

**Pedestrian crossing review - notes of meeting of BWA and Jackie Davies 9 September 2019**

Present:

BCC: Jackie Davies

BWA: Alan Morris, Jonathan Flower, Tony Bowden

These notes should be read in conjunction with notes of the BWA meeting of 8<sup>th</sup> July, at which Jackie explained the pedestrian review

1) Crossing timing review of UTC-controlled crossings

There are various stages to the review as in the table below. The current review is of Urban Traffic Control (UTC) controlled stand-alone pedestrian crossings, (This means that those which are part of a junction are excluded).

In order to understand how the UTC/SCOOT system works, and how optimising the system works, the meeting considered in more detail the review of crossings on Church Road, with on-screen access to the control system (SCOOT/STRATOS/ASTRID etc) and Google Street View.

<b>Scope of the review project</b>	<b>Timing</b>
UTC-controlled stand-alone pedestrian crossings	2019 to end of January 2020
UTC-controlled pedestrian crossings at junctions	2020/1, not yet approved

How the SCOOT system works:

- the system covers the city's main arterial routes (corridors) and inner ring road
- each corridor is broken down into 'regions', and signals within each region are co-ordinated
- SCOOT can dynamically switch an individual crossing from one mode to another according to weight of motor traffic.
- when motor traffic is light, SCOOT can be set to allow the crossing to be locally controlled. 'Quiet' and 'busy' are defined for each crossing.
- in busy times, SCOOT may cause the pedestrian crossings it controls to 'single cycle', which means that they run the same cycle time as surrounding junctions. As junctions have multiple stages, this can mean that the pedestrian crossings are less reactive for pedestrians.
- SCOOT can be set to automatically switch between single and double cycling. This means that when the region is sufficiently quiet, the pedestrian crossing can turn green twice as often during each complete cycle of the signal sequence at the surrounding junctions, thus reducing the average waiting time for pedestrians. At busier times it will revert back to "single cycle", running on the same cycle time as the junctions. As junctions have multiple stages this can mean that the crossings are less reactive for pedestrians at these times.
- The road condition is detected using in-road sensors which detect the traffic volumes approaching the crossing. When traffic is stationary, a sensor will also detect this and measure it in units of congestion.
- SCOOT has a "pedestrian priority" mode, as an alternative to giving local control, which works by changing to green for pedestrians ahead of the usual pedestrian crossing window period. This reduces delay for pedestrians with minimal impact on traffic conditions in some circumstances.
- SCOOT can force double cycling if congested traffic is crawling slowly, via the application of a traffic strategy.

- Traffic signal bus priority is a solution that detects when a bus is approaching the junction, and will either hold the signal on green or force it to turn green. This has a small negative impact for pedestrians, and usually only has a very low level of benefit for buses. In Bristol, as pedestrians are higher up the transport hierarchy, it is not applied to pedestrian crossings.

How system optimisation works:

- optimisation is by a 'trial and error' process, crossing by crossing, by observing the results on the road. (A system improvement will make pedestrian wait-time data easier to access in future, but the optimisation will remain trial and error.)
- reviews take place about every 5 to 7 years. Over that time, the streetscape can change, affecting the optimisation.
- the busiest junction in a region tends to drive the cycle time for all signals in the region, which can be detrimental for pedestrian crossings. Features exist within the system that can improve this.
- it is easy to allow short pedestrian wait times when motor traffic is light, or when it is heavily congested and crawling. It is harder when motor traffic is heavy and moving freely.
- two-stream crossings are easier to manage from a traffic optimisation perspective than single-stream ones, as traffic offsets can be provided in both directions for traffic. However, this is often worse for pedestrians. Where possible, two-stream crossings are programmed so that the cycles of the two halves are mirror images of each other, which minimises delay on the central island – and offers the least bad result for pedestrians.

Outputs from the review:

- a report will be provided, and a best practice guide to how to optimise pedestrian facilities, to support future routine revalidation exercises.

Overview of how an optimised balance is struck

- the balance is between bus flows, motor traffic congestion, and pedestrian flows
- Jackie feels that, whatever the political priorities, the balance tends to be the same, because, if the balance is to the detriment of any party, they complain, which drives further amendments, until a compromise is achieved.
- but the voice of the pedestrian is least likely to be heard, and BWA can play a role in encouraging pedestrians to speak up, and by explaining how to comment on timing issues – contact [traffic.signals@bristol.gov.uk](mailto:traffic.signals@bristol.gov.uk).

## 2) Locally-controlled crossings

- the two main types are Pre-Timed Max (PTM) and Vehicle Actuated (VA).
- it is not easy to switch between the two
- on VA, there is a delay whilst the traffic clears, subject to a maximum of between 7 and 40 seconds. 20 seconds is the most common delay period. The delay period is set to be long enough to clear the queue created by stopping the motor traffic, with reference to the volume of motor traffic at the busiest time of day
- on PTM, the lights change immediately on pedestrian request, except there is a minimum period of green for motor traffic – between 7 and 40 seconds. 20 seconds is the most common delay period. PTM is clearly better for pedestrians.
- the pattern of where PTM is used, and where VA, is not easy to describe. It is assessed at each individual site when it is designed, and the decision is a hybrid of traffic flows/ pedestrian flows/ political priorities, etc
- the operation of locally-controlled crossings is not subject to regular review, only individually on request
- many of these crossings are now quite old, and their timings haven't been reviewed for some years. If a review is requested, it is possible that the time might be increased, if traffic volumes have increased significantly since the last review.

- Jackie believes that VA/PTM crossings create minimal delay. Although the delay is potentially 20s or more, a non-UTC VA/PTM is usually in quieter locations and the VA or PTM configuration usually runs low cycle times.

### 3) List of specific problem crossings

Location	Issue	Response
REVIEWED		
Outside Browns restaurant near the Wills building at Clifton Triangle	The red light seems to come up after just a few seconds of it showing green.	[same response for both crossings] No change.
Crossing over Queens Road at the Triangle adjacent to Waitrose. <a href="#">Map</a>	Long wait and very short green man phase. Vehicles move off as soon as green man flashes despite people being in the road.	The Green man period is not meant to get you all the way across the road, it is an invitation to begin crossing – there is an all red period before motor traffic gets the green light, which is intended to get you the rest of the way across the road. Currently, the green man is 8s, which is more than the LTN 2/95 standard of 5s for a crossing of this width.
REVIEW DEFERRED TILL REVIEW PROJECT GETS TO IT (in all cases expected within 18 months)		
Temple Gate, adjacent to station approach <a href="#">Map</a>	Long wait time and 2 phase crossing.	Will be reviewed when junction-related crossings are reviewed
Anchor Road pedestrian crossing (links Library with Millennium Square). <a href="#">Map</a>	Very long wait time.	Will be reviewed by the end of January 2020
Bond Street near McDonalds. <a href="#">Map</a>	Very long wait time and a 2 phase crossing.	Will be reviewed by the end of January 2020 as part of city centre main roads. Long wait-times acknowledged. Conflict with multiple lanes of heavy traffic.
Bond Street near House of Fraser. <a href="#">Map</a>	Very long wait time and a 2 phase crossing.	Will be reviewed when junction-related crossings are reviewed
Clarence Road, east of Bedminster Bridge Roundabout. <a href="#">Map</a>	Very long wait	Bedminster Bridge pedestrian crossings will be reviewed by the end of January 2020
Cranbrook Road, near Zetland Road. <a href="#">Map</a>	Very long wait time for pedestrians	Will be reviewed when junction-related crossings are reviewed
College Green junction with Anchor Road. <a href="#">Map</a>	Pedestrian space is far too small for such heavy footfall.	Will be reviewed when junction-related crossings are reviewed
Upper Maudlin Street outside the main BRI/BRHC entrances	crossing towards the hospitals requires pedestrians to wait to cross to the middle and then to wait again to cross the other carriageway	Will be reviewed when junction-related crossings are reviewed
Marlborough Street near its junction with Upper/Lower Maudlin Street.	this crossing takes on average 1-2 minutes for the lights to change and then pedestrians get 8 seconds to cross	Will be reviewed when junction-related crossings are reviewed. (The vehicle entrance to the BRI is a junction.)
Bristol Bridge – the crossing from Baldwin Street to Castle Park	Long pedestrian wait times, because of the long sequence of traffic light	Will be reviewed when junction-related crossings are reviewed.
the crossing from the Cenotaph to the southern part of the Centre	The crossing is very wide, and the lights for the pedestrian seem to be at red for a long time whilst no buses are passing through	Will be reviewed when junction-related crossings are reviewed.
REVIEW DEFERRED UNTIL THERE IS A CHANGE OF EQUIPMENT		
Whiteladies Road / St Pauls Road / Tyndalls Park Rd. <a href="#">Map</a>	No provision for crossing from the north side of St Pauls Rd to north side of Tyndalls Park Rd. Would like to see pedestrians able to cross over all arms of this junction ideally in one go.	This is under an old inflexible system (RMS). The technology is no longer supported and it will have to come under SCOOT in the next few years. When this happens, the crossing configuration could be reviewed.

#### 4) Process for reporting problems and how they are resolved

Faults should be reported to FixMyStreet or <https://www.bristol.gov.uk/streets-travel/form-transport-and-streets-traffic-lights-fault-report>.

It is acknowledged that the contractor's response effectiveness could be improved.

Timing issues should be reported to [traffic.signals@bristol.gov.uk](mailto:traffic.signals@bristol.gov.uk). The relevant city area manager will pick it up.

#### 5) AOB

Other circumstances in which traffic signals are optimised:

- Jackie was recently asked to review traffic signals on bus route 2 (Cribbs Causeway to Stockwood). This was in the context of the Bus Deal (in which First Bus will increase bus frequency if BCC eases bus flows), to see if bus flow could be improved. It was a one-off request, but the chances are that the Bus Deal work may lead to other similar requests.
- in the context of the Clean Air Plan, an idea is to use signals timing to mitigate the worst air pollution in street canyons like Rupert Street. This would work by holding traffic back to reduce the congested traffic in the pollution hotspot. But there is limited scope for doing this. This has yet to be formally requested, and might be rejected if it had adverse impact on the current optimisation.
- in road schemes, if costs are tight, facilities to improve the management of pedestrian crossings can get squeezed. This would include things like putting them on to UTC and installing CCTV at the site.

#### Use of data

- Jackie is working to make pedestrian delay data, known as the wait confirm time, available for more detailed analysis. Also bus journey time data. This will allow the council to provide a well-balanced assessment of the impact of disruptions and traffic schemes, in terms of pedestrian, bus and general traffic impacts. This will be achieved in the long term by having the data added to the council's data warehouse, which already includes motor traffic count data, journey time data and other SCOOT data. The data warehouse will make the accessing and processing of data easier and faster, which will facilitate better data analysis. [note: BWA will be very interested to hear more in due course !]
- (In the short term, the data will be made available via the UTC system's own database, called ASTRID. This system enhancement was requested by Jackie and is currently being developed by the software supplier, Siemens.)
- Jackie, in her role as BCC Intelligent Transport Systems Principal Engineer, is in touch with Nikolai, the UoB researcher developing a pedestrian count system.

#### Responsibilities

- Jackie's team is responsible only for UTC-controlled crossings.
- some junctions are controlled by an old system (RMS). The **signals maintenance team** is responsible for the RMS sites, as they are only monitored for faults and are not intelligently controlled.
- the **signals design team** is responsible for stand-alone VA/PTM crossings. Team leader James Dowling.

#### Actions arising

- Jackie will send to BWA the report on the SCOOT-managed pedestrian crossings not at junctions (assuming clearance to do so is given)
- Jackie will send the draft scope of the planned review of crossings at junctions to BWA for comment (assuming clearance to do so is given)

- when commenting on road scheme proposals, BWA should make comments on the design of crossings
- BWA to make its members aware of how to report issues with crossing timings and encourage them to report issues. Alan will write a draft communication to BWA members and invite comments.
- Alan to contact James Dowling to ask if BWA can talk to him about stand-alone VA/PTM crossings