ANNEX A

Guidelines for the Application of Special Speed Limits 2010

Road Traffic Act 2004
Section 9(9)

Guidelines for the Application of Special Speed Limits

December 2010

Contents

Foreword

The Road Traffic Act 2004 (No. 44 of 2004) provides the legislative basis for speed limits. The Act introduced metric values for speed limits and, in addition, provided for–

- the adoption of default speed limits for roads in built-up areas, on motorways, rural national roads and rural regional and local roads;
- the enhancement of the powers of members of county and city councils in relation to the application of special speed limits through the making of special speed limit bye-laws;
- the introduction of powers for the adoption of separate speed limits on different carriageways and lanes on roads, the application of special speed limits for particular periods and in particular circumstances;
- the broadening of the arrangements for consultation on proposed special speed limit bye-laws by providing for consultation with the public;
- the application of a special speed limit at road works by Order made by county or city Managers;
- the issue of Guidelines by the Minister for Transport in respect of the making of special speed limit bye-laws;
- the making of regulations by the Minister for Transport establishing speed limits in respect of specified classes of vehicles.

The Road Traffic Act 2010 amends Section 9(2) of the Road Traffic Act 2004 by introducing a 40 km/h special speed limit in respect of a road or roads in accordance with guidelines issued by the Minister.

These guidelines replace the Guidelines for the application of Special Speed Limits 2005.

1. Introduction

The purpose of these guidelines is to provide advice and guidance in relation to the making of speed limit bye-laws by county and city councils for the purpose of applying special speed limits.

The Road Traffic Act 2004, which provides the legislative basis for speed limits generally, provides for the application of a number of default speed limits in respect of various road types. Normally those default speed limits apply to the designated road types. However there are instances in which it is necessary to intervene and change speed limits. This intervention role is vested in the elected members of county and city councils through the making of special speed limit bye-laws. The primary purpose of any such intervention should be to better match the maximum speed allowed to local road conditions and to improve road safety.

The immediate function of these guidelines is to provide advice and guidance to the elected members and staff of county and city councils in relation to the making of special speed limit bye-laws. Technical guidance by way of a speed assessment framework for single carriageway rural roads is also provided.

The guidelines also have relevance to An Garda Síochána who must be consulted in relation to any proposed bye-law applying a special speed limit, the National Roads Authority who must consent to the introduction of a special speed limit on a national road or motorway and to all other interested parties.

The guidelines provide for a new special speed limit of 40 km/h as provided for in section 86 of the Road Traffic Act 2010 and gives the criteria required for use of this speed limit.

The Road Traffic Act 2004 provides new powers to county and city Managers to apply special speed limits at the site of road works. Advice is also given in these guidelines on the making of road works speed limit Orders by county or city Managers.

2. The Context for Speed Limits

2.1 Speed

Speed has several positive impacts, the most obvious being it permits a reduction in journey time and therefore improves mobility. It also has negative outcomes on road safety and the environment. It can also be a factor to significant harmful impacts on the liveability of residential and urban locations.

Excessive (driving above the speed limit) and inappropriate (driving too fast for the prevailing conditions, but within the limit) speed is the number one safety problem in many countries including Ireland, often contributing to as much as on third of fatal collisions and an aggravating factor in all collisions (OECD, 2006).

2.2 Speed and Collision Risk

A driver's choice of speed is largely determined by the physical appearance of the road ahead and his or her consequent assessment of risk. Drivers tend to underestimate risk, and particularly risk to road users other than themselves.

One consequence of this is that speeds tend to be higher than the levels required for safe operation on individual roads, which in turn leads to a reduction in safety on the road network. For similar types of road the risk of collision increases with increasing speed, largely because of the increased stopping distance required. The severity of injury sustained increases with increasing speed, because of the higher speed at impact.

The use of speed limits has been a feature of our traffic and speed management policy for many years now. Speed limits are introduced as an aid for road safety; however experience with speed limits has clearly established that their introduction without associated speed reduction measures will not succeed.

Indeed, if a speed limit is set in isolation, or is unrealistically low, it is likely to be ineffective and lead to disrespect for the speed limit and drivers will be more inclined to choose their own speed. If limits are perceived as not being credible too often, it will also harm the trust in the speed limit system as a whole (ETSC 2010). As well as requiring significant and avoidable enforcement costs, this may also result in substantial numbers of drivers continuing to travel at unacceptable speeds, thus increasing the risk of collisions and injuries (UK DfT Circular 01/2006).

From a general perspective, the introduction of a speed limit that is lower than the default speed limit should not be the immediate response to road safety issues at particular locations. Engineering initiatives should always be investigated first.

A speed limit is the maximum speed at which a vehicle may be driven. It is the responsibility of a driver to obey a speed limit at all times. However the responsibility of the driver extends much further than simply obeying a speed limit. The driver is required to ensure that the speed at which his or her vehicle is being driven is appropriate for the prevailing circumstances, even if that speed is lower than the relevant speed limit applying either to the road or to the vehicle being driven.

2.3 Speed Management

While speed management must take account of the requirements of traffic flow, the primary focus must be road safety.

Successful speed management programmes apply the following progression:

- Decide on the function of the road within the network;
- Apply engineering techniques to make the road as safe as possible relative to its function. Such techniques may include the use of traffic signs, road markings, traffic calming and road design measures;
- Apply a speed limit appropriate to the particular road;
- Enforcement of the speed limit;
- Assess the speed limit, and revise if required.

Regarding the function of the road within the network, Local Authorities should adopt a two-tier hierarchical approach that differentiates between single carriageway roads with a **Strategic Function** and those with a **Local Access Function (See Appendix 1 for further information on road function and use of the speed assessment framework)**.

Strategic Function
Higher speed limits should be restricted to 'upper tier' or high quality strategic single carriageway roads where there are few bends, junctions or accesses.

Local Access Function
Lower speed limits would be appropriate on 'lower tier' single carriageway roads passing through a local community, or having a local access or recreational function. They would also be appropriate where there are significant environmental considerations or where there is a high density of bends, junctions or accesses, or the road is hilly.

The setting of appropriate speed limits is an important component of speed management which, in turn, is an essential part of the management of road safety on the road network.

2.4 Speed Limits

Once an appropriate speed has been determined for a road or section of road (taking into account road safety requirement as well as mobility and environmental considerations and quality of life for citizens living along the road) steps must be taken to ensure drivers adopt the appropriate speed. One of the key measures for achieving appropriate speed outcomes is the implementation of speed limits. Appropriate speed limits in themselves are only one element of a speed management approach but for the foreseeable future speed limits will continue to form the backbone of speed management strategies and policies.

Speed limits act as a key source of information for road users. Set correctly, they help reinforce drivers' assessment of a safe speed and act as a pointer to a nature of the road and associated level of risk to themselves and vulnerable road users. Speed limits are therefore an important part of the toolkit for achieving appropriate vehicle speeds and wider road safety benefits. Speed limits specify the **maximum safe speed of travel permitted for a light vehicle on a road under ideal conditions**. Speed limits are not intended to be seen by drivers as setting a target speed, nor as being appropriate in all conditions. Drivers should be encouraged to adopt slower speed when required by the prevailing conditions. Additionally, local speed limits should not be set in isolation, but considered alongside other methods

to manage speeds, including engineering measures, education, training publicity and enforcement.

Indeed, in addition to the provisions relating to speed limits, the Road Traffic Acts contain a number of additional references to speed. The offence of dangerous driving (Section 53 of the Road Traffic Act, 1961) includes a specific reference to speed and the Road Traffic (Traffic and Parking) Regulations 1997 includes the following provision:

"A vehicle shall not be driven at a speed exceeding that which will enable its driver to bring it to a halt within the distance which the driver can see to be clear." (Article 7 of S.I. No. 182 of 1997 – Road Traffic (Traffic and Parking) Regulations, 1997).

The rules of the road 2010 state the following:

"Signed speed limits set the maximum speed at which vehicles may legally travel on a section of road between speed limit signs, assuming the vehicles are not restricted in any way.

The signs indicate the maximum speed at which your vehicle may travel on a particular road or stretch of road, not the required speed for the road."

The driver must therefore take responsibility to drive at a safe speed to which the road and surrounding environment allows and to a maximum of the posted speed limit.

Research on speed limits suggests that:

- Speed limits at lower levels are more successful when supported by road safety engineering measures;
- The major benefits of speed limits are in terms of a reduction in collision severity and frequency;
- The most immediate consideration that might require a county or city council to consider changing a speed limit applying on a default basis will be collision data with particular reference to the safety of the more vulnerable road users;
- The physical characteristics of a road are very important in the setting of a speed limit. However in considering this issue, regard should be had to the position of the road in a context of the road network;
- The establishment of the mean speed and 85th percentile speeds (the speed at or below which 85% of the traffic is travelling), will also provide a good reference point for the establishment of a speed limit. Road authorities should continue to routinely collect both but mean speeds should be used as the basis for determining local speed limits. For the majority of roads there is a consistent relationship between mean speed and 85th percentile speed. Where this is not the case, it will usually indicate that drivers have difficulty in deciding the appropriate speed for the road, suggesting that a better match between road design and speed limit may be required.
- Data relating to the Annual Average Daily Traffic on a road or in an area might also influence decisions in relation to the use of special speed limits;
- Speed limits are normally more successful when supported by enforcement.

3. Speed Limit Structure in the Road Traffic Act 2004 (and amended by the Road Traffic Act 2010 to include 40 km/h)

This section of the guidelines briefly describes the range of speed limits provided for in the Road Traffic Act 2004 (and amended by section 86 of the Road Traffic Act 2010).

The Act establishes speed limits that apply to defined categories of roads. These apply on a default basis and can only be changed on a permanent basis by county and city councils through the making of special speed limit bye-laws. The speed limits that apply on a **default** basis are as follows –

- The "motorway speed limit" of 120 km/h;
- The "national roads speed limit" of 100 km/h;
- The "regional and local roads speed limit" of 80 km/h; and
- The "built-up area speed limit" of 50 km/h.

County and City Managers may change default speed limits on a temporary basis (i.e. no more than 1 year) through the making of Road Works Speed Limit Orders.

Special speed limits are speed limits that are specified in bye-laws made by elected members of county and city councils. Section 9 of the Road Traffic Act 2004 (amended by section 86 of the Road Traffic Act 2010) sets out the range of **special speed limits** that may be applied through bye-laws. These are:

- 120 km/h in respect of a dual carriageway on a national road as described in Section 5.5;
- 100 km/h in respect of a motorway, a non-urban regional or local road, or a road in a built-up area;
- 80 km/h in respect of a motorway, a national road or a road in a built-up area;
- 60 km/h;
- 50 km/h in respect of any road other than a road in a built-up area; and
- 40 km/h in respect of roads - as described in section 5.6
- 30 km/h in respect of roads as described in Section 5.7

The Road Traffic Act 2004 also introduces a new provision whereby a county or city manager can, by Order, apply a special speed limit in respect of road works (road works speed limit Order). The speed limit that may be applied cannot be less than 30 km/h and must be from the range of special speed limits set out in Section 9 of the Act.

Where it is not appropriate or practicable to impose a mandatory regulatory roadworks speed limit, a cautionary speed limit may be signed. The speed chosen must be either 25, 35, 45, 55, 65 or 75 km/h. Further details are contained in Chapter 8 of the Traffic Signs Manual.

The provisions in the Road Traffic Act relating to road speed limits only apply in respect of public roads. A public road is defined in the Roads Act 1993 as follows – *"public road" means a road over which a public right of way exists and the responsibility for the maintenance of which lies on a road authority.*

4. Responsibility for Speed Limits

4.1 Default Speed Limits

The legislative code applying to all speed limits is established in the Road Traffic Act 2004. The Act provides for speed limits that apply on a default basis to all road types as is pointed out in section 3.

4.2 Special Speed Limit Bye-laws

Under the Road Traffic Act 2004 elected members of county and city councils are empowered to make bye-laws to apply special speed limits in lieu of the default limits on roads in their area.

The process of making bye-laws requires county and city councils to engage in consultation with a number of bodies as well as the public generally. Consultation includes:

- In counties, there must be a consultation process with urban authorities in relation to roads in their areas.
- There must also be a consultation process with any adjoining road authority through which the road also passes to ensure consistency of approach.
- County and city councils must consult with An Garda Síochána in respect of all proposals relating to speed limit bye-laws. Consultation with urban authorities and the Gardaí has been a feature of the bye-law making process since the responsibility for that process was given to county and city councils through the Road Traffic Act 1994.
- The Road Traffic Act 2004 provides for the introduction of a public consultation process in relation to the making of special speed limit bye-laws.

County and city councils proposing to make bye-laws may specify the period for such consultation, which must be not less than one month from the date of the notice sent to the urban councils and the Gardaí. Any representations made by urban authorities and the Gardaí must be considered in the context of the making of bye-laws. The council must consider any objections raised as part of the consultation process before making the bye-law.

The National Roads Authority (NRA) is tasked with the construction and management of the national road network. For that reason, the Authority's consent, in writing, must be given in relation to any proposal to apply a special speed limit, in lieu of a default speed limit, or to change any existing special speed limit on a national road or motorway. The Authority may in certain circumstances promote a change to speed limit on a national road.

4.3 Road Works Speed Limit Orders

County and city managers are empowered by the 2004 Act to make Orders for the purposes of applying speed limits at road works. The Order cannot be for a period of more than 12 months.

Where a manager proposes to make a Road Works Speed Limit Order, the manager must notify the Commissioner of An Garda Síochána or delegated officer of the proposal to make the Order and must consider any representations made by the Commissioner or delegated officer. If the proposed Order is in respect of a national

road or a motorway, the consent of the National Roads Authority must be obtained. When an Order has been made, the manager must publish a notice in at least one newspaper circulating in the area giving details of the location where the Order will have effect, the period for which it will have effect and the speed limit that is being applied through the Order.

5. Recommended procedure for applying special speed limits

Responsibility for applying a special speed limit, in lieu of a default speed limit, lies with the elected members in the county and city councils. This section of the guidelines addresses the question "When should a county or city council intervene?" and sets out the general criteria to be applied in setting special speed limits.

5.1 When should a county or city council intervene?

In an ideal world the appearance and character of a length of road would provide a clear message to drivers about its function within the route and within the network. Driving speeds would be pretty close to the ideal operating speed. In short, there would be a harmony within the road between function, character, safety and speed.

In the real world this will very often not be the case. Road safety and traffic flow requirements give rise to the need for interventions aimed at determining appropriate speed limits for locations in particular circumstances.

This section of the guidelines outlines the range of variations of road types that can be encountered and discusses the speed limit options for each. In view of the approach to default speed limits laid down in the Road Traffic Act 2004, the possible approaches to the application of special speed limits on the various road types are discussed against the background of the default speed limits that would normally apply.

From a general perspective, the introduction of a speed limit that is lower than the default speed limit should not be the immediate response to road safety issues at particular locations. Engineering initiatives ranging from:

- Signage review to decipher whether additional warning signs or rationalisation of existing signage might improve the situation. In addition consideration should also be given to the provision of information signs to inform drivers of the reason for the particular speed limit and make it more credible. Research shows that less time is spent driving above the speed limit when it is credible than when the limit was perceived as being too low.
- Road markings and lines should be reviewed to see if they could be improved. It may be possible to improve traffic calming measures by way of central or edge hatching to visually reduce the road width. Traffic calming measures may need to be supported by the introduction of a special speed limit.
- Provision of footpath and/or cycle lanes as a means to improve traffic calming whilst also protecting the vulnerable road user.
- Improved public lighting
- Consideration should also be given to the use of vehicle-activated signs (VAS), which have proved particularly effective at the approaches to isolated hazards, junctions and bends in rural areas.

5.2 Consultation under the Road Traffic Act 2004

The various requirements placed on county and city councils in relation to the need for consultation in advance of the making of special speed limit bye-laws are set out in Section 4.2. Requirements in relation to consultation have applied since county and city councils were given power to make special speed limit bye-laws through the Road Traffic Act 1994. Councils will be familiar with the procedures that they consider to be appropriate for their purposes. In general terms it is recommended that those consultation processes should commence at the earliest possible opportunity so that the bodies involved can make informed contributions to the overall process. The Road Traffic Act 2004 introduces a new requirement through which there must be consultation with the general public. All representations and objections relating to proposals to be included in bye-laws must be made in writing.

5.3 General advice on the use of special speed limits.

The aim of this part of the guidelines is to give general advice to county and city councils to assist in their determinations as to the locations and circumstances where they consider that they must intervene to replace a speed limit applying on a default basis with a special speed limit. While in the majority of cases such interventions will be to see the application of a lower speed limit, there will be instances where a special speed limit that exceeds that which applies on a default basis will be seen as being appropriate. In the final instance decisions are a matter for the councils acting in accordance with the provisions of the Road Traffic Act 2004.

It is recommended that county and city councils could have regard to the following issues in their consideration of the use of special speed limits. (In general, references to a single road may be regarded as having a relevance to more than one road especially where proposals are being considered for areas).

- Special speed limits are normally unnecessary where the character of the road itself limits the speed of most vehicles (at least 85%) to a level at or below that of the limit under consideration;

- Careful consideration should be given to the function of the road within the network. Local Authorities should adopt a two-tier hierarchical approach that differentiates between single carriageway roads with a **Strategic Function** and those with a **Local Access Function;**

- Speed limits should not be used to solve the problem of isolated hazards, such as a single road junction or bend, as these would be difficult to enforce over such a short length. Other measures such as warning signs, improvement of junctions, superelevation of bends and new or improved street lighting are likely to be more effective;

- The provision of adequate footpaths/cycleways will usually be a more effective means of ensuring pedestrian and cyclist safety than will a speed limit;

- The establishment of the mean speed and 85th percentile speeds (the speed at or below which 85% of the traffic is travelling) will also provide a good reference point for the establishment of a speed limit. Road authorities should continue to routinely collect both but mean speeds should be used as the basis for determining local speed limits. For the majority of roads there is a consistent relationship between mean speed and 85th percentile speed.

Where this is not the case, it will usually indicate that drivers have difficulty in deciding the appropriate speed for the road, suggesting that a better match between road design and speed limit may be required.

- Frequent changes of speed limits over short distances will have a negative effect on the operation of a road and may not lead to road safety benefits.

Built-up areas
On many roads in towns, villages and small population centres, which do not fall within the definition of "built-up area" (See 5.4.3), the maintenance of the national road or rural regional and local road speed limit may not be appropriate and a special speed limit may be required. Determining the appropriate speed limit in such circumstances can be challenging especially in the context of isolated settlements. A guide to the determination of the approach that might be pursued in any particular location would be the number of house accesses to roads being examined. This might be of great use as housing development extends from existing urban environments (See 5.4.3).

Warning signs in advance of special speed limit signs
In certain circumstances county and city councils might consider the use of warning or information signs in advance of locations where special speed limits are to be applied. For example, where a special speed limit is required for safety purposes on a road where its design or purpose suggests that a higher speed limit would seem to be appropriate, motorists might usefully be advised of the reason for the special speed limit. Research shows (SWOV 2007) that less time is spent driving above the speed limit when it is credible than when the limit was perceived as being too low.

Planning and speed limits
The setting of special speed limits should not be used as a mechanism to facilitate additional development and/or access onto the road and to satisfy certain planning criteria. Examples of this are as follows:

- Extending a 50 km/h speed limit by way of bye-law beyond the built up area limit to accommodate additional accesses without corresponding engineering measures. This is particularly evident where the 50 km/h special speed limit is extended into a widened road cross section area and offers no credibility to the driver for the 50 km/h speed limit. Such special speed limits should be accompanied by appropriate engineering measures such as road markings, traffic calming, pedestrian and cycle facilities and other road design measures. This would offer credibility to the speed limit and help reduce enforcement costs.
- The reduction of an 80 km/h default limit to a 60 km/h special speed limit along a stretch of road to allow planning for an access meet certain planning criteria. This might occur where provision of an access does not meet the sight distance requirements for the 80 km/h speed limit but does meet the requirements of the 60 km/h limit. Such changes to speed limits without the appropriate associated engineering measures offers no credibility to the speed limit and can cause confusion and frustration for the driver.
- If a lower special speed limit is applied based on road safety criteria careful consideration should be given to whether additional development is allowed onto the particular stretch of road. Such development may eliminate any safety benefits gained from the lower special speed limit.

The most immediate consideration that might require a county or city council to consider changing a speed limit applying on a default basis will be collision data and

an emphasis on reducing accident severity. The examples above can create inconsistencies in speed limits and encourage unsafe practices such as overtaking and are not recommended unless in exceptional circumstances and together with any appropriate engineering measures.

5.4 Guideline by road type

The purpose of this part of Section 5 is to present circumstances where county and city councils may consider the need to introduce special speed limits having regard to the various types of road encountered in both rural and urban settings. The references to the various "types" are relevant to the perceived use of roads as opposed to the strict legal status afforded to roads in the Roads Act 1993.

The various options discussed for the various road types are for general guidance purposes. However in the case of the use of the special speed limit of 120 km/h on dual carriageways on national roads and the special speed limit of 40 km/h and 30 km/h, the criteria presented must be in place for either of those speed limits to be applied.

5.4.1 Motorways

The default speed limit established in respect of motorways is 120 km/h. This speed limit applies to motorways in both rural and urban areas. It may be considered desirable to apply a lower speed limit in certain situations including:

- Where roads cannot meet the standards for 120 km/h in terms of stopping sight distance, horizontal curvature and vertical alignment as set out in the NRA Design Manual for Roads and Bridges (and allowing for permitted relaxations);
- Where a lower speed limit is desirable for road safety or capacity reasons.

Under the Road Traffic Act 2004, special speed limits may be set in respect of individual carriageways and traffic lanes. This concept is discussed in more detail in Section 5.8. The off ramps that link the motorway to the rest of the network usually provide ample opportunity to decelerate but in some instances a transitional speed limit may be appropriate on the carriageway or on the traffic lane or lanes of the motorway approaching the off ramp. In other situations it may be appropriate to apply a special speed limit on the off ramp itself, for instance if there is a sharp bend on the off ramp. The Traffic Signs Manual 2010 provides for loop warning signs which can be used with cautionary speed limits on ramps (on or off) with tight bends. These warning signs may be used on other type roads where merging or diverging traffic exists.

5.4.2 Rural Roads

In rural areas every effort should be made to achieve an appropriate balance between speeds, speed limits, road function and design, the differing needs of road users, and other characteristics. This balance may be delivered by introducing one or more speed management measures in conjunction with the new speed limits and/or as part of an overall route safety strategy. The aim should be to align the local speed limit so that the original mean speed driven on the road is at or below the new posted speed limit for that road.

5.4.2.1Rural Dual Carriageways

The default speed limit for national roads is 100 km/h and for regional and local roads is 80 km/h.

Where development is limited it may be appropriate to consider a special speed limit of 100 km/h on regional and local roads (See 5.4.2.1(a) below). In general rural dual carriageways with a speed limit of 100 km/h should have regard to the following criteria:

- The standards for stopping sight distance, horizontal curvature and vertical alignment as set out in the NRA Design Manual for Roads and Bridges (allowing for permitted relaxations but not departures) over at least 85% of their length;
- Where the road alignment falls short of the standards set out above then adequate alternative road safety measures such as lining, signing and minor improvements should be investigated and/or be in place at these locations
- Roads sections to which the 100 km/h speed limit applies should extend for a continuous minimum distance of 3km.
- Roads should meet the requirements for safety barrier as set out in the NRA Design Manual for Roads and Bridges
- Low density development

On some rural national dual carriageways with traffic signals at junctions, it may be necessary to consider a special speed limit of 80 km/h or less on the approaches and through these junctions where other initiatives are deemed not to be sufficient.

The use of a special speed limit of 120 km/h on dual carriageways on national roads is discussed in Section 5.5.

5.4.2.1(a) Regional and Local Road Rural Dual Carriageway

In most situations a speed limit of 80km/h or less is sufficient for a regional or local road dual carriageway. If in exceptional circumstances and where development is limited it may be appropriate to apply a special speed limit of 100 km/h on a regional and local road dual carriageway. This approach may be of particular relevance in respect of dual carriageways on roads that were formally part of the network of national roads. If considering a special speed limit of 100km/h on a regional or local road dual carriageway then it is suggested the criteria set out in 5.4.2.1 above should be met.

On some rural dual carriageways with traffic signals or roundabouts at junctions, it may be necessary to consider a special speed limit of 80 km/h or less on the approaches and through these junctions where other initiatives are deemed not to be sufficient.

5.4.2.1(b) National Road Rural Dual Carriageway

High quality rural dual carriageways with segregated junctions and facilities for vulnerable road users would generally be suitable for 100 km/h limits. However, a lower limit would be appropriate if, for example, a collision history indicates that this cannot be achieved safely.

If considering lowering the speed limit from the default value on a national road application must first be made to the National Roads Authority. The written consent of the National Roads Authority is mandatory before any special speed limit in lieu of the default speed limit is applied. The following data must be assembled and included in such an application:

- Clear identification of length of road over which reduction is proposed
- Geometric data indicating radii at worst locations
- Collision data
- Mean speed data (also identifying operating speed at worst locations)
- AADT
- Garda support for alteration
- Evidence to show that other measures have been investigated such as lining, signing and minor improvements and enforcement

Supported by the above data the application should show that the proposed lower speed limit together with road safety engineering measures provides for a safer and more appropriate speed limit.

Rural dual carriageways are not covered by the speed assessment framework contained in Appendix 1 of this document.

The use of a special speed limit of 120 km/h on dual carriageways on national roads is discussed in Section 5.5.

5.4.2.2 Rural single carriageways

The default speed limit on national roads is 100 km/h and on regional and local roads is 80 km/h.

The speed limit on single carriageway rural roads should take into account:

- traffic and road user mix,
- the road's geometry and general characteristics,
- its surroundings, and
- the potential safety and environmental impacts.

In the vast majority of instances, the road function (Strategic or Local Access Function), characteristics and environment and actual speeds being driven should enable the road authority to determine the appropriate limit on single carriageway rural roads.

Where it is not possible and clear cut to set a speed limit based on the above criteria Local Authorities can adopt the speed assessment framework (See Appendix 1) and adopt a two-tier hierarchical approach that differentiates between single carriageway roads with a Strategic Function and those with a Local Access Function.

Strategic Function

Higher speed limits should be restricted to 'upper tier' or high quality strategic single carriageway roads where there are few bends, junctions or accesses.

Local Access Function

Lower speed limits would be appropriate on 'lower tier' single carriageway roads passing through a local community, or having a local access or recreational function. They would also be appropriate where there are significant environmental considerations or where there is a high density of bends, junctions or accesses, or the road is hilly.

In the first instance, local authorities should consider the speed assessment framework for those roads with high collision rates or simply as a way of helping

decisions in borderline cases where the choice of the appropriate speed limit is not clear-cut or where there is a difference of opinions.

5.4.2.2(a) High standard rural national roads

These roads may be two lane roads with hard shoulders or "2+1" carriageways with median safety barriers and the default speed limit of 100 km/h should normally be appropriate.

High standard rural national roads with default speed limits of 100km/h should meet the criteria specified in 5.4.2.1 above. Where these criteria are not met and consideration is being given to a special speed limit of 80 km/h or less then the procedure described in 5.5.2.1(b) above should be followed in this instance.

If investigating reducing or maintaining the speed limit of a high standard rural national road is not clear cut using the above criteria then consideration should be given to using the technical guidance of the speed assessment framework for rural single carriageway roads in Appendix 1.

In the case of two lane national roads, 100 km/h sections which adjoin built-up areas or special speed limit areas with limits of 50 km/h may need some treatment to effect a smooth transition between the 100 km/h and the 50 km/h sections. This may be achieved by providing:

- A standard traffic calming gateway configuration, OR;
- A speed limit ahead sign as contained in Chapter 4 of the Traffic Signs Manual
- An advance warning sign for the 50 km/h ahead.

An alternative approach would be to apply a special speed limit of 60 km/h in advance of the commencement of the 50 km/h speed limit. However this approach should only be pursued where it is not possible to utilise either of the other options. If the use of the 60 km/h speed limit is regarded as being necessary at such locations, then consideration should be given to the provision of footpaths and/or cycleways and public lighting from the point of commencement of that speed limit. The introduction of a 60 km/h speed limit at such locations would require the consent of the National Roads Authority. If an 80 km/h section adjoins a 50 km/h, then no specific treatment is required.

5.4.2.2(b) Unimproved rural single carriageway national roads

These roads will not have been designed to a full design standard and may have rudimentary hard shoulders or no hard shoulders. The default limit on these roads is 100 km/h. If lowering the speed limit is under consideration then the reference should be made to the criteria in 5.4.2.1. If these criteria are not met then consideration should be given to a special speed limit of 80km/h or lower and the procedure set out in 5.4.2.1(b) should be followed.

If investigating reducing or maintaining the speed limit of an unimproved rural national road is not clear cut using the above criteria then consideration should be given to using the technical guidance of the speed assessment framework in Appendix 1.

If a 100 km/h section adjoins a 50 km/h, then the section may be treated as recommended above in section 5.4.2.2(a) for high standard rural national roads. If an 80 km/h section adjoins a 50 km/h, then no specific treatment is required.

5.4.2.2(c) High standard rural single carriageway regional roads

The default speed limit on these roads is 80 km/h. In the majority of cases on high quality rural regional roads 80 km/h will be an acceptable and sufficient speed limit. Where these roads have been constructed to a high standard consideration can be given to applying a special speed limit of 100 km/h. In particular this may occur on bypassed national roads which are now by default local roads unless re-classified as regional roads. It is suggested that the criteria listed in 5.4.2.1 above should be met if considering applying a special speed limit of 100 km/h to these rural regional roads. In addition to these criteria the roads should have a paved width of at least 7m and edge clearance of at least 2m over at least 85% of their length.

If investigating altering the default speed limit of a regional road is not clear cut using the above criteria then consideration should be given to using the technical guidance of the speed assessment framework in Appendix 1.

Where a special speed limit of 100 km/h is applied, an interface with a 50 km/h speed limit should be approached in the same manner as is discussed in section 5.4.2.2(a) above relating to high standard rural national roads. If an 80 km/h section adjoins a 50 km/h, then no specific treatment is required.

5.4.2.2(d) ***Unimproved rural single carriageway regional roads***

These roads will not have been designed to a full design standard and normally have no hard shoulders. The default limit on these roads is 80km/h. Should consideration be given to lowering the speed limit from the default speed limit on these roads then the following criteria should be taken into account:

- Existing collision data
- Mean speed
- Has consideration been given to adequate alternative road safety measures such as lining, signing (warning and information signs), minor road improvements, lighting and enforcement
- Level of development along road
- Function of road – strategic link or local access

If after considering the above it is felt that the default speed limit of 80km/h is not an appropriate speed limit for the road then consideration should be given to introducing a special speed limit of 60km/h.

If investigating reducing or maintaining the speed limit of an unimproved rural regional road is not clear cut using the above criteria then consideration should be given to using the technical guidance of the speed assessment framework in Appendix 1.

If an 80 km/h section or 60km/h section adjoins a 50 km/h, then no specific treatment is required.

5.4.2.2(e) Local roads

The default limit on these roads is 80 km/h. No special treatment at the interface with 50 km/h zones is required. In exceptional circumstances and should a local road be constructed to a higher standard as set out in the preceding paragraph (in respect of rural regional roads) then the application of a special speed limit of 100

km/h on the local road may be appropriate. Should this be the case then the procedure in 5.4.2.2(a) should be followed.

While it is open to county councils to consider the use of special speed limits that are lower than the default speed limit across all road types, a particular feature of the speed limit structure introduced under the Road Traffic Act 2004 and the associated process for the changeover to metric values may give rise to the need for attention in relation to this group of roads. With the replacement of the old general speed limit by separate default speed limits for rural national roads and rural regional and local roads, the need arose for the provision of speed limit signs at interfaces between national and local roads. Notwithstanding the fact that the new speed limit is approximately 18 km/h below the previous general speed limit that applied to such roads, the provision of the signs depicting the 80 km/h speed limit has highlighted the issue of the appropriateness of that speed limit on certain local roads at those interfaces. County councils might consider the question of whether or not a special speed limit might be more appropriate in such circumstances. Similarly county councils may also consider the appropriateness of reducing the default speed limit of 80 km/h for roads on islands. Such initiatives should be pursued with a focus on minimising the need for major signage programmes.

The new major inter urban network has created significant lengths of old national roads (now regional or local roads) which have new reduced speed limits of 80km/h. **Where this occurs all the speed limit signs on the interfacing regional and local road network (with similar 80km/h speed limits) should have their speed limit signs reviewed and in most cases removed and possibly replaced with warning signs to suit the particular road layout.** This would at least eliminate some of the visual inappropriateness of an 80km/h sign on certain regional and local roads and their interfaces.

5.4.3 Urban Roads

The Road Traffic Act defines a built-up area as the area of a city, a borough or a town within the meaning of the Local Government Act 2001. In such areas the default speed limit on all roads other than motorways is the built-up area speed limit of 50 km/h. However not all towns fall within that definition and in the case of many, even very large towns, the built-up area speed limit has traditionally been applied through the bye-law making process. That has also been the case in relation to villages and other small population settlements. Similarly, in many cases urbanisation has spread outside the traditional boundaries of the cities and towns and the extension of the built-up area speed limit to such areas has also been facilitated by special speed limit bye-laws.

Urban areas, including those outside of legally defined 'built-up areas', feature a range of different road types, some of which have a specific purpose while others service a multiplicity of purposes.

The consideration of any change to the default speed limit of 50 km/h for roads in such areas must be informed by the fact that such areas have a high presence of pedestrians and/or cyclists.

The various road types, other than motorways, that are found in urban areas and the various situations where special speed limits may be applied are set out below.

5.4.3.1 Urban dual carriageways on national, regional or local roads

A 60 km/h special speed limit may be appropriate if the following conditions apply:

- There is considerable frontage development with direct access
- Numerous signal controlled junctions and/or roundabouts
- Pedestrian crossings and narrow medians

Where an urban dual carriageway is constructed to a high standard a special speed limit of 80 km/h may be appropriate if the following conditions apply:

- There is little or no direct access
- Development is well set back from the road
- Junctions are limited and are signal controlled and
- Measures are in place to ensure the safety of vulnerable road users.

If considering lower special speed limits of 40 km/h or 30 km/h then the criteria set in sections 5.6 and 5.7 should be met.

Overall collision rates should be considered before altering the speed limit.

5.4.3.2 Urban national, regional and local single carriageway roads
These roads will generally function as a means of distributing traffic through urban areas.

Where business premises and shops front directly onto the road a 50 km/h speed limit will normally be appropriate.

Where the road has been constructed to a high standard with limited development a speed limit of 60 km/h (or more rarely 80 km/h) may be considered.

A speed limit of 60 km/h may also be applicable to situations where development is well set back from the road, junctions are limited and are signal controlled and measures are in place to ensure the safety of vulnerable road users.

If considering lower special speed limits of 40 km/h or 30 km/h then the criteria set in sections 5.6 and 5.7 should be met.

5.4.3.3 Town and City Streets, Villages and "Housing Estate" roads
Fear of traffic can affect people's quality of life in towns and villages and it is self-evident that villages should have comparable speed limits to similar roads in urban areas. It is therefore appropriate that a 50 km/h speed limit should be the norm in built-up areas.

These roads will have continuous development fronting directly onto the road and 50 km/h would be the normal speed limit.

For the purpose of applying a village speed limit of 50km/h, a definition of a village can be based, but not necessarily exclusively, on the following simple criteria relating to frontage development and distance:

- 20 or more houses (on one or both sides of the road); and
- a minimum length of 600 metres.

If there are just fewer than 20 houses, local authority engineers should make extra allowance for any other key buildings, such as a church, shop or school. The above criteria should give an adequate visual message to drivers to reduce their speed. However, many drivers are unlikely to reduce their speed to the new 50 km/h limit if it

is over a very short stretch of road, particularly if the end of the limit can be seen at the entry point. It is therefore recommended that the minimum length is at least 600 metres to avoid too many changes in speed limits along a route. Road authorities may, however, lower this to 400 metres when the level of development density over this shorter length exceeds the 20 or more houses criterion and, in exceptional circumstances, to 300 metres. Shorter lengths are, however, not recommended.

In some circumstances it might be appropriate to consider an intermediate speed limit of 60 km/h prior to the 50 km/h terminal speed limit signs at the entrance to a village, in particular where there are outlying houses beyond the village boundary or roads with high approach speeds. For the latter, local authority engineers might also need to consider other speed management measures to support the message of the speed limit and help encourage compliance so that no undue enforcement difficulties are created. Where appropriate, such measures might include a vehicle-activated sign, centre/edge hatching, footpath or cycle lane provision or other measures that would have the effect of narrowing or changing the nature and appearance of the road.

If there are high approach speeds to a village, or the start of the village is not obvious, village gateway treatments can also be an effective way to slow drivers down.

In situations where the above criteria for a village are not met and there is a lesser degree of development, or where engineering measures are not practicable or cost-effective to achieve a 50 km/h limit, but a reduction from the default 100 km/h or 80 km/h speed limit is considered appropriate, road authority engineers should consider the alternative lower special speed limit of 60 km/h.

It may also be appropriate in some larger villages to consider 30 km/h limits or zones, if lighting and other considerations allow. Such limits should not, however, be considered on roads with a strategic function or on main traffic routes. For roads with a strategic function provision is made for the use of 40 km/h speed limit in certain situations. Where it is determined that a special speed limit of 30 km/h or 40 km/h should apply, the criteria set out in section 5.6 and 5.7 below should be met.

5.5 Special Speed Limit of 120 km/h

The Road Traffic Act 2004 provides that county and city councils can apply a special speed limit of 120 km/h on dual carriageways on national roads. The Act establishes that in pursuing such an application, a county or city council must comply with relevant provisions in guidelines made by the Minister for Transport.

The facility in relation to the application of this special speed limit is limited to dual carriageways that form part of national roads. Accordingly all such proposals must have the consent of the National Roads Authority.

As is the case in relation to the deployment of special speed limits generally, county and city councils will be influenced by particular considerations, including the collision history, that arise in relation to dual carriageways on national roads in their areas. However, the following specific criteria must apply in respect of any proposals for the deployment of this special speed limit in addition to any such localised considerations –

- The special speed limit should be applied over a minimum continuous length of 3 kilometres;

- Roads should meet the standards for stopping sight distance, horizontal curvature and vertical alignment for 120 km/h as set out in the NRA's design Manual for Roads and Bridges (allowing for permitted relaxations but not for departures);
- There should be no direct access from premises to the section of road under consideration;
- There must be continuous medians and no at grade junctions in the section under consideration.

5.6 Special Speed Limit of 40 km/h

The Road Traffic Act 2010 (amends section 9(2) of the 2004 act) provides that county and city councils may apply a special speed limit of 40 km/h. As is the case with the application of the special speed limit of 120 km/h, the use of the special speed limit of 40 km/h must be in accordance with the relevant criteria set down in guidelines issued by the Minister for Transport.

This special speed limit should only be applied in certain circumstances where the default 50 km/h is deemed unsuitable.

The use of relatively low speed limits has become a feature of traffic and speed management policy in many countries. Experience with such speed limits has clearly established that their introduction without associated speed reduction measures will not succeed.

Indeed, if a speed limit is set in isolation, or is unrealistically low, it is likely to be ineffective and lead to disrespect for the speed limit and drivers will be more inclined to choose their own speed. If limits are perceived as not being credible too often, it will also harm the trust in the speed limit system as a whole (ETSC 2010). As well as requiring significant and avoidable enforcement costs, this may also result in substantial numbers of drivers continuing to travel at unacceptable speeds, thus increasing the risk of collisions and injuries (UK DfT Circular 01/2006).

5.6.1 Locations

The default built up area speed limit remains 50 km/h. The use of 40 km/h speed limits should be limited to roads in urban centres where the default speed limit is deemed too high or on access ramps to motorways or dual carriageways with low radii curves.

In determining areas suitable for the use of the speed limit the county or city council must first have reference to –

- The level of concentration of vulnerable road users, especially the number of children;
- The evidence of road collisions in which vulnerable road users were involved.
- Mean speed and 85th percentile speed

5.6.2 Specific site considerations

- The 40 km/h speed limit would normally be applied to a single road but may sometimes be applied to an area;
- The 40 km/h speed limit should only be applied to National Roads in exceptional circumstances and with the prior approval of the National Roads Authority;
- 40 km/h speed limit roads would normally have a distributor function where the main function of the road is to facilitate traffic.

- High concentrations of vulnerable road users both using and crossing the 40km/h speed limit road at numerous crossing points.

5.6.3 Requirements for the application of the 40 km/h speed limit

Central to the consideration for the use of the speed limit is that its success should not be dependent on the use by the Gardaí of an unreasonable level of enforcement. Therefore the speed limit must be essentially self-enforcing.

A 40 km/h speed limit should only be considered on roads/streets where:

- There is a high concentration of vulnerable road users interacting with the road and their safety is deemed to be compromised due to a high through traffic level.
- The existing mean speed of vehicles should not exceed 50 km/h. If it exceeds this speed then environmental/engineering measures must be provided to reach this target before the new limit is applied.

5.7 Special Speed Limit of 30 km/h.

The Road Traffic Act 2004 provides that county and city councils may apply a special speed limit of 30 km/h. As is the case with the application of the special speed limit of 120 km/h, the use of the special speed limit of 30 km/h must be in accordance with the relevant criteria set down in guidelines issued by the Minister for Transport.

This special speed limit can be deployed in three separate sets of circumstances.

1. It can be applied on a permanent basis in certain locations or,
2. used as a temporary speed limit for limited periods or
3. It can be used at road works sites.

This particular section relates exclusively with the use of the speed limit on a permanent basis. The deployment of special speed limits on a temporary basis and at road works is addressed in separate sections of these guidelines.

The use of relatively low speed limits has become a feature of traffic and speed management policy in many countries. Experience with such speed limits has clearly established that their introduction without associated speed reduction measures will not succeed.

5.7.1 Locations

The use of 30 km/h speed limits on a permanent basis should be limited to locations where there is a current or expected concentration of vulnerable road users. For that reason, their general application should be limited to –

- Housing estate roads,
- Roads in urban centres with no distributor function
- Access ramps to motorways or dual carriageways with low radii curves

In determining areas suitable for the use of the speed limit the county or city council must first have reference to –

- The level of concentration of vulnerable road users, especially the number of children;
- The evidence of road collisions in which vulnerable road users were involved.

5.7.2 Specific site considerations

- The 30 km/h speed limit would normally be applied to a zone or area but may sometimes be applied in respect of a single road;

- The permanent 30 km/h speed limit must not be applied to a national road without the prior written consent of the National Roads Authority;
- With the exception of access ramps, the area should not include any road that has a distributor function – i.e. all of the roads in the area should have a traffic function that is limited to the area itself.

5.7.3 Requirements for the application of the 30 km/h speed limit

The use of this speed limit will not be appropriate in respect of all of the locations to which the above criteria relate.

Central to the consideration for the use of the speed limit is that its success should not be dependent on the use by the Gardaí of an unreasonable level of enforcement. Therefore the speed limit must be essentially self-enforcing.

A 30 km/h speed limit should only be considered on roads/streets where:

- The needs of vulnerable road users are deemed to take precedence over those of motorists but where access is allowed for vehicles;
- The mean speed of vehicles does not exceed 40 km/h. If it exceeds this speed then environmental/engineering measures must be provided to reach this target before the new limit is applied.

5.8 Special Speed Limits on separate carriageways/lanes

The Act allows the deployment of different special speed limits on different carriageways of motorways and dual carriageways. It is envisaged that the most frequent application of this provision will be on dual carriageways near urban areas, with a lower speed limit on the approach to the centre than on the departing carriageway.

The Act allows for the application of different speed limits on separate lanes of a road or a carriageway. The circumstances where this provision may be applied are very limited. One application could be where bus lanes are installed on rural national roads. Another circumstance where this provision could be appropriate is where there are long acceleration or deceleration lanes or entry/exit ramps. In general terms the use of separate speed limits on opposing lanes on single carriageway roads should be avoided.

When different speed limits on separate lanes of a carriageway are applied, the limits should be signed at start and finish, with intermediate reminders as necessary. The use of gantries will probably be required.

6. Special Situations

6.1 Special Speed Limits at Selected Restricted Times

Section 9(5) of the Road Traffic Act 2004 introduces the concept that provides that speed limits may be deployed at selected restricted times. The purpose of this provision is to allow county and city councils to use speed limits to address particular road safety issues that arise at particular times only.

Great care should be exercised in relation to the use of this facility. The application of a reduced speed limit for a specified period may not be the appropriate response to road safety issues in every instance. While locations such as the approaches to schools when children are coming to or leaving the school would seem to offer an opportunity to apply this approach, it is very important that every location suggested should be the subject of investigation. As is the case with speed limits generally,

there may be instances and locations where other initiatives may be more appropriate.

In addition, there may be instances where the use of temporary speed limits that are significantly lower than the speed limit that normally applies may in fact compromise safety. In that context a temporary speed limit should not generally be applied where it is more than two steps below the speed limit that applies at a location under consideration unless in exceptional circumstances.

6.2 The use of the 30 km/h speed limit on a temporary basis

Section 5.6 sets out the provisions relating to the use of the 30 km/h speed limit on a permanent basis. Clearly the conditions to be applied to such a deployment cannot be imposed where that speed limit is being proposed on a temporary basis. However the use of 30 km/h as a temporary speed limit must be critically examined in terms of its enforceability and potential success. That examination must consider the fact that the normal speed limit would reflect the road use, its position within the network, the relationship between that speed limit and vehicle speed and enforcement considerations. Against that background the deployment of the 30 km/h temporary speed limit should be restricted to sections of roads where the speed limit applying to that road normally is not in excess of 60 km/h unless in very exceptional circumstances.

County and city councils should have regard to the following when assessing if it is appropriate to apply a special speed limit at selected restricted times at a given location:

- The special speed limit is best suited to a situation where there is a pattern in terms of times of operation. A particular example could be at a school where it may be appropriate to apply such a speed limit for certain times in the morning, at lunch time, and in the evening for week days during the school year. However, there may be other locations where a council may consider that there is a need for such arrangements;

- The arrangements for the deployment of special speed limits at selected times must be specifically provided for in speed limit bye-laws (see section 7). Therefore, the arrangements cannot be applied on a random basis;

- The use of special speed limits would not serve any purpose in certain urban areas where traffic is continually congested;

- All other relevant safety measures should have been tried or considered not sufficient or appropriate before applying such a special speed limit;

- The effectiveness of the special speed limit in reducing speeds should be monitored.

Consideration should be given to the safety needs of school children on their journeys to and from schools and not just to focus on conditions at a school entrance. Overall accident statistics for the area should be considered before applying special measures.

6.3 Special Speed Limits in Special Circumstances

The Road Traffic Act 2004 provides for the first time for the application of speed limits at locations where special circumstances prevail. The purpose of the provision

is to allow for a reduction in the speed limit that normally applies where those special circumstances apply. The Act makes it clear that the circumstances where such an approach is to be introduced must be set out in the speed limit bye-laws. Accordingly it is envisaged that this provision would be used on very rare occasions where very particular circumstances that would give rise to a clear road safety issue can be foreseen. One example of this would be in a tunnel where it might be necessary to close a lane and traffic must consequentially be slowed.

The deployment of this provision is limited to national roads and motorways and it is recommended that the National Roads Authority, who must consent to the use of this provision, should be consulted at an early stage in the development of the proposal.

Under no circumstances should the use of this provision be pursued in the absence of the necessary bye-laws.

7. The Making of Speed Limit Bye-Laws

The purpose of this Section of the Guidelines is to give advice to the members and officials of county and city councils in relation to the making of special speed limit bye-laws. This Section is also relevant to members of the Gardaí, who must be consulted in relation to the proposed bye-laws, the National Roads Authority, who must consent to proposals relating to national roads and the public in general who must be consulted in relation to the final draft bye-law proposals.

The overriding principle that must inform any decision to change a default speed limit should be road safety. In addition, to be effective a speed limit must be regarded as appropriate by road users and should not be imposed on a road unless there is a clear justification. If a special speed limit is not warranted, drivers will tend to ignore it and this inevitably creates enforcement difficulties and can bring the whole system into disrepute.

The principle that the members of county and city councils have the power to make bye-laws for the purpose of applying special speed limits, which was established in 1994, is retained in the Road Traffic Act 2004. However the new Act sees the introduction of fundamental changes to the process of making bye-laws and the range of powers available to the councils.

The advice given originally following the passage of the Road Traffic Act 1994 that bye-laws should generally be made in respect of a county or city council as a whole is still relevant. Unless there are compelling road safety reasons for dealing with proposals for specific areas or roads on an independent basis, such an approach should be avoided.

7.1 The Structure of the Bye-laws

One of the major changes to the law relating to speed limits introduced in the Road Traffic Act 2004 sees the application of separate default speed limits on rural national roads and rural regional and local roads.

A further major change provided for in the Act is the fact that in addition to specifying the special speed limits that may be applied the Act also provides that all of the default speed limits can be applied as special speed limits on roads where they do not apply on a default basis.

As a consequence of those particular changes, the Act also provides that where a county or city council wishes to apply a special speed limit in lieu of a default speed limit, the latter speed limit will be automatically dis-applied. This means that the old requirement to provide for the disapplication of the built-up area speed limit or the motorway speed limit in bye-laws is no longer necessary.

7.2 Applying special speed limits to roads

Where speed limit bye-laws are made, the description of the locations at which the special speed limits apply must be very specific. Special speed limits should generally be applied in respect of a complete road or for specific distances on a road. Normally the reference points should be to, or from, junctions or city and town boundaries and departures from that approach should be very rare. In all cases the location of the speed limit sign should directly reflect the location set down in the bye-laws.

There are occasions where the identification of individual roads may not be the appropriate approach to the application of special speed limits in an area. There are a large number of towns, some with very sizeable populations, and areas of major urban development adjacent to major cities where a more appropriate response would be to establish a zone within which the special speed limit applies. It is important to point out here that once a road is not within the boundary of a built-up area (i.e. an area where there is an urban authority) the default speed limit for all of the roads in that area is 80 km/h for regional and local roads and 100 km/h for national roads under the Road Traffic Act 2004. In such circumstances the most appropriate speed limit would be 50 km/h and that must be applied through bye-laws.

The most direct method of dealing with this situation is to establish a speed limit zone within which all roads, or all roads with certain exceptions, will be covered by the special speed limit of 50 km/h. Such zones can be established by reference to a series of points that are joined together to create what is in effect a "boundary". The reference points should be to locations on roads and it is at those locations that the speed limit signs should be provided.

7.3 Examples of text for Schedules

Where a special speed limit is being applied to a stretch of road, there are a number of options available for the purpose of describing the exact parameters of the speed limit. Some suggested formats follow. They are taken from text in the speed limit regulations made in relation to County Cork in 1994 and are used purely as examples.

The first example used relates to a road in Buttevant.

The overall title to the reference was - *" The following roads at Buttevant".* The actual descriptions presented for the roads were as follows –

(a) Ball Alley Lane, Barrack Place, Military Road, New Street, St. Coleman's Place, Mill Lane.

(b) The Knockbarry Road for a distance of 942 metres from its junction with the Mallow-Limerick Road (National Road N20).

(c) The Liscarroll Road between its junction with the Mallow-Limerick Road (National road N20) and a point 340 metres west of its junction with the Military Road.

In order to assist all of those involved in the process of making the bye-laws and those bodies that must be consulted, a map of the area should be prepared that clearly shows the locations of the roads at (a) and of the points where the speed limits start and finish at (b) and (c). The map should also show the direction North so that the effect of the proposals at (b) and (c) can be seen.

The following is an example of the application of a special speed limit zone. Again, the example used is taken from the 1994 Cork Regulations and refers to the town of Dunmanway.

The following roads at Dunmanway:-

All roads in the area enclosed by a line commencing at a point on the Cork Road 281 metres east of its junction with the Macroom Road and drawn thence in straight lines successively to the following points:-

(a) a point on the Clonakilty Road 46 metres east of its junction with the Mullough Road,

(b) a point on the Mullough Road 385 metres south of its junction with the Clonakilty Road,

(c) a point on the Bantry-Coach road 1,086 metres south-west of the junction of Mary Street with the Kilbarry Road,

(d) a point on the Kilbarry Road 92 metres south-west of its junction with Mary Street,

(e) a point on Castle Street 23 metres east of its junction with the Inch Road,

(f) a point on High Street 284 metres north of its junction with The Square,

(g) a point on the Spa Road 23 metres north-west of its junction with Chapel Street,

(h) a point on the Macroom Road 92 metres north of its junction with Chapel Street,

and from the last mentioned point in a straight line to the commencement point on the Cork Road.

The examples set out above are used for illustrative purposes only and the speed limits in both cases may have been the subject of significant change since the Regulations were made in 1994.

Under the provisions of the Road Traffic Act 2004, bye-laws may now be made applying different speed limits to different carriageways or lanes on a road. A similar approach to the presentation of text should be pursued for these bye-laws, as is the case in the making of bye-laws to apply a special speed limit on the full length of a road.

The Act also provides for the application of special speed limits at restricted times and in special circumstances. In terms of the structure of bye-laws, such provisions should be addressed through Schedules that are separate from those under which special speed limits are applied to roads or parts of roads on a full time basis. It is very important that the circumstances that create the need for the special arrangements are clearly outlined in the bye-laws.

8. Speed Limits at Road Works

Under the 2004 Act, City and County Managers are empowered to make Orders for the purpose of applying special speed limits at road works.

The following should be noted in relation to the making of Road Works Speed Limit Orders:

- The speed limit must be one of the special speed limits set out in Section 9 of the Act and must not be less than 30 km/h;
- There is no legal basis for deploying any road works signs with posted speeds below 30 km/h;
- The Order must specify a limited time period not exceeding one year;
- The Order must specify the precise location at which the special speed limit is to be applied and the provision of the relevant regulatory traffic signs must be in strict accordance with those parameters;
- The consent of the National Roads Authority is required for speed limits at road works on national roads or Motorways.

The deployment of a speed limit of 30 km/h at road works is not subject to the criteria set out in in section 5.6 of the guidelines. It will be a matter for each county and city council to determine the most appropriate method for reducing speed and regard should be had to the Guidance Document: Guidance for the Control and Management of Traffic at Road Works 2010.

The determination of the extent of the road works site is a matter for each county and city council. It may be appropriate to apply the same speed limit proposed for the section of road where work is proposed to sections of other roads where they have junctions with the road works site.
Where it is not appropriate or practicable to impose a mandatory roadworks speed limit, a cautionary non-regulatory speed limit may be signed. The speed chosen must be either 25, 35, 45, 55, 65 or 75 km/h. Further details are contained in Chapter 8 of the Traffic Signs Manual as issued by the Department of Transport.

APPENDIX 1
Speed Assessment Framework for Rural Single Carriageway Roads

This section provides specific technical advice on the setting of speed limits on rural single carriageway roads.

Key points

The default speed limit on national roads is 100km/h and on regional and local roads is 80km/h.

The speed limit on single carriageway rural roads should take into account traffic and road user mix, the road's geometry and general characteristics, its surroundings, and the potential safety and environmental impacts.

Where it is not possible and clear cut to set a speed limit based on the above criteria Local Authorities can adopt the speed assessment framework and adopt a two-tier hierarchical approach that differentiates between single carriageway roads with a strategic function and those with a local access function.

Strategic Function
Higher speed limits should be restricted to 'upper tier' or high quality strategic single carriageway roads where there are few bends, junctions or accesses.

Local Access Function
Lower speed limits would be appropriate on 'lower tier' single carriageway roads passing through a local community, or having a local access or recreational function. They would also be appropriate where there are significant environmental considerations or where there is a high density of bends, junctions or accesses, or the road is hilly.

A speed assessment framework should help achieve an appropriate and consistent balance between safety and mobility objectives on single carriageway rural roads. **Local Authorities are initially encouraged to consider its use on those roads with high collision rates or simply as a way of helping decisions in borderline cases where the choice of the appropriate speed limit is not clear-cut.**

1.0 Introduction

1.1 Ireland's length of national road is over 5400 km and the length of non-national road is approximately 90,000 km. The default speed limit for national roads is 100km/h, regional and local roads 80km/h, motorways 120 km/h and towns and villages 50km/h. In certain cases the drivers do not, however, reach or exceed the speed limit on many single carriageway roads because it is often difficult to do so. This is especially evident on the local roads and some national secondary and regional roads where the geometric characteristics include many narrow roads, bends, junctions and accesses.

1.2 There is a need to improve speed management in rural areas and in particular to further help drivers to understand underlying risks and tackle the problems caused by inappropriate speed. Local Authorities should particularly intervene on roads where there is a case for encouraging use by, or safeguarding the needs of, vulnerable road users.

1.3 As elsewhere, speed limits should be considered as only one part of rural safety management, and what the road looks like to the road users, the road function, traffic mix, and road and rural characteristics should be taken into account. In the event that speed limits cannot be decided based on these criteria or where a road has high collision figures then road authorities can adopt the rural speed assessment framework. This involves a two-tier (upper and lower) hierarchical approach which differentiates between roads with a strategic or local access function. Using this approach, higher limits should be restricted to 'upper tier' or high quality strategic roads where there are few bends, junctions or accesses. Similarly, lower limits would be appropriate on 'lower tier' roads with a predominantly local, access or recreational function. They would also be appropriate where there are significant environmental considerations such as in any future National Parks, Areas of Outstanding Natural Beauty, or where there is a high density of bends, junctions or accesses, or the road is hilly.

1.4 This guidance seeks to assist road authorities by helping to define the appropriate traffic speed on different types of rural road, taking into account traffic and road user mix, geometry, general characteristics of the road and its surroundings, and the potential safety and environmental impacts.

1.5 Where collision rates are high, road authorities should seek cost-effective improvements to reduce these rates by targeting the particular types of collisions taking place. To help in this process collision data is available from the Road Safety Authority. This is a spatial dataset of all injury related road traffic collisions reported to An Garda Siochana. Collision rates are calculated by the NRA for the national routes. The methodology for calculating collision rates is available from the NRA. Identifying locations where there are above-average collision rates assists road authority engineers in identifying the types of site or route specific intervention measures that might be appropriate to manage speeds and reduce collisions along the route.

1.6 Local authority engineers should also consider the use of vehicle-activated signs (VAS), which have proved particularly effective at the approaches to isolated hazards, junctions and bends in rural areas.

1.7 In rural areas every effort should be made to achieve an appropriate balance between speeds, speed limits, road function and design, the differing needs of road users, and other characteristics. This balance may be delivered by introducing one or more speed management measures in conjunction with the new speed limits and/or as part of an overall route safety strategy. The aim should be to align the local speed limit so that the original mean speed driven on the road is at or below the new posted speed limit for that road.

2.0 Single Carriageway Rural Roads and the Speed Assessment Framework

2.1 In the vast majority of instances, the road function, characteristics and environment and actual speeds being driven should enable the road authority engineers to determine the appropriate limit on single carriageway rural roads.

2.2 However, in those cases where further guidance is required to aid their decision-making, a speed assessment framework has been developed. This is based on the principles of the speed assessment framework developed by TRL for the DfT in the UK. This was produced to help achieve an appropriate and consistent balance between safety and mobility objectives on single carriageway rural roads. Providing a method of assessment for speed limits, the assessment framework is designed to help decision-makers weigh up, in a more transparent way, the advantages and disadvantages of each speed limit option and reach a well-founded conclusion.

2.3 The assessment framework methodology is based on the presumption that single carriageway rural roads should operate at speeds near to those that give the minimum total costs taking safety, mobility and environmental impact into account.

2.4 Mean speeds should be used where the assessment framework is being applied. Local issues in relation to particular routes can be further reflected through final decisions on the acceptable mean speed for each limit, on the importance given to local environmental or social factors, and on the choice of additional engineering or educational measures.

2.5 The assessment framework differentiates between two tiers of roads based upon their traffic function:

> **Upper tier roads** – those with primarily a through traffic function, where mobility is important, typically all the national primary and secondary roads, important regional roads and some important local primary roads;
> **Lower tier roads** – those with a local or access function, where quality of life benefits are important, typically the local secondary and tertiary roads and remaining elements of the regional road and local primary network.

2.6 Following investigations of the relationship between speed and collisions on rural single carriageway roads (TRL Report 511 (Taylor et al., 2002)) the following collision thresholds for upper and lower tier roads have been set, which reflect expected levels associated with a road carrying a given level of traffic and an appropriate balance between safety and mobility:

> **Upper tier roads** – 35 injury collisions per 100 million vehicle kms
> **Lower tier roads** – 60 injury collisions per 100 million vehicle kms

By way of comparison, the average Irish collision rate for undivided 2-lane national roads is 10 injury collisions per 100 million vehicle kilometres of travel. This analysis was carried out by the NRA and is based on three years of collision data (2005 to 2007) and estimates of 2007 traffic volumes. Previous work by O'Cinneide et al (2004) established a collision rate for undivided 2-lane national roads at 14 injury collisions per 100 million vehicle kilometres using five years of collision data (1996 to 2000).
Similarly the average collision rate for Irish urban national roads has been calculated at 15 injury collisions per 100 million vehicle kilometres by the NRA.

2.7 The speed assessment framework operates on the principles that the speed limit choice should be guided by whether the collision rate on a section of road is above or below the respective 35 or 60 injury collision thresholds.

2.8 The framework is designed to assist local decision making and promote greater consistency.

2.9 Initial trials in the UK using the assessment framework proved the practical value of the methodology, resulting in speed limits for upper tier roads which were generally accepted as reasonable by the local safety officers in relation to speed, crash risk and road character.

2.10 In the first instance, local authorities should consider its application to those roads with high collision rates or simply as a way of helping decisions in borderline cases where the choice of the appropriate speed limit is not clear-cut or where there is a difference of opinions.

2.11 Recommended speed limits for the two tiers subject to meeting local needs and considerations are:

Upper Tier Roads

- 100 km/h: high quality strategic national primary and secondary and limited high quality regional roads with few bends, junctions or accesses. When the assessment framework is being used, the collision rate should be below a threshold of 35 injury collisions per 100 million vehicle kilometres.
- 80 km/h: lower quality strategic national primary and secondary roads which may have a relatively high number of bends, junctions or accesses. When the assessment framework is being used, the collision rate should be above a threshold of 35 injury collisions per 100 million vehicle kilometres and/or the mean speed already below 80 km/h.
- 60km/h: where there are high numbers of bends, junctions or accesses, substantial development, where there is a strong environmental or landscape reason, or where the road is used by considerable numbers of vulnerable road users.
- 50 km/h: should be the norm in built up areas and villages where appropriate.

Lower Tier Roads

- 100 km/h: only the best quality regional and local primary roads with a mixed function (i.e. partial traffic flow and local access) with few bends, junctions or accesses (in the longer term these roads should be assessed using the upper tier criteria).
- 80 km/h: Appropriate for good quality regional and local roads with a mixed function where there are a relatively high number of bends, junctions or accesses. When the assessment framework is being used, the collision rate should be below a threshold of 60 injury collisions per 100 million vehicle kilometres.
- 60 km/h: roads with a predominantly local, access or recreational function, or where the road forms part of a recommended route for vulnerable road users. When the assessment framework is being used, the collision rate should be above 60 injury collisions per 100 million vehicle kilometres.
- 50 km/h: should be the norm in built up areas and villages where appropriate.

See Table 1 for a summary of the above.

It is important to note that the above does not imply that speed limits should automatically be reduced. Indeed, in some cases the assessment may suggest that the existing speed limit may already be inappropriately set or too low, and an increased limit should be considered.

Table 1	Summary of speed limits for single carriageway roads	
Speed limit (km/h)	**Upper tier – roads with predominant traffic flow function**	**Lower tier – roads with important access and recreational function**
100	Recommended for most High Quality strategic national primary and secondary roads and limited strategic HQ regional roads with few bends, junctions or accesses. When the assessment framework is being used, the collision rate should be below a threshold of 35 injury collisions per 100 million vehicle km with this speed limit.	Recommended only for the best quality regional and local primary roads with a mixed (i.e. partial traffic flow) function with few bends, junctions or accesses. When the assessment framework is being used, the collision rate should be below a threshold of 35 injury collisions per 100 million vehicle km with this speed limit.
80	Should be considered for lower quality national primary and secondary roads which may have a relatively high number of bends, junctions or accesses. When the assessment framework is being used, the collision rates should be above a threshold of 35 injury collisions per 100 million vehicle kilometres at higher speeds. Can also be considered where mean speeds are below 80 km/h, so lower limit does not interfere with traffic flow.	Appropriate for good quality regional and local roads with a mixed function where there are a relatively high number of bends, junctions or accesses. When the assessment framework is being used, the collision rate should be below a threshold of 60 injury collisions per 100 million vehicle kilometres.
60	Should be considered where there is a high number of bends, junctions or accesses, substantial development, where there is a strong environmental or landscape reason, or where there are considerable numbers of vulnerable road users. When the assessment framework is being used, the collision rate should be above a threshold of 60 injury collisions per 100 million vehicle kilometres.	Should be considered for lower quality regional and local roads roads with a predominantly local access or recreational function, or if there are considerable numbers of vulnerable road users. When the assessment framework is being used, the collision rate should be above a threshold of 60 injury collisions per 100 million vehicle kilometres.
50	Should be the norm in built up areas.	

3.0 Approach to Speed Limit Setting for Single Carriageway Roads in Rural Areas

3.1 Speed limits should be considered as only one part of rural safety management. The first priority where collision rates are high should be to seek cost-effective improvements to reduce these rates, targeting the crash types that are over-represented.

3.2 If high collision rates persist despite these measures, then lower speed limits may also be considered. But lower speed limits on their own without supporting physical measures, driver information and publicity or other measures will not necessarily change driver behaviour and therefore will result in substantial numbers of drivers continuing to travel at unacceptable speeds. This may lead to significant enforcement cost. So every effort should be made to achieve an appropriate balance between speeds, speed limits, road design and other measures. This balance may be delivered by introducing one or more speed management measures in conjunction with the new speed limits, and/or as part of an overall route safety strategy.

3.3 The speed assessment framework helps decision-makers weigh up, in a more transparent way, the advantages and disadvantages of each speed limit option and reach a well-founded conclusion for these roads.

3.4 The basis for the speed assessment framework procedure is:

- a firm theoretical basis for choosing speed limits for road functions, taking account of safety, mobility and environmental factors
- roads classified into two tiers based on road function
- closer integration of speed limit choice, with more general rural road safety management measures
- driver choice of desired speed to be reflected by mean speed
- local flexibility of choice within a consistent overall procedure.

3.5 A simple two-tier functional hierarchy should be used, with roads having either primarily a through traffic function (upper tier) or a local access (lower tier) function. Both need to be provided safely. Mobility benefits will be more important for the upper tier than for the lower tier roads, whilst environmental benefits are likely to be of greater importance for the lower tier roads.

3.6 There may be many regional and local roads which serve a mixed through-traffic and access function. Where that traffic function is currently being achieved without a high collision rate, these roads should be judged against the criteria for upper tier roads. If, however, for all or parts of these roads there is a substantial potential risk to vulnerable road users, these sections should be assessed against the criteria for lower tier roads.

3.7 Decisions on speed limits should take account of other collision reduction measures that might be applied. Information such as typical collision rates, and typical proportions of different crash types, on different types of rural road. These can be used to judge whether other site or route-specific measures might be appropriate that would reduce either speeds or collisions along the route.

3.8 Mean speed should be used for the assessment. For the majority of roads there is a consistent relationship between mean speed and 85th percentile speed. Where this is not the case, it will usually indicate that drivers have difficulty in deciding the appropriate speed for the road, suggesting that a better match between road design and speed limit is required.

3.9 The aim should be to align the speed limit to the prevailing conditions, and that all vehicles are moving at speeds as close to the posted speed limit as possible. An important step in the procedure is to gain agreement with local enforcement agencies that the mean speed of drivers on the road with any new speed limit is acceptable.

3.10 The aim of the framework approach is to assist in a consistent application of speed limit policy throughout the country. But local issues in relation to particular routes can be reflected in the functional tier to which the road is assigned, and also through final decisions on acceptable mean speeds for each limit, on the importance given to local environmental factors, and on the choice of additional measures that could change the appropriate speed limit regime recommended.

3.11 Research shows that for every 1 mph reduction in average speed the accident frequency reduces by 5% (Finch et al., 1993, Taylor et al., 2000).

3.12 The monetary cost of an accident can be estimated as follows:

Fatal:	€2,280,000
Serious Injury	€304,600
Minor Injury	€30,000
Damage only	€2,400

(Goodbody Casualty and Accident Values 2002)

3.13 Speed limits on their own only have a limited effect on actual speeds. According to the OECD/ECMT (2006) meta-analyses shows that lowering the limit by 10km/h decreases speed by 3 to 4 km/h. In places where speed limits have been changed and no other action taken, the change in average speed is only about 25% of the change of the speed limit. Changes in speed limits must also therefore be accompanied by appropriate enforcement, infrastructure and information measures (European Transport Safety Council 2010).

4.0 Selection procedure

4.1 Within routes, separate assessments could be made for individual sections of road of 600 metres or more for which a separate speed limit might be considered appropriate. When this is completed, the final choice of appropriate speed limit for individual sections might need to be adjusted to provide consistency over the route as a whole.

4.2 A flow chart for the decisions to be made for selecting speed limits for rural single carriageway roads is given in Figure 1. It includes the following steps:

Step 1 – Consider whether the level of development requires special treatment.

Step 2 – Consider which functional tier is appropriate for the road.

Step 3 – Measure the current mean speed and calculate the collision rate (as all injury collisions per 100 million vehicle km (Collision rate = (Total No. of collisions / Total vehicle km of travel) X 10^8, where vehicle kilometres of travel is a function of AADT and the length of road under consideration.

Step 4 – Check the collision rates against acceptable thresholds

Step 5 – If the collision rate is high, check the proportions of different crash types and consider whether site or route treatment is appropriate before deciding speed limit.

Step 6 – if a speed limit lower than the current one is indicated, estimate the mean speed and collision rate and the influence on social factors and vulnerable road users that would result from implementing the new limit.

Step 7 – Check that these values are acceptable; if not, consider whether further measures are necessary to bring speed and collision rates into balance.

4.3 For mean speeds to be acceptable, they should be no higher than the posted limit after it has been implemented. Research shows that, for a typical distribution of vehicle speeds on single carriageway rural roads, the 85th percentile speed is about 10 km/h above the mean speed for roads with an 80 km/h limit, and about 13km/h above mean speed on roads with a 100 km/h limit. Setting acceptable mean speeds at or below the limit is therefore consistent with current enforcement thresholds.

4.4 The choice of speed limits within each tier should take account of the following:

- whether the collision rate is below the appropriate threshold of injury collisions per 100 million vehicle kilometres
- whether there is substantial development
- whether the road forms part of a recognised route for vulnerable road users.

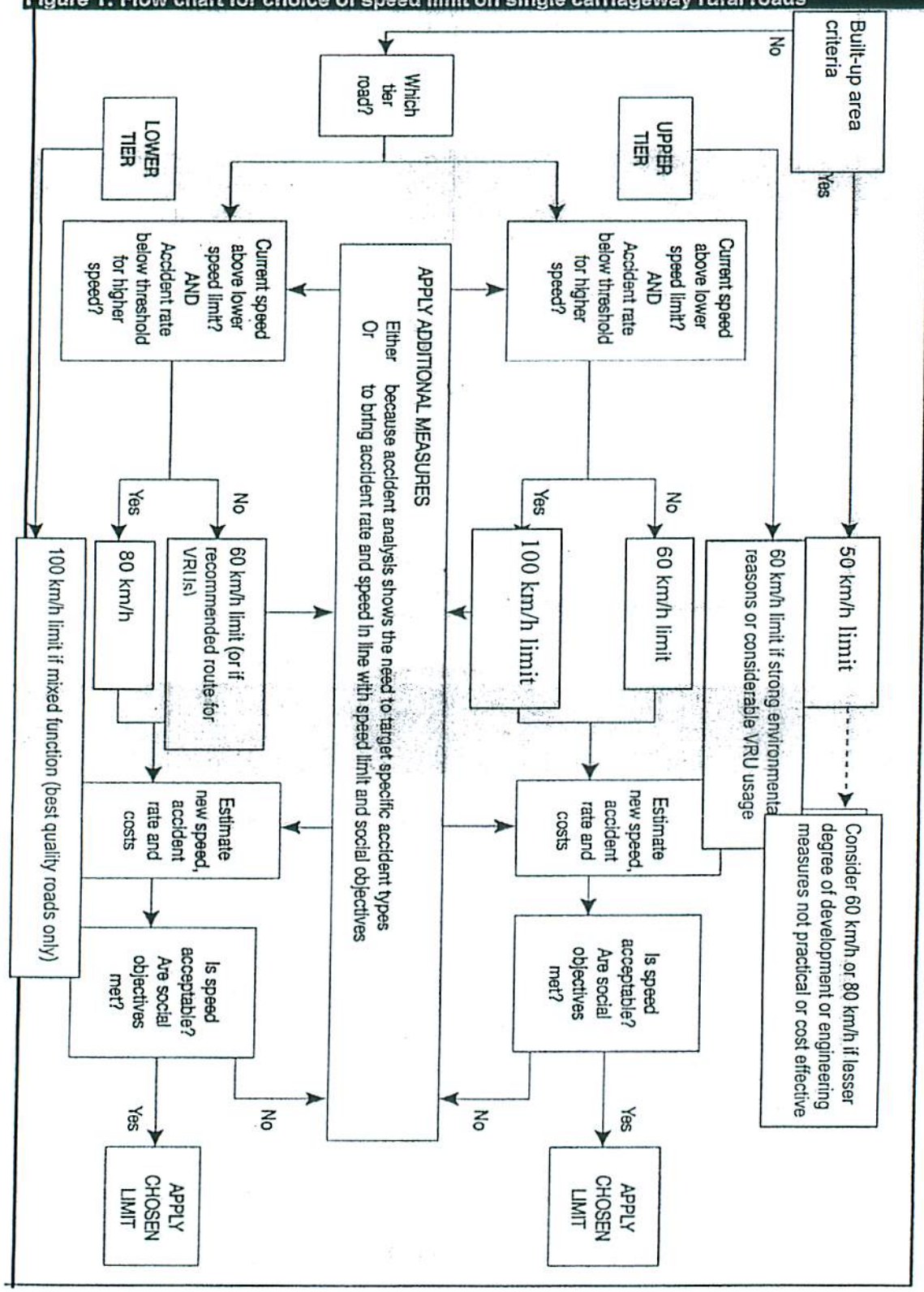
4.5 The bands of appropriate collision rates by speed and speed limit are illustrated in Figures 2 and 3. If walking, cycling, equestrians or environmental factors are particularly important on the road section, consideration should be given to using the lower limit, even if the collision rate is below the threshold shown.

4.6 The influence of development should be taken into account through the following factors:

- If the road section qualifies for built up area status then the advice given in the guidelines should be followed.
- If the section does not meet the definition for a village, but the level of development is at least half the density implied (over a minimum of 600 metres), a speed limit of 60 km/h should be considered.

4.7 Other factors that would strengthen the case for a 60 km/h limit are: a high incidence of bends or junctions, or a high collision rate, and specific development in terms of schools, public houses and use by vulnerable road users.

Figure 1: Flow chart for choice of speed limit on single carriageway rural roads



.Figure 2: Speed limit zones in terms of mean speed and collision rate for upper tier roads

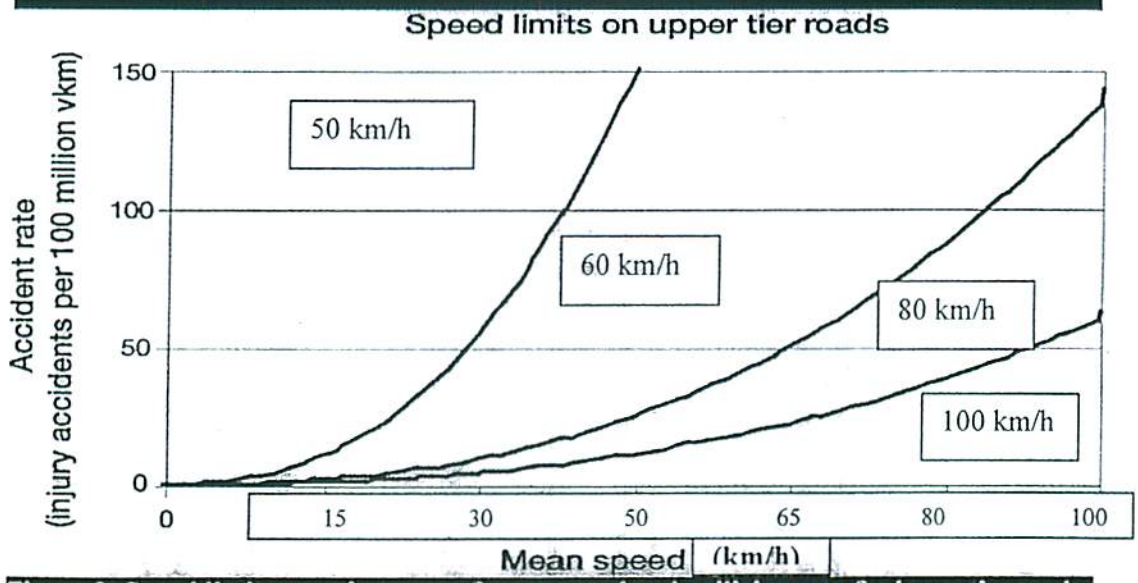
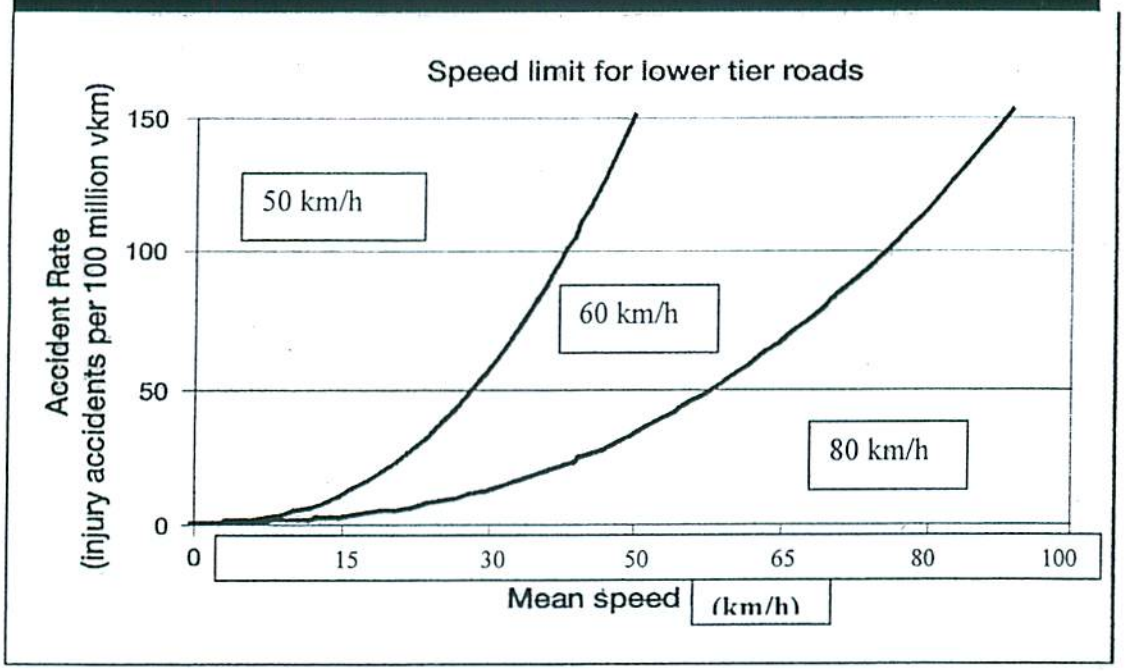


Figure 3: Speed limit zones in terms of mean speed and collision rate for lower tier roads



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