

APPENDIX 4 - N-S modelling information

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

Overall context

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

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

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

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

Pedestrians and environment

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

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

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

General traffic (excluding buses)

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

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

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

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

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

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

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

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

Parking and loading

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

Buses

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

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

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

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

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

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

Broader public transport benefits

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

Explanatory note on accompanying traffic modelling data table

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

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

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

Further detailed modelling information is available on request by emailing your requirements and contact details to trafficmodelling@tfl.gov.uk.

Complementary Measures

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

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

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North-South Cycle Superhighway - Modelling Results

Correct as at 23 September 2014	(A) Base Model - current situation on street				(B) Future base model - Expected situation on-street Dec 2016 without scheme				(C) Future journey times Dec 2016 with scheme				(D) Difference between Future with scheme (C) and base (A)		(E) Difference between future with scheme (C) and future base (B)		
	Current journeys		AM	PM	Journeys modelled		AM	PM	Journeys modelled		AM	PM	AM	PM	AM	PM	
Traffic Average journey times (minutes:seconds)	Elephant & Castle to Farringdon Station	Northbound	11:28	10:56	Elephant & Castle to Farringdon Station	Northbound	10:22	09:37	Elephant & Castle to Farringdon Station	Northbound	12:09	15:12	0:41	1:47	5:35		
		Southbound	10:50	12:17		Southbound	09:42	09:13		Southbound	14:43	14:20	2:03	3:53	5:01	5:07	
Buses A sample of journey times on four routes through the scheme area (minutes:seconds) Difference against base (A), expressed as a range in column D	Stamford Street to Queen Victoria Street	Northbound	3:45	3:20	Stamford Street to Queen Victoria Street	Northbound	03:43	03:25	Stamford Street to Queen Victoria Street	Northbound	15:43	12:41	11:58	12:00	9:16		
		Southbound	5:50	5:22		Southbound	05:03	03:25		Southbound	3:39	3:41	-2:11	-1:54	0:16		
Cycling Average journey times (minutes)	Route 100 (between Elephant & Casile and Ludgate Hill)	Northbound	14:12	13:06	Future base data available for general traffic journeys only	Route 100 (between Elephant & Casile and Queen Victoria Street)	Northbound		Northbound				Northbound		-(5-7m)	-(2-5m)	
		Southbound	10:12	11:00			Southbound			Southbound				Southbound		0-1m	-(1-2m)
	Eastbound	1:54	1:54			Route 381 (between Stamford Street and Southwark Street)	Eastbound			Route 381 (between Stamford Street and Southwark Street)	Eastbound			Eastbound		2-5m	2-5m
	Westbound	1:12	1:06				Westbound				Westbound			Westbound		2-5m	2-5m
	Eastbound	1:12	2:06			Route 11 (between Fleet Street and Ludgate Hill)	Eastbound			Route 11 (between Fleet Street and Ludgate Hill)	Eastbound			Eastbound		1-2m	1-2m
	Westbound	1:54	2:06				Westbound				Westbound			Westbound		2-5m	1-2m
	Northbound	15:24	12:36			Route 45 (between Elephant & Casile and Charterhouse Street)	Northbound			Route 45 (between Elephant & Casile and Charterhouse Street)	Northbound			Northbound		-(2-5m)	1-2m
	Southbound	13:18	14:36				Southbound				Southbound			Southbound		2-5m	5-7m
	Elephant & Castle to Farringdon Station	Northbound	18	17		Elephant & Castle to Farringdon Station	Northbound			Elephant & Castle to Farringdon Station	Northbound	19	14	1	-3		
		Southbound	14	15			Southbound				Southbound	14	20	0	5		
Pedestrians Traffic signal cycle times and associated wait times (seconds) NOTE: Future base would be same as current base without scheme	St George's Circus	Max. cycle time	NO SIGNALISED FACILITIES	NO SIGNALISED FACILITIES	St George's Circus	Max. cycle time	NO SIGNALISED FACILITIES	NO SIGNALISED FACILITIES	St George's Circus	Max. cycle time	112	120	N/A	N/A	N/A		
		Max. wait time				Max. wait time				Max. wait time	106	114					
	Southwark Tube station	Max. cycle time	88	88	Southwark Tube station	Max. cycle time	88	88	Southwark Tube station	Max. cycle time	104	104	16	16	16		
		Max. wait time	82	82		Max. wait time	82	82		Max. wait time	98	98	16	16	16		
	Blackfriars Station (westbound exit)	Max. cycle time	96	96	Blackfriars Station (westbound exit)	Max. cycle time	96	96	Blackfriars Station (westbound exit)	Max. cycle time	120	120	24	24	24		
		Max. wait time	90	90		Max. wait time	90	90		Max. wait time	114	114	24	24	24		
	Ludgate Circus (east-west) No facilities north-south	Max. cycle time	96	96	Ludgate Circus (east-west) No facilities north-south	Max. cycle time	96	96	Ludgate Circus (east-west) No facilities north-south	Max. cycle time	120	120	24	24	24		
		Max. wait time	90	90		Max. wait time	90	90		Max. wait time	114	114	24	24	24		
	Farringdon Street-Charterhouse Street	Max. cycle time	NO SIGNALISED FACILITIES	NO SIGNALISED FACILITIES	Farringdon Street-Charterhouse Street	Max. cycle time	NO SIGNALISED FACILITIES	NO SIGNALISED FACILITIES	Farringdon Street-Charterhouse Street	Max. cycle time	120	120	N/A	N/A	N/A		
		Max. wait time				Max. wait time				Max. wait time	114	114					