

A20 Speed Limit Reduction Scheme Design Review

Introduction

The TfL safety camera team were requested to investigate speed enforcement on the A20 after multiple incidents on the A20 eastbound carriageway east of Cookham Road because of surface water flooding.

The drainage issues identified will be resolved as part of a permanent scheme in 2024. In the interim period, a lowered speed limit enforced by safety cameras was sanctioned.

A proposal (Ref. A20 ASC Proposal v1 - [REDACTED] - 06/08/2023) was submitted for a reduction of the National Speed Limit on the A20 eastbound, east of the Crittalls Corner roundabout, to 40mph. The National Speed Limit would recommence east of the BP Petrol Station. No changes were proposed for the A20 westbound carriageway. The report detailed a possible signing strategy.

TfL Engineering were asked by Asset Operations to review the proposed signing strategy and provide a design to enable the speed reduction to be implemented.

Proposals

Following a review of the report, the following issues were noted:

- The number of 40mph repeater signs needed to be increased to meet the spacing requirements set out in Traffic Signs Manual Chapter 3 (Table 8-4).
- The A20 was already 40mph west of Woodchurch Close. Providing a 40mph speed limit east of Crittalls Corner would result in a speed limit of 40mph-50mph-40mph. It was agreed to provide a consistent 40mph speed limit between Woodchurch Close and the BP Petrol Station.

The proposals included:

- Replacing the existing A20 eastbound 50mph (600mm) terminal signs near Woodchurch Close with 40mph (300mm) repeater signs.
- Replacing the 50mph (450mm) repeater signs on with 40mph (300mm) repeater signs on the A20 eastbound between Woodchurch Close and Crittalls Corner.
- Replacing the National Speed Limit terminal signs (600mm) on the eastbound Crittalls Corner A20 on slip with 40mph (600mm) terminal signs.



- Replacing the National Speed Limit (750mm) terminal signs at A20 eastbound at Crittalls Corner with 40mph (300mm) repeater signs.
- Providing new 40mph (300mm) repeater signs on the A20 eastbound between Crittalls Corner and the BP Petrol Station.
- Providing new National Speed Limit terminal sign on the A20 eastbound east of the BP petrol station.

Design Review

Concerns have been raised by members of the public that the change in the speed limit from 50mph / National Speed Limit to 40mph is not clear. Issues such as the size of the signing provided has been questioned.

Repeater Signs:

The spacing and size of the repeater sign sizes (300mm) provided as part of the speed reduction scheme is in accordance with the relevant guidelines (See Figure I below: Traffic Signs Manual Chapter 3 - Table 8-4 for a 40mph speed limit

<https://assets.publishing.service.gov.uk/media/5c78f895e5274a0ebfec719b/traffic-signs-manual-chapter-03.pdf>).

Table 8-4 Size, recommended spacing and minimum clear visibility distances (CVD) for repeater signs

Speed limit and type of road ^{1,2}	Size of sign (mm)	Maximum distance (m) between		CVD (m)
		Each repeater sign	Terminal sign and first repeater ³	
20 mph zone	300	See 8.7.1	See 8.7.1	-
20 mph	300	200	200	20
30 mph (lit road)	-	No repeaters	No repeaters	-
30 mph (unlit road)	300	250	200	30
40 mph	300	350	250	40
50 mph	450	450	350	50
60 mph (dual carriageway)	600	500	400	60
National speed limit (lit single) carriageway)	450	500	400	60
National speed limit (lit dual) carriageway)	600	600	450	70
National speed limit (unlit road)	-	No repeaters	No repeaters	-

Figure I – TSM Chapter 3 Table 8-4: Size, recommended spacing and minimum clear visibility distances for repeater signs.

The size of the repeater signs has been confirmed on site by TfL Engineering (see Figure 2 below).



Figure 2 – Size of the new 40mph repeaters (300mm)

The A20 west of Woodchurch Road is already subject to a 40mph speed limit. TfL Engineering has reviewed the size of the existing repeater roundels and found they are larger (450mm) than those provided as part of the speed limit reduction scheme (300mm). The larger existing 450mm repeater signs are not in accordance with Table 8-4 of TSM Ch.3.

The existing signing west of Woodchurch Close is larger and may be more visible to drivers. This may make the repeater signs provided as part of the speed reduction scheme appear too small. However, vehicles exiting the existing 40mph near Woodchurch Close should already be travelling at / close to 40mph. The signing provided within the speed reduction scheme (300mm) should therefore still be visible for drivers travelling at 40mph. TfL Engineering therefore consider the repeater sign size provided as part of the speed limit reduction scheme appropriate.

Terminal Signing

Revised terminal signs have been provided at two locations as part of the speed reduction scheme:

- Replacing the National Speed Limit terminal signs (600mm) on the eastbound Crittalls Corner A20 on slip with 40mph (600mm) terminal signs.

The new 40mph terminal signs are the same size as the previous National Speed Limit terminal signals and are in accordance with TSM Chapter 3 Table 8-1 (See Figure 3).

- A new single nearside National Speed Limit (750mm) terminal sign on the A20 eastbound east of the BP petrol station (note no offside sign has been provided).

In terms of size, this is in accordance with TSM Chapter 3 Table 8-1 (See Figure 3 below).

Table 8-1 Sizes of terminal signs (other than at junctions)

Type of approach road	Speed limit on approach road (mph) (higher limit)				
	30	40	50	60	70
	Size of sign (mm)				
Single carriageway or one-way road	600	600	600	750 (600)	-
Wide single carriageway (10 m or more)	-	600	750	900 (750)	-
Dual carriageway	-	750 (600)	900 (750)	900	1200 (900)
Motorway	-	-	1200	1200	1200

Figure 3 – TSM Chapter 3 Table 8-1 – Sizes of terminal signs

No offside National Speed Limit terminal sign has been provided as there is nowhere to safely locate the sign within the central reservation. A departure from standard would be required to locate the sign on the central reservation in front of the safety barrier.

TSM Chapter 3 para. 8.22 states that there is no specific requirement to provide two terminal signs, one on each side of the carriageway, where the speed limit changes along a length of road. However, in most situations it is recommended that two signs are provided, particularly on motorways and rural dual carriageway roads as a single sign could be obscured by high-sided vehicles.

Where the speed limit changes to the national limit. TSM Chapter 3 states that two signs are likely to be required as there is no appropriate road marking to use in place of an offside sign and repeater signs are not used where there is no street lighting. It states that a driver not aware of the higher limit might be a hazard to other road users and encourage dangerous overtaking.

TSM Chapter 3 states that any decision by the traffic authority to use a single sign should be underpinned by robust risk analysis.

A single sign was considered appropriate at this location for the following reasons:

- Road users are exiting a lower speed limit into a higher speed limit. As a result, awareness of the higher speed limit is not as critical for safety or enforcement purposes.
- The A20 is a dual carriageway, flaring to three lanes soon after the commencement of the National Speed Limit. As a result, there is safe opportunity to overtake any slower moving vehicles.
- Many vehicles now have technology that informs drivers of the speed limit of the road. The provision of an offside terminal sign informing road users of an increase in the speed limit is not as critical.

In conclusion, no changes are considered necessary to the terminal signing provided as part of the speed reduction scheme. An offside National Speed Limit sign could be provided, however this would require a departure from standard.

Temporary Signing

Following complaints from members of the public, temporary 'New Speed Limit in Force' signing has been provided to help inform drivers of the change in speed limit. The siting and number of these has been determined by the contractor.

It was observed on site that the first of these signs has been in sited in advance of, but close to the static speed camera (near Northcote Road). It is understood that there may have been a sign installed further west of this, but this is no longer present on site. It may be beneficial to locate a sign further west to provide further advance notice of the change in speed limit before the enforcement camera.

It was further noted that the temporary signs appear to have minimal lateral clearance from the edge of the carriageway. This may be a result of trying to balance lateral clearance between the edge of the carriageway and the footway. To prevent damage from passing vehicles, signs should be set back appropriately from the edge of the carriageway.



Figure 4 – Temporary 'New Speed Limit in Force' Signing

Possible Addition Measures to Raise Driver Awareness

The signing provided for the speed reduction scheme is in accordance with relevant guidelines. Temporary signing has also been installed to highlight the new speed limit. TfL Engineering do not consider that further measures are necessary.

The following additional measures have been considered by TfL Engineering to highlight the change in speed limit if Asset Operations are required to positively address customer concerns:

- 1) Provide 40mph (750mm) terminal signs rather than the 300mm repeaters at the start of speed reduction scheme near Woodchurch Close (where the previous 50mph terminal signs were located)
<https://www.google.com/maps/@51.4294042,0.0841081,3a,75y,145.78h,84.67t/data=!3m6!1e!3m4!1sU6yvakbLSQqjzHAideASqg!2e0!7i!6384!8i8!92?entry=ttu>.

This may help to raise awareness of the change in speed limit from 50mph to 40mph. This is not in accordance with the guidelines set out in TSM Chapter 3 but should not impact on enforceability (2 x 40mph (750mm) Terminal signs).

This could be repeated on the A20 eastbound at Crittalls Corner where the previous National Speed Limit terminal signs were located
https://www.google.com/maps/@51.4123021,0.1168796,3a,75y,102.21h,92.45t/data=!3m6!1e!3m4!1sdbDMXa_1IEbD3A7LhJNjzQ!2e0!7i!6384!8i8!92?entry=ttu.

- 2) Increase the size of the repeater signs to 450mm to match that west of Woodchurch Close. Again, this not in accordance with the guidelines set out in TSM Chapter 3 but should not impact on enforceability of the speed limit.
- 3) An offside National Speed Limit sign could be provided at the end of the scheme east of the BP Petrol Station, however this would require a departure from standard to be applied for.

Other issues

A 'Reduce Speed Now' sign has been provided in advance of the area which is prone to flooding. This does not form part of the Speed Reduction Scheme. While the sign does not pose a safety issue, it may be possible to remove the sign to avoid further clutter.

