

Transport and Environment Committee

10.00am, Thursday, 20 June 2019

Pedestrian Countdown Timers at Traffic Signals

Executive/routine Wards Council Commitments	Routine All
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1. Recommendations

1.1 Committee is asked to:

- 1.1.1 Note that the Pedestrian Countdown at Traffic Signals (PCaTS) system has been developed in London, and is now available for use by other authorities around the UK, including Edinburgh.
- 1.1.2 Note that when considering the potential benefits of the PCaTS system, the concept of the “blackout” needs to be understood. This is the period in the sequence after the green man goes out and before the red man is displayed. This is explained fully in the report.
- 1.1.3 Note that benefits seen in London reflect the way they have set up their pedestrian crossing signals, with absolute minimum green man times and long “blackout” clearance times, which do not reflect current practice in Edinburgh, where the “blackout” is set at a fixed three seconds.
- 1.1.4 Accept that the PCaTS system is unlikely to bring any benefits to Edinburgh; and
- 1.1.5 Agree to discharge the motion with no further action to be taken.

Paul Lawrence

Executive Director of Place

Contact: Ewan Kennedy, Service Manager – Transport Networks

E-mail: ewan.kennedy@edinburgh.gov.uk | Tel: 0131 469 3575

Pedestrian Countdown Timers at Traffic Signals

2. Executive Summary

- 2.1 This report provides background on the way pedestrian crossings work at traffic signals and the way the crossing and clearance periods are set up. It explains the concept of a “blackout” in the pedestrian sequence, this is where no symbol is displayed. This follows on from when the green man goes out and occurs before the red man comes on. This needs to be understood in order to appreciate how the sequencing works. It also considers how the PCaTS system was developed in London.
- 2.2 This report also highlights that, due to the way the traffic signals are set up in Edinburgh, there would be limited or no benefit to the city and recommends that the system is not trialled or adopted in Edinburgh.

3. Background

- 3.1 Council approved an amended motion on [7 February 2019](#) on Intelligent Traffic Signals as follows:
 - 3.1.1 To approve the following adjusted amendment by Councillor Macinnes:
 - 3.1.1.1 To note the adoption of Pedestrian Countdown Timers in other UK Cities.
 - 3.1.1.2 To note the effectiveness and advantages of systems which place greater emphasis and priority on pedestrian safety and sense of comfort in crossing roads, particularly in adding more time for those who may require longer than some to cross roads.
 - 3.1.1.3 To acknowledge that any significant change to how pedestrians, cyclists and vehicle drivers interact should take place within the context of the City Centre Transformation project which is currently examining a comprehensive range of measures to enhance movement within the city centre and elsewhere in the city.
 - 3.1.1.4 To instruct the Director of Place to report to the Transport and Environment Committee within two cycles (May 2019) on the

possibility of installing Pedestrian Countdown at Traffic Signals in Edinburgh. The report, timed to coincide with the expected report on the City Centre Transformation, should outline the results of desk research into systems operated by other UK local authorities, an outline of potential costings, possible locations within Edinburgh, and a timeframe for installation and for collecting and analysing any appropriate data and agrees this report will also consider other options for improving pedestrian convenience and safety, including, but not limited to, modern puffin crossings and adjustments to pedestrian crossing times, as previously discussed by the Transport and Environment Committee on 3 June 2014.

- 3.2 This report responds to those motions and discusses the PCaTS system as used in London, which has been approved for use elsewhere in the United Kingdom (UK).

4. Main report

- 4.1 Controlled pedestrian crossings at traffic signals have been used in Edinburgh for many years now. The Council has adopted a policy that all traffic signals should incorporate controlled red/green man crossings as the accepted standard. The vast majority of junctions in Edinburgh now incorporate signalised crossings. Any that are not currently provided will be addressed when the junctions are next upgraded.
- 4.2 There are two approved methods of displaying the red man and green man symbols to the pedestrians in the UK. The first uses a “nearside” display. These are normally installed above the pushbutton, closest to where the pedestrians are waiting. The other uses a “farside” display, where the display is located on the opposite side of the road, as seen in figures 1 and 2 below.



Figure 1 – Nearside display



Figure 2 – Farside display

- 4.3 Both types of displays have strengths and weaknesses. With nearside displays, the main weakness comes from the display being mounted at a position lower down the pole next to the pushbutton. At crowded crossing points and at busy city centre locations, the display may not be visible to all pedestrians waiting to cross.
- 4.4 At farside displays, the main weakness is that the green man will stop being displayed as the people are still crossing. This can create confusion and uncertainty for pedestrians.
- 4.5 To meet the needs of pedestrians at the different types of crossings, (standalone crossings and signalised junctions), the Council is required to make a choice as to which type of displays will be used at each location.
- 4.6 At standalone crossings, the Council has made it standard construction to use Puffin crossings with nearside displays, whereas farside displays are standard for signalised junctions.
- 4.7 The Puffin crossing with nearside displays is now the recommended type for standalone crossings in the UK. It replaces the traditional Pelican crossing, which uses farside displays and a flashing amber/flashing green man as part of the sequence. The Council is gradually replacing existing Pelicans through its refurbishment programme and will eventually convert all existing Pelicans with farside displays to Puffins with nearside displays.
- 4.8 Pelican crossings use a flashing amber/flashing green man part of the sequence. This is used to indicate to traffic to give way to pedestrians still on the crossing during the clearance period. At junctions, the flashing amber/flashing green man sequence is not permitted, so the concept of a “blackout” is used instead.
- 4.9 To understand how the PCaTS system works, it is necessary to first understand how the pedestrian sequence is configured at junctions, including the purpose of a “blackout” period.
- 4.10 To create a safe crossing point for pedestrians, the sequence and timings are configured according to recognised regulations and national guidance.

- 4.11 When road traffic is signalled to stop, there is a period where the display is held at red man long enough for traffic to clear the crossing areas. Following that, the green man signal is displayed.
- 4.12 The green man period is used as the “invitation to cross” period and is an indication to pedestrians to step off the kerb. It is not set long enough for pedestrians to reach the other side of the road. The “clearance” period is used instead, which follows on after the green man goes out. This is set according to national guidance. It is dependent on the crossing width, and allows pedestrians on the crossing to reach the other side of the road before road traffic starts to move.
- 4.13 On a nearside display, when the green man goes out, the red man is shown straight away and the clearance period starts. Showing a red man does not confuse pedestrians on a nearside display as they are already on the crossing and can no longer see the display unit.
- 4.14 On a farside crossing, pedestrians can still see the display as they cross. If a red man was displayed as soon as the green man was to go out, it can unsettle pedestrians already on the crossing. This means that a “blackout” period is normally configured following the green man going out, where both the red man and green man are extinguished. This is followed by a red man being displayed before the road traffic starts to move.
- 4.15 The total clearance period, which is the sum of the blackout and red man periods, is set in line with national guidance, however the proportion of the clearance time used for the blackout period and red man period can vary according to local policies set by each local authority. This means the length of blackout period can vary according to the practices and policies in place at each local authority around the UK.
- 4.16 In Edinburgh, in common with many other local authorities in the UK, a pragmatic compromise of a fixed three second blackout is used.
- 4.17 In London, a different decision has been made, where a long blackout period is used during the majority of the clearance period, followed by a short red man period before the traffic starts to move.
- 4.18 At wide crossing points, where the clearance period is long, the blackout period can be displayed for an extended time, often over 10 seconds. This can be confusing to pedestrians as there is no display lit for a considerable period, and it can be unclear what to do, or possibly give the impression that the traffic signals are faulty.
- 4.19 In London, solving the issues created by using a long blackout period have resulted in the development of countdown timers (the PCaTS system). (Note: at most other authorities in the UK, where a decision has been made to use short blackout periods, this problem does not exist.)
- 4.20 Note that whilst the Red/Amber/Green signals and sequences used for controlling traffic are standardised across the world by the Vienna Convention, pedestrian

countdown timers are not. Pedestrian countdown timers are therefore free to be developed in any way an individual country chooses.

- 4.21 In the UK, Transport for London (TfL) have lead the way with specifying and developing the PCaTS system. This has now been extensively installed in London, as seen in Figure 3 below.



Figure 3 - PCaTS Display

- 4.22 The PCaTS system operates by counting down the blackout period of the clearance part of the sequence, (the period where no red man or green man is present), after the green man goes out. The regulations state these can only be used for farside displays.
- 4.23 Following on from the development of the PCaTS system in London, countdown timers in the UK are not allowed to be used to countdown any other part of the pedestrian sequence. This restriction has been confirmed by both the UK Department for Transport (DfT) and Transport Scotland (on behalf of the Scottish Government).
- 4.24 In other countries in the world, countdown timers can be used to count down other parts of the sequence, such as the waiting time to the next green man, however this is not permitted in the UK.
- 4.25 In Edinburgh, as a fixed blackout period of three seconds is used at all junctions, installing the system would result in the timers counting down from 3 to 0 before the red man is displayed for the remainder of the clearance period. This is clearly not very useful.
- 4.26 In London, where they have reconfigured a junction to display the majority of clearance period as a blackout, they have also taken the opportunity to reduce the green man time to six seconds which is the bare minimum required by the regulations. This allows crossing time to be taken away from pedestrians and re-allocated to road traffic.

4.27 In Edinburgh, the Council normally allocates more time for the green man phase than the minimum allowed. This is especially true at busy city centre junctions, such as those along Princes Street, where 10 seconds has been allocated. There is no desire to follow London's lead and reduce the green man times all to six seconds, either with or without the introduction of countdown timers. This means that there would be no change to pedestrian crossing times if PCaTS were installed, and consequently no benefit to traffic efficiency at a junction.

5. Next Steps

- 5.1 Due to the way the pedestrian signal sequence is implemented in Edinburgh, with a short fixed 3 second blackout period, the confusion arising from using a long blackout (as seen in London) is minimised. There is therefore no compelling reason to install Pedestrian Countdown Timers.
- 5.2 Installing countdown timers would result in all crossing points countdown from three seconds to zero when the red man goes out, which is clearly not very useful.
- 5.3 It is suggested that the Council continues with its current policy for setting a short three second blackout period at junctions, as a tried and tested compromise. This will provide consistency across the city.

6. Financial impact

- 6.1 The following indicative figures have been put together to illustrate the cost of installing the PCaTS system at junctions in Edinburgh should they be adopted.
- 6.2 At a standard crossroads junction, which is the most common type in Edinburgh, there are eight pedestrian displays. Having sought indicative prices from manufacturers, there would be a cost of £1,000 per PCaTS unit, including fitting. Therefore an average cost of £8,000 would be required for each junction.
- 6.3 There are approximately 250 junctions in Edinburgh. The cost of the work would be as follows:

Cost for a single trial site:	£8,000
Cost to equip all traffic signals in Edinburgh:	£2m
- 6.4 Officer time would also be required to procure equipment, programme in installations and updating records drawings as appropriate. This would take around two days work per site, on average, so two years of a full time member of staff would be required.
- 6.5 There is currently no budget allocated and no staffing resources available to cover these potential works.

7. Stakeholder/Community Impact

7.1 None.

8. Background reading/external references

8.1 None.

9. Appendices

9.1 None.