could not have avoided:
 - 3 are due to banned turn movements being made. The design does no more to enforce the bans other than add additional arrows on the carriageway on the approach to junctions. Banned turn boards will be present on the new signals.
- Although now left hook collisions occurred from Farringdon Road to Charterhouse St (N to NE) there is a greater chance of this collision type being prevented because of proposed early release signals and 7.5m ASL for cyclists.
- The carriageway is to be resurfaced with improved skid resistance & repaired defects. This will reduce the likely hood of skidding and accidents in the wet.
- Road markings currently in poor state and will be refreshed by CSNS improving visibility in dark conditions

Layout for current proposed ATS junction at Farringdon Road/ Charterhouse Street:



Key Accident Data:

See the following drawing for the 15 collisions plotted at the Farringdon Road/ Charterhouse Street junction.



BALLOON	SEVERITY	WEATHER CONDITIONS	VEHICLE MANOEUVRE SYMBOL	VEHICLE MANOEUVRE SYMBOL	PEDESTRIAN SYMBOL	KEY	Map	Table	Logos	Page Info																								
Accident Severity (SI - Slight; Se - Serious; Fa - Fatal) Police Reference Number Weather condition Carriageway condition Light / Dark Manoeuvre & vehicle's	SI SLIGHT INJURY Se SERIOUS INJURY Fa FATAL INJURY LIGHT CONDITIONS DARK WITH STREET LIGHTS DARK WITHOUT STREET LIGHTS DAYLIGHT	FOG RAIN SNOW HIGH WIND / RAIN ROAD DEFECT WET/DAMP SNOW ICE/FROST	VEHICLE LOSS OF CONTROL STATIONARY VEHICLE PARKED VEHICLE VEHICLE OVERTAKE VEHICLE TURNING MANOEUVRE SUDDEN BRAKING / STOPPING REAR SHUNT REAR SHUNT SINGLE VEHICLE LANE CHANGE / SIDESWIPE	"U" TURN VEHICLE STRIKING PEDESTRIAN VEHICLE MOVEMENT FROM OFFSIDE VEHICLE REVERSING (IN DIRECTION OF ARROW) PEDAL CYCLE P2W GOODS VEHICLE PUBLIC SERVICE VEHICLE	PED MOVEMENT FROM NEARSIDE PED MOVEMENT FROM OFFSIDE PED MOVEMENT FACING TRAFFIC PED MOVEMENT BACK TO TRAFFIC PED UNKNOWN MOVEMENT	OCURRED DURING THE AM PEAK HOURS 07:00 - 09:59 OCURRED DURING THE PM PEAK HOURS 16:00 - 19:59 APPROXIMATE LOCATION OF EXISTING BUS STOP		<table border="1"><thead><tr><th>rev</th><th>date</th><th>details</th><th>des</th><th>chk</th><th>app</th></tr></thead><tbody><tr><td>P01</td><td>26/09/14</td><td></td><td></td><td></td><td></td></tr></tbody></table>	rev	date	details	des	chk	app	P01	26/09/14						<table border="1"><thead><tr><th>date</th><th>scale</th><th>proj</th><th>task</th><th>obj</th><th>sheet no</th></tr></thead><tbody><tr><td>Sep 16</td><td>1:200 @ A1</td><td>CW</td><td>CG</td><td>CG</td><td>0001 OF 0002</td></tr></tbody></table> <p>City of London/ Camden Cycle Superhighway North South Phase 2</p> <p>FOR COMMENT</p> <p>P01</p>	date	scale	proj	task	obj	sheet no	Sep 16	1:200 @ A1	CW	CG	CG	0001 OF 0002
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Sep 16	1:200 @ A1	CW	CG	CG	0001 OF 0002																													

Smithfield Market 7day Count Data

1. Notes on the Data and presentation of Graphs

- The raw data is in a separate Excel Workbook per day of data. They are named as follows: 3378-LON-JB Farringdon - Friday 30 September etc.
- A workbook of graphs is included entitled: Graph Pack for Smithfield Market. The graphs are numbered "1.AB" etc. (i.e. Site 1, movement AB) and are referenced in this report. Note: do not resize the graphs that have shapes (i.e. grey rectangles for the delineation of days and black boxes for the indication of market hours) placed on them or the shapes will no longer correspond to the times on the horizontal axis.
- As the proportion of traffic making turns at the junction varies, most graphs are repeated; one with a fixed axis to provide an easy comparison with other graphs and another with an automatic axis to enable a detailed look at the distribution of vehicle types. For example graph "1.ABa" is the auto axis graph and graph "1.ABf" is the same data with a fixed axis of 1200 vehicles per hour. The graph is not repeated if the auto axis version uses a maximum of 1200 vehicles per hour.
- Grey boxes denote days, black outlines denote market hours (5am-7am)
- Data starts from Friday (left) to Thursday (right)
- Horizontal axis labels are the 'end hour'. For example hour 01:00 on the graph is the data collected from 00:00 to 01:00.
- Abbreviations for vehicles below:

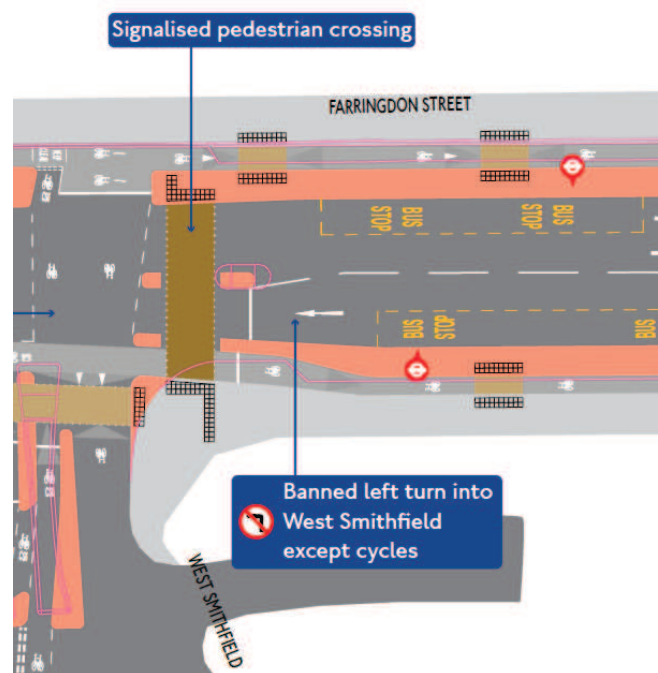
Car/LGV	LDN Taxi	R2A	HGV	PSV	MC	PC
Car/ light goods vehicle	London taxi	Rigid 2 axle lorry	Heavy good vehicle	Public Service Vehicle (bus)	Motorcycle	Pedal cycle

2. Rationale for signalised junction at West Smithfield (WS)

- Feedback from TfL's public consultation in early 2016 highlighted that key stakeholders and the public wanted to see more done to tackle safety at this junction
- The collision data shows there is a very strong case for signalising the junction, especially due to the number of right turn collisions the design would seek to remove. See separate collision note.
- In the AM peak right turning pedal cycles peak at 401 per hour, or an AM peak hour average over the 5 weekdays of 352 per hour. Cyclists therefore represent an average of 65% of the vehicles making this turn in the AM peak
- The average figure for right turning cyclists in the inter-peak is 22 per hour, or 14% of the right turning vehicles

3. Rationale for the proposed banned left turn into West Smithfield

- The left turn is proposed to be banned to remove the risk of 'left hook' collisions at this junction which is a key connection between CS6 and the Central London Grid cycle route on West Smithfield.
- It is not possible to separately signal this turn from SB cycle movements at the junction because this would require another traffic signal stage to be added to separate the movements. Adding a 5th Stage to the signal timings would require additional time in the signal phasing and the impact of this is increased journey times for all traffic through the junction. This has been demonstrated through sensitivity modelling of other options that increase time at this junction.
- The location of the bus stop in advance of this junction reduces the inter-visibility between cyclists and vehicles, increasing the risk of a left hook collision. At Charterhouse Street, visibility between cyclists and vehicles is greater.



4. Market traffic calculations

- It is not possible to completely separate vehicles accessing the market from total traffic counts at junctions due to the variation in market activities and destinations in the area.
- Market associated traffic has therefore been calculated as follows:
 - Market hours are calculated as between 00:00 and 08:00 Mon-Fri based on the market operational hours of 02:00 to 07:00 with a two hour preparation time before and one hour set down time after
 - Two methods of estimating how many vehicles per hour access the market via the left turns at CS and WS have been used to provide a calculated high and low range:

Method 1 (provides high range calculation):

- All HGVs and R2A vehicles between 00:00 08:00 Mon-Fri
- plus*
- 90% of all Car or LGV left turns (CS and WS) between 00:00 and 08:00 Mon-Fri.

Assumes a high % of market associated use and takes less account of the 'ambient' traffic conditions when the market is not on

Method 2 (provides low range calculation):

- All HGVs and R2A vehicles between 00:00 08:00 Mon-Fri
- plus*
- All Car or LGV left turns (CS and WS) between 00:00 and 08:00 Mon-Fri
- minus*
- average Car or LGV movements from 00:00 and 08:00 Sat-Sun (non market days).

Influenced by factors such as high weekend traffic and will be high night time traffic flows at weekends (note Fabric was shut at the time of the counts). It is not possible to undertake a comparison to a non market weekday as the market is open every week

5. Re-assignment of left turning traffic from West Smithfield to Charterhouse Street

- The left turns at CS and WS are low flow movements compared to other traffic movements at the junctions. This is illustrated in the following comparison of graphs which are plotted on the same vertical axis scale for comparison:
 - 2.ABf** – Southbound left turn into WS
 - 2.ACa** – Southbound ahead at WS
 - 2.CBf** – Northbound right turn into WS
 - 1.AC-1Aba** – Southbound left turn at CS and the southbound ahead traffic plotted on one axis
- It can be seen that the southbound left turn is a very low flow compared to the northbound right turn into WS and the southbound ahead traffic at the Farringdon St (FS) and WS junction
- Data calculations in the table below show that if all the vehicles that currently use the left turn at West Smithfield move to make this turn at Charterhouse Street, the number of vehicles turning left at Charterhouse Street would still be very low - less than one vehicle per minute on average during market hours.
- If you also add all of the traffic currently turning right at Charterhouse Street (which could divert via the market) then this figure rises to 1.53 vehicles per minute which is still low. It is likely right turning traffic would not all use this route however as other diversion routes are available.

Data showing average vehicles movements during market hours

	All vehicles		Market associated vehicles ¹	
	Total average	Average per minute	Total average	Average per minute
West Smithfield left turn (Graph 2.AB)	25	0.4	15-21	Up to 0.35
Charterhouse St left turn	27	0.45	10-21	Up to 0.35
Charterhouse St <i>plus</i> West Smithfield left turn	52	0.87	35-42	0.7
Charterhouse St right turn	40	0.7	N/A ²	N/A
Charterhouse St <i>plus</i> West Smithfield left turn <i>plus</i> Charterhouse St right turn (diverted)	92	1.53	N/A	N/A

- At night when the flows on the network are lower (for example the ahead southbound traffic at Charterhouse: Graph 1.ACa) the signal cycle times will be shorter (i.e. the

¹ Based on the Method 1 & 2 approaches.

² The SB right turn is not used for market access

green light for the left turn at Charterhouse St will occur more frequently) and based on the higher percentage of left turning traffic the green time could be adjusted through the SCOOT (Split Cycle Offset Optimisation Technique)* and UTC (Urban Traffic Control)³ systems to allow more green time for these left turners. Even so, with such low flows it would be expected all vehicles waiting to turn left at Charterhouse St will make it through the junction on the first green light it receives.

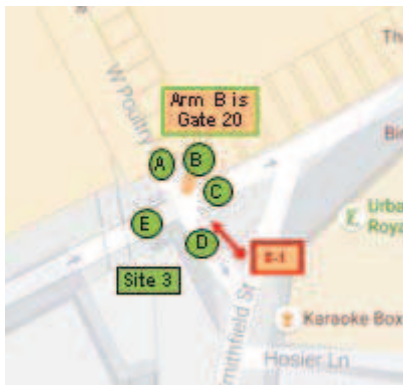
- In addition, the traffic data shows that during the AM peak hour (which is the time period used for our traffic modelling), the Charterhouse Street junction has an average of **2380** vehicle movements per hour.
- During the average market hour the Charterhouse Street junction has an average of **870** vehicle movements per hour, which represents just 36% of the movements experienced at the junction during the AM peak hour
- This means that traffic modelling undertaken for the route (which shows neutral impacts on journey times) represents a situation with higher volumes of traffic than those experiences during market hours.



³ In short; computer controlled traffic signals that respond to demand to minimise delay across all arms of a junction and across a wider urban area.

6. Impacts at Gate 20 of the proposed banned left turn into WS

- Gate 20 was included in our review of the data as it was highlighted as one of the furthest access points to the market if accessing from Charterhouse Street
- The data shows that an average of 6 market associated vehicles per hour enter Gate 20 from any direction (including illegal movements), or **1 vehicle every 10 mins.** (Graph 3.EBa).
- Entry into Gate 20 from the West Smithfield approach arm forms half of these movements with an average of 3 market associated vehicles per hour, or **less than 1 vehicle every 20 mins.** (Graph 3.XBa).
- Market associated traffic entering Gate 20 from WS (3 per hour) is lower than the market associated left turners at WS (15-21/hour). Therefore very few of the market associated left turners at WS use Gate 20.



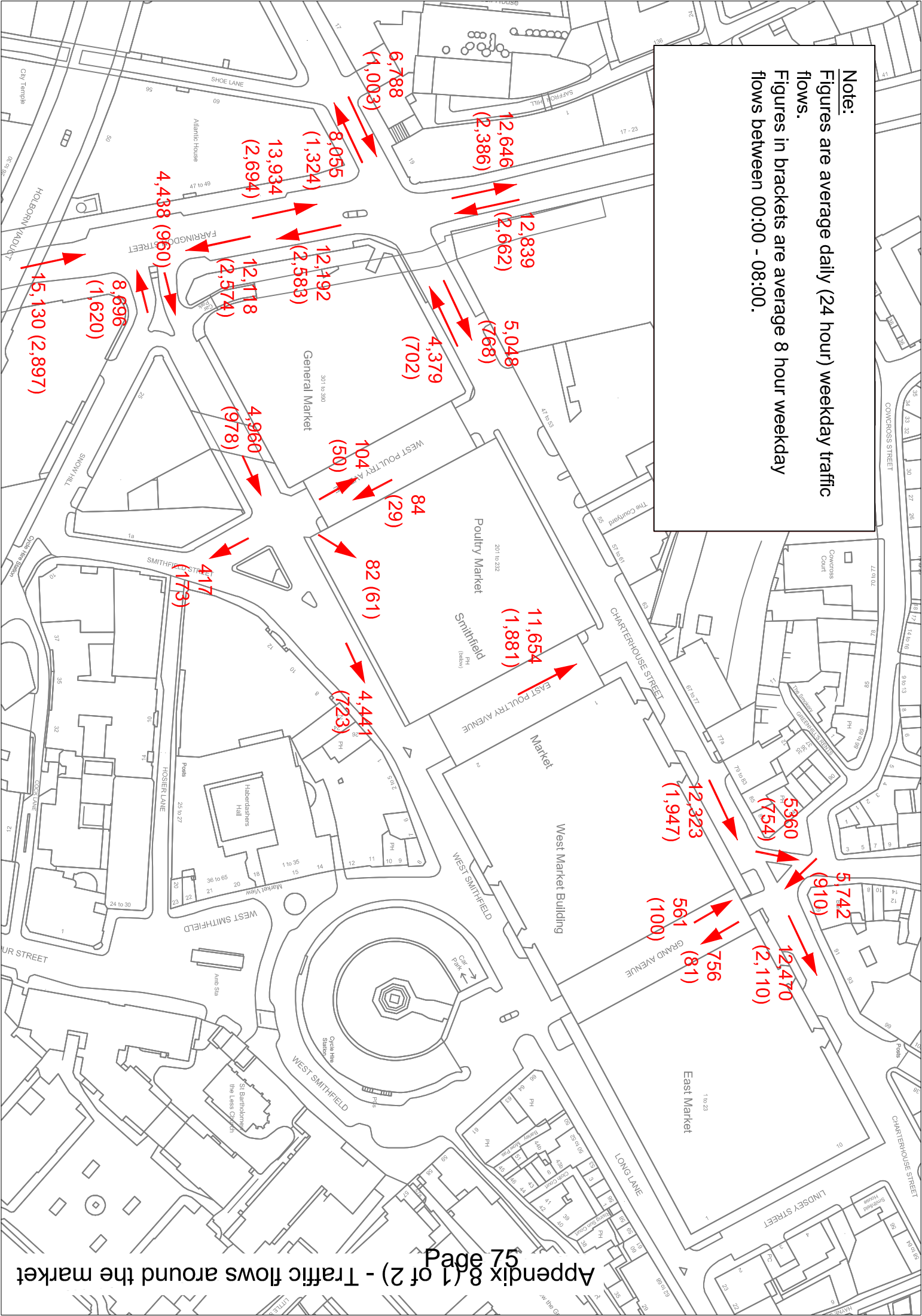
7. St. John St and Charterhouse St Junction

- St John Street was included in our review of the data as it was highlighted by the market as a potential location for traffic congestion due to re-assignment of traffic to Charterhouse Street
- Vehicles displaced at WS that use CS would pass this junction via the Lindsey St diversion route.
- The data shows that an additional 25 vehicles per hour could be displaced from WS during market hours.
- Graph 4.CB shows St John Street junction has an average of 148 vehicles per hour during market hours. This means a there would be a total of 173 vehicles per hour passing this junction, or **3 vehicles per minute**.
- During peak hours (07:00-10:00, 16:00-19:00) the average number of vehicles at this junction is 410 per hour, or double the market hours volume at **7 vehicles per minute**.
- This means that traffic volumes at this junction would be half that of the AM peak
- At night when the flows on the network are lower the signal cycle times will be shorter and the green time could be adjusted through the SCOOT and UTC systems to allow more green time.



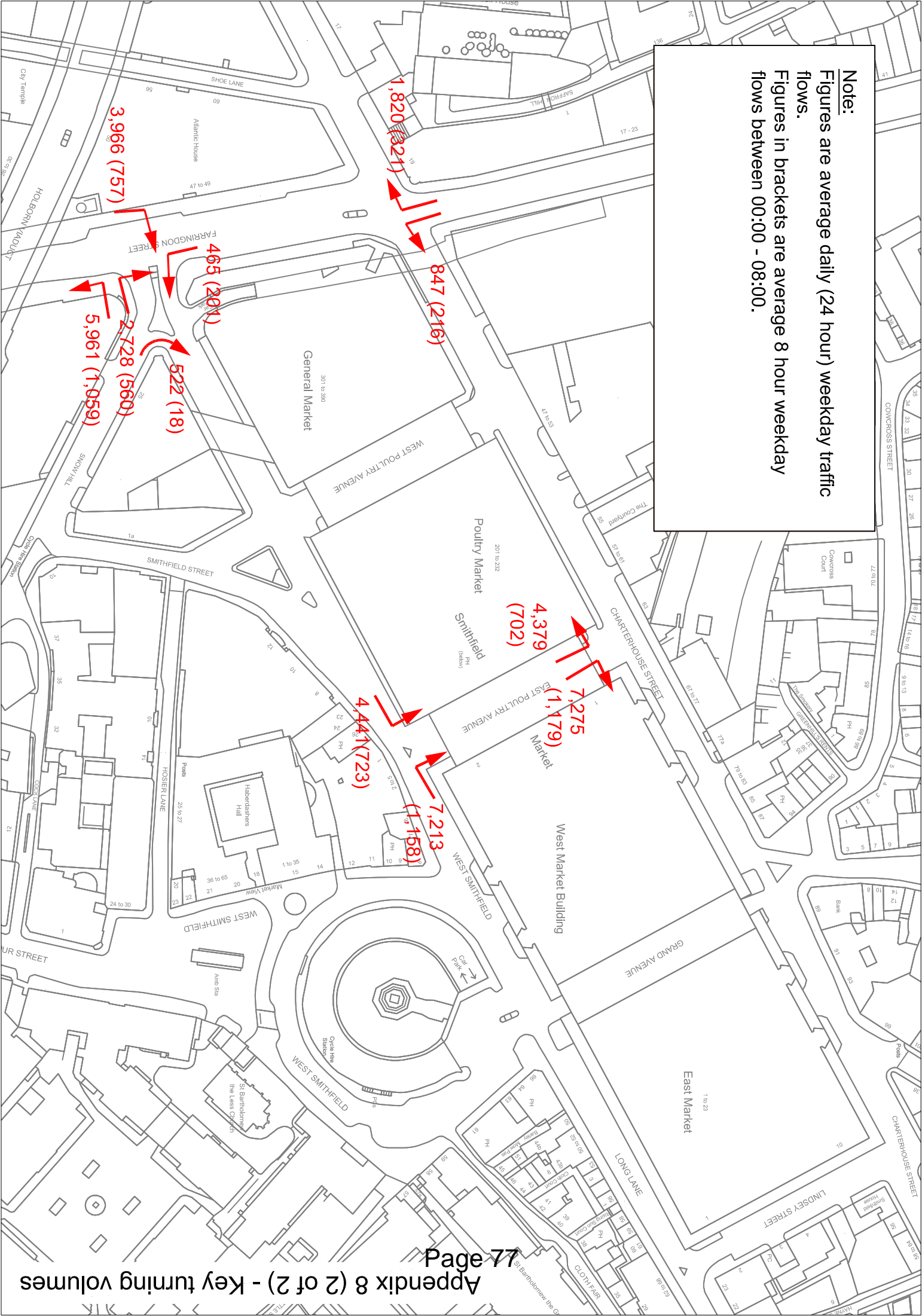
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Note:
Figures are average daily (24 hour) weekday traffic flows.
Figures in brackets are average 8 hour weekday flows between 00:00 - 08:00.



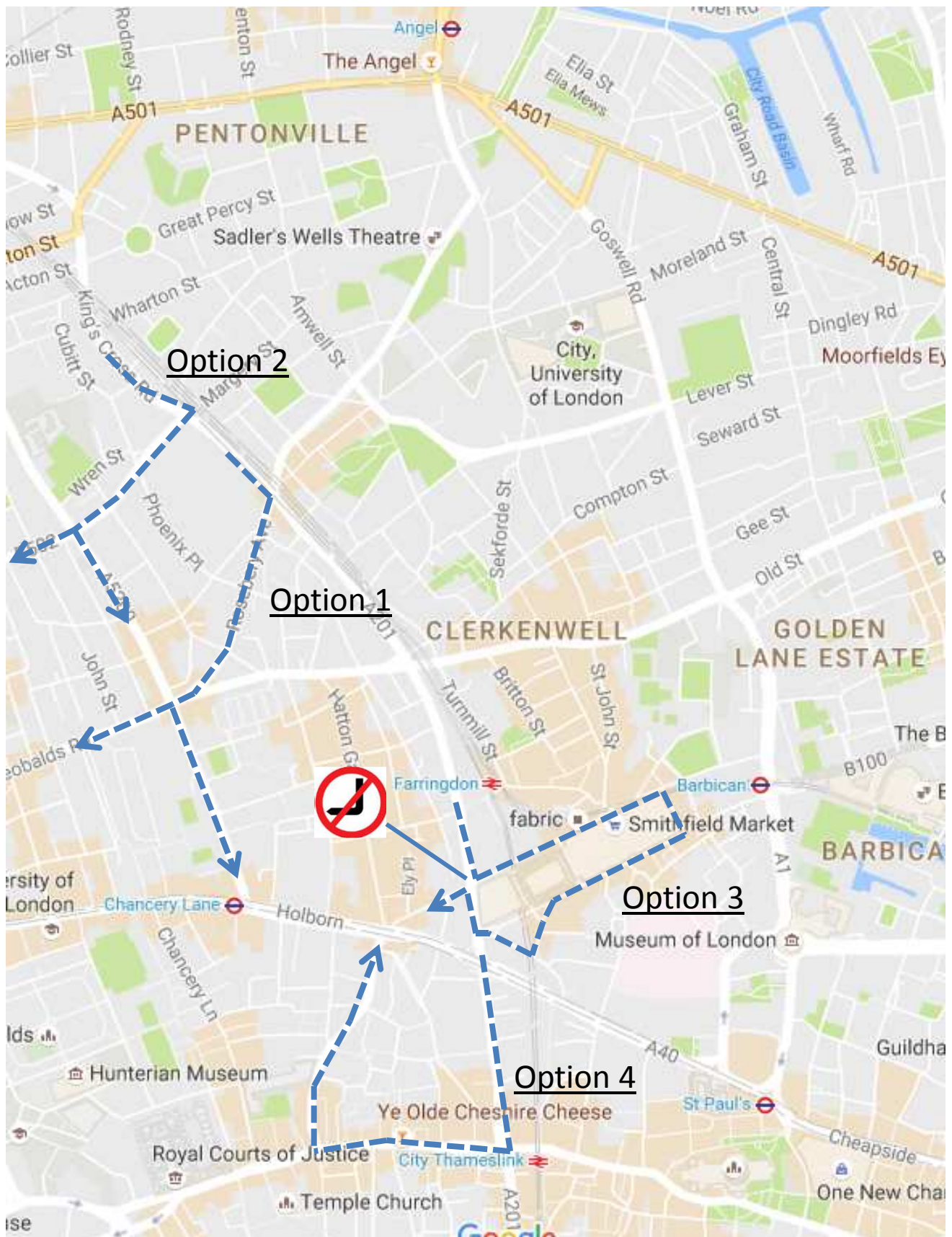
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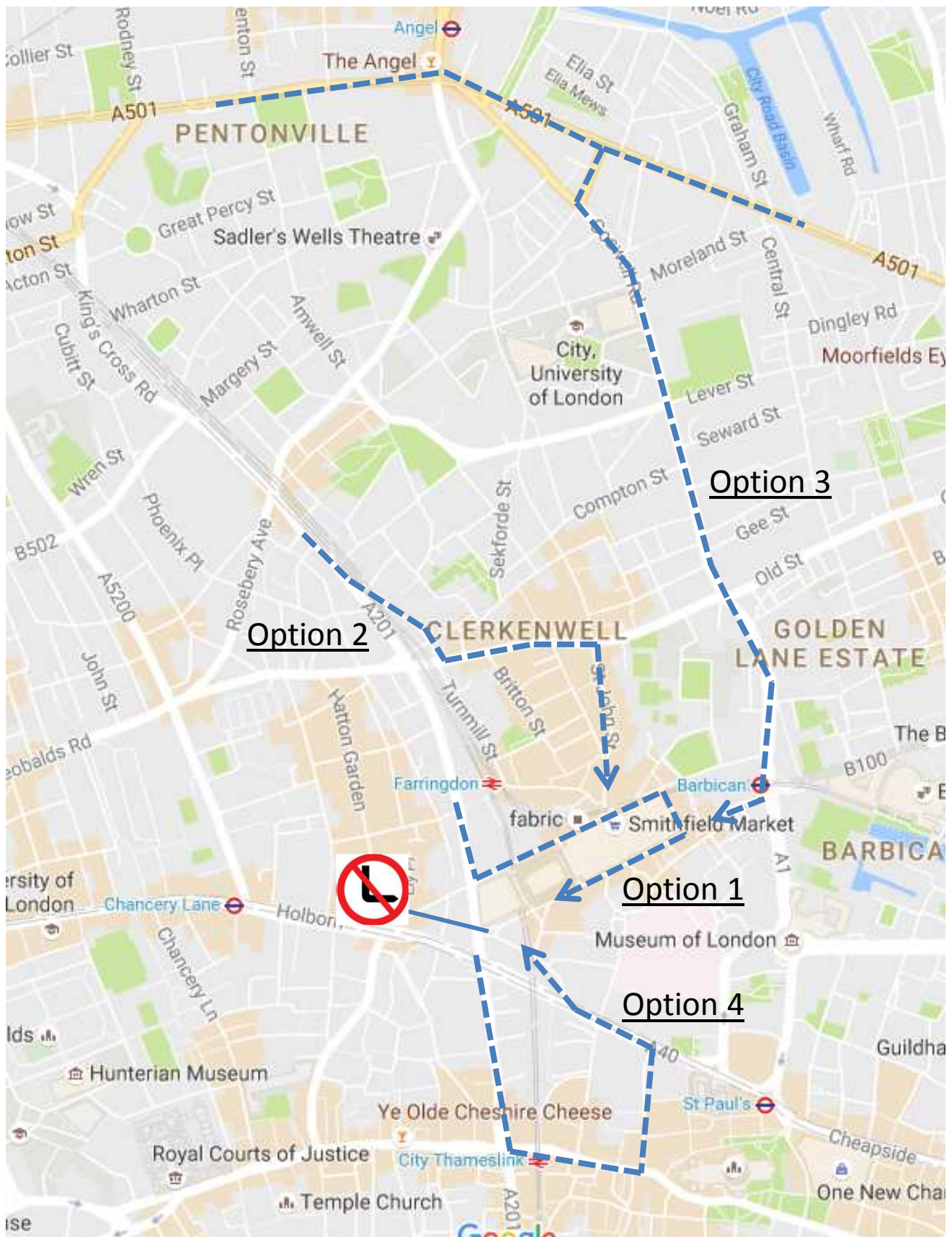


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Appendix 9 (1 of 2) - Banned Right Turn : Alternative Routes



Appendix 9 (2 of 2) - Banned Left Turn : Alternative Routes



By virtue of paragraph(s) 3 of Part 1 of Schedule 12A
of the Local Government Act 1972.

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