

Busting congestion

One of my favourite green policies is to ease congestion and get traffic moving smoothly without so much stop start interruption. We could save so much fuel and cut emissions substantially if vans, cars and buses could proceed at a steady pace more often. Allied to it is greater safety, through better modelled junctions with fewer frustrated drivers taking unreasonable risks.

I have often argued that roundabouts work much better than traffic light controlled junctions to maximise flows and minimise interruptions. Today I wish to share with you some work I have been doing on light phases, following careful observation of a large number of regularly blocked junctions with lights.

One of the common causes of delay is the four phase light set at a conventional crossroads. If we assume a 100 second complete set of phases for the lights then traffic from east, west, south and north have a green phase just 25% of the time or 25 seconds each way. Traffic from any direction can use that green phase to carry straight on, turn left or turn right when they finally reach the turning points. This means each direction of main road is not being used for 75% of the time, apart from turning traffic.

It would be much better if the lights were rephased so that most of the time east and west traffic have a green light for straight on or left turning, or north and south traffic have green for straight on and left turning. There should be short right filter phases, with one allowing north and south to turn right, and one allowing east and west to turn right.

If we allow 7.5 seconds for each of the two right filter phases, the primary east-west and north-south phases then operate for 42.5 seconds per 100 seconds instead of for 25 seconds. This gives us a 70% increase in road use or capacity across the junction, which will greatly cut delays and allow more smoother flows of traffic.

Another regular cause of delay at off peaks is lights turning red on main roads to allow access from lightly used side roads when there is no traffic present in them. All light sets allowing side road traffic onto a main road should have traffic sensors, with constant green for the main road unless traffic is detected, when the normal timings of phases would then kick in.