Appendix 4

Holborn Circus Area Enhancement – Highways Improvements

For many years, Holborn Circus was amongst the most dangerous junctions in the City of London and the London Borough of Camden. In addition to being a dangerous junction, it provided poor pedestrian facilities, with formal pedestrian crossing facilities only provided on one of the six arms of the junction.

It is worth noting that the majority of people using this junction are vulnerable road users – in March 2011, the morning peak hour flow through the junction was 5,680 pedestrians and 930 cyclists, compared with 2,510 motorised vehicles. Half of accidents at the junction involved vulnerable road users.

Detailed analysis of collisions taking place at the junction revealed that a significant proportion of the accidents were either side-swipe collisions caused by weaving movements, or side-impact collisions caused by confusion as to how the junction operated.

Further analysis revealed that the main contributor to these accidents was the Grade II Listed Prince Consort Statue at the centre of the junction. The statue's location resulted in:

- Confusion as to whether the junction operated as a six-arm signalised junction, or a roundabout;
- Poor sightlines across the junction, with drivers/cyclists unable to properly see on-coming traffic;
- A slight deflection in the junction. This meant that drivers/cyclists in the inside lanes tended to drive straight across the junction, whilst drivers in the outside lanes tended to slightly swerve to avoid the statue, often causing side-swipe collisions.

Whilst it was recognised that certain elements of the junction geometry were contributing towards the existing poor accident record, a projection of likely future accident occurrence made worrying reading. A number of major redevelopment projects (plus a new Crossrail Station) were to be constructed in the area surrounding the junction, meaning that pedestrian (and cyclist) movement through the junction was certain to increase. It was therefore considered essential to address both the existing problems at the junction, and to safeguard the junction against projected increases in pedestrian and cyclist volumes.

Key to transforming the junction was the relocation of the Grade II Listed statue. This allowed a complete re-design of the junction. By relocating the statue (for which Listed Building Consent was required), the junction could be made physically smaller. The tightening of the junction allowed the signals to operate much more efficiently, as stop lines were brought closer together.

Further, one of the minor arms of the junction was diverted, reducing the number of junction arms to five. Another minor arm was converted to one-way movement, further reducing the number of arms that fed traffic into the junction. This made the junction less confusing to navigate, and allowed a more efficient junction signal phasing.

Through tightening the junction, and reducing the number of traffic arms feeding into it, traffic signal time was released; this allowed us to introduce pedestrian phases on all of the

main junction arms without the need to increase the junction cycle time. Through reducing carriageway space, significant space could also be reallocated for pedestrian use – including the creation of a new pedestrianised public space.

Finally, following consultation with the Department for Transport, eight metre long Advance Stop Lane reservoirs were introduced on all arms of the junction, with mandatory cycle lanes leading into the ASLs.

The junction has been fully operational now for over three years.

The table below (taken from the Gateway 7 report dated July 2016) illustrates the overall accident statistics for the 17 month period before and after the scheme construction period.

	17 Months Before	17 Months After	Reduction
Fatal	0	0	
Serious	3	0	
Slight	13	8	
Total	16	8	50%

As can be seen, accidents overall have reduced by 50%, with serious accidents being eradicated completely.

We have undertaken a further analysis of the impact of the scheme upon accidents involving vulnerable users (cyclists and pedestrians) for the same period. The following table summarises that analysis.

	17 Months Before	17 Months After	Reduction
Pedestrians	2	2	0%
Cyclists	11	1	91%
Total	13	3	77%

A comparison of before and after traffic surveys indicates that junction capacity has remained unaffected by the scheme, and vehicle journey times through the junction broadly similar both before and after scheme introduction.

The total cost of the scheme was £3.1 million, funded by a combination of TfL funds and developer contributions. Before committing funds for the construction phase, TfL required a full Benefit Cost Ratio calculation; the BCR was calculated as 3.2, more than justifying expenditure on the scheme.

Based upon projections of on-going casualty reduction at the junction, and using DfT guidance on the prevention costs per reported casualty, it is estimated that the scheme will result in an on-going casualty saving of £995,000 per annum.