Appendix 4

London Bridge and Borough High Street

Monitoring Strategy

LONDON BRIDGE and BOROUGH HIGH STREET

Bus route monitoring corridors

LCAP links

Existing ATC

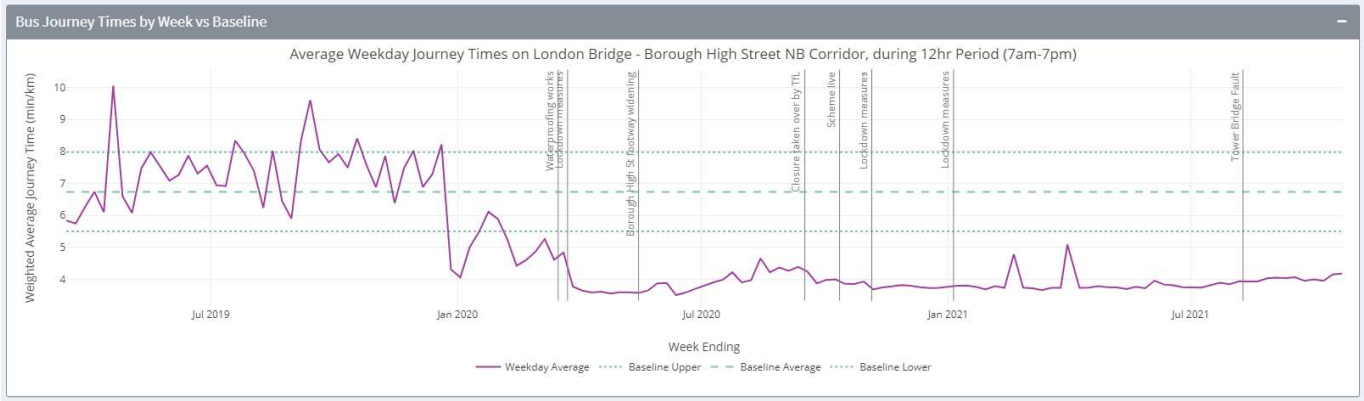
Existing ACC

Vivacity count-lines

MONITORING TO DATE

Bus journey times on London Bridge – Borough High Street Corridor

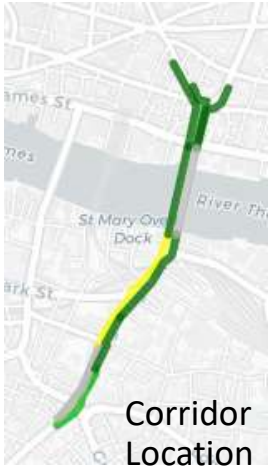
Northbound



6.7	4.2	-2.6 (-38%)	0 (1%)
minutes per km Baseline average journey time 2019-03-11 to 2020-03-09	minutes per km Latest week average journey time W/E 2021-10-22	minutes per km Difference from baseline average	minutes per km Difference from previous week

Southbound

6.8	4.5	-2.3 (-34%)	-0.8 (-18%)
minutes per km Baseline average journey time 2019-03-11 to 2020-03-09	minutes per km Latest week average journey time W/E 2021-10-22	minutes per km Difference from baseline average	minutes per km Difference from previous week

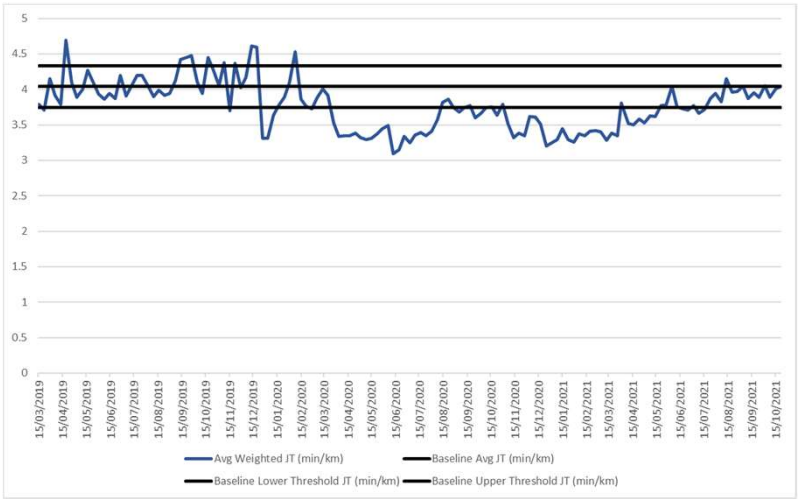


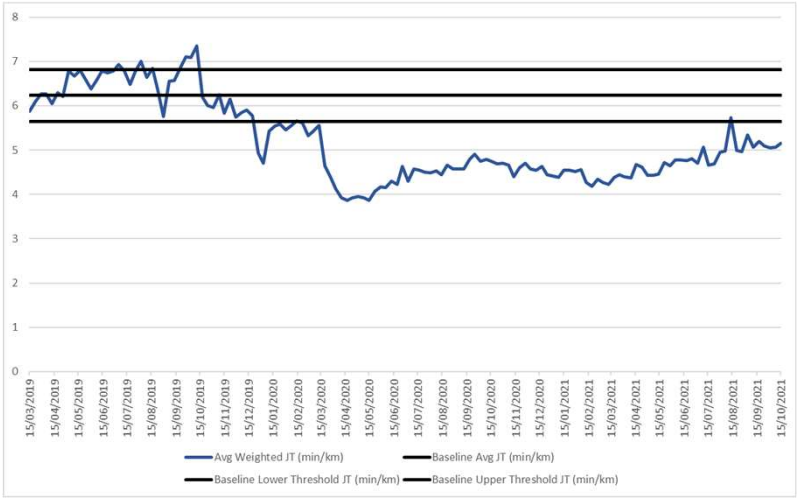
Bus journey times on London Bridge – Borough High Street Corridor: Out of Operational Hours

Northbound

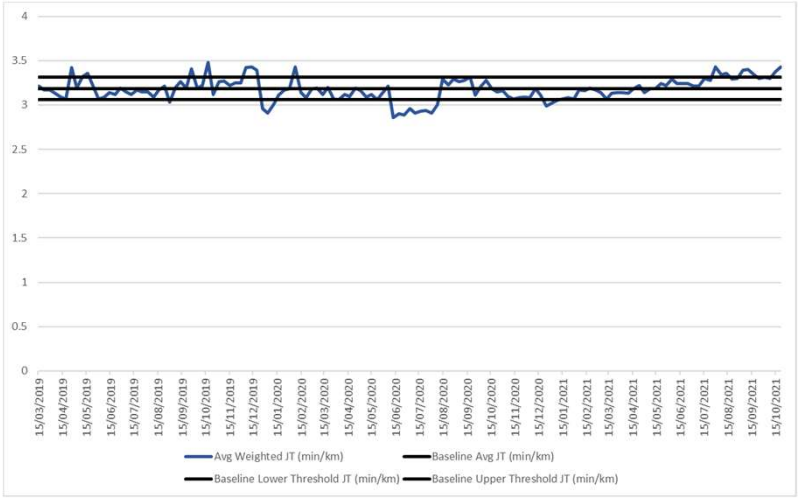
Southbound

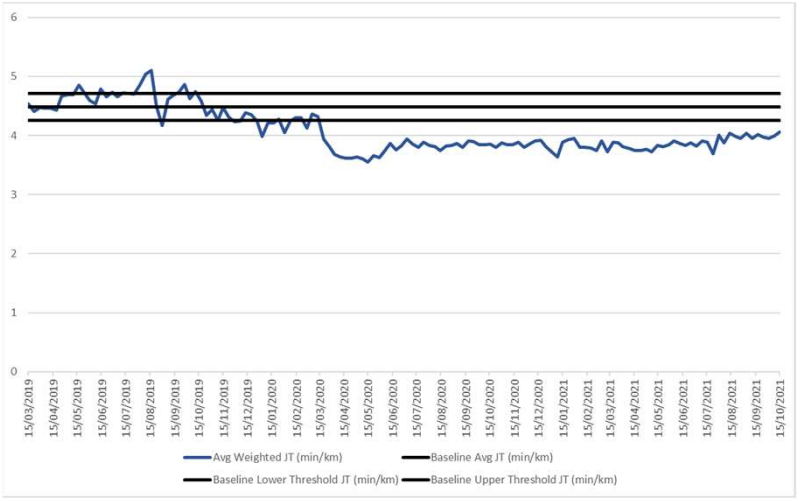
Late Evening



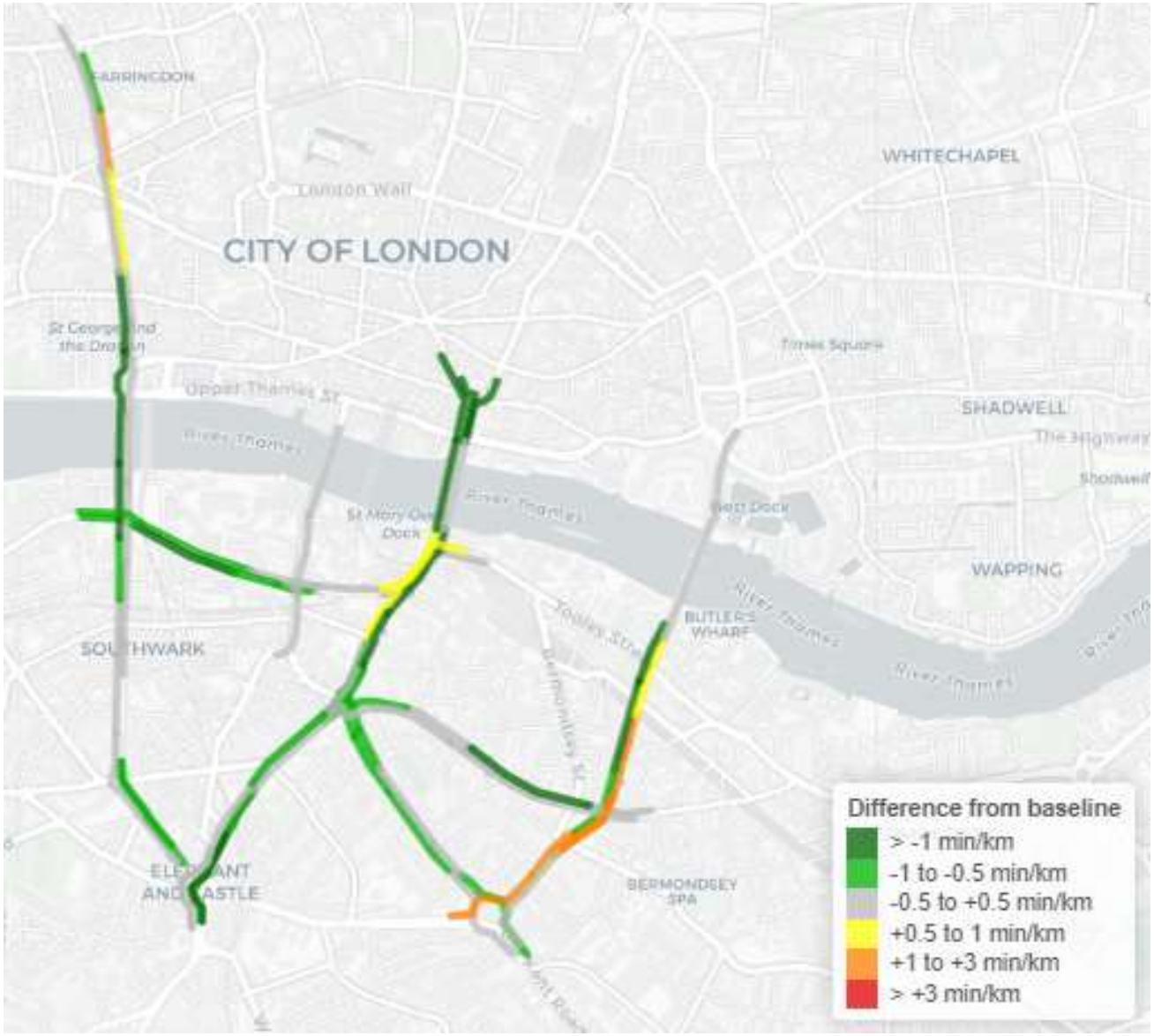


Early Morning





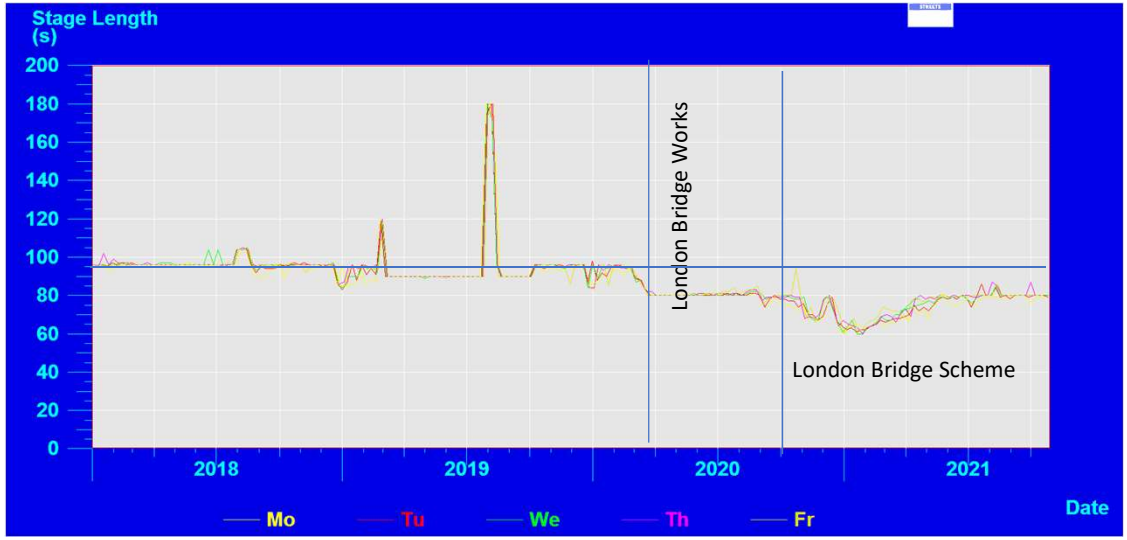
Recent Weekly Snapshot of Bus Performance



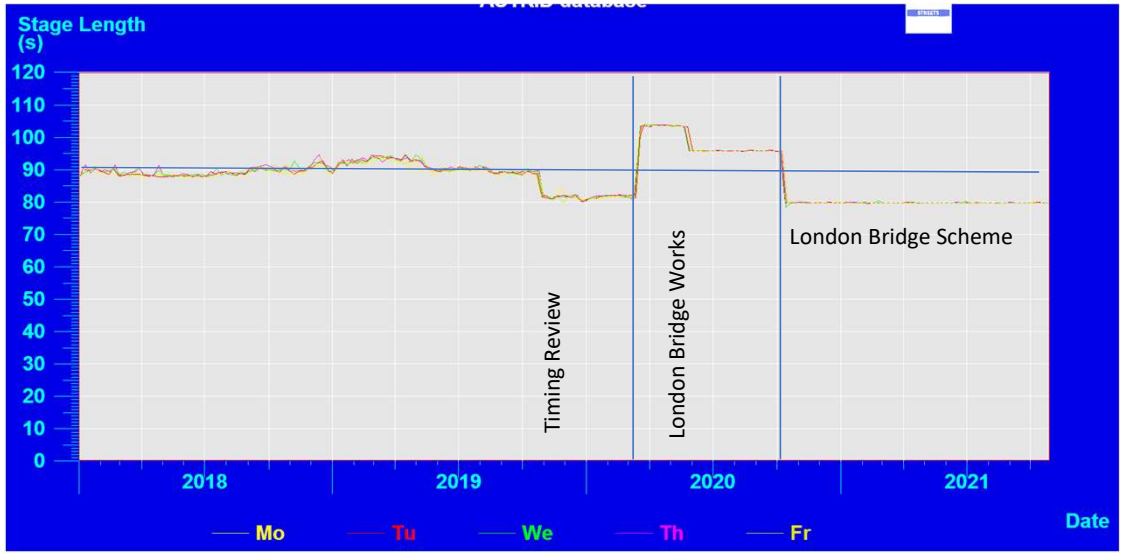
Bus Performance on all corridors is generally within 1 S.D.

	Corridor	Dir	Avg buses p/h	Baseline Lower	Baseline Avg	Baseline Upper	2021-08-06	2021-08-13	2021-08-20	2021-08-27	2021-09-03	2021-09-10	2021-09-17	2021-09-24	2021-10-01	2021-10-08	2021-10-15	2021-10-22
1	Farringdon	NB	27	4.9	5.2	5.5	4.9	4.8	5.3	4.9	4.9	5	5.1	5.5	5.1	5.3	5.1	5.1
2	Farringdon	SB	26	5.1	5.6	6	5.1	5.2	8	5.2	5.4	5.5	5.8	6.3	5.6	6	5.9	5.5
3	Great Dover Street	NB	8	4.2	4.4	4.6	3.9	4.1	3.9	3.8	4.5	4.2	4.1	4.1	3.8	4	4.1	3.9
4	Great Dover Street	SB	8	4.2	4.4	4.5	3.8	3.8	3.7	3.8	3.9	3.9	3.9	3.8	3.8	4.1	3.8	3.8
5	London Bridge - Borough High Street	NB	88	5.5	6.7	8	3.9	3.9	3.9	4	4.1	4	4.1	4	4	4	4.2	4.2
6	London Bridge - Borough High Street	SB	70	6.2	6.8	7.3	5.1	5.3	5.2	5.2	5.2	5.1	5.2	5.1	5.3	5.1	5.3	4.5
7	Long Lane	EB	7	4.5	4.8	5.1	4.2	4.2	4.2	4.2	4.6	4.5	4.6	4.5	4.3	4.3	4.3	4.3
8	Long Lane	WB	7	5.6	6.1	6.6	5.6	5.4	5.3	5.2	5.8	5.8	6	5.9	5.6	5.6	5.7	6.1
9	Newington Causeway	NB	60	4.4	4.5	4.7	4.1	4	4.1	4	4	4.1	4.1	4.1	4.2	4.3	4.1	4.1
10	Newington Causeway	SB	47	4.1	4.2	4.4	4.2	4.1	4.1	4.1	4.3	4.2	4.1	4.2	4.3	4.4	4.2	4.2
11	Southwark Bridge	SB	7	4.4	4.6	4.8	4.1	4.5	4.2	4.3	4.4	4.4	4.6	4.8	5.5	4.6	4.6	4.5
12	Southwark Street	EB	5	6.8	7.2	7.5	6.7	6.9	6.6	6.4	6.9	7	7.2	7.1	7.2	7	6.9	7
13	Southwark Street	WB	5	6.8	7.6	8.5	6.1	6.3	6.6	5.8	6.4	6.2	6.6	6.7	6.4	6.9	6.4	6.6
14	Tower Bridge	NB	28	5.7	7.5	9.3	6.8	5.9	6.9	6.5	8.6	8.4	10.8	7.3	5.6	6.7	6.9	7.5
15	Tower Bridge	SB	29	4.8	5.2	5.6	5	4.8	5	5.3	5.7	5.4	5.5	5.4	4.9	4.9	5.2	5.6

London Bridge and other nearby schemes have reduced flows facilitating the lowering of pedestrian and cycle wait times



Monument junction cycle time has reduced from 96 seconds pre-covid to 72-80 seconds from October 2020 to October 2021

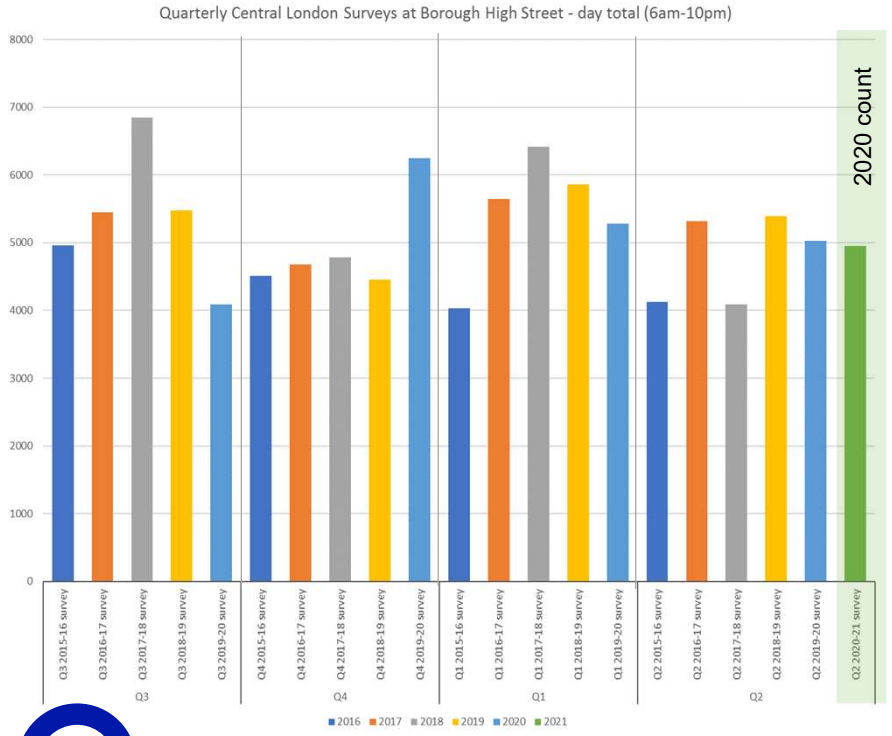


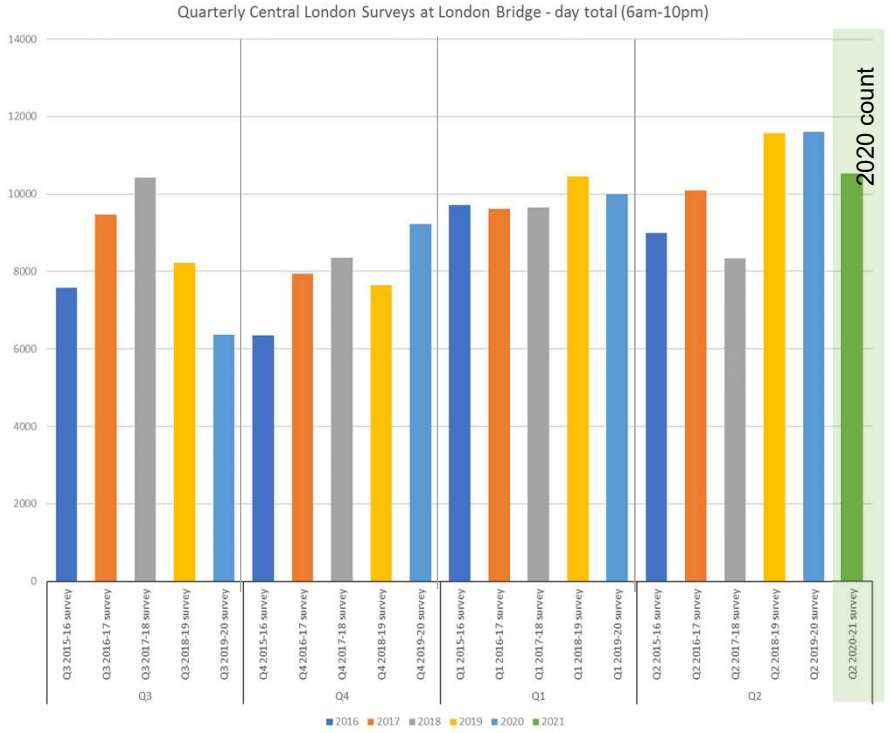
Borough High Street cycle time has been maintained at 80 seconds from October 2020 to October 2021. This matches timing review changes made in Autumn 2019, despite the Borough High Street scheme providing additional road space to pedestrians. Pedestrians are benefitting from additional space and low wait times.

Cycle Flows up to 2020

Quarterly Central London Cycle Surveys conducted between 2016 and 2020 counted **6am-10pm** flows across both directions ranging from **~4,100 to ~6,800 at Borough High Street**, and from **~6,300 to ~11,600 at London Bridge**. However, it should be noted that these surveys are only conducted over a sample of days so can vary significantly.

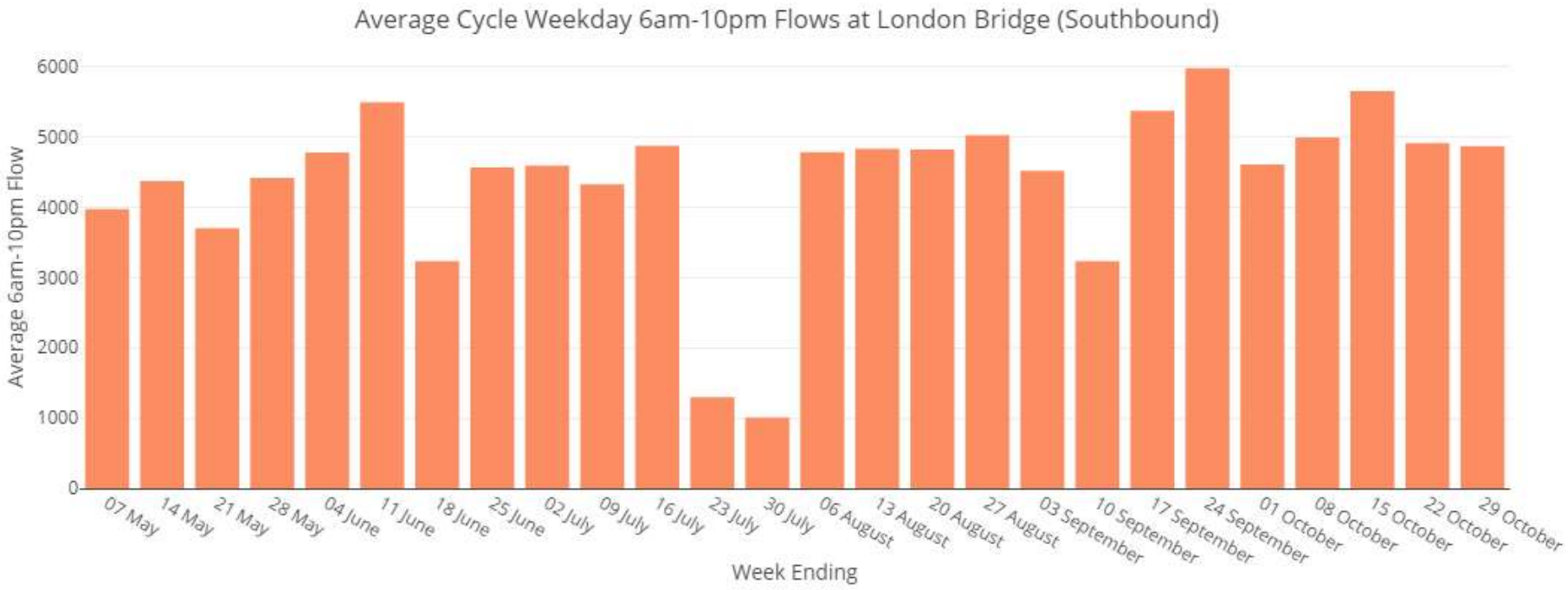
The only **2020 counts** available counted **6am-10pm flows of ~5,000** at Borough High Street in September, and **6am-10pm flows of ~10,500** at London Bridge in August. These were in line with previous Q2 counts which ranged from ~4,100-5,300 and ~8,300-11,600 respectively.





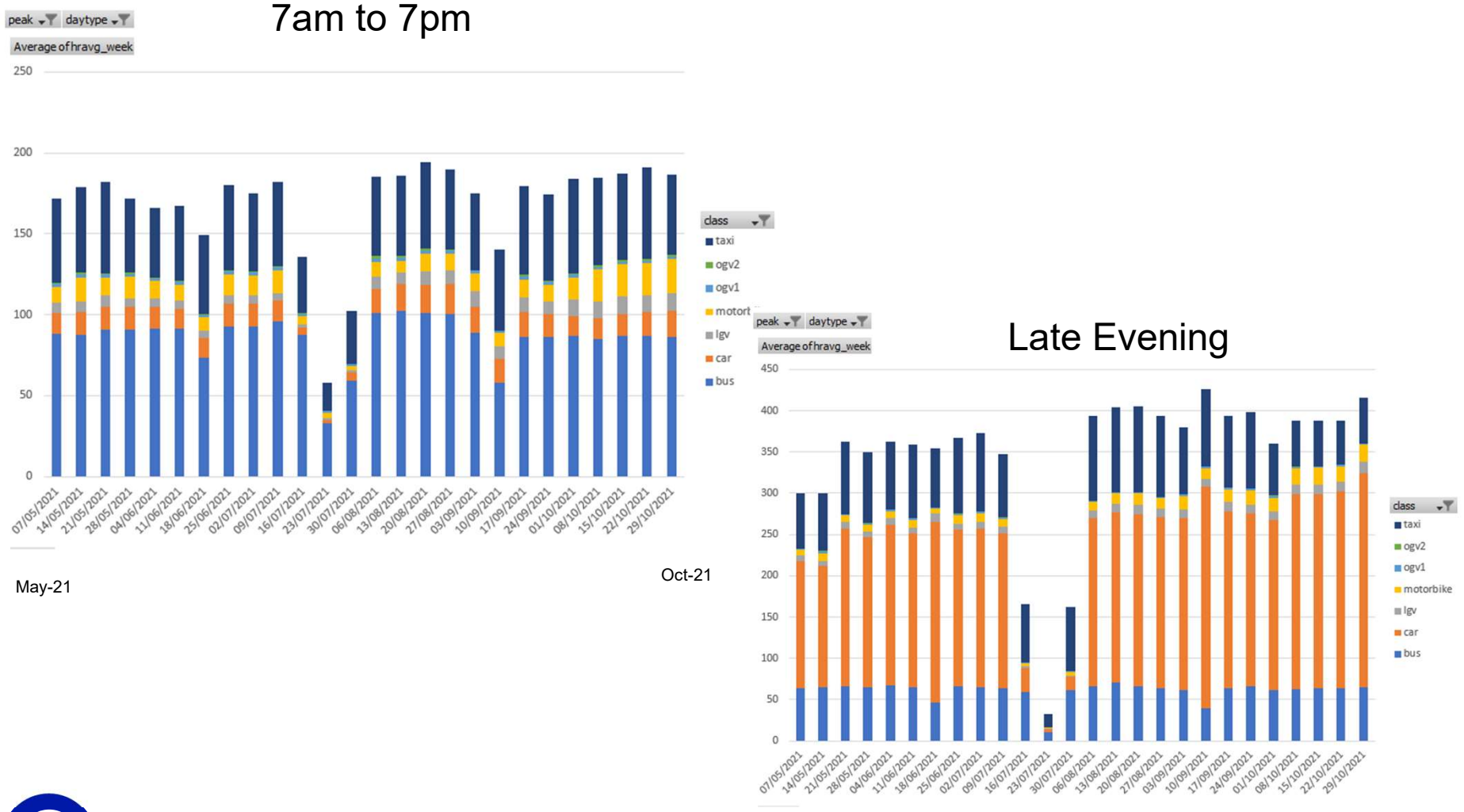
2021 Vivacity Data: Southbound Cyclists / Eastern Footway Only

- Approx. 4800 cyclists travel southbound across London Bridge daily 6am to 10pm Mon-Fri (Aug – Oct 21)
- Approx. 20,000 pedestrians use the eastern footway from 7am to 7pm Mon-Fri (May- Oct 21)



2021 Vivacity Data: Southbound Carriageway Motorised Flow

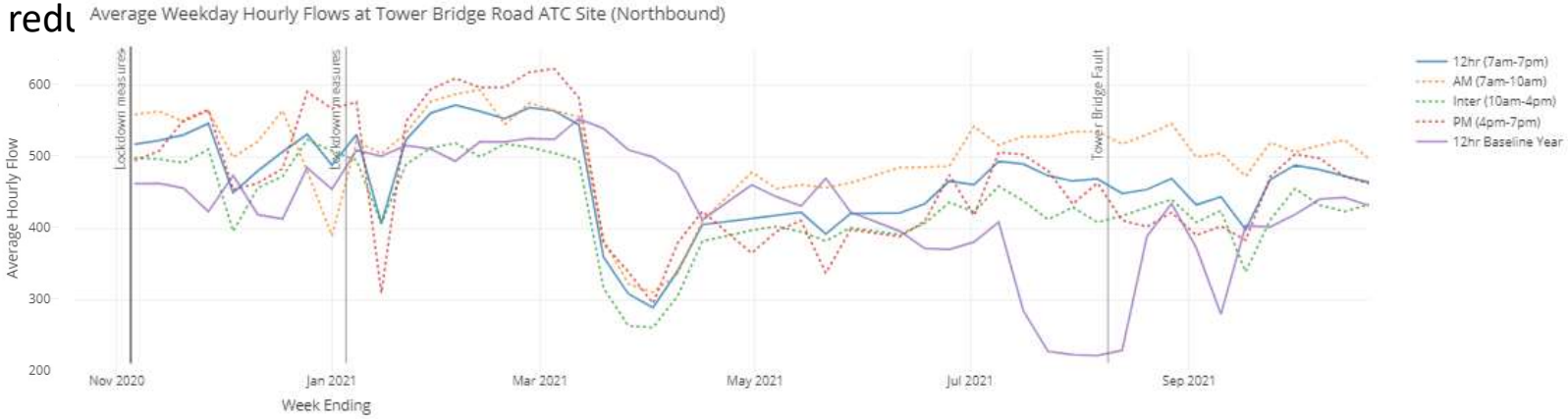
Southbound average hourly flow of motorised vehicles is just under 200 vph from 7am to 7pm Mon-Fri (May- Oct 21)

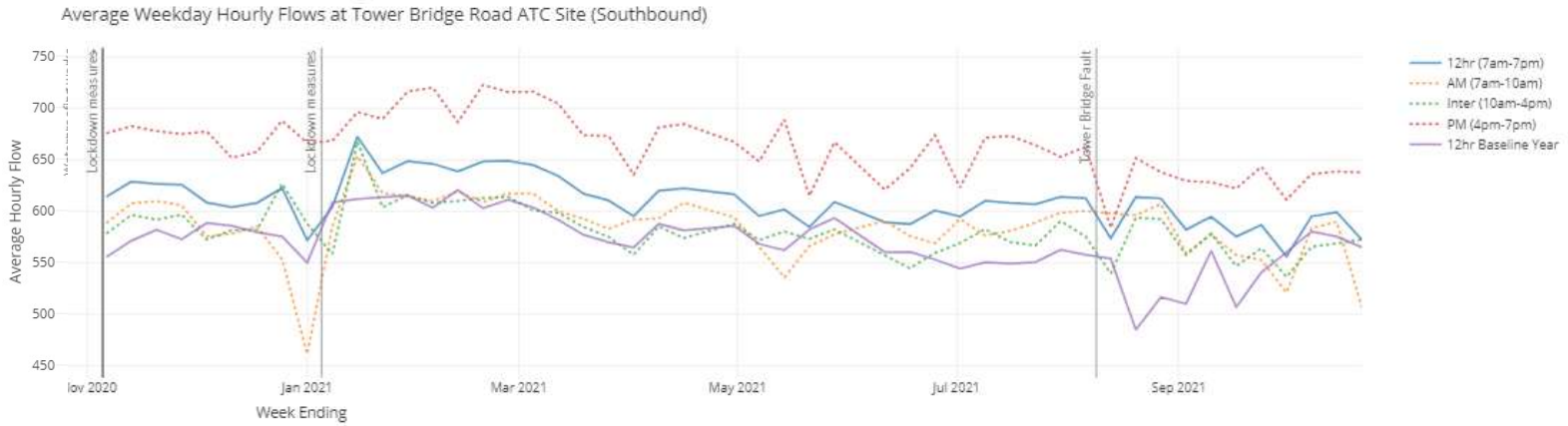


Freight / Traffic Journey Times and Flows

General traffic journey times on Tower Bridge Road have been similar to baseline and remain lower on the Farringdon corridor. This is likely to reflect the longer term suppressed flows within the IRR.

ATC on Tower Bridge Road indicate weekday 7am-7pm hourly flows southbound have increased by c.50 vehicles relative to baseline. Northbound flows are similar to baseline except for a redu



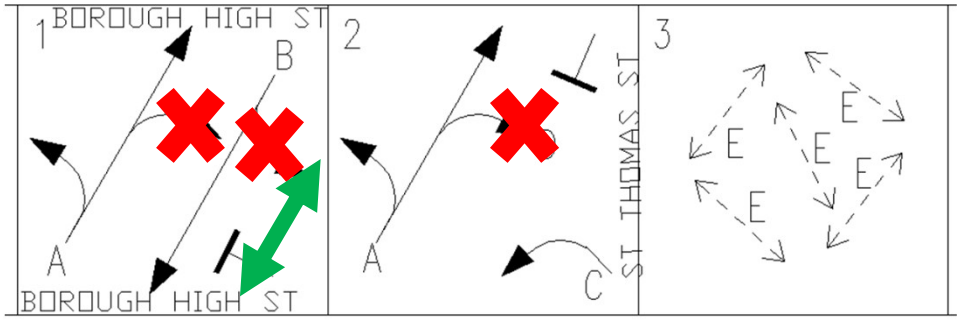


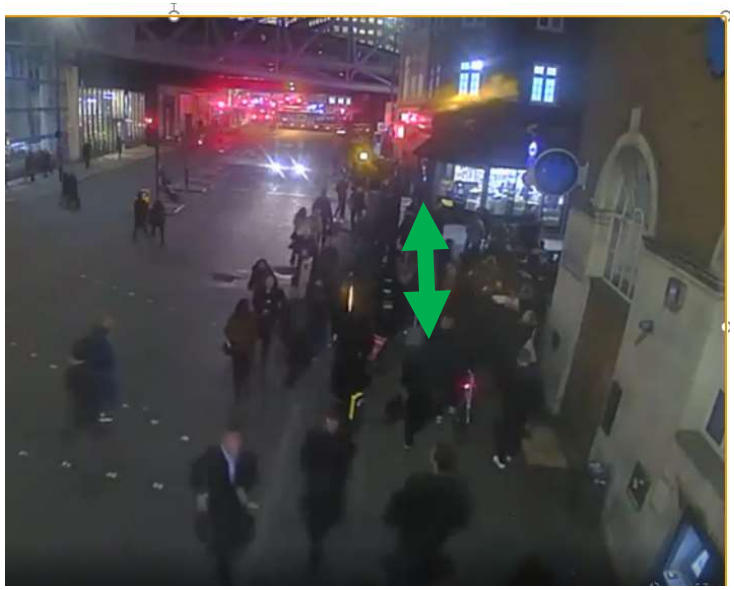
Further general traffic data can be found in the appendix

Further Corridor Opportunities

Under ETRO
Early Release scheme at Borough High Street / London Bridge / Duke Street Hill is ready to go

If committed to banning turning movements into St Thomas Street, there is an opportunity to add an extra c.40 seconds green time per cycle across the St Thomas Street arm. The green man would be shown over 50% of the cycle time





Longer term

- Maximising footway benefits on Borough High Street (including moving signal poles/ highway alignment).
- Study into full cycle segregation on the corridor and HVM arrangements on London Bridge.
- Monument junction redesign

Proposed Experimental scheme on both Borough High Street and London Bridge

Why do we need an experiment?

- Because traffic levels have not been close to pre-Covid levels long enough for us to be confident in making a permanent decision
- Because if London Bridge were to re-open, re-allocated highway space on Borough High Street may need to be given back to traffic – mainly to protect bus performance
- Buses are seeing their best performance, not having to fight for highway space with passing-through traffic.
- Tower Bridge weight limit – concerns from CoL re.impact on Tower Bridge from overweight vehicles that are choosing that over western bridges

Borough High Street and London Bridge – Proposed area to be monitored

Proposed monitoring locations and monitoring dashboard are already established from the previous Temporary Traffic Regulatory Order (TTRO)

- Proposed manual traffic count locations
- Bus route monitoring corridors
- LCAP links
- Existing ATC
- Existing ACC
- Vivacity count-lines

Classified turning counts will be collected at:

- Borough High Street / Duke Street Hill
- Borough High Street / Bedale Street / St Thomas Street
- King William Street / Fish Street Hill

Pedestrian counts will be collected at:

- Borough High Street / Thomas Street
- Borough High Street / London Bridge / Duke Street Hill
- London Bridge / Monument junction

Core success criteria for Borough High Street

Safety – the highway is safer for all road users

Safety data demonstrates a reduction in risk / injuries

People feel safer when travelling in the vicinity

- Collision data – comparison of flows and safety to evaluate a change in risk levels. A successful scheme will show a **reduction in risk**.
- A Safety Review Panel will evaluate and provide an **engineering safety assessment** from raw data periodically throughout the scheme.
- A user perception survey will show if people feel safer cycling through the scheme area than previously. A successful scheme will show that the **users feel safer than previously**.
- Any increase in queueing through pedestrian crossings where safety is impacted will be escalated.

Pedestrian and cycle numbers remain high and pedestrian comfort levels improve

Vivacity sensors, pedestrian and cycling counts or Strava

- Pedestrian comfort - we expect Borough High Street pedestrian flows to remain high. The additional pedestrian space is expected to be well used by pedestrians and improve pedestrian comfort levels.
- Cycle counts - we expect cycle numbers to continue to a level similar to that during the TTRO or to increase (data collected from September 2020 onwards show a rise in demand and there are consistently over 4,500 cyclists (one-way) a day using this route), subject to consideration of seasonality and pandemic factors affecting travel patterns.

Bus operations are not unreasonably impacted by the experiment

iBus data

- iBus data – comparison of bus journey times across the scheme area to the pre-pandemic average. A successful scheme will show **journey times are within one Standard Deviation of the pre-pandemic average on Borough High Street and the surrounding network**

Supporting success criteria for Borough High Street

Road network operations are not unreasonably impacted

ANPR and traffic count data

SCOOT flow and congestion data

NMCC incident reports

- Traffic disruption data – There should not be an unreasonable impact to traffic performance in the scheme area including consideration of displacement traffic to other routes
- Pedestrian wait times do not increase compared to pre-pandemic levels.

Cycling levels are good and the experience for cyclists and pedestrians is improved

Public perception survey data

• Pedestrian experience – Feedback from the public should indicate an improvement in pedestrian experience compared to before the scheme.
• Cycle experience – Feedback from users of the cycle route should indicate an improvement compared to before the scheme.

Bus operations are not unreasonably impacted by the experiment

iBus data

Bus operations feedback

- iBus data – a drop in operated versus scheduled trips would indicate a reduction in performance for buses.
- Feedback from operators will be useful to demonstrate the scheme is at least neutral in terms of impact to bus services.

Businesses and residents are broadly positive about the experiment

Public and business perception survey data

Customer / stakeholder correspondence

• Public perception survey - A successful scheme will have **support from local residents, workers and businesses.**
•Feedback from particular user groups will help indicate the scheme is having a beneficial effect on more vulnerable users.
• Local businesses feedback will enable impact on local services and freight to be understood.

Monitoring will also pay particular attention to the Borough High Street scheme changes at the following specific locations:

No access to St Thomas Street from Borough High Street

- TfL engagement online survey.
- Direct engagement with user groups

- Consistent with our duties under the Equality Act we will monitor feedback from the public and disability user groups as part of our ongoing engagement, as to any impact of removing this space.

Cyclists re-routing due to restrictions on St Thomas Street

- TfL engagement online survey.
- Traffic counts at junctions

- Cyclists are expected to use Q14 to approach London Bridge from the south-west or use Duke Street Hill to approach from the northern side.
- We will undertake classified turning counts at the junction of Borough High Street / St Thomas Street to check compliance.
- We will monitor feedback from cyclists and cycle groups.

Re-routing due to restrictions on St Thomas Street

- SCOOT flow and congestion data
- NMCC incident reports
- Traffic counts at junctions

- Drivers wanting to access St Thomas Street are now expected to instead arrive from the east via Druid Street. We will monitor counts of vehicles doing these movements and any network impacts, and feedback from local residents.
- We will monitor and review Green Person Authority sites located on St Thomas Street.

St Thomas Street loading and taxi ranks

- Loading and taxi rank surveys

- We will check that modified loading and taxi rank areas are being used appropriately

Borough High Street and London Bridge – Proposed area to be monitored

Proposed monitoring locations and monitoring dashboard are already established from the previous Temporary Traffic Regulatory Order (TTRO)

- Proposed manual traffic count locations
- Bus route monitoring corridors
- LCAP links
- Existing ATC
- Existing ACC
- Vivacity count-lines

Classified turning counts will be collected at:

- Borough High Street / Duke Street Hill
- Borough High Street / Bedale Street / St Thomas Street
- King William Street / Fish Street Hill

Pedestrian counts will be collected at:

- Borough High Street / Thomas Street
- Borough High Street / London Bridge / Duke Street Hill
- London Bridge / Monument junction

Core success criteria for London Bridge

Safety – the highway is safer for all road users

Safety data demonstrates a reduction in risk / injuries

People feel safer when travelling in the vicinity

- Collision data – comparison of flows and safety to evaluate a change in risk levels. A successful scheme will show a **reduction in risk**.
- A Safety Review Panel will evaluate and provide an **engineering safety assessment** from raw data periodically throughout the scheme.
- A user perception survey will show if people feel safer cycling through the scheme area than previously. A successful scheme will show that the **users feel safer than previously**.
- Any increase in queueing through pedestrian crossings where safety is impacted will be escalated.

Cycling levels are good and the experience for cyclists and pedestrians is improved

Cycling counts from ACCs, vivacity sensors or Strava

- Cycle counts - We expect cycle numbers to continue to a level similar to that during the TTRO or to increase (data collected from October 2020 onwards show there are consistently over 4,500 cyclists a day (one way) using this route, subject to consideration of seasonality and pandemic factors affecting travel patterns.

Bus operations are not unreasonably impacted by the experiment

iBus data

- iBus data – comparison of bus journey times across the scheme area to the pre-pandemic average. A successful scheme will show journey times consistently lower than one Standard Deviation from the baseline on London Bridge and for the surrounding network journey times are within one Standard Deviation of the pre-pandemic average

Supporting success criteria for London Bridge

Road network operations are not unreasonably impacted

ANPR and traffic count data

SCOOT flow and congestion data

NMCC incident reports

- Traffic disruption data – There should not be an unreasonable impact to traffic performance in the scheme area including consideration of displacement traffic to other routes
- Pedestrian wait times do not increase compared to pre-pandemic levels.
- **We expect the London Bridge restrictions to continue to support network operations for the Bishopsgate ETRO and Borough High Street ETRO.**

Cycling levels are good and the experience for cyclists and pedestrians is improved

Public perception survey data, UTC cycle time data

- Pedestrian experience – Feedback from the public should indicate an improvement in pedestrian experience compared to before the scheme.
- Cycle experience – Feedback from users of the cycle route should indicate an improvement compared to before the scheme.
- **We expect to continue to provide improved pedestrian and cyclists wait times at Monument junction and on Borough High Street.**
- **We expect the London Bridge restrictions to continue to support the scheme objectives of the Bishopsgate ETRO and Borough High Street ETRO.**

Bus operations are not unreasonably impacted by the experiment

iBus data

Bus operations feedback

- iBus data – a drop in operated versus scheduled trips would indicate a reduction in performance for buses.
- Feedback from operators will be useful to demonstrate the scheme is at least neutral in terms of impact to bus services.

Businesses and residents are broadly positive about the experiment

Public and business perception survey data

Customer / stakeholder correspondence

- Public perception survey - A successful scheme will have **support from local residents, workers and businesses.**
- Feedback from user groups will help indicate the scheme is having a beneficial effect on more vulnerable users.
- Local businesses feedback will enable impact on local services and freight to be understood.

Monitoring will also pay particular attention to the London Bridge scheme changes at the following specific locations:

No access over London Bridge for general traffic

TfL engagement online survey.

Direct engagement with user groups

- Consistent with our duties under the Equality Act we will monitor feedback from the public and disability user groups as part of our ongoing engagement, as to any impact of removing this space.

Freight movements over 18 tonnes

Tower Bridge PCN data shared with TfL via Southwark

- An increased risk of overweight vehicles using Tower Bridge has been raised by stakeholders – we will review the number of PCN issued by Southwark. Consideration of other schemes, works and alterations to road user charging will be required.

Local re-routing due to access restrictions on London Bridge

Traffic counts at junctions

- Drivers may use the local road network to avoid closure points
- Turning counts will be undertake at the following locations:
  - Borough High Street / Duke Street Hill
  - Borough High Street / Bedale Street / St Thomas Street
  - King William Street / Fish Street Hill

Wider reassignment due to restrictions on London Bridge

SCOOT flow and congestion data

NMCC incident reports

- Drivers are likely to re-route via Tower Bridge, Southwark Bridge or Blackfriars Bridge. We will monitor counts of vehicles doing these movements and any network impacts, and feedback from local residents.
- We will monitor performance in locations showing flow increases in ONE model including Long Lane, Great Suffolk Street and Borough Road.