TRANSPORT STRATEGY SERVICE

SIMI SHAH

PROOF OF EVIDENCE

FOR PUBLIC INQUIRY COMMENCING ON 10th OCTOBER 2017

SITE

The scheme is located on the Torrington Place / Tavistock Place Corridor, between the junctions with Tottenham Court Road and Judd Street

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SUBJECT OF PUBLIC INQUIRY

The Camden (Torrington Place to Tavistock Place) (Prescribed Routes, Waiting and Loading Restrictions and Loading Places) Traffic Order [2017]
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PLANNING INSPECTORATE REFERENCE:

DPI/X5210/17/8

CAMDEN REFERENCE:

SC/2017/04

INTRODUCTION

Introduction

i. I, Simi Shah, have prepared this proof of evidence for presentation at the Public Inquiry into the Tavistock Place/Torrington Place Trial traffic scheme ('the Trial'). I hold a BEng degree in Civil Engineering (1992). I am the Design Team Manager at the London Borough of Camden where I have worked since 2001, and in total I have 25 years of experience of working in local government on transportation and traffic projects.

ii. My proof concentrates on the engineering design and traffic aspects of the scheme, and the justification for choosing the current trial layout over other proposals.

iii. This statement is true to the best of my knowledge and belief. I can confirm that the views expressed are my true and professional opinion.

STRUCTURE OF THIS PROOF

i. My evidence will be divided into eight sections:

Section 1 (**Background**) provides background information on the Corridor prior to the Trial being introduced.

Section 2 (**Pre-Trial Layout and Conditions**) discusses the layout of the Corridor pre implementation of the Trial and conditions (e.g. pedestrian volumes) It considers the design standards and recommended widths for footways, cycle lanes and traffic lanes.

Section 3 (**Options Considered Prior to the Trial**) This section sets out the options considered to deliver the required change to the pre-Trial layout to meet the project objectives. It also sets out in detail the Trial layout.

Section 4 (**Effects of the Trial**), discusses the effects on pedestrians, cyclists and motor vehicles that the Trial has had.

Section 5 (**Trial Adjustments**), sets out the adjustments to the street layout that have been made during the Trial.

ii. Proofs of evidence provided by Tony Dichev, TfL on Traffic modelling procedures and methodologies agreed by Transport for London (TfL) and from David Carter, Systra Consultants deal with how the methodology was adopted to assess the Trial layout now that it is in place including assessment of alternative schemes suggested by others through representations.

1.0 Background

1.1 As described in the "Scheme Rationale" section of Louise McBride's Proof of Evidence, the Trial was introduced to address a number of issues such as to make cycling along the Corridor safer and improve the environment for pedestrians. The bi-directional cycle track in place prior to implementation of the Trial, on the north side of the Corridor, was overcrowded, leading to collisions, near misses and a poor level of service for cyclists. The street layout also led to conflicts between cyclists and pedestrians, and between cyclists and motor vehicles. This was in part due to the counter intuitive nature of the two-way track. Drivers and pedestrians were unfamiliar with such arrangements and did not anticipate cyclists approaching in two directions on one side of the road. In my experience, having two single cycle lanes, one on each side of the road, is more effective than a bi-directional cycle lane on one side of the road in such a setting. Camden has in the past, introduced a small number of bi-directional cycle lanes, however recently one was converted to single lanes on each side of the street segregated from traffic to address safety concerns. Some of TfL's Cycle Superhighways include bi-directional tracks, however these are in most cases on major routes where the cycle flows are higher, and offer wider segregation between traffic and cyclists.

1.2 The Pre-Trial layout did not provide a safe and attractive environment for pedestrians. The narrow footway, together with the bi-directional cycle track, resulted in an uncomfortable pedestrian environment and one where confusion was created when crossing the road. The presence of a bi-directional cycle track on one side of a road in addition to a two-way road for motor traffic created an environment with a poor safety record for pedestrians.

1.3 As part of the feasibility study into options for re-designing the Corridor, various types of data were collected and analysed, including road and footway widths, casualty statistics and volumes of pedestrians, cyclists and motor traffic.

Pre-Trial layout

1.4 For the purposes of description in this proof of evidence, the Corridor from Judd Street to Tottenham Court Road has been divided into Sections as follows:-

Section 1 - Tavistock Place between Judd Street and Marchmont Street junctions

Section 2 - Tavistock Place between Marchmont Street and Woburn Place junctions

Section 3 – Tavistock Square between Woburn Place and Bedford Way junctions

Section 4 – Gordon Square between Bedford Way and Gordon Square western arm (turns into Gordon Street)

Section 5 – Byng Place/Torrington Place between 43m east of Malet Street and Gower Street junction.

Section 6 – Torrington Place between Gower Street and Tottenham Court Road (Appendix 1 provides a plan of the Corridor with the Sections labelled for ease of reference)

1.5 The shared space on Byng Place located between Section 4 and 5 has not been included in any of the sections above as no changes were made to this part and the existing ban on waiting and loading remained in place.

1.6 In summary, the Corridor prior to the Trial being introduced was laid out approximately as follows:-

(a) 2.3m wide two-way bi-directional cycle lane on the north side of the street;
(b) 3.3m wide vehicular traffic lane eastbound; and
(c) 3.3m wide vehicular traffic lane westbound.

1.7 The Photographs below (Figure 1 and Figure 2) illustrate how the Corridor looked before the Trial was introduced.

Figure 1 – Photograph 1 of pre-Trial layout

Figure 2 – Photograph 2 of pre-Trial layout

2.0 PRE-TRIAL LAYOUT AND CONDITIONS

2.1 Detail on how each section of the Corridor was divided between different uses of the street prior to the Trial being introduced is provided below. This is divided into sections as the width varies along the Corridor. This helps demonstrate the varying widths which were available to different users and how the guidance and recommendations on minimum recommended widths would impact on the users' safety and comfort.

Section 1 (by Kenton St):

Southern Footway	Two-way road	Kerb Segregation	Bi-directional cycle track	Northern Footway	Total width from building to building
1.76m	6.13m	0.54	2.44m	2.43m	13.3m

Section 2 (27m west of Marchmont St):

Southern Footway	Two-way road	Kerb Segregation	Bi-directional cycle track	Northern Footway	Total width from building to building
2.12m	5.84m	0.54m	2.18m	2.02m	12.70m

Section 2 (51m east of Woburn Place):

Southern Footway	Two-way road	Kerb Segregation	Bi-directional cycle track	Northern Footway	Total width from building to building
2.51m	5.82m	0.54	2.17m	2.89m	13.93m

Section 3 (25m east of Bedford Way):

Southern Footway	Two-way road	Kerb Segregation	Bi-directional cycle track	Northern Footway	Total width from building to building
3.19m	7.95m	0.68m	1.96m	1.74m	15.52m

Section 4 (at zebra crossing by Woburn Square):

Southern Footway	Two-way road	Kerb Segregation	Bi-directional cycle track	Northern Footway	Total width from building to building
3.34m	7.86m	1.5m	2.41m	3.19m	18.3m

Section 5 (east of Gower Street):

Southern Footway	Two-way road	Kerb Segregation	Bi-directional cycle track	Northern Footway	Total width from building to building
7.48m	6.42m	0.3	1.97m	3.43m	19.6m

Section 6 (32m east of Tottenham Court Road):

Southern Footway	One-way road	Kerb Segregation	Bi-directional cycle track	Northern Footway	Total width from building to building
4.18m	3.37m	0.84m	2.64m	4.28m	16.97m

2.2 Cycling is a highly space efficient means of moving people through urban areas.The space occupied by one average car can accommodate five average cycles using 0.2 of a Passenger Car Unit (PCU), so while the additional cycle lane on the Corridor reduces the space available for motor traffic, it allows for more people to pass through the area at any one time than would be possible by motor cars at 1.3 occupancy (average car occupancy in the morning peak.

Pedestrian Flows Along the Corridor

2.3 Pedestrian counts were undertaken along the Corridor on the 24th March 2015. This showed that pedestrian flows were generally higher at the western end of the Corridor and slightly busier during the lunchtime peak hour. Pedestrian flows were still high within the morning and evening peak hours. The busiest hour saw over 2,500 pedestrians walking along the Corridor.

Cycle usage on the Corridor

2.4 Cycle count surveys were undertaken on Tuesday 24th March 2015 to assess the number of cyclists travelling along the Corridor.

Location	Direction of travel	Morning Peak Hour	Evening Peak Hour
Tavistock Place	Eastbound	242	609
Tavistock Place	Westbound	767	271
Byng Place	Eastbound	183	546
Byng Place	Westbound	819	321

2.5 The table above shows that cycling movement along the Corridor is tidal, i.e. higher flows in the morning westbound and higher flows in the evening eastbound. It should be noted that there are also substantial numbers of cyclists in the opposite direction, which made the bi-directional track congested especially during peak hours.

Traffic Flows along the Corridor

2.6 Traffic surveys undertaken on Tuesday 12th May 2015 indicate that during the survey period, the volume of motor traffic (does not include motor cycles or bicycles) along the Corridor was as follows:

Road Name	Direction of travel	Morning Peak Hour	Evening Peak Hour	Daily (24hours)
Torrington Place (west of Huntley Street)	Westbound	349	322	5441
Byng Place (west of Torrington Square)	Eastbound	323	271	2323
Byng Place (west of Torrington Square)	Westbound	129	159	4862

Gordon Square (S) (west of Bedford Way)	Eastbound	232	224	3536
Gordon Square (S) (west of Bedford Way)	Westbound	541	469	7945
Tavistock Place (west of Herbrand Street)	Eastbound	206	262	3884
Tavistock Place (west of Herbrand Street)	Westbound	290	187	3748
Tavistock Place (east of Marchmont Street)	Eastbound	127	207	3163
Tavistock Place (east of Marchmont Street)	Westbound	245	155	3238

Note: Volume is number of vehicles

2.7 Traffic surveys carried out pre-Trial showed that generally westbound traffic volumes were higher than eastbound during the AM peak period.

Pre-Trial Layout Assessment

2.8 In order to address safety, comfort for cycling and walking, and to meet the objectives outlined in Louise McBride's proof, a number of options were considered before the Trial layout was confirmed. As a starting point, the level of service provided by the Pre-Trial layout was considered as well as minimum standards recommended for adoption for the safe passage of all road users. These are detailed below.

Footway widths

2.9 The potential for improving facilities for pedestrians in a way that allows for future growth in footfall, which is expected due to population increase, new development in the area and the opening of the Elizabeth Line, is an important consideration. Increased footway widths can encourage greater use of walking as a means of transport. They make pedestrians feel safer and more

comfortable, and can prevent pedestrians overspilling into the cycle lanes or carriageway. Reducing widths has the opposite effect. The Department for Transport's (DfT) Adjacent and Shared Use Facilities for Pedestrians and Cyclists (2004) (see CD1/16) guidance states the recommended minimum width for urban footways on local roads should be 2m. However this needs to be unobstructed width. To ensure footway widths are inclusive for all users we must also consider the implications for people with mobility and visual impairments, as well as pram users. DfT's Inclusive Mobility (2005) indicates that a 2m clear width (generally space between street furniture and back of footway) allows two wheelchair users to pass one another and 'should be regarded as the minimum under normal circumstances'. TfL's Pedestrian Comfort Level (2010) (see CD2/8) guidance takes account of DfT's guidance, considers obstructions such as street furniture e.g. street lighting, and recommends a minimum width of 2.9m. This is reflected in Camden's Streetscape Design Manual which recommends a 3m footway width. It is recognised that in a constrained area such as central and inner London, it is not always possible to achieve this width, however it would need serious consideration alongside the needs of other modes.

2.10 In general Sections 1, 2, and 3 of the pre-Trial layout do not meet the DfT's recommended minimum width. A particular concern are sections 1 and 3 where the widths at around 1.76m and 1.74m respectively, fall far short of what is required to provide a safe and comfortable passage of pedestrians including those using wheelchairs. Although Section 2 has widths over 2m, these are total widths and therefore the clear unobstructed, usable width once the width of the kerb and street furniture, such as lamp columns and sign posts are accounted for, leave the minimum well under what is considered necessary. Street furniture is generally set back by 450mm from the kerb edge to avoid being struck by overhanging vehicles.

Cycle lane widths

2.11 Increasing the widths of cycle lanes is also a key objective of the scheme. The Corridor is a popular cycling route which, with the previous bi-directional cycle lane layout, was operating over capacity and becoming hazardous due to overcrowding. TfL's London Cycling Design Standards (LCDS), Cycle Lanes and Tracks (2015) (see CD2/12) indicates minimum cycle lane widths based on the volume of usage, ranging from very low cycle flows to medium to very high. The cycle counts undertaken before the Trial exhibited what is categorised as 'medium flow', for a bi-directional track. "Medium flow" is when a two-way track has a flow of between 300-1000 cyclists during a peak hour and between 2000-8000 over a 24 hour period. At the sites surveyed along the corridor during the cycle counts undertaken in March 2015 prior to the implementation of the Trial show that, 183-819 cyclists travelled through the Corridor during the morning peak hour and between 546-321 cyclists in the evening peak hour. The 12 hour total on the date surveyed reached 4637 cyclists. To accommodate this volume, a bi-directional track should be a minimum width of 3m, whilst a cycle lane in a single direction should be a minimum of 2.2m wide. To future-proof the scheme against aspirations for growth in cycling encouraged by Government, TfL and the Council, and to make it attractive to users, a width of 2.5m+ is desirable for a single direction track and for a bi-directional track, 4m+ is desirable.

2.12 Cycle counts on the Corridor (taken just east of Woburn Place on Tavistock Place) suggest that in the busiest period of the day (between 08:15 and 09:15am), eastbound cyclist volumes were 31% (242) of the westbound cyclist volumes (767). Therefore, the opposing flows are still substantial, and without clear separation between eastbound and westbound cyclists there was a risk of head-on collisions between cyclists, which was raised as a concern. The width of the bi-directional track would not meet current LCDS standard and would not help encourage more people to take up cycling. Therefore options were considered which would allow for the cycle lanes to be wider in order to meet LCDS guidance and also provide a better level of service to cyclists.

2.13 Further considerations were made in relation to Transport for London's (TfL) Cycling Level of Service (CLoS) assessment tool, in which a layout is awarded a score set against a common standard defined within the CLoS tool in order to reflect how likely a route is to positively impact on the propensity to cycle. Prior to the implementation of the trial layout, the Corridor had a poor CLoS score, and scored particularly badly in the 'safety' and 'rider comfort' areas of the assessment. The assessment of the pre-Trial and Trial layouts can be found in Scheme effects in Section 4 of this proof.

Traffic lane widths

2.14 DfT's document Design Manual for Road and Bridges, Highway Link Design (2002) indicates that 3.65m is the standard general traffic lane width in the UK. However, often this width is not achievable and indeed not necessary when volumes of large vehicles are low, particularly in central London. Taking into account the urban nature of the borough, best practice generally adopted in Camden is to use traffic lane widths of 3.25m wherever possible. This width allows sufficient space for large heavy goods vehicles (HGV's) which can often occupy 3m (including wing mirrors) and allows for a comfortable passage for two large vehicles approaching from opposite direction. In some circumstances, where the geometry of the public highway does not allow for such widths, and there is a need to accommodate other modes, an absolute minimum lane width of 3m can be accepted. LCDS, Cycle Lanes and Tracks (2015) indicates that 'If the proportion of HGV and public service vehicle traffic is less than 10 per cent then, subject to the carriageway geometry and speed and volume of traffic, motor traffic lane widths may generally be reduced to between 2.5 and 2.9 metres. Lanes adjacent to cycle lanes or bus lanes, however, should be a minimum of 3.0 metres wide'.

2.15 The London Fire Brigade has produced a Fire Safety Guidance Note which covers the access arrangements required for the Fire Service to get close to a

building to fight fire. Under Section 3: general, it states the minimum road width required to be 3.1m for safe passage, wider if there is a bend. The Fire vehicle itself is 2.55m, however with mirrors it is over 3m. Discussions with the Fire Service have led officers to understand that although the mirrors can fold, where they are navigating through a narrower road they keep their mirrors out in order to keep any potential cyclists in their vision as cyclists are at a height where they would be struck by the mirrors. The Fire Service has stated in discussions with officers that a lane narrower than 3.1m could potentially make it very difficult for them to pass through a road safely. This is shown in Appendix 2.

2.16 In general the pre-trial layout had lane widths of 3m or above, however in order to provide wider footways and cycle lanes, the space had to come from the remaining road width. A number of options were considered to seek a way to achieve a better level of service for pedestrians and cyclists whilst considering wider objectives outlined in Louise McBride's proof.

3.0 OPTIONS CONSIDERED PRIOR TO THE TRIAL

3.1 In an ideal scenario two-way working would be provided for all modes along the Corridor with sufficient space for each to operate safely and comfortably. But as is often the case, existing buildings on either side of the Corridor dictate the overall usable width which must be optimised to balance the needs of road users.

3.2 A number of options were considered before arriving at the trial layout, taking into account physical constraints as well as the objectives set out in Louise McBride's proof. Retaining the bi-directional track would not address the conflicts between pedestrians, cyclists and motor vehicles. The bi-directional track was confusing and may well have contributed to the collisions between pedestrians and cyclists. However, if we accepted the bi-directional layout was the best option, in order to meet the minimum requirement of 3m for a bi-directional cycle track, and moreover if we were to provide 4m in order to allow

for increasing numbers of cyclists, that space would have to come from the road space. There is not sufficient road width to accommodate that without either removing one traffic lane or reducing the footway width, the latter in some sections is already below the minimum widths required as described above.

Section 1 (by Kenton St) (as pre-Trial Layout):

Southern Footway	Two-way road	Kerb Segregation	Bi-directional cycle track	Northern Footway	Total width from building to building
1.76m	6.13m	0.54	2.44m	2.43m	13.3m

3.3 Taking Section 1 as an example, in order to provide a 4m bi-directional cycle track, you would need to have increased the track by 1.56m.

3.4 The kerb segregation can be removed and its width utilised for the cycle lane. However a further 1.02m would still need to be found. The road at that point is 6.13m, and taking 3m minimum per motor traffic lane, there is hardly any scope to narrow this. The footway on the south side is already substandard, and neither footway can be narrowed as it is below the recommended minimum of 3m.

3.5 The only Section where this is possible without narrowing footways is Section 4 of the Corridor where the traffic lanes are wider and there is a substantial width of kerb segregation which can be utilised.

Decision

3.6 This option was not progressed as it would not improve the provision for cycling throughout the Corridor as some sections are narrower and reducing traffic lane widths would not help meet minimum standards. This option would also preclude footway widening in places where the footway width is substandard.

3.7 In order to achieve a minimum footway width of 3m, it is not possible to narrow the footway along Sections 1, 2, and 3 as the existing widths for both sides of the footway except the southern side in Section 3 already falls short of 3m.

Ideally the footways need to be widened to achieve minimum widths which would help provide a more comfortable environment for pedestrians.

3.8 Taking 3m as a minimum width for a motor traffic lane (although Fire Service guidance states 3.1m) without reducing footway widths along any sections in order to retain those sections that provide a good level of service to pedestrians, then the only sections it is possible to retain two-way motor traffic are Sections 3 and 4. However for Section 3, the existing footway is below recommended minimum therefore if space were available, then officers consider this should be utilised to widen the footway therefore improving safety and comfort for pedestrians.

3.9 **Removing the bi-directional track and implement separate eastbound and westbound cycle lanes with minimum widths of two metres while retaining eastbound and westbound motor traffic lanes.**

The 4m discussed for the bi-direction track could essentially be split into two 2m cycle lanes (although consideration would need to be given to increasing these to 2.2m to meet minimum recommended widths). Therefore the restrictions mentioned above would still apply. As discussed above the only section this is possible are Sections 3 and 4. However Section 3 has a substandard footway, where widening this would be considered necessary by officers in order to improve safety and comfort for pedestrians

<u>Decision</u>

3.10 Sections 1, 2 & 5 could not make such provision without reducing the existing footway, and for these reasons the above option was discounted. This would still be the case even if the road lane widths were reduced to 3m, which we would consider the absolute minimum.

3.11 **Remove east and westbound traffic – timed closure e.g. 7am – 7pm.**

- Eastbound cyclists would use the full width of the existing segregation plus the eastbound traffic lane.

- Westbound cyclists would use the existing westbound traffic lane.
- Where the footway is particularly narrow e.g. by Tavistock Square the footway is less than 1.5m wide of unobstructed width (full width 1.74m), the existing segregation could be closed for cycles and opened for pedestrians.

A timed closure would result in wider negative impacts to the surrounding network, including borough roads. Without any modelling being carried out, one could predict that removal of both the eastbound and westbound links through the Corridor during the busy periods, could render traffic to a standstill in roads in the vicinity and worsen both noise and air pollution.

Decision

3.12 For the above reasons this option was discounted.

3.13 **Removing motor traffic from the Corridor at all times so that no cycle infrastructure (or minimal) is required.**

A full closure in both directions for motor traffic would result in wider negative impacts to the surrounding network, including borough roads. Without any modelling being carried out, one could predict that removal of both the eastbound and westbound links through the Corridor during the busy periods could render traffic to a standstill in roads in the vicinity and worsen noise and air pollution.

Decision

3.14 For the above reasons this option was discounted.

3.15 **Removing all motorised traffic along the Corridor with access to residents and servicing only.**

Removal of motor traffic from the Corridor would result in unacceptable levels of traffic diverted to the surrounding network including local roads. In addition allowing access only to residents and servicing would be difficult to administer and enforce and there is then the issue of how access would include for those

visiting the area; this is also something that has been requested for other parts of the borough and is something that is not normally being considered further by Camden.

Decision

3.16 For the above reasons this option was discounted

3.17 **Widening the bi-directional cycle track while removing westbound or eastbound traffic from Judd Street to Gower Street at all times.**

3.18 As explained previously the bi-directional cycle track in this location posed a problem to pedestrians as it's a busy street with shops along some sections. Retaining the bi-directional track would not address the conflicts between pedestrians, cyclists and motor vehicles. However following LCDS guidance for a minimum flow cycle lane being permitted with a 3m wide bi-directional track, Camden officers consider this too narrow if we want to accommodate the growing number in cycling and to encourage more cyclists, some using adapted bicycles and some not so confident to take up cycling to use this route. For this reason we would only consider this at 4m. If this is the case then to avoid the conflicts mentioned above, officers would prefer to have two separate 2m (ideally 2.2m) cycle lanes for safety and comfort reasons.

Decision

3.19 For the reasons outlined above, widening the bi-directional track was discounted by officers as having 2 separate 2m cycle lanes which took up the same space as a widened bi-directional track was considered a far more suitable measure for this Corridor.

3.20 **Remove westbound or eastbound traffic from Judd Street to Gower Street at all times with no changes to signals and minimum changes to banned turns.**

Westbound removal:

- Eastbound traffic would remain within the eastbound carriageway
- Eastbound cyclists would then use the full width of the existing segregation
- Westbound cyclists would use the “free” westbound carriageway
- Possibility to add some light segregation to separate westbound cyclists from eastbound traffic

Eastbound removal:

- Westbound traffic would be relocated within the eastbound carriageway
- Eastbound cyclists would then use the full width of the existing segregation.
- Westbound cyclists would use the “free” westbound carriageway.
- Possibility to add some light segregation to separate westbound cyclists from westbound traffic.

3.21 Removing one direction of motor traffic from a large portion of the Corridor would generally increase the usable width potentially available for pedestrians and cyclists while still providing an adequate lane width for motor traffic in a single direction. This is applicable whether it is implemented in a westbound configuration or eastbound.

3.22 This type of proposal is consistent with Camden’s Transport Strategy which seeks to encourage sustainable and active modes of transport and to reduce the harmful effects of motor traffic on people and the environment.

3.23 As the westbound traffic lane carried higher motor traffic flows when compared to eastbound, officers considered removal of the westbound traffic to result in more benefit for pedestrians and cyclists on the Corridor in terms of safety and comfort and would also meet our policies of reducing impact of through traffic on borough roads. It would also assist with keeping this traffic on main through routes such as the Strategic Road Network (SRN) and Transport for Road

Network (TLRN) therefore utilising Grays Inn Road and Euston Road respectively instead of the Corridor.

3.24 TfL were requested to model this option using their strategic model, ONE Model in order to assess the impact of this proposal on the surrounding network, the aim being to test it as a Trial in order to assess its effect before taking a decision on the permanent layout for the Corridor. The approval for the West End project (WEP) scheme proposals (changes proposed for Gower Street and Tottenham Court Road) included a decision to bring forward the Trial. This was in response to comments made as part of the public consultation on the WEP to mitigate the predicated traffic impact of the WEP on Torrington Place.

TfL Approval

3.25 TfL produced a report on the modelling which is provided in Appendix 3. This indicated that the Trial making Tavistock Place/Torrington Place eastbound only for motor traffic between Judd Street and Gower St section between Gower St and Tottenham Court Road remains westbound one-way) would reassign the westbound traffic to other parts of the network. The model showed broadly that traffic would reassign to the Transport for London Road network (TLRN) and the Strategic Road Network (SRN) with increases in traffic volume shown on Grays Inn Road northbound and Euston Road. However there were some moderate increases predicted on local roads including Judd St northbound, Endsleigh Gardens westbound and Gordon St southbound. Activity around Gordon Street and Endsleigh Gardens appears to be increasing due to it being the primary access for Euston Station as there is currently no direct right turn from Euston Road into the station. Some notable decreases were predicted along Sidmouth Street westbound, northbound on Gordon Street.

3.26 Camden officers were of the view that this option offered on balance the best outcome to improve walking and cycling as redirecting the westbound traffic to the major roads like Grays Inn Road and Euston Road were more capable to absorb its displacement while improving the safety and journeys to pedestrians

and cyclists in particular along the Corridor. Byng Place, a recently built public realm scheme was considered to be working well for all road users and therefore no changes were considered to its existing layout. The section between Gower Street and Tottenham Court Road (Section 6 in Plan) was considered to remain one-way westbound.

3.27 The modelling report together with the rationale on the scheme and its benefits to walking and cycling were submitted to TfL Planned Interventions Team who have the authority to approve proposals that include a change in traffic signals as TfL is the signal authority across London and where changes are considered to impact on SRN and TLRN.

3.28 A number of meetings and a site visit were held between Camden officers and the Planned Interventions team. This was followed by Camden's submission in July 2015. Approval was granted in writing in November 2015 to implement the scheme under an Experimental Traffic Order. Monitoring caveats to determine whether the scheme is successful were also added, these are summarised as:

- Traffic volumes:
    - Overall reduction in flows of greater than 20% on Torrington Place
    - Increase in traffic volumes do not exceed levels modelled by TfL by a variance of greater than 5%
- Collisions
    - Less than 4 collisions in the 3 month period on Torrington Place
    - Less than 1 'serious' collision reported in the 3 month period on Torrington Place
- Air Quality
    - A greater than 15% reduction in NOx emissions on Torrington Place
- Public Stakeholders
    - Greater than 50% level of support

Decision

3.29 Following approval from TfL, Camden took the decision to remove the westbound movement for motor traffic along the Corridor between Judd Street and Gower Street under an Experimental Traffic Order. The proposals were drawn up to make this possible with minimal changes to the traffic signals and the physical layout of the Corridor as it was to be introduced as a trial layout and therefore did not seem to be justified in spending large sums of money at this stage until a decision was made on its permanent layout.

Trial layout details

3.30 The proposal included converting the westbound traffic lane into a cycle lane and retained the existing bi-directional track on the north side of the Corridor but to be used only by cyclists travelling in the eastbound direction. Separation of westbound cyclists from eastbound motor traffic was to be through use of light segregation via the use of “orcas”, (small rubber blocks with black and white markings to provide some protection for cyclists by providing a visual and physical delineation between cyclists and motorised vehicles using the adjacent traffic lane). Banned turns would be introduced to provide safe movement of all traffic. This would then provide two cycle lanes one on each side of the road which would provide a layout similar to other streets in Camden and be easier to navigate as pedestrians with less conflict with cyclists.

3.31 The bi-directional cycle track on the north side of the Corridor had restrictions imposed which banned any loading or waiting when the scheme was implemented a number of years ago; this remained in place as part of the Trial. There is a kerb segregation in place between the cycle track and motor traffic lane in order to offer protection to the cyclists; this remained in place in order to make minimal changes. Double and single yellow markings were laid on either side of the traffic lanes, i.e. adjacent to the kerb segregation and the southern kerbline. These permitted loading and waiting (during different periods) and changes were made to these in order to consider the use of a single traffic lane and the cycle lane provided on the southern side. The road markings were

converted to double yellow lines with kerb “blips”, meaning loading and waiting was no longer permitted. However these still allow picking up/dropping off activity to take place. The Trial layout allows cyclists to utilise the westbound traffic lane which as explained above permits drop off/pick along the length of the Corridor.

3.32 The Metropolitan Police, Traffic Division was heavily involved in the development of the Trial layout to ensure safety was considered for all aspects of the design. The Police raised concern as to the visibility of the orcas for motor cyclists in particular; to address this, a solid white line was painted on the outside of the orcas. This may have caused some confusion to drivers who felt that dropping off/picking up was not permitted on the south side.

3.33 An additional loading bay with timed restrictions has been provided on Torrington Place outside the business Planet Organic in order to help meet the specific needs of the business as well as others in the vicinity therefore benefitting more than one business. In addition the taxi rank outside the Imperial Hotel on Tavistock Square has been retained within the cycle lane but the lane widened to allow cyclists to bypass the taxi when in situ.

3.34 A number of provisions to load and unload on side streets already existed through the use of double yellow line or loading bays, however as part of the Trial, an additional loading bay was provided on Herbrand Street close to the Corridor, with timed restrictions. A stretch of double yellow line was also provided on Huntley Street to help facilitate loading, with no timed restrictions.

3.35 The experimental Trial layout includes approximately:

- 2.3m wide westbound cycle lane not including the orcas;
- 3.3m wide vehicular traffic lane eastbound; and
- eastbound cycle lane retained with existing widths (i.e. the width of the previous bi-directional track).

3.36 Appendix 1 provides an illustration of the Trial layout which indicated where new and existing loading provision was provided. Using the sections provided on the plan the following table shows how the road was divided up to provide the above changes.

3.37 The Table below sets out how the Corridor was laid out under the Trial.

Section of Corridor	Width of lane		
	Westbound cycle lane	Traffic Lane	Eastbound cycle lane
Section 1 (by Kenton St):	2.20m	3.63m	2.44m
Section 2a (27m west of Marchmont St)	2.20m	3.34m	2.18m
Section 2b (51m east of Woburn Place)	2.20m	3.32m	2.17m
Section 3 (25m east of Bedford Way)	2.20m	5.45m	1.96m
Section 4 (at zebra crossing by Woburn Square)	2.20m	5.36m	2.41m
Section 5 (east of Gower Street)	2.20m	3.92m	1.97m
Section 6 (32m east of Tottenham Court Road)	2.20m	3.81m	2.2m

4.0 EFFECTS OF THE TRIAL

4.1 The trial was introduced in November 2015. The section below covers the effect the Trial has had on safety, pedestrians, cyclist, traffic and parking, waiting and loading.

Safety along the Corridor

4.2 Camden has sought collision data from Transport for London (TfL) for the period over which the scheme has been in place together with three years prior to the implementation of the Trial. The TfL data has been validated to Sept/Oct 2016, but the data from that date until December 2016 has not yet been validated so should be regarded as provisional only. It should be noted that the

Metropolitan Police (MPS) introduced a new input database in November 2016 which involved a change to the way officers recorded data. This has resulted in compatibility issues which are being worked through by TfL and the MPS. In addition, there are no descriptions of how collisions occurred for recent data and thus this should only be regarded as provisional.

4.3 Drawing comparisons between before and after data should be treated with caution, however, even taking into consideration these caveats, the data indicates that both serious and slight pedestrian causalities have reduced along the Corridor.

4.4 The following collision data has been sought for the Torrington Place Tavistock Place Corridor during the following periods:

- 36 months prior to implementation of the trial layout (1st November 2012 – 31st October 2015); and
- 14 months after the implementation of the trial layout (1st November 2015 – 31st December 2016).

4.5 Although collision data is usually reviewed over a three year period (36 months), only 14 months of results has been made available for the purpose of post-trial data analysis. For reasons stated above, it should be noted that whilst this data acts as a good indicator, the data is draft and is yet to be published by the department for Transport.

4.6 Camden acknowledge that 14 months is a relatively small sample size and that yearly fluctuations are likely. In light of this, and for a more direct comparison, collision data has also been analysed during the period of 14 months prior to the implementation of the trial (1st August 2014 – 31st October 2015).

Number of Collisions			
Sev.	**Pre Trial (Nov 12 - Oct 15)**	**Pre Trial (Aug 14 - Oct 15)**	**During Trial (Nov 15 - Dec 16)**
Slight	42	16	16
Serious	10	3	0
Fatal	0	0	0
Total	**52**	**19**	**16**

4.7 The number of collisions during the trial has reduced when compared to the period surveyed prior to implementation. Whilst the average number of 'slight' collisions recorded during the trial is similar to that recorded pre-Trial the number of 'serious' collisions has decreased to zero. No fatal collisions have been recorded prior to or during the trial.

Number of Pedestrian and Cyclist Casualties			
Type of Casualty	**Pre Trial (Nov 12 - Oct 15)**	**Pre Trial (Aug 14 - Oct 15)**	**During Trial (Nov 15 - Dec 16)**
Pedestrian	21	9	2
Cyclist	22	7	11
Total	**43**	**16**	**13**

4.8 In the 14 months surveyed during the trial, pedestrian casualties significantly reduced to two, which is more than a 75% reduction when compared with 14 months prior to the trial. Although the average number of cyclist casualties have increased during the trial, the severity of the causalities have reduced. Prior to

the implementation of the trial, three collisions were recorded as ‘serious’ compared with no serious collisions recorded during the trial.

4.9 It should be noted that there have been significant increases in cycling east-west along the route in the morning and afternoon rush hours (up to 52% at one site surveyed) and that there has been an overall increase in cycling along the Corridor.

4.10 During the trial, the number of collisions where a contributory factor was from pedestrians stepping into the cycle lane, reduced significantly from 18, three years prior to the trial to one during the trial. The proportion of collisions resulting from contributory factors from cyclists, car drivers and coach drivers have all increased during the trial whereas the number collisions resulting from goods vehicles, motor cyclists and taxis have reduced.

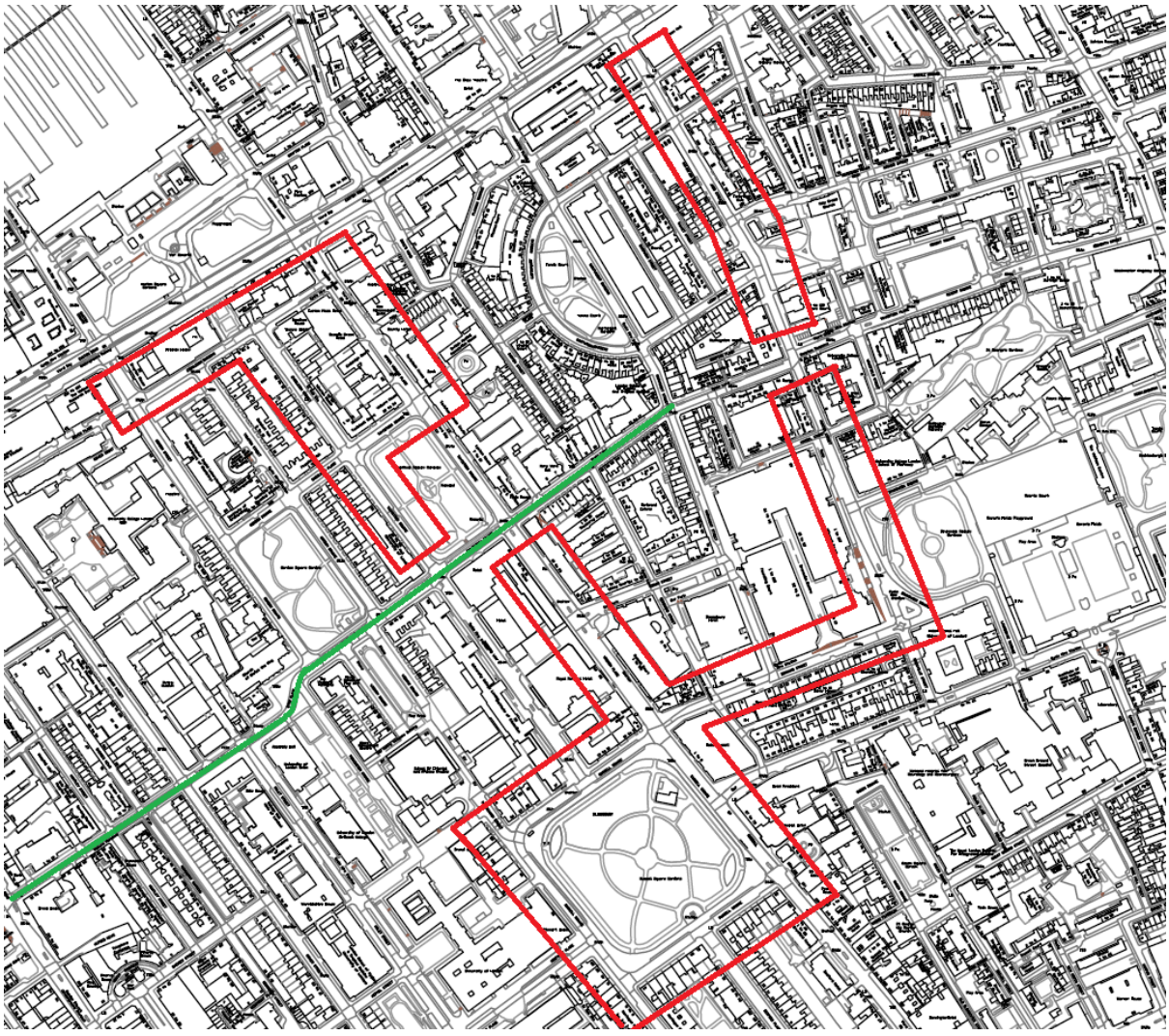
Collisions by mode		
Collision	**Pre Trial (Nov 12 - Oct 15)**	**During Trial (Nov 15 - Dec 16)**
Ped (total) Ped-Cyclist	21 4	2 0
Ped-Car	6	2
Ped-GDS	5	0
Ped-M/C	3	0
Ped-Taxi	3	0
Ped-Coach	0	0
Cyclist	22	11
Cyclist-Veh	16	10
Cyclist-Cyclist	1	0
Cyclist-Car	7	6
Cyclist-GDS	3	3
Cyclist-M/C	0	0
Cyclist-Taxi	6	1
Cyclist-Coach	0	0

4.11 There has been a significant reduction in pedestrian-vehicle casualties from a total of 17 recorded in the three years prior to the trial when compared with a total of 2 recorded in the 14 months during the trial. Before the implementation of the trial, in 10 instances, pedestrians stepped out into the vehicular carriageway along the Corridor (7 travelling southbound across the bidirectional cycle track and 3 northbound), which could be a result of pedestrians assuming

that the whole length of the Corridor is one-way to vehicular traffic. Removal of two-way traffic along the length of the Corridor during the trial may have been a factor in the reduction of pedestrian-vehicle collisions.

4.12 No cyclist-cyclist collisions were recorded during the trial, which is a reduction when compared with three years prior where one was recorded. Before the implementation of two, separate single cycle tracks, an incident involving two cyclists was recorded on the bidirectional track. Removal of this has removed the possibility of this type of collision and has increased safety for cyclists travelling along the route.

Safety in the wider area



4.13 The following collision data has been sought for the wider area surrounding the Torrington Place Tavistock Place Corridor (noted in red above). The area defined in red above was subject to anecdotal evidence suggesting that the streets chosen experienced some displaced traffic as a result of the implementation of the trial. Data was requested for the following periods:

- 36 months prior to implementation of the trial layout (1st November 2012 – 31st October 2015); and
- 14 months after the implementation of the trial layout (1st November 2015 – 31st December 2016).

1. Number of Collisions

Sev.	**Pre Trial (Nov 12 - Oct 15)**	**Pre Trial (Aug 14 - Oct 15)**	**During Trial (Nov 15 - Dec 16)**
Slight	77	33	32
Serious	13	5	1
Fatal	0	0	0
Total	**90**	**38**	**33**

4.14 The average number of collisions during the trial has reduced when compared to data collected prior to implementation. Since the implementation of the trial 'serious' casualties have reduced on average by 80%. Additionally, no fatal collisions have been recorded prior to or during the trial. Causalities have not increased in the wider area during the period surveyed after the trial was implemented.

Effects on Pedestrians

4.15 As set out above, the Trial removed motor traffic in the westbound direction along the Corridor and made provision for a cycle lane in each direction on each side of the Corridor. As well as other intended benefits as stated in the Scheme Objectives section of Louise McBride's Proof of Evidence, reducing the volume of traffic and separating the cycle lanes is likely to have made the route more attractive to pedestrians even though no changes were made to the footway.

4.16 There has been a significant reduction (75%) in the number of collisions involving pedestrians in the 14 months surveyed during the Trial. No collisions between pedestrians and cyclists have been recorded during the Trial and there has also been a significant reduction of the number of collisions between pedestrians and vehicles in the same period. Before the implementation of the Trial, in 10 instances, pedestrians stepped out into the vehicular carriageway along the Corridor (7 travelling southbound across the bi-directional cycle track and 3 northbound), which could be a result of pedestrians assuming that the whole length of the Corridor is one-way to vehicular traffic. Removal of two-way traffic along the length of the Corridor during the Trial may have been a factor in the reduction of pedestrian-vehicle collisions.

4.17 Whilst no footway widening was implemented as part of the trial, there is scope to further improve the environment along the Corridor for pedestrians. In order to undertake pedestrian level of service, pedestrian flows and footway widths are required. Pedestrians using the Corridor were counted before and after implementation of the trial scheme (in March 2015 and May 2016 respectively). The surveys were taken over different months of the year to avoid road works and major construction work that could significantly impact on the readings. Overall, there were increases in pedestrian numbers in some places, while on other parts of the route, numbers fell slightly. This may be because some pedestrians had chosen to travel through the area by cycle, or it may be that there were simply fewer pedestrians visiting the area on the days when surveys were undertaken.

Pedestrian Comfort Level

4.18 Pedestrian Comfort Level (PCL) is an assessment tool developed by Transport for London (TfL) that quantifies the appropriateness of the design of pedestrian footways in terms of the volume and type of users. Undertaking a PCL assessment highlights priorities for action or attention, outlines the cause of these issues and incites potential mitigation measures to make the footway more comfortable.

4.19 Pedestrian Comfort Level is categorised according to the Pedestrian Comfort Level scale; A+ being the best and F the worst. Sites are awarded a score based upon the remaining clear footway width, which is the amount of useable footway notwithstanding obstructions such as street furniture. PCL B+ is the minimum recommended level of comfort for most area types.

4.20 The PCL score relates to levels of crowding on the footway and is measured in pedestrians per metre of clear footway width per minute (ppmm). Two scores are awarded for each site; one for peak hour flow levels and one based on an average of the busiest 10 second samples (Average Maximum Activity), where the latter has been included to allow understanding of how the footway may feel in the busiest times.

4.21 To give an overarching view of pedestrian comfort on the Corridor, pedestrian flows at three sites along the route at 1) Torrington Place, 2) Gordon Square and 3) Tavistock Place have been observed. The pedestrian counts from May 2016 were used for the purpose of this PCL exercise.

PCL Comfort Guidance – Whole Route				
Site	**Location**	**Clear Footway Width (m)**	**Pedestrian Comfort (Peak Hour Flow)**	**Pedestrian Comfort (Average Maximum Activity)**
1	Torrington Place Northern Side	1.45	F : 11 ppmm	F : 23 ppmm
	Torrington Place Southern Side	3.85	A- : 6 ppmm	B+ : 11 ppmm
2	Gordon Square Northern Side	5.6	A : 5 ppmm	A- : 8 ppmm

	Gordon Square Southern Side	2.8	A : 4 ppmm	A- : 8 ppmm
3	Tavistock Place Northern Side	1.5	A : 5 ppmm	B+ : 11 ppmm
	Tavistock Place Southern Side	1.3	F : 7 ppmm	F : 13 ppmm

4.22 The PCL assessment has deemed the footway provisions inadequate for the northern side of the footway at Torrington Place (Site 1). Although in practice it may be possible to walk along the street, the clear footway width is insufficient for comfortable movement.

Torrington Place (Northern Footway) Site 1		
Pedestrian Comfort (At peak hour flow levels)	**Pedestrian Comfort Level (PCL)**	**F : 11 ppmm**
	Total Width Required for PCL B+	4.15 m
	Clear Width Required For PCL B+	1.50 m
Pedestrian Comfort (Average of Maximum Activity)	**Pedestrian Comfort Level (PCL)**	**F : 23 ppmm**
	Total Width Required for PCL B+	5.40 m
	Clear Width Required For PCL B+	2.75 m

4.23 To allow for comfortable movement during peak hour flow, 0.05m of additional clear footway width is required and to allow for comfortable movement during the average maximum activity window, 1.3m of additional clear footway width is required.

Tavistock Place (Southern Footway) Site 3		
Pedestrian Comfort (At peak hour flow levels)	**Pedestrian Comfort Level (PCL)**	**F : 7 ppmm**
	Total Width Required for PCL B+	2.60 m
	Clear Width Required For PCL B+	1.50 m
Pedestrian Comfort (Average of Maximum Activity)	**Pedestrian Comfort Level (PCL)**	**F : 23 ppmm**
	Total Width Required for PCL B+	2.60 m
	Clear Width Required For PCL B+	1.50 m

4.24 To allow for comfortable movement during peak hour flow and during the average maximum activity window, 0.2m of additional clear footway width is required.

4.25 Of the six footways assessed along the Torrington Tavistock route, two failed to provide adequate footway comfort levels with regards to standards set out in TfL's Pedestrian Comfort Level guidance. The assessment has outlined that up to 1.3m of additional clear footway width is required to allow for comfortable pedestrian movement on the northern side of Torrington Place between Malet Street and Gower Street. Whilst the footway width is practical enough to allow for movement at this location, the comfort levels and thus the attractiveness of the footway is substandard.

4.26 Improving footways could improve comfort levels for pedestrians and will help increase walking as a means of getting around whether accessing the residential and business premises, the numerous institutions as well as those passing through on their way to other amenities.

4.27 The scheme layout has improved the pedestrian environment, as the Trial layout with cycle lanes on each side of the road instead of the previous bi-directional cycle track, is more intuitive and easier to use (in particular for people not familiar with the area). In addition, removal of one lane of motor traffic has created a safer, less vehicle dominated environment for pedestrians.

4.28 Feedback during the Trial has suggested that many pedestrians have found it easier to cross the road under the Trial arrangements and have appreciated the reduction in motor traffic along the route. However, a small number of pedestrians were less confident interacting with cyclists on both sides of the road.

4.29 The Scheme layout has increased pedestrian comfort by making the road layout easier to use and a safer environment for pedestrians. There is scope within the current layout to increase footway widths and/or to relocate existing street furniture to improve comfort levels. The Scheme layout also allows the

flexibility to reallocate carriageway space to footways whilst retaining the recommended minimum lane widths and cycle lanes wide enough to cope with the flows.

4.30 In addition to the potential for footway improvements between junctions, there is also scope to improve the footways at the junctions themselves, which could further improve the safety of the junction by reducing vehicular speeds and reducing the crossing distance pedestrians must undertake. Other measures such as pedestrian countdown timers on the traffic signals along the Corridor could also improve the environment for pedestrians if the trial layout were to be made permanent.

Effects on Cyclists

4.31 Early indications from TfL provisional collision data along the Corridor suggest that whilst there has been an increase in the number of collisions involving cyclists, the severity of injuries has reduced, with all reported as 'slight' injuries. Three years prior to the implementation of the Trial, ten collisions were recorded as 'serious' compared with no serious collisions recorded during the Trial. Although the average number of cyclist casualties has increased during the Trial it should be noted that cycle counts undertaken before and during the Trial indicate that the Scheme has resulted in a marked increase in cycle trips (up to 52% during peak hours surveyed at one location).

4.32 No collisions between cyclists and other cyclists were recorded during the Trial, which is a reduction when compared with three years prior where one was recorded. Before the implementation of two, separate single cycle tracks, an incident involving two cyclists was recorded on the bidirectional track. The removal of the bi-directional track and increase in cycle lane width has also removed cyclist conflict when cyclists are travelling in opposing directions, and has made it easier for cyclists to safely overtake one another. The provisional collision data suggests that these types of collisions have reduced to zero.

Cycling Level of Service (CLoS)

4.33 To further assess the effects of the trial layout for cyclists a CLoS assessment has been undertaken for both pre-Trial and Trial layouts along the Corridor. The results show that implementation of the trial layout has more than doubled the Cycling Level of Service along the Corridor raising its CLoS score from 22 to 53.

1. CLoS Score Breakdown for the Pre-trial and Trial Layouts			
Design Outcome	**Factor**	**Pre-trial**	**Trial**
Safety	Collision risk	0	13
	Feeling of safety	0	2
	Social safety	4	4
	Total Safety Score (48)	**4**	**19**
Directness	Journey time	0	2
	Value of time	1	2
	Directness	2	2
	Total Directness Score (8)	**3**	**6**
Coherence	Connections	2	2
	Way-finding	0	1
	Total Coherence Score (6)	**2**	**3**
Comfort	Surface quality	2	6
	Surface material	2	2
	Effective width without conflict	0	6
	Gradient	2	2
	Deflections	2	2
	Undulations	2	2
	Total Comfort Score (20)	**10**	**20**
Attractiveness	Impact on walking	1	1
	Greening	0	0
	Air quality	0	0
	Noise pollution	0	0
	Minimise street clutter	1	1
	Secure cycle parking	0	1
	Total Attractiveness Score (12)	**2**	**3**
Adaptability	Public transport integration	0	0
	Flexibility	1	1
	Growth enabled	0	1
	Total Adaptability Score (6)	**1**	**2**
TOTAL (max 100)		**22**	**53**

4.34 Nine of the twenty-three factors considered for the Trial layout's Cycling Level of Service have improved CLoS scores when compared with the pre-trial layout. Scores for 14 of the factors have remained the same and none of the scores have worsened as a result of the trial layout.

4.35 A further measure of success is noting how many areas received zero scores. Prior to the implementation of the Trial layout, 11 of the 23 factors scored zero compared to only four areas with a score of zero for the Trial layout.

4.36 Since implementation of the trial layout, the most notable areas of improvement are safety and rider comfort, with a particularly large increase of CLoS score for both. Prior to implementation of the trial, the bidirectional track provided substandard lane widths when compared with the Trial layout which has significantly increased lane widths in all sections. The trial layout has also had a positive impact on collision risk, raising the CLoS score from zero to 13.

4.37 There has been minimal increase in score with regards to 'attractiveness'. As the new layout was implemented as a trial, the proposed alterations were limited by functionality of existing pedestrian footway widths and connectivity to adjoining streets. There is scope however to further improve the layout of the Corridor and hence further improve the CLoS score for 'attractiveness'. There is opportunity to increase widths of existing pedestrian footways, create a nicer environment by introduction of greening and removal of street clutter, and the introduction of additional cycle parking where required.

4.38 No noise surveys were carried out as part of the trial and therefore this factor has not been considered in the above CLoS assessment. It is anticipated however, that since the amount of vehicles along the Corridor has reduced, consequently noise levels will also reduce and are likely to increase the CLoS score further.

Summary of Effects on Cyclists

4.39 The CLoS score for the trial layout has increased to 53, which is more than double its preceding pre-trial layout CLoS score of twenty. The areas to benefit the greatest from the implementation of the trial layout are safety and comfort. Removing the narrow, substandard bidirectional cycle track and two-way vehicular flow has enabled the introduction of two adequately sized, segregated cycle tracks, which has in turn increased the Cycling Level of Service for the Corridor.

4.40 Cyclists can enjoy a more safe, direct, coherent and more comfortable ride because of the trial. There have also been some small improvements in the attractiveness of the route however it should be noted that there is scope to further improve this if the Trial were made permanent.

4.41 It is evident that in the absence of the Trial layout, there would be a severe negative impact on the propensity to cycle. Removal of the two separate Trial cycle tracks and reinstating two-way vehicular traffic would significantly reduce the safety for vulnerable road users. Omitting layout changes brought about by the Trial would reduce the level of service along the Corridor and could thus actually discourage cycling.

4.42 As noted in Louise McBride's Proof of Evidence, anecdotal evidence submitted during the public consultation indicates that cyclists feel much safer and that people who felt intimidated by conditions on the Corridor before the Trial now feel able to use the route and encourage friends and family to do so. 3782 (25% of all respondents to the consultation) commented that since implementation of the Trial, the Corridor felt safer and more pleasant to cycle and walk.

4.43 The pre-trial layout was insufficient to cope with the high flows of cyclists along the Corridor. A key objective of the scheme was to create safer, more comfortable conditions for cyclists. Additionally, the Scheme has resulted in a marked increase of cycle flows as shown in the table below.

	Morning Peak Hour			9.15am to 10.15am			Evening Peak Hour		
	Pre-Trial	Trial	% diff	Pre-Trial	Trial	% diff	Pre-Trial	Trial	% Diff
Tavistock Place (EB)	242	307	27%	121	162	34%	609	692	14%
Tavistock Place (WB)	767	792	3%	390	499	28%	271	357	32%
Byng Place (EB)	183	223	22%	91	138	52%	546	632	16%
Byng Place (WB)	819	781	-5%	403	479	19%	321	332	3%

Effects on Motor Vehicles

4.44 Further detail on the modelled impact of the traffic impact on the scheme is located in David Carter's proof. This section outlines the surveyed impact of the Trial on traffic flows in the area.

4.45 Traffic flow surveys (automatic traffic counts) were undertaken along the Corridor and the surrounding streets in May 2015 prior to the implementation of the trial and in May 2016, six months after the implementation of the trial layout. By means of comparison, the total number of vehicles surveyed in the area surrounding the Corridor have been presented in the table below and differentiating between the total number of vehicles all day (24 hour period), in the morning peak hour (08:00 – 09:00 hours) and the evening peak hour (17:00 – 18:00 hours). Details of the specific survey site locations are located in Appendix 3 of this document.

Location	All day (excluding M/C and P/C) (vehicles)			
	Before (Tue 12 May 15)	After (Tue 17 May 16)	Difference	Difference (%)

1. Traffic in the area	202171	181687	-20484	-10%
2. Traffic along the Corridor	44337	25878	-18459	-42%
3. Traffic in the area excluding traffic along the Corridor	157834	155809	-2025	-1%

Location	08:00 - 09:00 hours (excluding M/C and P/C) (vehicles)			
	Before (Tue 12 May 15)	After (Tue 17 May 16)	Difference	Difference (%)
1. Traffic in the area	11938	11871	-67	-1%
2. Traffic along the Corridor	2799	1859	-940	-34%
3. Traffic in the area excluding traffic along the Corridor	9139	10012	873	10%

Location*	17:00 - 18:00 hours (excluding M/C and P/C) (vehicles)			
	Before (Tue 12 May 15)	After (Tue 17 May 16)	Difference	Difference (%)
1. Traffic in the area	11057	9403	-1654	-15%
2. Traffic along the Corridor	2640	1692	-948	-36%
3. Traffic in the area excluding traffic along the Corridor	8417	7711	-706	-8%

4.46 As shown in the tables above, since the implementation of the trial layout, the total amount of motor traffic has reduced in the area. Daily motor traffic has reduced on average by 10% and most markedly, reduced by 42% along the Corridor. Total traffic in the area excluding the sites surveyed along the Corridor has been presented in the table as Location 3 to exclude the direct impact of removing westbound motor traffic from the Corridor. This has shown that, even when excluding the effects of the Corridor, there has been an overall decrease in daily traffic by 1% in the area.

4.47 The summary of traffic counts in Appendix 4, show that whilst the daily traffic in the surrounding area has reduced, there have been increases to traffic flows on some streets close to the Corridor, specifically, to those streets that offer viable, alternative westbound routes to Torrington Place and Tavistock Place. There has been some local redistribution of traffic from the Corridor and Gordon Square northbound, having a more general reassignment to Endsleigh Gardens and Endsleigh Place.

4.48 Endsleigh Gardens and Endsleigh Place allow access to Euston Road and, in particular, offer a direct route to Euston Station that is often used by taxis. An important point to note is that two days prior to when the 'after' traffic survey data was captured, a road closure was put in place on Gordon Street for construction works (14 May 2016 to 4 June 2016). Traffic wishing to use this route would have diverted to Taviton Street and Endsleigh Gardens to gain northbound access to Euston Road. In addition, another road closure on Gordon Square, at the western end of Endsleigh Place, has been in place since September 2014 and is still in place today. Westbound traffic wishing to use this route would also be diverted to Taviton Street and Endsleigh Gardens. Both of these road closures have impacted on the traffic counts observed on Endsleigh Gardens and hence, the number of motor vehicles on Endsleigh Gardens is higher than would otherwise be the case. Further locations of developments under construction and roadworks being undertaken in the area (during May 2016 selected as a snapshot when traffic surveys were carried out) are shown in a map in Appendix 4. This plan shows the significant amount of

other works taking place in the area and suggests the potential impact the works may have on traffic flows during early periods after the Trial was implemented.

4.49 In terms of impact on Emergency Services response times, we have received information from The London Fire Brigade that although they have been impacted by the Trial, the response times have decreased in the Bloomsbury Ward from 4 minutes 39 seconds in 2015 to 4 minutes 28 seconds in 2017. The full table showing this data is included within Appendix 5.

4.50 The Metropolitan Police were involved in the development of the Trial layout and were supportive of the Trial.

4.51 The London Ambulance Service responded to the consultation (received late but just before the Cabinet meeting) stating that the Trial scheme had an adverse impact for them as they used the Corridor in the westbound direction to take patients to the Hospitals near Tottenham Court Road. No data has been provided on their response times but liaison has been ongoing between Camden and the Ambulance Service to understand in detail what delay they are experiencing.

4.52 Whilst there is no restriction in Camden's traffic order that would stop any emergency services travelling westbound in response to an emergency, the Emergency Services themselves have to adhere to their own regulations. However, our understanding from discussions with them is that the driver on each callout would take a judgement on whether to travel westbound on the Corridor.

4.53 In traffic terms, the Trial has achieved its aims as westbound motor traffic has diverted to the major routes. As the closure of Gordon Square will be remaining in place for a medium term (expected to be closed until 2024) it is difficult to fully assess the longer term impact for motor traffic on Endsleigh Gardens and Endsleigh Place. However in the meantime, Camden officers are considering potential ways to minimise this impact: a reduction in traffic might be achieved

by providing a right turn directly from Euston Road into Melton Street (to provide access to the taxi rank for Euston station). Officers are in discussion with HS2 and TfL regarding this and other potential measures.

Effects on parking, Loading and Waiting

4.54 Access to parking bays on the side streets from the Corridor has been retained although it is noted that the routes to and from these bays may be slightly more circuitous with the Trial in place due to the one-way traffic restriction. Three residents parking bays have been converted to provide for loading.

4.55 A number of comments have been made on the lack of provision for the dropping of/picking up of passengers that suggests drivers are in general undertaking this from the side streets rather than along the Corridor. It should be noted that pick-up and drop-off activity continues to be permitted at the kerbside along the Corridor on both sides. This is not an urban clearway therefore there are no restrictions on picking up and dropping off passengers, although the side streets are of course available.

4.56 The north side of the Corridor which has the bi-directional cycle track had restrictions imposed on loading and waiting when the scheme was implemented a number of years ago. The kerb segregation helps to a large degree to self-enforce this. No loading at any times restrictions (double kerbside blips) were at to the southern kerbside within the new cycle lane. A dedicated loading bay has been provided outside Planet Organic on Torrington Place to help meet the needs of the business who had a number of large deliveries arriving on a daily basis (as well as assisting other businesses). A number of provisions to load and unload on side streets already existed through the use of double yellow line (without any loading restrictions) or loading bays, however as part of the Trial, an additional loading bay was provided on Herbrand Street close to the Corridor. A stretch of double yellow line (without loading restrictions) was also provided on Huntley Street to help facilitate loading.

4.57 The taxi rank outside the Imperial Hotel on Tavistock Square has been retained within the cycle lane, at this point the cycle lane is widened to facilitate this activity.

4.58 The Table below provides details of the provision and the restrictions imposed for each street where demand for loading provision has been observed.

Street Name	Side of the Footway	Distance from the Corridor	Length of bay/line	Hours of Restriction
Huntley Street north	West (Single yellow)	9m	31m	Loading permitted at any time
Huntley Street south	West (Double yellow)	2.8m	19.8m	Loading permitted at any time
Malet Street	West (Loading bay)	6.5m	12m	Mon-Sat 8.30am – 6.30pm
Herbrand Street	West (Loading bay) East (Single yellow)	7.5m 8.75m	9.8m 9.7m	Mon-Fri 8.30am – 6.30pm Sat 8.30am – 1.30pm, loading on single yellow permitted at any time
Marchmont Street north	West (Single yellow)	5	55m	Loading permitted at any time
Marchmont Street south	West (Double yellow) West (Loading bay)	5.6m 20m	14.4m 12m	Loading permitted on double yellow at any time, Mon-Fri 8.30am – 6.30pm Sat 8.30am – 1.30pm
Torrington Place	South (Loading bay)	0m	15m	Mon-Sun 10am-2pm 2pm-4pm
Tottenham Court Road	East (Loading bay)	14m	12m	Mon-Sat 8.30am – 6.30pm

4.59 Based on the table above and distances measured it has been calculated that no business along the Corridor is located more than 65m from some kerbside loading provision.

5.0 **TRIAL ADJUSTMENTS**

5.1 During the Trial, safety concerns were raised at specific locations along the Corridor, these were identified by Camden officers monitoring the Trial and other users of the Corridor including local residents. Concerns were raised in particular in regards to cyclists' safety at two key junctions: Tavistock Place / Hunter Street / Judd Street, and Bedford Way / Gordon Square / Tavistock Square. Steps have been taken to address these concerns. These are detailed below.

Tavistock Place / Hunter St / Judd St junction

5.2 This particular junction is a staggered junction with a left hook issue (left turning traffic cutting across cyclists traveling straight ahead) into Judd Street for cyclists travelling eastbound onto Tavistock Place.

5.3 An ASL (advanced stop line) was put in, effectively pushing the stop line back by five metres, and a few metres of the segregation kerb separating the eastbound cycle lane from motor traffic were removed. "SLOW" road markings were also put in on the approach to the junction both on the traffic lane and eastbound cycle lane to alert drivers of a potential conflict/hazard.

5.4 This allowed for cyclists to become aware that not only were they approaching a signal controlled junction but also to realise that the cycle lane was no longer segregated from motor traffic and caution needed to be exercised.

Bedford Way / Gordon Square / Tavistock Square junction

5.5 A yellow box was introduced at the junction to prevent vehicles blocking the junction. A mini traffic island was built on Gordon Square and a sign post erected, which stated "Give Way to Oncoming Cycles". This was aimed at reminding drivers who were adjacent to this island that when they turned right into Bedford Way they needed to give way to cyclists approaching from

Tavistock Square who were travelling straight across the junction in the westbound direction and who had right of way.

5.6 The cycle lane was marked from the studs up to the yellow box on both sides to delineate the cycle lane making it more visible to both cyclists and motor vehicles.

Other locations

5.7 In addition to works carried out at the two junctions mentioned above, the signage and road markings ("NO ENTRY") were improved at Bedford Way / Gordon Square / Tavistock Square, Woburn Place / Tavistock Square /Tavistock Place and Judd Street / Hunter Street / Tavistock Place junctions where motor vehicles were observed on numerous occasions making the banned left turns.

5.8 Concerns relating to pedestrians tripping on the orcas used to partially segregate cyclists from motorised vehicles were addressed by the removal of these in sections where pedestrian footfall was high. Orcas were removed from the westbound with-flow cycle lane on Torrington Place between Gower Street and Tottenham Court Road. This section of road is heavily used by construction vehicles which were dirtying and damaging the white reflective and antiskid strips moulded onto the orcas. Cleaning the orcas on that stretch would also have resulted in the antiskid strip coming off. This was a cause for concern especially during the night when visibility is at its lowest.

6 ALTERNATIVE PROPOSALS AND REPRESENTATIONS PUT FORWARD BY OTHERS

6.1 I am aware of alternative proposals and representations put forward by others and I will contribute to a formal response on the basis of engineering design and traffic aspects after reading how the proposals or representations are expressed as a matter of detail in the Proofs of Evidence.