7. Gateways and entry treatments

7.1 Background

7.1.1 Gateways (TAL 13/93) are used to signify the approach into a village, or into a traffic-calmed area such as a 20 mph zone. Gateways are sometimes called 'entry treatments' (Section 7.3) or 'thresholds'. They can have many different forms, but those implemented to date have most commonly incorporated a distinctive change in road surface colour or material, a prominent sign to alert drivers to the calmed area and perhaps other measures such as 'dragon's teeth'. In some areas the conspicuity of the signs and markings can raise objections, but trials have shown that conspicuity of the gateway is a requirement for them to be effective. Some local authorities have overcome this problem by using existing features such as historic arches, or features using local materials such as fences or brickwork coming near to the edge of the carriageway to emphasise the gateway in a manner more in keeping with the surroundings. It is advisable that gateway features are set at least 450 mm from the edge of the carriageway (increasing to 600 mm where there is a severe camber or crossfall), to avoid the risk of vehicles clipping them. Linking gateway features to the visual start of a village may also help to reduce vehicle speeds.

7.1.2 A report entitled *Natural Traffic Calming: guidance and research report* (Scottish Executive, 1999a) concluded that the calming of roads as they enter settlements requires a process of adjustment and transition involving a range of different physical and perceptual factors.

7.2 Gateways to villages

Visibility

7.2.1 A gateway (Fig. 7.1) should be sited so that drivers do not encounter it suddenly. It should be visible over at least the stopping distance for the 85th percentile of the approach speed of vehicles.

Fig. 7.1 Village gateway at Charlwood

Basing the distance on the speed limit will often not be sufficient, and speed measurements should be taken to identify the 85th percentile speed. Site inspection will determine if the stopping distance is sufficient or if it needs to be increased. Care should be taken when considering placing gateways on long curves where they may not be initially in the driver's line of vision. Gateways should be linked to the visual start of the villages. TAL 01/04 (*Village Speed Limits*) defines a village as having at least 20 houses and a minimum length of 600 metres, with a recommended average density of at least 3 houses per 100 metres.

Conspicuity

7.2.2 Gateways should be as conspicuous as possible, whilst remaining in keeping with the surroundings. The effectiveness of various individual gateways is described in Wheeler *et al.*, 1993 and Wheeler *et al.*, 1994. The conspicuity of a gateway may be marginally enhanced by the use of dragon's teeth (TAL 01/00), which are not road markings and therefore do not require special authorisation. However, it should be noted that, as the markings are not visible from a distance or in wet weather, their impact is likely to be minimal and the use of such markings alone would not be advisable. If dragon's teeth markings are being considered, the negative

Fig. 7.2 Entry treatment at the start of a 20 mph zone

visual impact on the local environment should be weighed up against the slight potential for additional speed reduction.

Horizontal elements

7.2.3 These can have the form of a contrasting coloured surface, which may also be textured or form a rumble device (see Chapter 5). The area should be at least 5 metres long. Longer lengths up to 10 metres can improve conspicuity, but beyond this length they may detract from the effect of the gateway. Edgeline hatched markings with a dashed border (diagram 1040.4 of TSRGD) can make the carriageway appear narrower, whilst still allowing larger vehicles to overrun the areas if necessary. Islands or build-outs can be used to narrow the carriageway at the gateway, but care should be taken to maintain adequate road width for the vehicles that use the road. Ghost islands or overrun areas can be used where farm machinery or specialist vehicles are likely to need to negotiate the narrowing. Islands can be placed towards one side of a gateway to give protection to cycle lanes or cycle bypasses.

Vertical elements (including road signs)

7.2.4 Speed limit and village nameplate signs are prescribed in TSRGD. Road furniture positioned at the gateway should be set sufficiently far back so that vehicles do not come into contact with the furniture. Location on the footway or cycle track should be avoided, unless there is sufficient space remaining to allow safe passage of pedestrians and cyclists. If signs span the footway or cycle track, there should be adequate headroom for users. For any structure erected as part of the gateway, careful consideration needs to be given to the effect if impacted by a vehicle.

7.3 Entry treatments

7.3.1 An entry treatment is a form of gateway, usually used in urban areas (Fig. 7.2). Entry treatments have been developed for use at side roads to let drivers know that they are leaving a major road and entering an area of different character, which may be a residential road. They may indicate the start of a series of traffic calming measures, or they may identify the gateway at the boundary of a 20 mph zone or Home Zone.

7.3.2 Gateways to 20 mph areas can incorporate coloured surfaces, with or without a 20 mph elongated roundel marking. Where a 20 mph roundel marking is used, a coloured background can give it added prominence. Under TSRGD, such roundels do not require authorisation by the Department.

7.3.3 Entry treatments in urban areas can include features such as raised crossings. These give drivers

further encouragement to decrease their speed. If used, these must be appropriately signed and marked (see paragraph 4.1.9).

7.3.4 Entry treatments must not interfere with access to the frontage of properties.

7.4 Effectiveness

Gateways

7.4.1 The effect on speeds at gateways can sometimes be difficult to quantify, since the design of a scheme may include measures on the approach to the gateway that can contribute to the overall effectiveness, such as rumble strips (see Chapter 5). Results from the VISP village speed project (TAL 01/94) showed that minor gateway treatments achieved 85th percentile speed reductions of generally below 3 mph at the gateways. With more significant treatments at gateways, speed reductions of 6–7 mph were attained. Where major gateways relying on more physically restrictive treatments were installed, reductions in 85th percentile speeds were up to 10 mph in some cases. Further information can be found in TRL reports (Wheeler *et al.*, 1993; Wheeler *et al.*, 1994; Wheeler & Taylor, 1999).

7.4.2 Where speed reductions have been achieved, these have not been sustained over any distance, and speeds within villages have at most been reduced by 1 or 2 mph if there are no additional measures in place. For maximum benefit, gateways need to be used in conjunction with other measures within the village, so that drivers are made aware that lower speeds are required throughout.

7.4.3 An analysis of accidents at village traffic calming schemes (Wheeler & Taylor, 2000) has shown that traffic calming measures can yield reductions in speed that are associated with substantial reductions in injury accidents (a 1 mph reduction in mean speed gave a 4.3 per cent reduction in accidents), particularly accidents involving fatal or serious injury (see TAL 11/00).

Entry treatments

7.4.4 Entry treatments are designed to be used at points where speeds should be low because they are a visual message to drivers, and therefore their individual effectiveness is difficult to assess.

7.5 Environmental Impact

Visual intrusion

7.5.1 It is important to balance the speed- and accident-reducing impact of a gateway against the potential visual intrusion it will cause in the local landscape. By their nature, gateways are designed to be conspicuous, but careful design can minimise the negative impacts on the village character and reduce urbanisation of the rural environment. Signs can be mounted on structures built with local materials such as stone walls or fences. Similarly, build-outs at gateways can be made into features or be designed to complement local buildings. The use of coloured surfacing and/or dragon's teeth markings should be avoided in sensitive areas.

Other impacts

7.5.2 Where gateways are combined with additional traffic calming within villages, speed reductions caused by the gateway may be maintained throughout the village. For village residents, this can lead to improvements in quality of life arising from reductions in noise, vibrations, community severance and vehicle emissions.