

Traffic Calming Considerations - 20mph Streets

‘Speed limits should be evidence-led and self-explaining and seek to reinforce people’s assessment of what is a safe speed to travel. They should encourage self-compliance.’ (DfT circular-01-2013 Setting local Speed Limits)

20mph Streets

General notes:

We recommend implementing ‘zone’ restrictions as they bring with them a speed restriction across a cohesive area and are more ‘self-enforcing’ (effective) due to the physical measures that are required, as oppose to a sign-only restriction.

20mph zones will require a Traffic Regulation Order, which will necessitate conducting statutory consultation and inviting objections to the proposals. It is also standard practice to have Road Safety Audits conducted for the entire proposal (including the chosen features) at detailed design and post-implementation stages.

The entrance and exit of the zone will require ‘gateway’ signs. The features on the below table are additional requirements to make the zone compliant with national regulations and contains the recommendations of officers, based on experience, guidance and regulation. There is a requirement to have a physical traffic calming feature every 50m and a good proportion of these being ‘vertical’ features (i.e. not just signing) to improve the self-enforcement of the scheme.

Feature	Legal/Regulatory Requirements for the feature	Pros & Cons	Relative Cost Considerations (Low = £00’s, Medium = low £000’s, High = higher £000’s, Very High = £0,000’s)
20mph repeater signs	No TRO required	<p>Pros: Used in combination with carriageway roundels can leave motorists in no doubt as to the speed limit across a wide field of view. Can be placed on existing posts/lamp columns to minimise additional street clutter. Are considered as a ‘traffic calming feature’ for a 20mph zone. Signs typically suffer from little wear.</p> <p>Cons: Not very visible behind on-street parking and near to vegetation. Used on their own, they offer only an edge-of-carriageway reminder of the speed limit and are relatively small. Will add to street clutter if there are limited existing posts/lamp columns, as new posts will need to be installed.</p>	<p>Installation: Low, particularly if being erected on existing posts/lamp columns.</p> <p>Maintenance: Low, infrequent</p>

<p>20mph painted (on carriageway) roundels</p>	<p>No TRO required</p>	<p>Pros: Very prominent and in motorists forward sight line. Used in combination with repeater signs can leave motorists in no doubt as to the speed limit across a wide field of view. Are considered as a ‘traffic calming feature’ for a 20mph zone.</p> <p>Cons: They are quite large and impactful on the street scene. Subjectively, this could be considered positively or negatively by residents. Less visible on roads that suffer from dirt/mud run-off and during periods of snow cover. Are on the carriageway surface, so are susceptible to relatively high wear rates through being driven over and environmental impact. This will impact their effectiveness over time and impact ongoing maintenance costs. Require a good road surface on which to be applied.</p>	<p>Installation: Low. Installation is broadly 3-4 times the cost of a sign, (excluding post, fittings and installation of the sign).</p> <p>Maintenance: Medium, relatively frequent.</p>
<p>Rumble strips (painted)</p>	<p>No TRO required</p>	<p>Pros: Relatively inexpensive to install.</p> <p>Cons: Will have little-to-no effect on vehicle speeds. Create a significant noise, so are not recommended for use in urban areas. Are on the carriageway surface, so are susceptible to relatively high wear rates through being driven over and environmental impact. This will impact their effectiveness over time and impact ongoing maintenance costs. Require a good road surface on which to be applied.</p>	<p>Installation: Low.</p> <p>Maintenance: Low, relatively frequent.</p>
<p>‘Reactive’ LED Signing</p>	<p>No TRO required</p>	<p>Pros: A clear, high-visibility reminder of the speed limit. Reacts only to those motorists at/exceeding the speed limit. Can be portable (movable to other sites), depending on desirable implementation.</p> <p>Cons: Unlikely to be effective against regular users of the road - more effective reminders for streets used by a high proportion of ‘visitor’ traffic. Unlikely to significantly reduce vehicle speeds in isolation. Limited to a single location and single direction of traffic. If mains-powered, would be a fixed site location with ongoing electrical costs and costly initial connection. If solar-powered, would be a fixed site with good sunlight with infrequent, but costly, replacement of battery. If battery powered, will require costly spare batteries for rotation during charging. Will require resource to move units between different locations and service units. Will require complete replacement in the longer-term. Potentially higher risk of vandalization/theft.</p>	<p>Installation: High (highest for mains and solar units), which will include infrastructure on which to place the equipment.</p> <p>Maintenance: See ‘Cons’ - can have a considerable range of short-to-longer term costs, depending on desirable installation.</p>

<p>'Reactive' LED Signing with ANPR technology</p>	<p>No TRO required</p>	<p>Pros: A clear, high-visibility reminder of the speed limit. Reacts only to those motorists at/exceeding the speed limit. Can lead to Police sending warning letters to offending motorists.</p> <p>Cons: Very costly to purchase and install, with relatively high ongoing costs, due to mains power, regular camera calibration, mobile data charges and subscription to the cloud data hosting site. Relies on Police resourcing and support for contacting offending motorists, otherwise becomes no more effective than a standard reactive sign. Limited to a single location and single direction of traffic. If mains-powered, would be a fixed site location with ongoing electrical costs and costly initial connection. Will require complete (or substantial) hardware replacement in the longer-term. Potentially higher risk of vandalization/theft.</p>	<p>Installation: Very high, which will include infrastructure on which to place the equipment.</p> <p>Maintenance: Medium, frequent plus high, infrequent.</p>
<p>Pinch points (small build-outs to narrow the road width)</p>	<p>TRO typically not required.</p>	<p>Pros: Used in combination with other features, they can contribute to a reduction in vehicle speeds. Relatively low maintenance.</p> <p>Cons: In isolation are not likely to significantly reduce vehicle speeds - there are more effective measures available. Relatively costly to install. Can have implications on Highway drainage, which could significantly add to installation costs. Potentially unfavourable to cyclists, unless the carriageway is sufficiently wide to accommodate a 'pass through' cyclist lane - this is more likely to be available for chicanes. Placement can be challenging, due to on-street parking, dropped-kerb accesses and junctions.</p>	<p>Installation: High.</p> <p>Maintenance: Low > Medium, infrequent.</p>
<p>Chicanes (Priority-Flow)</p>	<p>These features will require statutory consultation for the 'give way to oncoming traffic' restriction.</p>	<p>Pros: They create a physical 'gateway' feature to potentially stop a direction of traffic. A cyclist 'pass through' lane could be created, given sufficient carriageway width to do so. As part of a package of measures, could contribute to reduced vehicle speeds and deterring through-traffic from using a street (desirable for a residential area on a non-classified street).</p> <p>Cons: In isolation are not likely to significantly reduce vehicle speeds in a wider area - there are more effective measures available. Costly to install, particularly as they will require illuminated signing.</p>	<p>Installation: High > Very High (extent depends on size and complexity of the feature).</p> <p>Maintenance: Medium, infrequent, Low, frequent (electrical costs).</p>

		<p>Can have implications on Highway drainage, which could significantly add to installation costs, although these larger features can more easily include drainage channels.</p> <p>Without other features in place, could lead to motorists ‘racing’ to pass the feature ahead of oncoming traffic.</p> <p>Create stop/go situations, which could be disturbing for nearby residents, disruptive to traffic flow (particularly bus routes and overall traffic at busier times).</p> <p>Potentially unfavourable to cyclists, unless the carriageway is sufficiently wide to accommodate a ‘pass through’ cyclist lane.</p> <p>Placement can be challenging, due to on-street parking, dropped-kerb accesses and junctions.</p>	
Cushions (sets of)	These features will require statutory consultation.	<p>Pros: These features are shown to be more positively impactful on reducing vehicle speeds and are appropriate for use on bus and emergency service vehicle routes. Depending on placement, can be circumnavigated by cyclists and less impactful as a result.</p> <p>Cons: These features are not as positively impactful on reducing vehicle speeds when compared with humps (below) but are a necessary compromise on bus and key emergency service vehicle routes. Can be largely straddled by vehicles with a wider wheelbase and higher ride height, potentially having a lesser speed-reducing effect. Placement can be challenging, due to dropped-kerb accesses and junctions. Can be seen as negatively impactful on the street scene. Can generate claims of noise and vibration from nearby residents. Features are run over, so will require lining and other maintenance over time.</p>	<p>Installation: Medium > High, depending on the width of the road to span.</p> <p>Maintenance: Low > Medium, infrequent.</p>
Humps (full-width)	These features will require statutory consultation.	<p>Pros: These features are shown to be positively impactful on reducing vehicle speeds as they are unavoidable.</p> <p>Cons: Not desirable nor recommended on bus routes, key emergency service routes or those with a high volume of HGV traffic. Undesirable to cyclists, as they will also be impacted by the feature. Placement can be challenging, due to dropped-kerb accesses and junctions. Can be seen as negatively impactful on the street scene. Can generate claims of noise and vibration from nearby residents. Features are run over, so will require lining and other maintenance over time.</p>	<p>Installation: Medium > High, depending on the width of the road to span.</p> <p>Maintenance: Low > Medium, infrequent.</p>
Tables	These features will require statutory consultation.	<p>Pros: These features are shown to be positively impactful on reducing vehicle speeds as they are unavoidable. Can become a more ‘attractive’ feature in the street scene, compared with humps.</p>	<p>Installation: High > Very High, depending on the size and other incorporated features.</p> <p>Maintenance:</p>

		<p>Can be made a more 'useful' feature if also made into an 'at-grade' pedestrian crossing enhancement, whether uncontrolled or a zebra crossing, for example.</p> <p>Cons:</p> <p>Not desirable nor recommended on bus routes, key emergency service routes or those with a high volume of HGV traffic, but more acceptable if the top of the table spans a longer length (e.g. 12m+), which will significantly escalate costs and prove the location challenging.</p> <p>Undesirable to cyclists, as they will also be impacted by the feature.</p> <p>Placement can be challenging, due to dropped-kerb accesses and junctions.</p> <p>Many engineering challenges may make these unsuitable, such as the level differentials between footway and carriageway being too shallow, surface water drainage, utility chambers within the desirable area.</p> <p>Can generate claims of noise and vibration from nearby residents.</p> <p>Features are run over, so will require lining and other maintenance over time.</p>	Medium, infrequent.
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