

Smoothing Traffic Flow...

Have we seen the light or more accurately the end of it?

Earlier this year we attended the **Transport for London (TfL) Smoothing Traffic Flow Conference** in Westminster, where there were a number of presentations by TfL and others on smoothing traffic flow.



Amongst the presenters was Keith Firth (Director of Traffic Engineering at Colin Buchanan) who have been working on some interesting studies outside London that showed dramatic improvements in Traffic Movements.

To be clear as to what 'traffic' means in such studies – it covers pedestrians and cyclists as well as the traditional forms of motorised traffic, which of course includes Taxis and Private Hire Vehicles.

The presentation demonstrated that we have traditionally moved forward expecting roads to have traditional forms of traffic management with differing major and minor road priorities but there is a real need to identify when road management and traffic regulations are really necessary.

In law there is no statutory requirement for any form of junction control or statutory requirement for full time signal operation and traffic lights can be switched off at any time.

In today's stop start traffic environment it was felt that the time has come to assess the *unsubstantiated benefits* of traffic controls, as it had been noticed at various traffic light failures around London, that traffic moved much more smoothly. Traffic signals are designed for peak hours and the question was asked, 'Are we sat there doing nothing outside those hours for no reason?'

The Traffic Management Act currently does not use switching traffic signals off as an option for improvements in Traffic Movements. Colin Buchanan studied thousands of signals and junctions throughout London at all times of day and night to get the best comparisons.

The Mayor of London has made a commitment to improving traffic flow, which includes removing traffic signals where possible and to date a total of 145 traffic signals have been identified as targets for potential removal and replacement by simpler traffic management measures.



At junctions it was established that in the main the removal of signals would not deliver significant benefits, however that was not the case overnight as there would be significant benefits by switching them off.

Some traffic signals at junctions, would however show benefits by being switched off in the inter peak period time and some showed that they could be switched off completely as had been shown at Bexley, where traffic calming measures and the removal of signals at a junction had significantly improved matters and saved money and emissions.

One of the key observations was the fact that we stop traffic regardless of whether pedestrians are crossing. This causes delays, damage to the environment, with cars idling and stationary when they could be progressing and is at direct odds with policy in most parts of the rest of the world, where flashing amber, rather than red lights allow drivers to proceed when there is no reason to stop for pedestrians or late at night.

This change would not be technologically or psychologically difficult to do in this country.

In 'Gossip Square' at Skvallertorget, Sweden all traffic signals were removed and it works, with improved traffic flows for all – pedestrians, motorists and cyclists. An additional benefit is that much of the traffic management paraphernalia, signs and markings have gone. This concept is called 'shared space'.

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There is no evidence that 'shared space' schemes result in more casualties than traditional layouts at the types of flow where they have been implemented in the UK and at the few UK schemes where exposure data is available, there does appear to be a positive effect in reducing the number of casualties and the level of risk to pedestrians and cyclists.

It would appear that pedestrians are aggressively against such schemes but there is considerable hypocrisy here as studies have revealed what we already knew – that most pedestrians not only cross when traffic pedestrian signals are at green, they cross just as much during the blackout and red periods. This renders the signals almost useless, causing traffic delays and much negative environmental impact as traffic is stopped at red lights when no pedestrians are present.

Very occasionally motor vehicles go through at red and cyclists allegedly rarely stop when there are no pedestrians and even go through red signals when pedestrians are on such crossings!



Traffic signals being covered up at the successful Cabstand Junction Trial – Portishead Bristol

Cabstand Junction Trial – Portishead Bristol

Traffic lights were introduced at the Cabstand Junction in Portishead Bristol in 2004 at a cost of £800,000 and were a bone of contention locally, with long delays in the changing of lights and massive queues of traffic.

A trial commenced in September 2009 lasting for four weeks to determine whether or not unregulated traffic management would result in improved junction performance and reduced delays without affecting pedestrian and cyclist amenity or road safety.

The traffic lights and controls were turned off and within hours the benefits to traffic were immense, and by the end of the period the queues and delays had halved, despite a 20% increase in traffic flow as a consequence of traffic reassigning through the junction from local rat-runs.

Pedestrian delays were also reduced, and most coped very well without formal controls. The trial was so successful that the traffic signals have remained disabled ever since. So far, there have been no injury accidents and only two damage-only incidents – which is significantly fewer than might be expected for a junction of this nature.

The removal of conventional pedestrian controls was always the main issue and following consultation with local groups North Somerset Council are utilising zebra crossings at key locations to facilitate formal crossing.



Pedestrians crossing at Cabstand junction following signal switch-off

The benefits to all have been immense with more traffic passing through the junction, without the polluting and costly delays to everyone. For 'doom mongers' who may be quick to jump on the 'more traffic' statistics, this is not new traffic but traffic that has stopped using the less suitable side roads and rat-runs locally to pass through the best junction in the best way.

Cabstand junction following signal switch-off



The economic benefit is £1½ million pounds a year and the pedestrian volume has not changed, with no delays to pedestrians at crossing times either. There were no injuries or accidents and the energy value of the savings of not having traffic lights were close to the equivalent to the carbon footprint of a family house!

- The pedestrian volume following the trial remained unchanged at 200-300 per hour in peaks, with pedestrian crossing times reduced from 20sec to 19sec average and from a 90sec to a 45sec maximum.
- Before the trial in 36 months there had been 2 slight Personal Injury Accidents and none in the 3 months after the trial began.
- There has only been two recorded accidents, (both causing minimal damage to vehicles), since the switch-off, which were possibly caused by the distraction of TV cameras filming at the successful junction.
- The Energy consumption at the junction in Daylight hours was 9,820.9 kWh per annum and in Dimming hours was 4,311.2 kWh per annum, delivering a total consumption saving of 14,132.1 kWh per annum.
- The Carbon footprint benefit was 7.5889 tonnes of CO2 per annum comparable to a typical household carbon footprint of 9.8 tonnes CO2 per annum.
- The Energy bill saving was £1,164.34 per annum.

LPHCA Comment

Anyone who drives will know that an inordinate amount of time, fuel and money is wasted at traffic signals, particularly pedestrian crossings, where vehicles idle waiting for phantom pedestrians that are never coming or who have already gone.

Pedestrians will also know that, if they are able, they will cross not only when the lights are green but also when the lights are red or in the blackout phase, a fact that can easily be demonstrated by a study of any pedestrian traffic signal.

The research carried out shows what many of us already knew, the old fashioned Zebra Crossing worked perfectly well in most cases and still works well where it is deployed.

The Mayor in London is working to smooth traffic flow and introduce countdown timing at pedestrian crossings, which will eliminate confusion about the time left to cross.

The main issue to be agreed upon regarding pedestrian crossing signals concerns the blind and what will work well for them.

It is clearly time to assess today's traffic signals and fall in line with the rest of the world regarding flashing amber lights, which elsewhere, work so well and prevent vehicles being unnecessarily 'red lighted' outside peak times and in the dead of night.

Time to see the light, or a bit less of it, or another colour!