

## **Appendix B: Likely journey time impacts following changes to the design post consultation**

### **Summary of changes from 2017 consultation**

Following consultation feedback in 2017 several turning movements have now been retained eastbound onto Lambeth Bridge and the location of the southbound bus stop on Lambeth Palace Road has been moved back to its existing location. The following turning movements are now allowed at all times of day for all vehicles: Millbank North to Lambeth Bridge and Millbank South to Lambeth Bridge. The shared pedestrian and cycle areas have been reviewed and removed where it is safe for cyclists to use the carriageway. Shared use remains between Millbank South and Horseferry Road. There is also a carriageway level cycle lane through the footway between Millbank North and Lambeth Bridge. These alterations to the design in response to consultation feedback have resulted in some changes to the modelled journey times.

Please note journey times are not directly comparable to the 2017 consultation. This is due to the modelled area being extended to ensure all journey times changes are captured by the modelling assessment. The tables below compare future modelled journey times with and without the Lambeth Bridge scheme. Both models include demand changes associated with committed developments and population growth, and planned changes to the road network. This allows us to isolate other changes on the network and present the predicted impact of the Lambeth Bridge scheme.

## Revised Journey Times: Buses

Mode	Routes	Future Journey Time without Scheme		Future Journey Time with Scheme		Journey Time Impact of Scheme		
		AM	PM	AM	PM	AM	PM	
Buses Average journey times (Minutes)	Millbank North to Lambeth Road	Route 3 Eastbound	5 to 6	6 to 8	6 to 8	6 to 8	1 to 2	0 to 1
	Lambeth Road to Millbank North	Route 3 Westbound	6 to 8	5 to 6	4 to 5	6 to 8	0 to -1	0 to 1
	Marsham Street to Lambeth Palace Road	Route C10 Northbound	10 to 15	8 to 10	8 to 10	8 to 10	-3 to -4	No change
	Lambeth Palace Road to Marsham Street	Route C10 Southbound	6 to 8	6 to 8	10 to 15	6 to 8	3 to 4	No change
	Albert Embankment to Lambeth Palace Road	Route 77 Northbound	8 to 10	6 to 8	10 to 15	10 to 15	2 to 3	2 to 3
	Lambeth Palace Road to Albert Embankment	Route 77 Southbound	4 to 5	5 to 6	5 to 6	5 to 6	1 to 2	No change
	Millbank South to Millbank North	Route87 Northbound	8 to 10	8 to 10	10 to 15	4 to 5	3 to 4	-4 to 5
	Millbank North to Millbank South	Route87 Southbound	4 to 5	5 to 6	5 to 6	6 to 8	1 to 2	1 to 2
	Albert Embankment to Lambeth Road	Route 344 Northbound	10 to 15	6 to 8	10 to 15	10 to 15	1 to 2	2 to 3
	Lambeth Road to Albert Embankment	Route 344 Southbound	3 to 4	3 to 4	3 to 4	3 to 4	0 to 1	0 to -1
	Horseferry Road to Lambeth Palace Road	Route 507 Northbound	15 to 20	15 to 20	10 to 15	10 to 15	-8 to -10	-3 to 4
	Lambeth Palace Road to Horseferry Road	Route 507 Southbound	6 to 8	6 to 8	10 to 15	6 to 8	3 to 4	0 to -1

Bus journey times through the scheme area have been updated since consultation. In the morning the scheme increases journey times by up to four minutes for both the C10 southbound and 507 southbound from Lambeth Palace Road. There is also an increase of up to four minutes for route 87 northbound. In the morning there are some improved bus journey times for routes 507 northbound and C10 northbound. These routes on Horseferry Road see an improvement due to the new signalled junction on the northern side of the river improving flow of vehicles from Horseferry Road onto Lambeth Bridge.

In the evening there are some increases in journey times of up to three minutes for route 77 northbound and 344 northbound from Albert Embankment. However, bus journey time improvements are seen on route 87 northbound and route 507 northbound. This is due to the new signalled junction reducing the delay the current priority roundabout is predicted to incur and assisting buses through the junction.

## Revised Journey Times: Cyclists

			Future Journey Time without Scheme		Future Journey Time with Scheme		Journey Time Impact of Scheme	
Mode	Routes		AM	PM	AM	PM	AM	PM
Cyclists entering from Lambeth North	Millbank North to Millbank South	Southbound	3 to 4	3 to 4	3 to 4	4 to 5	No change	1 to 2
	Millbank North to Lambeth Palace Road	Southbound	4 to 5	3 to 4	3 to 4	4 to 5	0 to -1	1 to 2
	Millbank North to Lambeth Road	Eastbound	4 to 5	4 to 5	4 to 5	4 to 5	No change	No change
	Millbank North to Albert Embankment	Southbound	3 to 4	5 to 6	5 to 6	6 to 8	1 to 2	0 to 1
	Millbank South to Millbank North	Northbound	3 to 4	3 to 4	4 to 5	3 to 4	0 to 1	0 to 1
	Millbank South to Horseferry Road	Westbound	2 to 3	1 to 2	4 to 5	1 to 2	1 to 2	No change
	Millbank South to Lambeth Palace Road	Northbound	4 to 5	2 to 3	5 to 6	2 to 3	0 to 1	0 to 1
	Millbank South to Lambeth Road	Eastbound	4 to 5	4 to 5	5 to 6	4 to 5	1 to 2	0 to 1
	Millbank South to Albert Embankment	Southbound	4 to 5	5 to 6	6 to 8	6 to 8	2 to 3	1 to 2
	Horseferry Road to Millbank North	Northbound	2 to 3	2 to 3	3 to 4	4 to 5	0 to 1	2 to 3
	Horseferry Road to Lambeth Palace Road	Eastbound	4 to 5	3 to 4	4 to 5	5 to 6	0 to 1	1 to 2
	Horseferry Road to Lambeth Road	Eastbound	3 to 4	3 to 4	4 to 5	4 to 5	0 to 1	1 to 2
	Horseferry Road to Albert Embankment	Southbound	4 to 5	4 to 5	5 to 6	6 to 8	1 to 2	1 to 2
	Average journey times (Minutes)							
Cyclists entering from Lambeth South	Lambeth Palace Road to Lambeth Road	Southbound	0 to 1	2 to 3	0 to 1	2 to 3	No change	0 to 1
	Lambeth Palace Road to Albert Embankment	Southbound	3 to 4	3 to 4	4 to 5	4 to 5	1 to 2	1 to 2
	Lambeth Palace Road to Millbank North	Northbound	4 to 5	3 to 4	6 to 8	4 to 5	1 to 2	3 to 4
	Lambeth Palace Road to Millbank South	Southbound	1 to 2	4 to 5	2 to 3	6 to 8	0 to 1	1 to 2
	Lambeth Palace Road to Horseferry Road	Westbound	3 to 4	3 to 4	6 to 8	6 to 8	3 to 4	2 to 3
	Lambeth Road to Lambeth Palace Road	Westbound	2 to 3	No data	4 to 5	No data	1 to 2	No data
	Lambeth Road to Millbank North	Northbound	4 to 5	3 to 4	4 to 5	4 to 5	0 to 1	1 to 2
	Lambeth Road to Albert Embankment	Westbound	1 to 2	3 to 4	1 to 2	No data	No change	No data
	Lambeth Road to Millbank South	Southbound	3 to 4	3 to 4	4 to 5	4 to 5	0 to 1	1 to 2
	Lambeth Road to Horseferry Road	Westbound	3 to 4	3 to 4	5 to 6	4 to 5	1 to 2	1 to 2
	Albert Embankment to Lambeth Palace Road	Northbound	3 to 4	3 to 4	5 to 6	4 to 5	1 to 2	1 to 2
	Albert Embankment to Lambeth Road	Eastbound	3 to 4	3 to 4	6 to 8	4 to 5	2 to 3	1 to 2
	Albert Embankment to Millbank North	Northbound	5 to 6	2 to 3	8 to 10	4 to 5	2 to 3	1 to 2
	Albert Embankment to Millbank South	Southbound	4 to 5	4 to 5	6 to 8	6 to 8	2 to 3	3 to 4
Albert Embankment to Horseferry Road	Westbound	4 to 5	3 to 4	8 to 10	5 to 6	4 to 5	2 to 3	
Average journey times (Minutes)								

These proposals deliver safety benefits for cyclists through the Lambeth Bridge area, for some routes ensuring cyclist safety has resulted in increases in journey time. The updated design and alterations to signal timings have changed some cycle journey times. The removal of all shared use areas at the southern junction and from two corners of the northern junction causes some additional delay to left turning cyclists. For example, cyclist journey times from Horseferry Road to Millbank North increase in the revised proposal due to cyclists now waiting for additional time at traffic signals as they are no longer able to bypass the junction. There are increases of up to five minutes for cyclists traveling from Albert Embankment to Horseferry Road and smaller increases for other routes passing northbound over Lambeth Bridge. This is due to cyclists now waiting at the new signalled junctions on the northern and southern sides of the river.

## Revised Journey Times: Pedestrians

Mode	Routes		Future Journey Time without Scheme		Future Journey Time with Scheme		Journey Time Impact of Scheme	
			AM	PM	AM	PM	AM	PM
Pedestrians crossing at Lambeth South  Average journey times (Minutes)	Across Lambeth Palace Road	Eastbound	1 to 2	1 to 2	1 to 2	1 to 2	No change	No change
	Across Lambeth Palace Road	Westbound	1 to 2	1 to 2	1 to 2	1 to 2	0 to 1	0 to 1
	Across Lambeth Road	Southbound	1 to 2	1 to 2	2 to 3	2 to 3	0 to 1	0 to 1
	Across Lambeth Road	Northbound	1 to 2	1 to 2	2 to 3	1 to 2	0 to 1	No change
	Across Albert Embankment	Westbound	1 to 2	1 to 2	1 to 2	1 to 2	No change	No change
	Across Albert Embankment	Eastbound	1 to 2	1 to 2	2 to 3	2 to 3	1 to 2	0 to 1
Pedestrians crossing at Lambeth North  Average journey times (Minutes)	Across Millbank North	Eastbound	0 to 1	0 to 1	1 to 2	1 to 2	0 to 1	1 to 2
	Across Millbank North	Westbound	0 to 1	0 to 1	1 to 2	1 to 2	0 to 1	0 to 1
	Across Horseferry Road	Northbound	0 to 1	0 to 1	0 to 1	1 to 2	0 to 1	0 to 1
	Across Horseferry Road	Southbound	0 to 1	0 to 1	0 to 1	1 to 2	0 to 1	0 to 1
	Across Millbank South	Westbound	0 to 1	0 to 1	1 to 2	1 to 2	0 to 1	1 to 2
	Across Millbank South	Eastbound	0 to 1	0 to 1	1 to 2	1 to 2	0 to 1	0 to 1
	Across Lambeth Bridge	Northbound	0 to 1	0 to 1	1 to 2	1 to 2	0 to 1	1 to 2
	Across Lambeth Bridge	Southbound	0 to 1	0 to 1	1 to 2	1 to 2	0 to 1	1 to 2

The new signalled junctions remove the zebra crossings on the northern roundabout and change the operation of the signalled crossings on the southern roundabout. The revised northern junction design now includes staggered crossings on both Millbank arms of the junction. The design changes and associated signal timing modifications have had a small impact on pedestrian journey times. No pedestrian journey times have changed by more than two minutes compared to the future model.

## Revised Journey Times: General Traffic

Mode	Routes		Future Journey Time without Scheme		Future Journey Time with Scheme		Journey Time Impact of Scheme	
			AM	PM	AM	PM	AM	PM
Traffic entering from Lambeth North  Average journey times (Minutes)	Millbank North to Millbank South	Southbound	3 to 4	6 to 8	3 to 4	4 to 5	0 to 1	-2 to -3
	Millbank North to Horseferry Road	Westbound	3 to 4	4 to 5	2 to 3	2 to 3	0 to -1	-2 to -3
	Millbank North to Lambeth Palace Road	Northbound	5 to 6	8 to 10	3 to 4	2 to 3	0 to -1	-5 to -6
	Millbank North to Lambeth Road	Eastbound	6 to 8	8 to 10	5 to 6	6 to 8	No change	-2 to -3
	Millbank North to Albert Embankment	Southbound	6 to 8	10 to 15	6 to 8	5 to 6	No change	-5 to -6
	Millbank South to Millbank North	Northbound	8 to 10	6 to 8	10 to 15	3 to 4	1 to 2	-3 to 4
	Millbank South to Lambeth Palace Road	Northbound	8 to 10	8 to 10	10 to 15	6 to 8	4 to 5	-2 to 3
	Millbank South to Lambeth Road	Eastbound	8 to 10	10 to 15	10 to 15	6 to 8	3 to 4	-2 to 3
	Horseferry Road to Millbank North	Northbound	15 to 20	10 to 15	4 to 5	8 to 10	-10 to -15	-4 to 5
	Horseferry Road to Lambeth Palace Road	Northbound	15 to 20	15 to 20	8 to 10	10 to 15	-8 to -10	-4 to 5
	Horseferry Road to Lambeth Road	Eastbound	15 to 20	15 to 20	8 to 10	10 to 15	-8 to -10	-4 to 5
	Horseferry Road to Albert Embankment	Southbound	15 to 20	15 to 20	3 to 4	10 to 15	-15 to -20	-8 to -10
Traffic entering from Lambeth South  Average journey times (Minutes)	Lambeth Palace Road to Albert Embankment	Southbound	2 to 3	5 to 6	8 to 10	8 to 10	5 to 6	3 to 4
	Lambeth Palace Road to Millbank North	Northbound	3 to 4	6 to 8	4 to 5	2 to 3	0 to 1	-4 to -5
	Lambeth Palace Road to Millbank South	Southbound	4 to 5	6 to 8	8 to 10	8 to 10	4 to 5	2 to 3
	Lambeth Palace Road to Horseferry Road	Westbound	4 to 5	6 to 8	8 to 10	6 to 8	5 to 6	0 to 1
	Lambeth Road to Millbank North	Northbound	3 to 4	4 to 5	3 to 4	8 to 10	No change	3 to 4
	Lambeth Road to Albert Embankment	Southbound	8 to 10	6 to 8	4 to 5	8 to 10	-3 to -4	2 to 3
	Lambeth Road to Millbank South	Southbound	4 to 5	6 to 8	4 to 5	8 to 10	No change	3 to 4
	Lambeth Road to Horseferry Road	Westbound	4 to 5	6 to 8	6 to 8	8 to 10	1 to 2	2 to 3
	Albert Embankment to Lambeth Palace Road	Northbound	10 to 15	4 to 5	10 to 15	8 to 10	2 to 3	3 to 4
	Albert Embankment to Lambeth Road	Eastbound	10 to 15	4 to 5	10 to 15	8 to 10	2 to 3	4 to 5
	Albert Embankment to Millbank North	Northbound	10 to 15	6 to 8	6 to 8	6 to 8	-6 to -8	0 to -1
	Albert Embankment to Millbank South	Southbound	10 to 15	6 to 8	6 to 8	6 to 8	-2 to -3	0 to 1
Albert Embankment to Horseferry Road	Westbound	10 to 15	6 to 8	10 to 15	5 to 6	0 to -1	0 to -1	

General traffic journey times have changed following the design changes to retain more turning movements following feedback from consultation in 2017. The improved connectivity has led to more vehicles travelling eastbound over Lambeth Bridge. In the morning peak the largest journey time increases are from Millbank South and Lambeth Palace Road of up to six minutes. However, there are improvements to all journeys from Horseferry Road. These large improvements are due to the predicted worsening performance of the existing roundabout in the future as a result of increased traffic and cycle flows. The new signalled junction improves progression of vehicles from Horseferry Road. In the evening, traffic on the northern side of the river benefits from the new signalled junction. However, there are some journey time increases south of the river, for example Albert Embankment to Lambeth Road increases by up to five minutes and journey times from Lambeth Road increase by up to four minutes in the evening peak

## **Revised Traffic Reassignment**

The proposed changes at Lambeth Bridge will affect the way vehicles use the road network in the local area. The scale and complexity of traffic reassignment modelling means we are not able to model every road, instead general patterns of flow change and reassignment are identified.

In the morning and evening peak, reductions in traffic flow are expected in both directions on Horseferry Road. There will also be reductions in vehicle flows approaching the proposed junction at Lambeth Bridge North from Millbank North and Millbank South. These flow reductions will also be experienced eastbound on Lambeth Bridge, and onto Lambeth Palace Road northbound. Some routes will experience a small increase in flow such as Great Peter Street in both the morning and evening peaks, Marsham Street northbound in the morning and Regency Street southbound in the evening.

At the southern junction in the morning there is a reduction in flow on Albert Embankment towards Lambeth Bridge. In the evening peak the new junction arrangement is expected to reduce flow southbound on Lambeth Palace Road and increase flow on Lambeth Road. There will be a small increase in flow using Kennington Road northbound in the morning.

Each of these changes is a result of the proposals affecting traffic capacity and delay, due to the reallocation of road space, and proposed turning restrictions. These flow reductions are partly due to reassignment onto nearby bridges such as Vauxhall Bridge and Westminster Bridge, and can also be attributed to a predicted increase in queuing as a result of the scheme. This is reflected in the changes to journey times presented and discussed previously.

## Technical Note on Modelling Results

**No change** indicates a predicted journey time change of less than fifteen seconds

**No data** indicates there is no comparison available due to a route through the modelled area having insufficient demand to calculate a robust journey time comparison

### Turning Movements

Some turning movements are proposed to be banned for general traffic and buses as part of the Lambeth Bridge scheme and are not shown in the tables above. These movements are:

#### North

The left turn from Millbank South to Horseferry Road

The right turn from Horseferry Road to Millbank South

Note the right turn from Millbank North to Horseferry Road and left turn from Horseferry Road to Millbank North are included above, but in the proposed design requires rerouting via Great Peter Street and Marsham Street

#### South

The left turn from Lambeth Palace Road onto Lambeth Road

The right turn from Lambeth Road to Lambeth Palace Road

TfL has used traffic modelling techniques to calculate the expected average journey time changes at the busiest hour in both the morning and evening peak. The data tables outline the expected average journey times extracted from VISSIM modelling software for the following:

**Future without scheme** – Journey times expected on street if the Lambeth Bridge scheme is not built. These average journey times take account of all other planned changes to the network, along with predicted changes in demand on London's road network.

**Future with scheme** – Journey times expected on street if the Lambeth Bridge scheme is built. These average journey times take account of all other planned changes to the network, along with predicted changes in demand on London's road network.