



**A3212 Chelsea Embankment junction with
Chelsea Bridge Road
Safer Junctions programme**

Brief

August 2018

A3212 Chelsea Embankment junction with Chelsea Bridge Road

Brief

Contents

1. Background

- Strategic Context
- Local Context

2. Commission

- Considerations
- Other relevant investigations

3. Methodology

- Identifying potential interventions
- Feasibility designs
- Local modelling of options
- Key study stages and deliverables

4. Governance

5. Timescales

6. Appendices

1. Background

Strategic context

Transport for London, as the highway authority, has responsibility for maintaining, operating and improving the Transport for London Road Network in London. This network comprises around five per cent of all roads in London, but carries over one third of all traffic.

The transport network plays a vital role in supporting economic growth, by linking people to jobs, delivering products to markets and supporting domestic and international trade. Transport also promotes social cohesion, by providing access to key services, such as health and education services, shops and leisure facilities.

The Mayor's Transport Strategy sets out a clear commitment to the Vision Zero approach to eliminating road deaths and serious injuries on London's roads. Vision Zero includes a number of programmes designed to tackle road danger reduction, including Safer Junctions.

Safety improvements at specific junctions will be critical to achieving the Mayor's Vision Zero ambition in reducing road danger and following the analysis of the road casualty data, the Safer Junctions list was published in April 2017 and identified 73 junctions on the TLRN with the highest Vulnerable Road User (VRU) collision rate. The list includes:

- 21 junctions which have been upgraded in the last three years,
- 33 at which TfL were already investigating improvements, and
- 19 where investigations would begin.

Over the period 2013 – 2015, 1819 KSIs (all modes) were recorded at all junctions in London. This data was used to identify the sites to be prioritised for study. 46 KSIs were recorded at the 19 new locations which are being investigated as part of the Safer Junctions programme.

It should be noted that the junctions in the Safer Junction programme are also major locations of social interaction and in many cases perform an important 'place' function. Hence design proposals should seek to make these locations more appealing to pedestrians and cyclists, with the aim of reducing road danger throughout the Safer Junction scheme area. This holistic approach will not only drive down collisions, but improve the urban realm, encourage modal shift to walking and cycling, and contribute to wider regeneration objectives.

Examples of interventions that should be considered for all Safer Junctions include:

- New and/or improved pedestrian crossings
- Innovative facilities to separate cyclists from traffic in time and space, and improve existing cycle facilities where they exist
- Wider pedestrian footways, and decluttering of existing footways
- 'Floating' bus stops
- Opportunities to introduce Sustainable Urban Drainage

- Opportunities to introduce pocket parks, improved hard and soft landscaping, and new cycle parking
- A review of street lighting throughout the scheme area, to identify any sub-standard locations
- Measures to reduce traffic speeds (including consideration of 20mph), and ensure those speed reductions are self-enforcing (e.g. through raised pedestrian crossings)
- Measures to bring about traffic reduction through the junction (e.g. traffic lane removal, where practicable and without significant adverse impacts on buses; making roads accessible to pedestrians, cyclists and buses only)
- Opportunities for increased bus priority

In June 2018, the TfL Healthy Streets Portfolio Board approved the Safer Junctions programme budget of £0.5m in 2018/19 to continue work on the 19 junctions where collision investigations began in 2017/18.

Local context

The junction of Chelsea Embankment and Chelsea Bridge Road on the border of the Royal Borough of Kensington and Chelsea and the City of Westminster is situated along the A3212 / A3220 corridor. This is a strategic route that runs along the north embankment of the River Thames connecting central London in the east to the arterial routes of the A4 and A40 to the west. Chelsea Bridge Road runs north / south connecting the areas of Pimlico and Belgravia on the north side of the river to Battersea on the south side.

Cycle Superhighway 8 (CS8) runs along the A3212 Grosvenor Road (the east arm of the junction) and along Chelsea Bridge (the south arm of the junction). A scheme that upgraded the superhighway at this junction was completed in June 2016.

The junction is dominated by motorised traffic however there is a heavy cycle flow during peak periods. Traffic counts show that although the CS8 route is along Grosvenor Road and over the bridge, the highest numbers of cyclists actually continue west along Chelsea Embankment.

A fatality occurred on the 27 September 2017 at this junction. The collision occurred when a westbound cyclist was hit by an HGV turning left from Grosvenor Road onto Chelsea Bridge.

A serious collision was recorded on 10 November 2016 involving a pedestrian crossing northbound on the western arm being hit by a westbound cyclist. The pedestrian subsequently died on 5 April 2017.

There are controlled crossing facilities (staggered arrangement) on all arms of the junction.

There may be opportunities for urban realm improvements around the junction, especially on the south side by the bridge.

Collision Issues

29 personal injury collisions occurred in the 36 month period ending 31st October 2016, of which five resulted in serious injuries (17.2%). This is above the comparative rate of 12.6% for ATS junctions on the TLRN in Inner London Boroughs.

Key collision issues at the junction of A3212 Chelsea Embankment junction with Chelsea Bridge Road include:

- 11 collisions (37.9%) involved a pedal cyclist
- 11 collisions (37.9%) involved a powered two wheeled vehicle (P2W)
- 11 collisions (37.9%) occurred in dark conditions
- 6 collisions (20.7%) occurred in non-dry conditions
- 5 collisions (17.2%) involved a goods vehicle
- 4 collisions (13.8%) involved a u-turning vehicle
- 3 collisions (10.3%) involved an overtaking vehicle

Table 3 - Comparative Collision Rates

Factor	Collisions		Expected Rate (%) ²
	Number	% ¹	
Total	29	100.0%	-
Total per year	9.7	-	-
Total per km year	-	-	xx.xx / xx.xx
Priority Score	0	-	-
Injury			
Fatal and Serious	5	17.2%	12.6%
Slight	24	82.8%	87.4%
Modal			
Pedestrian	0	0.0%	21.6%
Pedal Cycle	11	37.9%	25.3%
Powered Two Wheeler	11	37.9%	25.4%
Bus or Coach	0	0.0%	11.2%
Goods Vehicle	5	17.2%	14.5%
Manoeuvre			
Overtaking	3	10.3%	9.4%
Right turning	6	20.7%	21.0%
Left turning	2	6.9%	10.1%
U-turning	4	13.8%	2.1%
Cond.			
Non-dry	6	20.7%	17.1%
Dark	11	37.9%	34.8%

¹ Shading indicates where a collision rate is higher than the comparative average

² Comparative rate is derived from Collision Levels in Greater London Issue 14: 2011 to 2013, comparison table: ATS (Inner Borough)

2. Commission

To appoint Traffic Design Engineering (TDE) to carry out feasibility and concept design. TDE will act as the Principal Designer and carry out all the duties under the CDM Regulations 2015.

The scope of this commission is for TDE to consider the content of the A3212 Chelsea Embankment junction with Chelsea Bridge Road collision study report (as supplied Appendix A) together with the comments and recommendations provided by key internal stakeholders at the site meeting (as supplied in Appendix B) and further develop these to:

- Provide feasibility design options based on the potential interventions to reduce road danger, including exploring opportunities to improve cycle facilities, encourage pedestrian priority, reduce traffic dominance and vehicle speeds and where possible introduce urban realm improvements and / or green infrastructure (See also, 'Strategic Context');
- Provide concept design of the preferred option;
- Utilise the results from the base Healthy Streets surveys undertaken by TDE to inform the design;
- Assist the Sponsor to assess the impact of proposals using the TfL's City Planner strategic assessment framework tool;
- Provide designs to TfL Network Performance in order for them to undertake traffic modelling of recommended solutions for the design of all options and to assess local impacts. TfL Network Performance will be commissioned separately by the TfL Sponsor;
- Provide technical input to the Sponsor for the Business Case and other required paperwork in preparation for associated programme and portfolio boards;
- Calculate potential collision savings and other quantifiable benefits which may be derived, such as more walking and cycling; and,
- Provide a detailed Microsoft project programme and cost estimate for TDE tasks related to carrying out the feasibility and concept designs.

In addition, TDE is currently working on a scheme from Mornington Crescent to Britannia junction, and it is requested that TDE investigate if the two schemes can be tied together, so that all objectives are met.

In order to adhere to the required timescale, it is recommended that certain surveys required by the LoHAC design team for detailed design may be required to be procured during the concept design stage. All additional surveys required to carry out the design, will require prior authorisation from the Sponsor. TDE to provide specification and quotations to the Sponsor so that separate survey commissions can be agreed.

The design has to be produced and comply with all the relevant design standards and TfL specific requirements.

Figure 1 overleaf shows the geographic scope of the study with the local context.



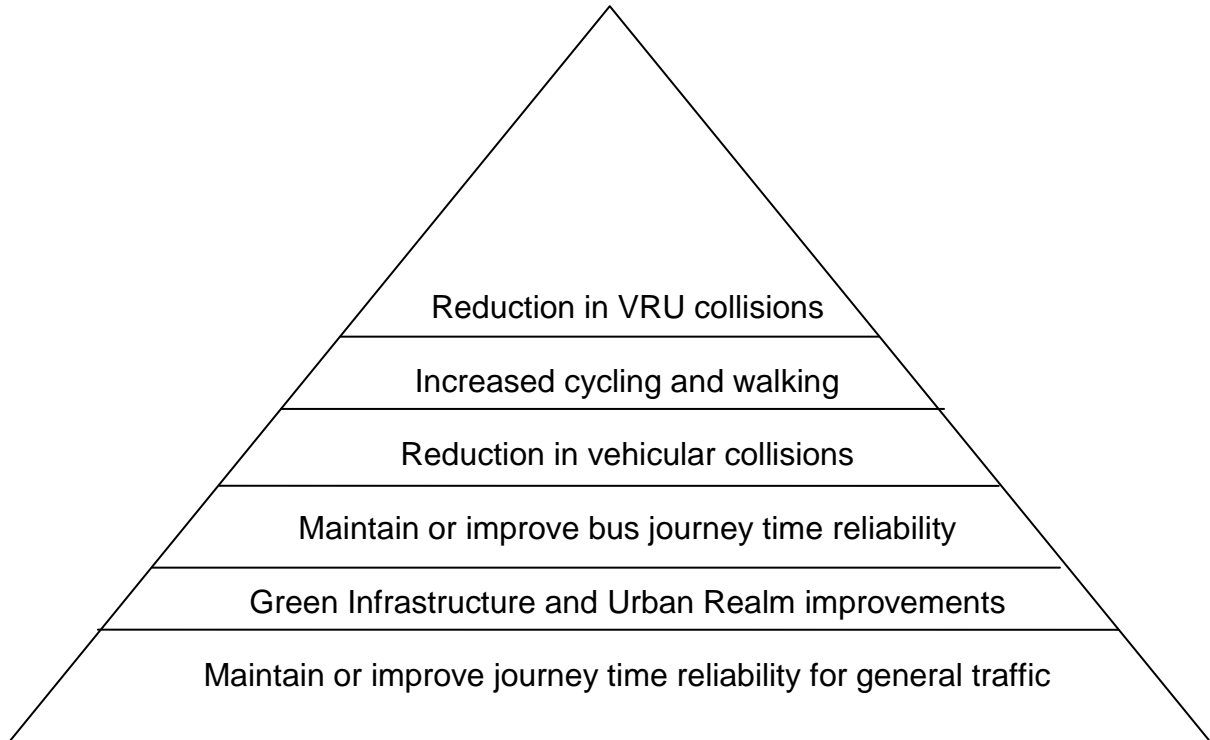
Figure 1 - Network in scope for intervention

Considerations – Safer Junctions Programme Wide

- Traffic re-timings of signals and the large impact of changes to traffic across several lanes, but this could impact negatively on the bus network
- Pedestrian behaviour (with no historical record of personal injury collisions) of crossing injudiciously or informally across junctions could be resolved by an all-round pedestrian signal stage

- The delay of improvements to a location because of other planned changes or factors

It is accepted that in order to provide a holistic approach to reducing road danger, some design considerations may be in direct contradiction with each other. To assist in the prioritisation of proposed measures, this hierarchy of needs is to be followed:



There are several elements to the Design Strategy for the Safer Junctions programme which should be considered.

Design Strategy - Overarching Principles

- **Highways Infrastructure** – To see significant improvements in addressing collision patterns and reducing road danger for vulnerable road users, meaningful changes and improvements are needed to the highways infrastructure. The provision of direct crossings and raised tables can highlight pedestrian priority and reduce the dominance of vehicular traffic.

For cyclists, direct cycle lanes, tracks and early release traffic signals should be investigated, especially where there is future cycle demand. ASLs and advisory cycle lanes are not considered sufficiently transformational for Safer Junctions.

The use of public transport for longer trips should be encouraged by bus priority measures including bus lane extensions and bus gates should also be considered. Wherever possible, impacts to the bus network should be mitigated.

- **Street Makeover** - By encouraging more pedestrians to spend time in the area through enhancing the place function of the site, vehicle dominance in the area will be reduced.

Streetscape and urban realm improvements can design out conflict points while enabling pedestrians to safely follow desire lines. This can include, but is not limited to removal of clutter, introducing pocket parks and green infrastructure (eg. sustainable urban drainage), wider, better quality pavements and cycle parking. This also helps support a number of Healthy Streets indicators including shade and shelter, places to stop, people feel relaxed and clean air, which would not routinely be addressed through traditional highway infrastructure improvements.

Removal of through traffic from selected residential streets can remove key dangerous manoeuvres and provide opportunities for streetscape improvements.

An Urban Designer has been appointed to the Safer Junctions programme to provide technical input and strategic guidance to facilitate the incorporation of Streetscape and urban realm improvements into the designs for this Safer Junction.

- **Safety and Security** – Reduced speed limits, especially 20mph, are known to reduce the severity of collisions and encourage more active forms of transport. A high quality urban environment will in turn result in more passive surveillance to reduce crime and encourage more active forms of transport.
- **Future Proofed** – The pressures on the street are ever-changing and so the design needs to be adaptable to change: flexible on a daily basis and resilient over the long-term. The Safer Junctions programme will need to

respond to any known intensifying role as a focal point for pedestrian, cyclist or motorcyclist activity.

- Innovative – The deliverables need not rely solely on tried and tested measures. Where appropriate, efforts should be made to trial innovative and creative solutions in order to reduce road danger.
- Safer Streets for All – A dimension of the design strategy is to increase motorist awareness of all vulnerable road users. The design should support the provision of alternative modes such as walking and cycling, in particular focussed on shorter trips to local main attractors where there is most scope for increased use, such as nearby town centres and public transport interchanges.

Where appropriate, having a distinct change in the character of the junction may be appropriate to encourage motorists to slow down, especially where cyclists travel and where pedestrians cross frequently.

Whilst additional motorised trips should not be encouraged within the Safer Junctions programme, the safety of motorcyclists should be protected through the design of the individual projects.

- Parking and Loading - Special consideration should also be given to loading and parking along the route and maintaining or improving servicing arrangements. Loading pads which allow for footways to open up during the busiest periods is one approach that could provide for different users at different times of the day.
- Behaviour Change Initiatives – Where possible, if a location is identified which may also benefit from softer road safety interventions, this should be highlighted to the Sponsor to bring to the attention of colleagues in Customer Communication and Technology (CCT).

Safer Junctions Template

Examples of measures which could be included in a Safer Junctions design

Traffic reduction measures:

- Removal of through traffic from selected streets, such as residential zones

Highways infrastructure:

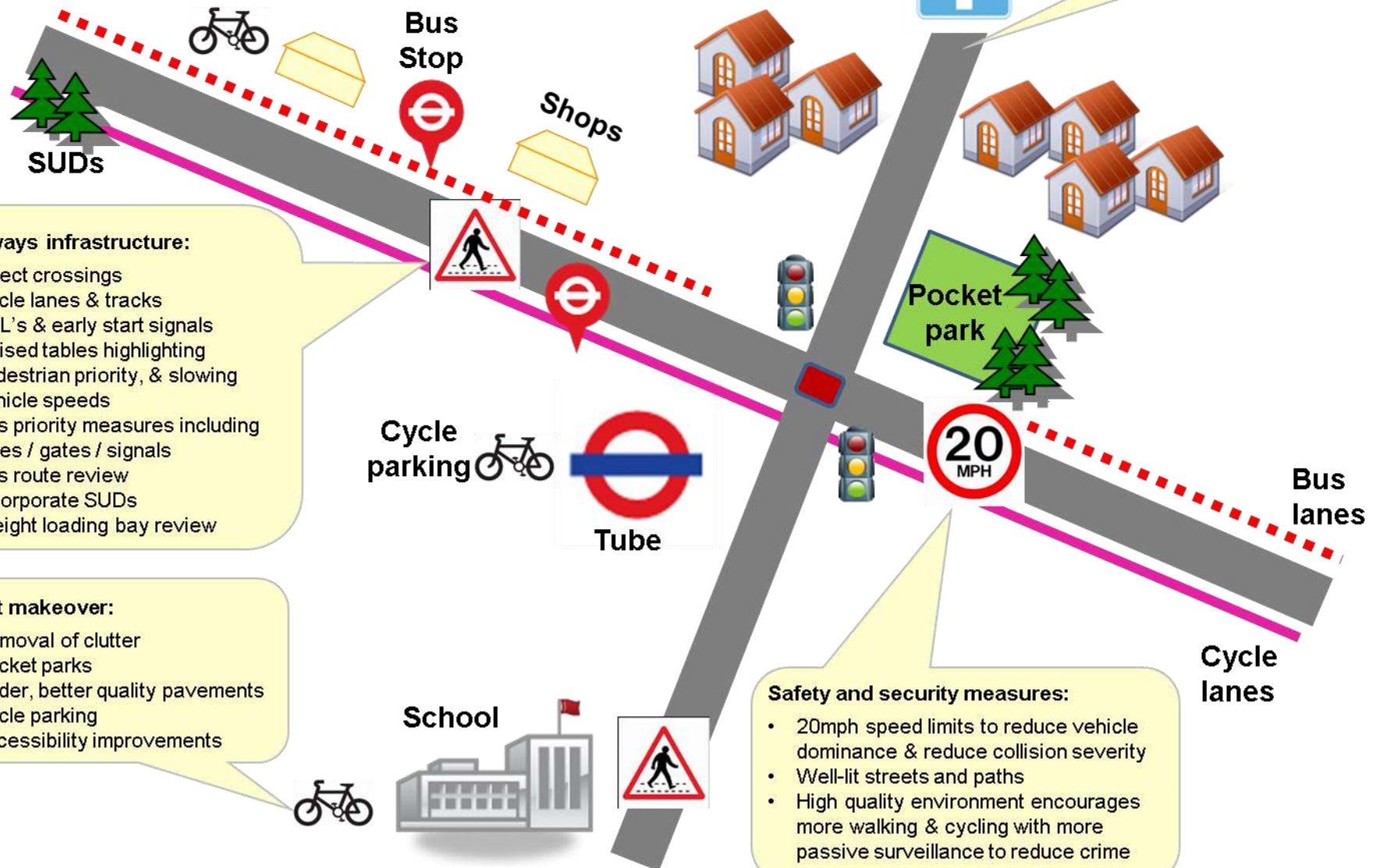
- Direct crossings
- Cycle lanes & tracks
- ASL's & early start signals
- Raised tables highlighting pedestrian priority, & slowing vehicle speeds
- Bus priority measures including lanes / gates / signals
- Bus route review
- Incorporate SUDs
- Freight loading bay review

Street makeover:

- Removal of clutter
- Pocket parks
- Wider, better quality pavements
- Cycle parking
- Accessibility improvements

Safety and security measures:

- 20mph speed limits to reduce vehicle dominance & reduce collision severity
- Well-lit streets and paths
- High quality environment encourages more walking & cycling with more passive surveillance to reduce crime



Other Relevant Investigations

Currently Strategy and Network Development (S&ND) is not aware of any other ongoing investigations or projects at the junction of the A3212 Chelsea Embankment junction with Chelsea Bridge Road which TDE should also be aware of. However, other investigations in the wider local area being undertaken which are of relevance to this study are: -

- Cheyne Walk / Battersea Bridge junction – a Safer Junctions ‘in flight’ project. This project is currently in concept design and considers the introduction of two controlled crossings at the junction (west arm and south arm), ASLs for cyclists and the full time prohibition of right turning traffic from the west arm onto Battersea Bridge. Implementation is programmed for the end of 2019/20.

Proposed Measures for Feasibility and Concept Design under this Commission

These proposals are based on the recommendations made in the Collision Study prepared by TDE, comments made at the site meeting of 14th May 2018 and at the post-site meeting involving key internal stakeholders held at the TfL offices at Palestra on 11th June 2018.

TDE are instructed to investigate and provide feasibility and concept designs, which could include a combination of the following proposals:

1. Pedestrians crossing outside of the green man period around the junction

Summary: Site observations showed that pedestrians often fail to wait for green man periods as they are able to cross to refuge islands when conflicting traffic streams are stationary / lightly trafficked. It was also noted that pedestrians continue to cross after green man invitation period has ended leading to potential conflict with vehicles pulling away from the stopline. No Pedestrian Countdown at Traffic Signals (PCaTS) facilities have been provided.

Proposals: Provide Pedestrian Countdown at Traffic Signals around the junction.

Potential impacts: TfL Engineering (formerly Traffic Infrastructure) to confirm the reasoning behind any decision not to provide PCaTS in the existing road layout, given the junction has been altered significantly in recent years.

2. Inconsistent and inappropriate signing around the junction

Summary: It was noted that various traffic sign and street furniture locations around the junction are often not appropriate. The location of the signposts can also impede pedestrian movements. Several signs are of significant size and are not in keeping or appropriate for the nature of the street / urban

environment. Conversely, the cycle direction signing can be difficult to see in good time and is of relatively small size, given the high volume of cyclists at this location and on a key Cycle Superhighway.

Proposal: Undertake a review of the signing requirements around the junction.

3. **Insufficient depth of Advanced Stop Line (ASL) on Chelsea Bridge Road southbound approach to the junction**

Summary: Site observations showed the ASL on the north arm approach to the junction is of insufficient depth, considering the high cycle flows in the evening peak period. The cycle logo is also missing from the ASL.

Proposal: Increase the depth of the ASL so that it is sufficient to accommodate the expected number of cyclists at this location.

Potential impacts: May impact intergreens. Potential impact to buses, cyclists and general traffic will be determined by traffic modelling, which will be carried out by NP.

4. **The length of the staggered crossing over Chelsea Bridge Road (north arm) deters pedestrians from crossing at the controlled crossing point**

Summary: In the existing road layout, a significant stagger length is provided over Chelsea Bridge Road (north arm), taking pedestrians away from their desire line. This can frequently lead to pedestrians crossing away from the crossing point, closer to Chelsea Embankment where they are at risk of being struck by turning, braking or accelerating vehicles.

It was also noted that the lane width on Chelsea Bridge Road (west arm) is insufficient to accommodate traffic and cyclists travelling alongside. Traffic turning left from Chelsea Embankment (west arm) onto Chelsea Bridge Road (north arm) restricts eastbound cyclists access to the ASL.

Proposals: 1. Investigate improvements to the pedestrian crossing location on this arm. This could include the provision of a straight across crossing arrangement. 2. Investigate making the left-turn into Chelsea Bridge Road (west to north) permitted for cyclists only and banning the left-turn for general traffic.

Potential impacts: The length of the stagger on Chelsea Bridge Road is likely to have been provided to accommodate a storage reservoir and clear visibility to the traffic signals at the internal stop line. The internal stop line and associated signals capture left turning traffic from Chelsea Embankment. To accommodate a straight across arrangement, it may be necessary to prohibit the left turn (west to north). Potential impact to buses, cyclists and general traffic will be determined by traffic modelling, which will be carried out by NP.

5. **Part-time right turn prohibition (north to west) can cause confusion at the junction and promote unexpected movements**

Summary: In the existing road layout, there is a part-time right turn prohibition from Chelsea Bridge Road (north arm) to Chelsea Embankment (west arm), in operation between 7am and 7pm and indicated to approaching driver through the use of secret signs. However, the sign was not in operation at the time of the site visit. This can result in unexpected turning movements.

Outside the hours of operation, right turning vehicles are still in conflict with opposing traffic flows.

In addition, there is a potential period of confusion immediately around the period when the ban begins and ends, which may lead to unexpected turning manoeuvres. Permitting both right turn movements concurrently in the centre of the junction requires a starboard-to-starboard hooking arrangement which can restrict visibility of approaching traffic and further exacerbates the potential for collisions. In practice, the right turn movements are completed in the intergreen period, at an increased risk of being struck by vehicles entering the junction.

Proposal: Extend the prohibition to 24 hour operation.

6. **Potential left-hook conflict for westbound cyclists on Chelsea Embankment**

Summary: Site observations showed that the kerb radii on the south-eastern corner of the junction is large and facilitates left-turning drivers turning at higher speeds across the path of cyclists continuing straight ahead. This may increase the risk of left-hook type collisions.

Proposal: Provide improvements to the traffic signal method of control and junction geometry to encourage the safety of cyclists. This includes: 1. Introducing low-level cycle signals and early release for cyclists. 2. Investigate the potential for a 'hold the left' arrangement. 3. Review the swept path analysis to determine if the radii can be tightened to reduce turning vehicle speeds.

Potential impacts: Potential impact to buses, cyclists and general traffic will be determined by traffic modelling, which will be carried out by NP.

7. **Vehicles encroach into the mandatory cycle lane on Chelsea Bridge northbound approach to the junction**

Summary: Site observations showed that the traffic lane geometry and alignment creates a pinch point on the approach to the stop lines for general

traffic and cyclists respectively. The proximity of the bridge deck structure exacerbates the issue and precludes significant alterations at this location. Vehicle encroachment into the cycle lane presents a risk of side-swipe and left-hook type collisions for cyclists and hinders cycle progression through the junction.

Proposal: Review location and shape of pedestrian refuge island to allow revised lane dimensions and alignment on the northbound approach to the stop line.

8. Northbound lane allocation on the approach to the traffic signals results in conflicting traffic movements in the centre of the junction

Summary: It was noted that both traffic lanes on the northbound approach to the traffic signals permit straight ahead movements. Vehicles in the right hand lane wishing to proceed ahead can be impeded by vehicles waiting to turn right in the centre of the junction. This can result in sudden and unexpected lane changes or sudden braking. Cyclists are at particular risk of being collision in the existing road layout.

There is an existing two-stage right turn movement for cyclists (south to east), but it is poorly utilised. Cyclists prefer to enter the general traffic flow and wait in the centre of the junction and turn right against the opposing traffic flow. The ambiguity over the desired movement for vehicles in the offside lane further increases the risk of cyclists undertaking this manoeuvre.

Furthermore, the recommended alignment for Cycle Superhighway 8 requires cyclists to continue north through the junction and perform a two-stage right turn. There is also a heavy cycle flow continuing northbound away from CS8. It was noted that there is a high volume of left-turning vehicles from Chelsea Bridge to Chelsea Embankment (south to west). As a result there is an increased risk of left-hook type collisions involving cyclists.

Proposal: Review the lane allocations on the northbound approach to the junction with a view to provide a single ahead lane. Provide cyclists with a separate green period or provide an early release for cyclists.

Potential impacts: Potential impact to buses, cyclists and general traffic will be determined by traffic modelling, which will be carried out by NP.

9. Pedestrians wishing to cross Chelsea Embankment (west arm) frequently stand on the westbound stepped cycle track

Summary: The westbound stepped cycle track on the southern footway appears to be an extension of the footway, resulting in pedestrians to stand in front of the tactile paving. This increases the risk of pedestrian and cycle conflicts and may impede cycle progression over the junction.

Proposal: Reconstruct the stepped track to start beyond the pedestrian crossing point, with cyclists remaining at carriageway level through the crossing, and, ensure the stepped track is clearly defined at a different level to the footway to users

Potential impacts: Any design needs to account for Thames Tideway works on the southern footway which are expected to be in place for a number of years.

10. Insufficient merging length on Chelsea Embankment westbound exit from the junction

Summary: In the existing road layout, vehicles are forced to merge immediately upon exiting the junction owing to the positioning of the pedestrian refuge and westbound stepped cycle track. This may lead to an increased risk of side-swipe type collisions on the exit from the junction as well as sudden braking movements. Furthermore, traffic flow through the junction can be affected as a result of the delayed merging, causing blocking back over the junction and increasing the potential for conflict or aggressive driving.

In addition, the pedestrian refuge on the west arm of the junction is too narrow to accommodate the pedestrian flows at this junction, especially whilst the annual Chelsea Flower Show is taking place.

Proposals: 1. Review the number of traffic lanes in both directions to widen the pedestrian refuge and / or increase the merging distance. 2. Review the positioning of the stepped track.

Potential impacts: Potential impact to buses, cyclists and general traffic will be determined by traffic modelling, which will be carried out by NP.

Improvements to the pedestrian refuge will have to be balanced against increasing the merging distance on the westbound exit from the junction.

11. Cycle logos positioned to the offside of the Chelsea Embankment (west arm) exit direct cyclists from the nearside position to a vulnerable position towards the centre of the carriageway and oncoming vehicles

Summary: Site observations showed that the stepped westbound cycle track on the west arm exit from the junction ends abruptly, forcing cyclists to merge with the general westbound traffic lane, where they are unlikely to be expected. There is an increased risk of side-swipe collisions as a result.

Furthermore, the cycle logos providing in the westbound lane are positioned towards the centre of the carriageway. This is a vulnerable position for cyclists. Westbound drivers are less likely to anticipate a cyclist to their offside and cyclists will be in closer proximity to oncoming traffic, at an increased risk of head-on collisions.

It is believed that the temporary cycle logos were painted as part of the Thames Tideway Tunnel works and were not removed when the traffic management was amended.

Proposal: The Sponsor is to discuss with relevant stakeholders the potential to relocate the cycle logos and to determine what the longer term changes may be implemented as part of the works. TDE to design the Safer Junctions improvements accordingly.

12. Potential area for urban design improvements

Summary: It was noted that there are relatively large areas of footway which could potentially be better utilised for streetscape improvements. There are opportunities for green infrastructure, cycle parking, seating or other urban design initiatives.

Proposal: Opportunities to improve the urban realm should be explored.

3. Methodology

Identifying potential interventions

TDE is required to produce feasibility designs for each site identified as a Safer Junction site. These may vary in cost for delivery; PPD Commercial should lead on all cost estimating for emerging designs, in collaboration with the Designer. The final interventions are expected to remain within an overall budget of circa £5m (including all design development, project management, sponsorship, communications, and miscellaneous delivery costs).

Early Contractor Involvement will be considered by PPD, in order to inform the cost estimates, and help the designer address risks at any early stage (e.g. in relation to statutory undertakers and procuring necessary surveys).

S&ND will make available any relevant completed studies, which describe issues and suggest solutions. TDE should not rely on collating existing ideas, and will be expected to develop design recommendations independently.

Innovative and creative solutions may be proposed, but non-standard or unapproved techniques will need to be agreed by the Sponsor before significant work is undertaken in developing these options.

The design should address the following issues:

- Improve road safety, focussing on, but not limited to vulnerable road user collisions;
- Facilitating public realm improvements to encourage more people to spend time in the area and maximise the junction's potential against TfL's Healthy Streets indicators;

- Improving local ambience through increasing TfL's green estate. This will also mitigate the exposure of pedestrians (especially children), cyclists and motorcyclists to fumes from stationary traffic and maximising opportunities for carbon capture and sequestration, addressing environmental impacts;
- Improving accessibility and severance issues for pedestrians and cyclists, including cycle parking provisions;
- Journey time reliability should be maintained or improved for buses where feasible;
- In acceptance of the role of Principal Designer, all CDM Regulation 2015 requirements will apply including managing, co-ordinating and programming the feasibility and concept design to include all aspects for delivering the design (i.e. Engineering and Technical Services, Traffic Infrastructure, Network Impact Management, WCAP, Highways Technical Approval Authority, external including contractors for surveys and London Borough of Kensington and Chelsea etc.). The S&ND Principal Sponsor will send a letter formally appointing TDE as Principal Designer and provide the initial PCI separately.

Feasibility designs

TDE is expected to undertake 2D geometric designs of intervention measures for identified locations. CAD based designs should include/ identify:

- General highway layout (existing and proposed), showing the highway boundary;
- Geometric alterations to the highway;
- Land take requirements, if required;
- Lane definition; and,
- Statutory plant, and furniture affected by the proposals and the implications for the design.

Where unavailable, topographical surveys may be required for the purpose of providing suitable feasibility designs however this should be agreed with the Sponsor prior to commissioning.

Where required, TDE to assist the Sponsor in presentation of the proposals to the Streetscape Design Review Group (SDRG).

TDE, in conjunction with the Sponsor, is to provide PPD with the draft feasibility designs to facilitate construction cost estimates for the project.

Concept design of the preferred option is then to be progressed.

Concept design

The final concept design package is to include:

- General Arrangement drawings showing proposed dimensions;
- Site Clearance drawings;
- Signs and Road Marking drawings; and,
- (where appropriate) Outline Urban Realm improvement designs (in conjunction with the nominated Urban Designer).

A Risk workshop with stakeholders will be arranged by PPD during the concept design stage, and output to be included within ARM. TDE will be required to provide their technical input. The output of this meeting will be a detailed Risk Register and Issues Register to be maintained by PPD using ARM.

TDE, in conjunction with the Sponsor, is to provide PPD with the draft concept design to facilitate construction cost estimates for the project.

Assess impact of proposals using strategic assessment framework

TDE will be provided with a Fingerprint output from TfL's City Planner strategic assessment framework tool for each junction. The attributes of the framework include the following Transport Outcomes:

- Safety – Road casualties and crime levels
- Active – Active travel, current and potential cycling and walking levels
- Green – Air quality
- Space efficient – Freight flow levels and car dependency
- Connected public transport – Improved connectivity
- Accessible public transport – Access inequality
- Quality public transport – Bus performance, demand and provision
- Sustainable, active travel developments – Car dependency and poor connectivity
- Unlocking development – Forecast population and employment growth

Once feasibility designs are defined, TDE should assist the Sponsor in completion of a high-level evaluation of all options based on this assessment framework.

Local Modelling of options

Local modelling will be required in order to undertake the assessment of network performance/engineering feasibility. Separate briefs to Network Performance and Traffic Infrastructure will be issued by the Sponsor.

Public Consultation

As a result of the limited timeframe for delivery, public consultation will only take place where there is a statutory requirement. Where no formal public engagement is required, extensive pre-engagement via TfL CCT will take place throughout the design period to maximise the potential for local stakeholder buy-in.

Where formal public consultation is to take place, TDE is to assist with the preparation of material for the consultation.

Key Study Stages and Deliverables

Stage 1

- Project initiation meeting
- Brief note outlining TDE's understanding of study objectives and strategic and local objectives

Stage 2

Following confirmation of the above with S&ND, the following is expected:

- Design of interventions to feasibility and concept level as specified
- Assess impact of each proposal on a local level for all road users utilising the assessment framework
- Periodic spend profile to end of concept design
- Detailed Microsoft Project plan to end of concept design
- Designer's Response to the Stage 1 Road Safety Audit and TfL Highways Approval Document (HAD) for the Technical Approval process
- Technical input to the TfL Engineering Scheme Impact Report (SIR)

Deliverables

In addition to the common deliverables noted in the next section, the following items should also be provided:

Option drawings

Any option drawings should be produced in line with recommendations made by key internal stakeholders in attendance at the Safer Junctions site meetings and / or wash up sessions.

The Sponsor will select the optimum design option which captures the design objectives within the scope of this commission, based on the hierarchy of needs established earlier in this Commissioning Brief.

Utility Surveys

Utility surveys, e.g. C2's shall be undertaken and subsurface utilities are to be determined with the project area. This shall be undertaken during the course of this task order. During the feasibility and concept design stages, the LoHAC designer is to be available for early engagement activities in order to understand the rationale behind design decisions and to ensure that any surveys necessary to undertake the detailed design are procured in good time to meet the agreed timescales. TDE are to assist in the procurement and commissioning of these surveys.

Road Safety Audit

On completion of the concept design, the Sponsor will arrange for a Stage 1 Safety Audit to be undertaken by TfL's in-house Road Safety Team. The Safety Audit reports shall be received by TDE who shall consider and provide a designer's response in respect of any remedial works or additional features considered necessary.

Construction and Design Management

CDM Regulations 2015 should be considered as part of assessing viability of any design. The S&ND Principal Sponsor will send a formal letter of appointment to TDE and provide the Pre-Construction Information (PCI) documentation.

DELIVERABLES

Common Deliverables	Required?
Project Plan that sets out time and cost details, including project milestones and deliverables.	<input checked="" type="checkbox"/>
Periodic reports to coincide with TfL 4-weekly accounting periods detailing time worked, money spent, and percentage complete.	<input checked="" type="checkbox"/>
Report on work undertaken and implementation recommendations (no report without a recommendation). The Report will include a single page Executive Summary as a forward outlining the Commission objectives and conclusions, and a single page Design Statement outlining the key design parameters and decisions.	<input checked="" type="checkbox"/>

The following will be included in the Report or produced as separate documents:

Common Deliverables	Required?
Appropriate plans (AutoCAD and PDF format)	<input checked="" type="checkbox"/>
Traffic counts – To be discussed and confirmed with Sponsor	<input checked="" type="checkbox"/>
Appropriate Traffic Models giving:	
Base	<input type="checkbox"/>
Options	<input type="checkbox"/>
Preferred option	<input type="checkbox"/>
Signed off TSSR	<input type="checkbox"/>
Topographical survey - To be discussed and confirmed with Sponsor	<input checked="" type="checkbox"/>
Stage 1 Road Safety Audit – To be completed by TfL's in-house Road Safety Audit team	<input checked="" type="checkbox"/>
Stage 1/2 Road Safety Audit combined	<input type="checkbox"/>
Road Safety Audit Designer's Response	<input checked="" type="checkbox"/>
Location of Statutory Undertakers plant and potential implications to design.	<input checked="" type="checkbox"/>
Streetscape Design Review Group (SDRG) approval, where required	<input checked="" type="checkbox"/>
Highways Technical Approval at the end of each stage	<input checked="" type="checkbox"/>
Network Performance (NP) approval	<input checked="" type="checkbox"/>
Consultation documentation (plan, text etc.)	<input checked="" type="checkbox"/>
Summary results of consultation exercise(s)	<input checked="" type="checkbox"/>
Cost estimate for construction	<input type="checkbox"/>
CDM documentation	<input checked="" type="checkbox"/>
Public consultation drawings (where required)	<input checked="" type="checkbox"/>
TMO drawings and schedules	<input checked="" type="checkbox"/>
Environmental Checklist	<input checked="" type="checkbox"/>
Healthy Streets Check (with Sponsor)	<input checked="" type="checkbox"/>
Guardrail Assessment	<input type="checkbox"/>
Design change log	<input checked="" type="checkbox"/>

4. Governance

The S&ND Portfolio Sponsor for Road Safety is accountable for the commissioning of this work and the requirements set out in this brief. A PPD Project Manager has been appointed for early involvement of this project, prior to handover at the detailed design stage. The PPD Project Manager is accountable or responsible for all Health and Safety and Project Management activities as set out in the Pathway RACI matrix.

The S&ND Principal Sponsor (based in the appropriate Network Sponsorship Area Team) will be responsible for stakeholder engagement, decision making, and project governance during design development. They will provide appropriate scrutiny and challenge to the Project Manager, who will oversee the design schedule and cost estimates.

TDE should provide a weekly progress report.

A project Progress Meeting will also take place on a monthly basis. TDE should be available for this and may be invited to attend for part of the meeting. There may be other meetings between the Sponsor and TDE however this will be confirmed / requested over the course of the commission period. Please find attached the governance structure in Appendix C.

5. Timescales

TfL has committed to Will Norman, the Walking and Cycling Commissioner for London, to complete detailed design and Gate 4 approval at this location by April 2020.

In order to meet this deadline, TDE are requested to complete the feasibility and concept design with public consultation as outlined in this brief by 31 December 2018.

Indicative milestones for the final design are:

By end August 2019	Feasibility, concept design and public consultation complete (12 months)
<i>Mid August 2018</i>	<i>TDE to respond with understanding of brief, output delivery programme and fee estimate (one week)</i> <i>S&ND to confirm commission (one week)</i>
<i>End December 2019</i>	<i>Feasibility design to be completed with amendments incorporated including Highways TAA submission</i>
<i>End January 2019</i>	<i>Gate 2 sign-off by S&ND</i>
<i>Spring 2019</i>	<i>Public consultation to run concurrently to the concept design with one month to collate consultation report.</i>
<i>End July 2018</i>	<i>Concept design to be completed with amendments incorporated including Stage 1 Road Safety Audit and Highways TAA submission</i>
<i>End August 2019</i>	<i>Gate 3 sign off by RSM-S</i>
By end of April 2020	Detailed design complete (5 months)
By end of February 2021	Construction complete (10 months)

6. Appendices

Appendix A – A3212 Chelsea Embankment junction with Chelsea Bridge Road Safer Junctions collision study

Appendix B – Summary of site visit / meetings with key internal stakeholders

Appendix C – Strategic Assessment Framework ‘Fingerprint’

Appendix D – ‘Before’ Healthy Streets check

Appendix E - Safer Junctions Governance Structure

Appendix A – A3212 Chelsea Embankment junction with Chelsea Bridge Road Safer Junctions collision study



Safer Junctions ~
Chelsea Embankment

Appendix B – Summary of site visit / meetings with key internal stakeholders



Chelsea Embankment
conflicts - site visit 14

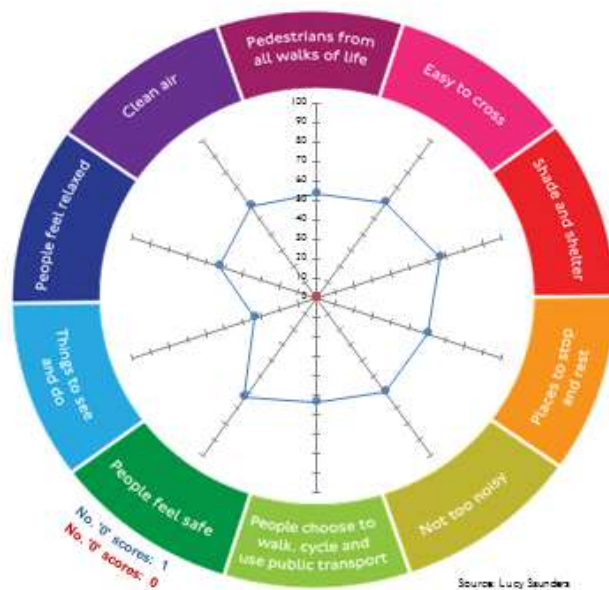
Appendix C – Strategic Assessment Framework 'Fingerprint'

Table A: Strategic Network Check	STRATEGIC NETWORKS IN AREA	Healthy Streets/Healthy People	Existing/Committed Cycle Network	No	
			Strategic Cycle Analysis - Priority	High	
			Strategic Movement & Freight Network	Yes	
		Good PT Experience	Bus Network	Yes	
			Bus Priority Corridor	No	
			Low Emission Bus Corridor	No	
			High Patronage Bus Corridor	Yes	
			Existing PT Interchange	Yes	
		Growth	Growth & Opportunity Area	Yes	

Table B1: Outcome Scoring (short version)	AREA OUTCOME SCORING	Transport Outcomes		Score	Importance	Description	V Low	Low	Medium	High	V High
		Active	Current & potential cycling & walking levels	+ High	High	ped & cycling demand and/or potential					
		Safe	GI and crime levels	+ High	High	accident and/or crime incidence					
		Green	Air quality issues	+V High	Lowest	air quality					
		Space Efficient	Vehicle flow levels & car dependency	+ High	High	vehicle flows and local car ownership					
		Connected PT	Existing PT connectivity	+ Low	High	PT accessibility index					
		Reliable Service	Current & forecast bus demand & bus performance	+ High	High	high patronage & poor bus performance					
		Quality Service	Current & forecast bus demand & bus performance	+V High	High	highest crowding & lowest comfort					
		Inclusive PT	Accessibility level	+V High	Poor	accessibility					
		Growth	Existing & forecast pop. and employment levels	+ High	High	population & employment density					

Appendix D – Base Healthy Streets Check

Healthy Streets Check scores



Healthy Streets Indicators' scores (%)

(Results will only display once all metrics have been scored)

	Existing layout	Proposed layout
Pedestrians from all walks of life	54	#####
Easy to cross	60	#####
Shade and shelter	67	#####
Places to stop and rest	60	#####
Not too noisy	60	#####
People choose to walk, cycle and use	54	#####
People feel safe	64	#####
Things to see and do	33	#####
People feel relaxed	53	#####
Clean Air	58	#####
Overall Healthy Streets Check score	55	0
Number of '0' scores	1	0

Appendix E - Safer Junctions Governance Structure

*Please note that members of the Design and Modelling team listed overleaf shown in italics are subject to Transformation and consequently the individuals involved may be subject to change.

Safer Junctions Governance

