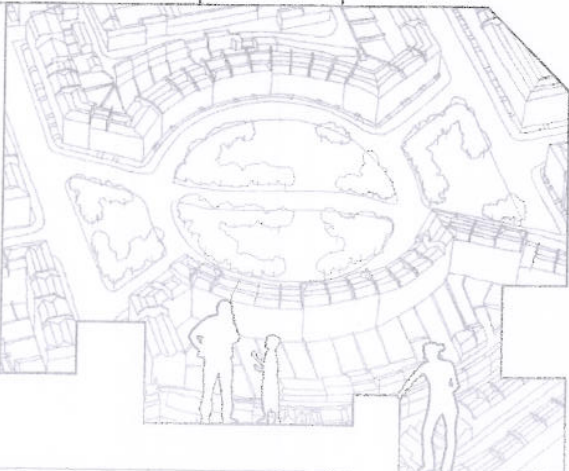




A Policy Statement for Scotland

designing streets



Stopping sight distance

The stopping sight distance (SSD) is the distance within which drivers need to be able to see ahead and stop from a given speed.

The SSD values used in *Designing Streets* are based on research into deceleration rates, driver perception-reaction times and speed. These SSD values are appropriate for residential and lightly trafficked streets. The table below shows the effect of speed on SSD. These values are independent of traffic flow or type of road. It is recommended that they are used on all streets with 85th percentile wet weather speeds up to 60kph.

Below around 20 mph, shorter SSDs themselves may not achieve low vehicle speeds: the design of the whole street and how this will influence speed needs to be considered at the start of the process; e.g. the positioning of buildings and the presence of on-street parking.

Further information on SSDs, including details of the calculation formula, and also the relationship between visibility and speed is available in *TRL Report No. 332*¹¹ and *TRL Report No. 661*¹².

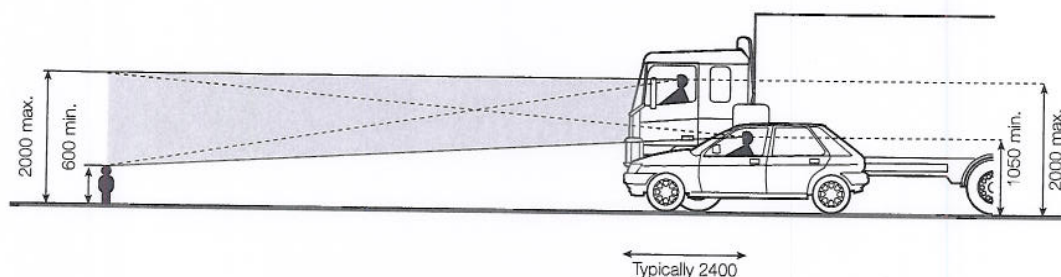
Speed	Kilometres per hour	16	20	24	25	30	32	40	45	48	50	60
	Miles per hour	10	12	15	16	19	20	25	28	30	31	37
	SSD (metres)	9	12	15	16	20	22	31	36	40	43	56
	SSD adjusted for bonnet length	11	14	17	18	23	25	33	39	43	45	59

Visibility requirements

Visibility should be checked at junctions and along the street. Visibility is measured horizontally and vertically.

Using plan views of proposed layouts, checks for visibility in the horizontal plane ensure that views are not obstructed by vertical obstructions.

Checking visibility in the vertical plane is then carried out to ensure that views in the horizontal plane are not compromised by obstructions such as the crest of a hill, or a bridge at a dip in the road ahead. It also takes into account the variation in driver eye height and the height range of obstructions. Eye height is assumed to range from 1.05 m (for car drivers) to 2 m (for lorry drivers). Drivers need to be able to see obstructions 2 m high down to a point 600 mm above the carriageway.



Forward visibility

Forward visibility is the distance a driver needs to see ahead to stop safely for obstructions in the street. The minimum forward visibility required is equal to the minimum SSD. It is checked by measuring between points on a curve along the centreline of the inner traffic lane. Consideration should be given to vertical geometry and any other obstructions.

There will be situations where it is desirable to reduce forward visibility in conjunction with other methods to control traffic speeds.



An example of the reduction in forward visibility to reduce vehicle speed

Visibility along the street edge

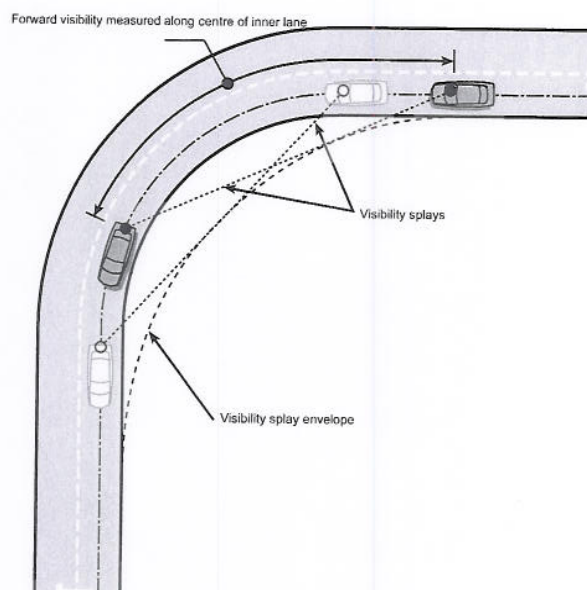
Vehicle exits at the back edge of the footway mean that emerging drivers will have to take account of people on the footway. The absence of wide visibility splays at private driveways will encourage drivers to emerge more cautiously. Consideration should be given to whether this will be appropriate, taking into account the following:

- ▣ the frequency of vehicle movements;
- ▣ the amount of pedestrian activity; and
- ▣ the width of the footway.

Obstacles to visibility

Parking in visibility splays in built-up areas is quite common, yet it does not appear to create significant problems in practice. Defined parking bays can be provided outside the visibility splay if required, and the use of tracked streets that allow for informal parking is also an option. Encroachment of parking space into visibility splays should be avoided where practical.

The impact of other obstacles, such as street trees and street lighting columns, should be assessed in terms of their impact on the overall envelope of visibility. In general, occasional obstacles to visibility that are not large enough to fully obscure a whole vehicle or a pedestrian, including a child or wheelchair user, will not have a significant impact on road safety.



Measurement of forward visibility