



An Roinn Iompair
Turasóireachta agus Spóirt

Department of Transport,
Tourism and Sport

2013

Speed Limits Review



Department of Transport,
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Executive Summary

Introduction

System of Irish speed limits was reviewed in 2003/4 prior to the switch to metric units of measure in 2005. As part of that process the General Speed Limit was ended in favour of separate Default Speed Limits for different classes of road such as National Roads (100km/h) or Regional and Local Roads (80km/h). While that transition was delivered smoothly and there has been significant progress on road safety since then, 8 years on issues are arising in relation to limits, the signs and their deployment which are causing a degree of confusion for road users.

In February 2012 the Minister for Transport, Tourism and Sport established a Working Group to review the Speed Limits that apply to roads in the State. The Working Group was tasked with: -

- Reviewing and making recommendations on the existing overall system of Speed Limits
- Reviewing and making recommendations on signs that accompany Speed Limits
- Making recommendations on awareness and communications issues on Speed Limits
- Making recommendations on the implementation of suggested changes.

The review arises out of the Road Safety Strategy (2007 to 2012) and supports the Road Safety Strategy (2013 to 2020), under which the Department of Transport, Tourism and Sport is committed to publishing a Speed Limits Review report and implementing its recommendations.

Background

A Speed Limit is the maximum legal speed, but not necessarily the safe speed at which a vehicle should be driven. It is the responsibility of a driver to obey a Speed Limit and to ensure that the vehicle speed is appropriate for the prevailing circumstances, even if that speed is lower than the Speed Limit applying.

The Road Traffic Act of 2004 sets out the current legislative basis for the setting of speed limits. The Act applies 'default' speed limits to different categories of road and also allows for local authorities to intervene and set 'special speed limits' on roads in their area. The main provisions are:

- **Default Speed Limits:** - The legal Speed Limit that applies to each class of road unless varied through Special Speed Limits.
- **Special Speed Limits:** - These allow a Default Limit to be varied locally by elected members of county and city councils.
- **Roadworks Speed Limits:** - A County or City Manager can apply a Special Speed Limit in respect of road works (Road Works Speed Limit Order).
- **Speed Limit Signs:** - These are numerical and regulatory (i.e. enforceable).
- **Guidelines:** - The Minister for Transport may issue Speed Limit Guidelines under the Road Traffic Act 2004 that constitute a Direction in respect of the setting of Special Speed Limits.

Ireland's road network is extensive and inconsistent, which means that a 'one size fits all' solution for Speed Limits for the 99,100km of road network is not possible. Additionally, Local Authorities (in conjunction with the National Roads Authority in respect of National Roads) are able to amend and set Speed Limits as appropriate and in accordance with Guidelines on Special Speed Limits for different sections of the road network as required.

Issues

The two key issues arising are **inconsistency** and **inappropriateness**. Some of these are long-standing but some have arisen since the metrication of speed limits. Notwithstanding the provision of updated Guidelines for the Application of Special Speed Limits there is a general lack of consistency from one local authority area to the next. This gives rise to anomalies whereby drivers can encounter differing speed limits on the same route from one county to the next. This also gives rise to anomalies whereby drivers encounter locations where the nature, design and layout of the road does not change but the speed limit does.

Arising from the work of the Group and input from interested parties and from the general public the following are a number of general observations on the appropriateness of Speed Limits on the network:

- **National Primary Roads Network:** - Although the Speed Limit for the National Primary Network of 100 km/h is generally seen as appropriate a small number of sections exist where anomalies may appear to exist. For example a section of legacy narrow single carriageway on the N4 in County Sligo carries the default limit of 100 km/h while a section of modern multi-lane dual carriageway on the N4 in Co Dublin has a [Special Speed] Limit of 80 km/h.
- **National Secondary Roads Network:** - Like the National Primary Road Network, the National Secondary Road Network has a default Speed Limit of 100 km/h. However much of the network is narrow and has poor alignment for long stretches where a lower limit may be more appropriate. Also, there are sections where a lower limit has been applied but where the road is suitable for a limit of 100 km/h.
- **Regional Roads:** - The default Speed Limit of 80 km/h for the Regional Road Network is seen as generally correct. However on certain sections, such as on former National Roads, a higher limit may be more appropriate.
- **Local Roads:** - Arising from the 2004 legislation local authorities are obliged to place numerical speed limit signs on very minor local roads and 'boreens'. Where these roads are too minor to have been assessed by the local authority, a default speed limit of 80 km/h is specified by the Act. This has led to the widespread deployment of '80 km/h' signs on roads that are extremely narrow tracks and where it is not possible to drive at the speed limit posted. This suggests the use of either a lower speed limit number or an alternative sign that does not have a number.
It should be noted that these minor roads have not presented any significant problems either in terms of safety or in terms of enforcement. Drivers are not attempting to reach high speeds on them. These signs present an on-going problem that can affect the credibility of the speed limit system overall.

Other key issues are: -

- **Appeals:** - As part of the process of setting Speed Limits members of the public are able to make comments and observations. However there is no formal process whereby a limit or sign can be queried or appealed either to the Local Authority or NRA or to a national body.
- **Repeater Signs:** In addition to posting speed limit locations with signage, local authorities are also charged with supplementing these signs with smaller 'repeater' signs throughout a road section. This has given rise to a number of locations where repeater signs have been placed inappropriately.
- **Speed Limits at Roadworks:** City and County Managers (in consultation with the Garda and the National Roads Authority where appropriate) can apply temporary speed limits at the location of road works. While the current system is mostly effective for large road projects the provisions have proved too rigid for minor works and for works that are required at relatively short notice.

Further Issues arising include:

- A more complex and too flexible a system of Speed Limits, with more limits that can apply for any road.
- Road user perception of the numerical signs as being a 'safe driving speed' such as for a Local Road (Boreen),
- Difficulty of Enforcement
- Road user understanding of the meaning of Speed Limits and the consequences of speed.
- Legislation with regard to setting Speed Limits, roles, powers and oversight.

Many of the anomalies are caused by differences in interpretation of the Guidelines for the Application of Special Speed Limits by individual local authorities. The challenge is to ensure consistency across the network while allowing local authorities to apply Special Speed Limits on roads, as required, in their administrative areas.

Recommended Solution

The overall recommended solution is for more appropriate Speed Limits and signs that, while providing for the variety and inconsistency of the road network, address the issues identified by the Review. Key elements include: -

- Introducing a symbol type 'Rural Speed Limit' sign for Local Roads where the 80 km/h signs on local roads (boreens) be replaced with a generic sign that does not display a numeral. The sign will be the 'black circle with diagonal which is in use internationally under the Vienna signage convention and which was used in Ireland prior to 2004. That sign means that drivers must use their own judgement but must never exceed 80km/h in any case.



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Rural Speed Limit



Current sign



Recommended Rural Speed Limit sign

- Implementing a new communication strategy on Speed Limits and speeding for road users. This to be supplemented with updated education and training.
- An Appeals System will be put in place to address anomalous Special Speed Limits. This will allow interested parties or members of the public to appeal a given speed limit to the local authority. If dissatisfied with the local authority response the appeal can be escalated to a national body that will assess the speed limit against the requirements of the Guidelines for the Application of Speed Limits, which will be empowered to instruct a local authority to change a speed limit if it is found to be inappropriate.

- The National Roads Authority, supported by local authorities, will review and update speed limits on the National Road network to ensure appropriate fit and compliance with the Guidelines for the Application of Special Speed Limits. This to be done at least every 5 years.
- Local Authorities will review speed limits on Regional and Local Roads in their areas to ensure appropriate fit with the Guidelines for the Application of Speed Limits. This to be done at least every 5 years.
- Ensuring that Speed Limit signs on the road network are located appropriately and that inappropriate repeater signs are removed.
- The rules for the setting of temporary speed limits to allow for roadworks will be updated. This will allow City and County Managers to apply road works speed limits more responsively and flexibly, for example to apply lower limits only while works are underway.
- The Guidelines for the Application of Speed Limits will be updated for improved clarity in respect of Special Speed Limits.
- The requisite legislation will be updated to allow for: Speed Limit Guidelines to be Mandatory, the Appeals Mechanism, strengthened powers and functions for the Minister, strengthened powers and functions for the National Roads Authority for National Roads, improvements to Roadworks Speed Limits.

Much of the recommendation builds on what already exists and can be provided for in the Guidelines for Special Speed Limits. Critically this needs to be underpinned by a strengthened legal and regulatory framework together with strengthened oversight. This is particularly needed to ensure consistency and appropriateness as the system of Speed Limits in Ireland is quite flexible. Support actions are recommended to provide for improved administration, engineering procedures, Speed Limit management, training and enforcement.

The recommended solution comprises 18 individual actions of which 10 are lead and 8 are support. The Actions are interrelated and ultimately have to be considered as a single solution. These are set out in summary form in tables 1 and 2 below.

Timeframe and Costs

Implementation over a 2 year period is expected with estimated cost in the order of €8 million. The cost of some actions can be absorbed within normal budgets. An overall timeframe to the end of 2015 has been set to implement with some of the actions on-going thereafter.

Conclusion

The actions, when implemented, will lead to a more credible and consistent system of Speed Limits. Road users will be better informed and educated regarding appropriate speed and Speed Limits. This in turn should help improve road safety and reduce collisions.

Table 1: - Lead Actions Summary

Action 1	<u>Revise Speed Limit Signs</u> That Speed Limit signs on Local Roads be replaced, simplified and amended by a new 'Rural Speed Limit' sign to address issues arising.
Responsibility	DTTAS supported by local authorities
Timeframe	Q2 2014 to Q3 2015
Action 2	<u>Update and Implement Driver Education, Training and Communication</u> That a communication strategy be developed and that existing education and training programmes and documents, such as 'The Rules of the Road' be updated.
Responsibility	RSA supported by DTTAS / NRA
Timeframe	Q1 2014 to Q4 2015. Also on-going.
Action 3	<u>Implement Appeals, Oversight and Co-ordination</u> That an independent unit be established to: - manage appeals and queries, manage and update Speed Limit Guidelines as well as to monitor, audit and inspect Local authorities and NRA. DTTAS to consider options and make recommendations in advance.
Responsibility	DTTAS
Timeframe	Q1 2014 to Q2 2014
Action 4	<u>Update National Road Speed Limits</u> That Speed Limits on the National Road Network be updated in accordance with the Guidelines for Special Speed Limits to ensure appropriate fit. To be repeated at intervals no greater than 5 years.
Responsibility	NRA supported by local authorities
Timeframe	Q2 2014 to Q1 2015
Action 5	<u>Update Regional and Local Road Speed Limits</u> That the Speed Limits on the Regional and Local Road Networks be updated in accordance with the Guidelines, to ensure appropriate fit. To be repeated at intervals no greater than 5 years.
Responsibility	Local authorities.
Timeframe	Q2 2014 to Q4 2015
Action 6	<u>Remove Inappropriate Signs</u> That existing locations of inappropriate (repeater) Speed Limit signs be identified (logged and mapped) and subsequently removed, relocated or replaced as appropriate.
Responsibility	Local authorities and NRA
Timeframe	Underway. To Q2 2014 for National Roads and end of Q4 2015 for Regional and Local Roads.
Action 7	<u>Strengthen Road Works Speed Limits</u> That the system of Road Works Speed Limits be reformed to improve use & implementation.
Responsibility	DTTAS
Timeframe	Q1 2014 to Q1 2015
Action 8	<u>Update and Strengthen Guidelines and Circulars</u> That the Guidelines for Special Speed Limits be updated to address a number of issues including clarity for road types; approaches to towns; approaches to schools; the use of Variable Speed Limits; the use of Driver Feedback Signs; and training.
Responsibility	DTTAS
Timeframe	Q1 2014 to Q2 2014
Action 9	<u>Update Function to Set Speed Limits</u> That legislation for the function to set Special Speed Limits be implemented so that the Local Authority Reserved Function be subject to an appeals process and the NRA have a stronger supervisory and controlling role for National Roads.
Responsibility	DTTAS
Timeframe	Q1 2014 to Q1 2015
Action 10	<u>Update Legislation</u> That legislation to support Speed Limits is implemented to provide for: - Guidelines for Special Speed Limit to be mandatory; appeal mechanism; strengthened powers and functions for the Minister; the NRA for National Roads as well as Improvements to Roadworks Speed Limits.
Responsibility	DTTAS
Timeframe	Q1 2014 to Q1 2015

Table 2: - Support Actions Summary

Action 11	<u>Update Traffic Regulations and Signs Manual</u> That the Traffic Regulations and Signs Manual and other related guidelines be revised to address amendments to Speed Limit Signs; Clarity in the use and type of Speed Limits Signs; and Driver Feedback Signs
Responsibility	DTTAS
Timeframe	Q1 2014 to Q2 2014
Action 12	<u>Implement Speed Limit Management Awareness and Training</u> That the Local Authority Roads Service Training Group (RSTG) hold workshops and seminars; and to develop and run a standardised course on the managing and updating of Speed Limits.
Responsibility	Roads Service Training Group (RSTG) supported by DTTAS, NRA, Gardai
Timeframe	Underway. Q4 2013 to Q4 2014
Action 13	<u>Maintain Digital Records and Maps</u> That Speed Limit records be logged and maintained on a national standardised MapRoad Road Management (GIS) System to facilitate consistency.
Responsibility	DTTAS supported by Local authorities, NRA and LGMA
Timeframe	Underway. Q4 2013 to Q4 2014
Action 14	<u>Strengthen Engineering and Infrastructure Guidelines and Standards</u> That road design and traffic management standards and guidelines be updated to support road fit to Speed Limits, gateways to urban/built up areas, self-explaining roads and a range of low cost solutions, based upon international practice. DTTAS to co-ordinate with NRA and NTA.
Responsibility	DTTAS supported by NRA & NTA
Timeframe	Q3 2014 to Q4 2015
Action 15	<u>Trial and Implement Quiet Lanes and Shared Space</u> That proposals for Rural Quiet Lanes and Urban Shared Space (or Homezones) be developed and implemented and provide for very low Speed Limits such as 30km/h or 20km/h. Proposals to be supported by research and trials.
Responsibility	DTTAS
Timeframe	Q1 2015 to Q4 2015
Action 16	<u>Trial Intelligent Speed Adaption</u> That proposals and recommendations for the deployment of Intelligent Speed Adaption (ISA) be developed based on research and pilot studies.
Responsibility	RSA
Timeframe	Q4 2014 to Q4 2015
Action 17	<u>Develop New Legal Evidence Mechanisms</u> That new evidence mechanisms be legislated for, regulated and developed to strengthen enforcement and use of new technologies such as Variable Speed Limits and Average Speed Enforcement.
Responsibility	DTTAS
Timeframe	Q1 2014 to Q1 2015
Action 18	<u>Improve Detection and Enforcement</u> To improve speed detection the Gardai to review and make recommendations on: increased deployment and outsourcing; average speed detection; widening the function of outsourced back office work and seeking to maximise the integration and shared use of ITS technologies.
Responsibility	Gardai
Timeframe	Q1 2015 to Q4 2015

Review Group Members

Organisation

Member

Department of Transport Tourism and Sport

John McCarthy (Chair)
Kieran Baker (Secretary)

An Garda Síochána

Superintendent Con O' Donohue

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Alternate

Evan Molloy

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Terms of Reference

The purpose of the Working Group will be to:-

1. REVIEW EXISTING OVERALL SPEED LIMIT SYSTEM AND MAKE RECOMMENDATIONS HAVING LOOKED AT: -

- The contributing factors affecting speed and the contributing factor of speed to road safety
- Whether the existing system for default Speed Limits is still appropriate
- The existing criteria for determining Speed Limits for all categories of road
- The future need for setting, on-going review, management and audit of Speed Limits.
- The Speed Limit Guidelines and how it can be applied consistently across the country
- The legislative framework.

2. REVIEW AND MAKE RECOMMENDATIONS ON SIGNAGE THAT ACCOMPANY SPEED LIMITS: -

- To address the approach and needs for Speed Limit signage and determine from a road authority and driver's perspective if the approach is appropriate
- How the approach to signage might be improved and made consistent

3. TO MAKE RECOMMENDATIONS ON THE ISSUE AWARENESS / COMMUNICATION

- Advise on existing driver awareness
- Recommendations on an appropriate awareness/education campaign for drivers

4. TO MAKE RECOMMENDATIONS ON THE IMPLEMENTATION OF CHANGES SETTING OUT: -

- What actions are required
- Timescales
- Cost implications

1.0. Introduction and Background

1.1. Introduction

In February, 2012 the Minister for Transport, Tourism and Sport established a Working Group for the purpose of reviewing the Speed Limits that apply to roads in the State. The task is summarised as:

- To review and make recommendations on existing overall system of Speed Limits
- To review and make recommendations on signs that accompany Speed Limits
- To make recommendations on issues of awareness / communication
- To make recommendations on the implementation of changes

The detailed terms of reference for the Group are set out on page viii.

This review follows on from the work of a previous Working Group in 2003 and subsequent implementation of metrication in 2005. At that time the general limit of 60 mph (100 km/h) was ended in favour of specific default limits for different classes of road such as National Roads (100 km/h) as well as Regional and Local Roads (80km/h). As part of this, the old General Speed Limit sign was ended in favour of numerical signs for each limit.

Since then, there has been progress in some areas in improving the operation and management of Speed Limits in Ireland. However, there have also been a number of factors and trends that are considered relevant to the pursuit of this review: -

- The effective practices in implementing and operating the system of Speed Limits since its introduction in 2005, as opposed to what was intended.
- Ministerial Direction (Circular RST 2/2011) and the update of the Statutory Guidelines on Special Speed Limits.
- The current international practice in relation to Speed Limit signs, particularly with regard to the Vienna Convention on Signs and Signals.
- While Speed Limits specify maximum speeds at which vehicles may be driven, conditions may require drivers to proceed more slowly than the posted Speed Limit.
- The complexity of the current system of Speed Limits in the context of a hugely varied road network.
- A significant increase in interface points and signs such as from a National Road to a poor Local Road such as a Boreen, where they didn't exist before.

In looking at solutions to the issues that have been identified it is critical to do so reflecting the regulatory, administrative and enforcement framework that exists in Ireland. In addition there are also many stakeholders involved in Ireland such as:-

- DTTAS (Legal framework & oversight),
- NRA (National Roads),
- NTA (Greater Dublin Region) – New since November 2009,
- City and County Councils (Road Infrastructure),
- Gardaí (Enforcement),
- RSA (Education, Training & Communication) – New since September 2006,
- Road Users and Organisations (e.g. AA Ireland and RIAC)

These were represented on the Working Group.

1.2. Background to Speed and Speed Limits

Although higher road speed can have several positive aspects, such as reduced journey times, there are also several negative ones of which the most obvious relates to road safety. Excessive and inappropriate speed is the number one safety problem in many countries including Ireland, often contributing to as much as a third of fatal collisions and is an aggravating factor in most other collisions.

Road Speed Limits are used to manage and regulate the speed of road vehicles and there are usually several reasons for wanting to do this. They are often set with an intention to improve road traffic safety and reduce the number of casualties from road traffic collisions. In its report on road traffic injury prevention, the World Health Organization (WHO) identifies speed control as one of various interventions likely to contribute to a reduction in road casualties. (The WHO estimated that some 1.2 million people were killed and 50 million injured on the roads

around the world in 2004). Speed Limits may also be set in an attempt to reduce the environmental impact of road traffic (vehicle noise, vibration, emissions).

Speed and Road Safety

Speed is at the core of the road safety problem. It influences both the risk of being involved in a crash and the subsequent outcomes. For similar types of road, the risk of collision increases and the severity of injury sustained increases with increasing speed, because of the higher speed at impact.

The balance between safety and mobility must be judged from an ethical standpoint, whereby death and serious injury are ultimately not acceptable by-products of using the road system. This also requires that Speed Limits are set in coordination with current road infrastructure provisions to eliminate the risk of fatality or serious injury. While many jurisdictions may not be able to move immediately to these Safe System Speed Limits, intermediate steps are possible. Results from research suggest when average speed increases (due to raised Speed Limits and/or increased speeding), there has been a corresponding rise in road trauma. Conversely, where speed decreases (lower Speed Limits / less speeding), there has been a drop in road trauma. Any jurisdiction that imposes lower Speed Limits can expect safety benefits.

From a driver's perspective, speed is largely determined by the physical appearance of the road ahead and his or her consequent assessment of risk. However, as road users are held responsible for their behaviour on the road network, prevention strategies have been directed mainly at improving road users' behaviour, mostly through education, information and enforcement strategies. Even though thinking is evolving this core principal remains.

Speed Management

The 2006 OECD Report on Speed Management lists six interventions/responses that can yield benefits on road safety, of which speeding is the first. It is also accepted internationally and nationally that management of Speed Limits has to be considered within the overall context of a Speed Limits Management Framework. This is illustrated by the 2006 and 2008 OECD reports and successful speed management programmes that apply the following generic progression: -

- Decide on the function of the road within the network;
- Apply engineering techniques to road infrastructure;
- Apply a Speed Limit appropriate to the particular road;
- Apply clear and constant signing of the Speed Limits;
- Enforce the Speed Limit;
- Periodically assess the Speed Limit, and revise if required.

In addition given the significant potential benefits from new technologies, their progressive implementation is particularly encouraged. This is also so in the context of ensuring a cost effective system of speed management that delivers on consistency and appropriateness.

This can be summarised as the **4 Es' – Engineering; Education; Enforcement and Economy**. It is also important to emphasise that speed management including the setting and review of Speed Limits is an on-going process.

Speed Limits

Speed Limits are at the core of any speed management policy and should reinforce a drivers' assessment of the safe speed to travel along a road. A Speed Limit should reflect the function and quality of the road to ensure a safe speed. In addition, a Speed Limit must be supported by the characteristics of the road and the road environment in order to be credible for the road user. The main rationale is as follows: -

- Drivers can impose significant risks to others; a driver with a high tolerance for risk may be inclined to drive faster, accepting a high risk of having a collision,
- Regulation of speed derives from the inability of drivers to correctly judge the capability of their vehicle (stopping, handling) and to anticipate road geometry and roadside conditions to determine appropriate driving speeds,

- The tendency of some drivers to underestimate or misjudge the effects of speed on crash probability and severity.

Speed Limits can define maximum, minimum or no Speed Limit and are normally indicated using a traffic sign. These are usually set by legislative bodies such as the Oireachtas (Road Traffic Acts) and Local authorities (Bye-laws) and are enforced by bodies such as the Gardai / Courts.

Where a Speed Limit is the maximum legal speed, it is not necessarily the safe 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 Speed Limit applying either to the road or to the vehicle being driven. Speed Limits are not a target speed to be achieved.

Changing Speed Limits, on their own, generally only have a limited effect on changing the actual speeds whereby the lowering of a limit by 10km/h lowers the actual 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).

In general, since Speed Limits were first introduced in any country, they have been the focus of attention from the public and various groups that can express a range of views on the relevance of Speed Limits or to the level they are set at.

Appropriate Speed Limits

Speed Limits were introduced as an aid for road safety. However experience with Speed Limits has clearly established that their introduction without associated speed reduction measures does not succeed. If a Speed Limit is set in isolation, or is unrealistically low, it is likely to be ineffective and lead to enforcement issues. If limits are frequently perceived as not being credible, it will harm the trust in the Speed Limit system as a whole.

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. In situations where the actual road speed is considered too high, notably in urban areas where Speed Limits below 50 km/h (31 mph) are used, then engineering infrastructure measures such as traffic calming are often used. For some classes of vehicle, Speed Limiters may be mandated to enforce compliance.

Speed Limits must be appropriate for a given road or stretch of road. Determination of appropriate Speed Limits in speed zones should be made on the basis of an engineering assessment. Although there are a number of methods for assessing and setting appropriate Speed Limits, they can be limited but do provide a means of being objective and can thus be a beneficial support to relevant experts, decision makers, legislators and the public.

2.0. Current System of Speed Limits

The Road Traffic Act 1961 (No. 24 of 1961) is the legislative basis for Speed Limits in Ireland of which Part IV was amended by Part II of the Road Traffic Act 2004 (No. 44 of 2004). These provisions provide for the establishment of a range of Default and Special Speed Limits and apportion to the Minister and local authorities, powers and functions in relation to the determination and application of those Speed Limits. The Acts also provide the National Roads Authority and the Garda Síochána with particular roles in relation to the application of Speed Limits. In addition the 2004 Act provided for–

- The introduction of metric values for Speed Limits;
- Different default Speed Limits for roads in built-up areas, motorways, rural national roads and rural regional and local roads;
- 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;
- 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;
- Broader arrangements for consultation on proposed Special Speed Limit bye-Laws;
- A Special Speed Limit at road works by Order made by County or City Managers;
- Guidelines by the Minister in respect of the making of Special Speed Limit bye-Laws;
- Regulations by the Minister for Transport for Speed Limits in respect of specified classes of vehicles.

In addition 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.

Default Speed Limits

As part of the introduction of metric limits in the 2004 Act, the General Speed Limit was replaced by separate Speed Limits depending on the class or category of road. The current default Speed Limits are as follows: -

- 120 km/h for motorways
- 100 km/h for National Routes (Primary and Secondary) that are not motorway status.
- 80 km/h for local and regional roads.
- 50 km/h in built-up areas.

Speed restrictions also apply for certain classes of vehicles.

Special Speed Limits

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,
- 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 (in respect of all roads),
- 50 km/h in respect of any road other than a road in a built-up area,
- 40 km/h (in respect of all roads),
- 30 km/h in respect of a road or roads in accordance with Guidelines issued by the Minister.











As part of the process of making Special Speed Limit bye-laws, local authorities undertake a public consultation exercise by placing notices in newspapers, draft proposals on display and seeking observations from the public or other interested parties.

Speed Limit Signage

Speed Limit signs are provided as required to inform the road user as to what limit applies. Signs are also provided at the interface between different Speed Limits such as between national and non-national roads or when exiting a motorway. In addition there is provision for the use of repeater signs within each zone. As a

result of the new Speed Limits the End of Speed Limit sign (General Speed Limit) was replaced by a series of numerical Speed Limit signs as illustrated in the table below.

Table of Equivalent Former and Current Permitted Speed Limits

Former Speed Limit Signs (mph)	- -						
Current Speed Limit Signage							

The change has resulted in road users being more dependent on signage that directly tells them what Speed Limit applies (i.e. 80 km/h, 100 km/h and 120 km/h) as opposed to relying on a simpler system of defaults, urban signage and education.

Road Works

The Road Traffic Act 2004 also introduced 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 may be signed. The speed chosen must be either: 25, 35, 45, 55, 65 or 75 km/h.

Guidelines

Under section 9(9) of the Road Traffic Act 2004 the Minister for Transport may issue Speed Limit Guidelines in respect of the setting of Special Speed Limits. These Guidelines constitute a direction given by the Minister for Transport. In early 2011, the Department of Transport issued the most recent Circular (RST 2/2011) and Statutory Guidelines on Speed Limits. This update was also carried out in accordance with actions 34 and 35 of the Road Safety Strategy 2007 – 2012. The purpose of the 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. This update included for Technical Guidelines as well as a Speed Assessment Framework.

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. Advice is also given in the Guidelines on the making of roadworks Speed Limit Orders by County or City Managers.

The Road Network in Ireland

The default Speed Limit for a road depends on whether it is motorway, National, Regional, Local or in a Built-up area. As a consequence this has resulted in many interface points on the road network where these Speed Limits have to be posted.

The road network in Ireland is approximately 99,100 km and is made up of national roads and non-national roads. Of this, national roads account for over 5,600km of which 1,000km is motorway. This comprises 5.65% of the overall network of which the figure for motorways / dual carriageways has increased significantly in recent years.

It is estimated that there are nearly 89,100km of non-national roads in rural areas and approximately 4,500 km of non-national roads in built-up areas, a total of 93,500 km countrywide. Approximately 13,100kms of these are Regional Roads, many of which carry as much traffic as some National Secondary Roads. The rest, totalling almost 80,400km, are Local Roads.

Ireland's length of road per 1,000 populations (21.63 km) is two and a half times the EU average of 8.51 km.

3.0. Identifying the Issues

The Road Traffic Act 1961, as amended including Part II of the Road Traffic Act 2004 (No. 44 of 2004), provides the current legislative basis for Speed Limits and for the change from imperial to metric Speed Limits. The transition to metric Speed Limits occurred in early 2005 and was a very smooth and successful process. However, 8 years on, it is apparent that further issues are arising in relation to Speed Limits, the Speed Limit signs and their deployment. In summary these centre on:

Main

- The appropriateness of Speed Limits to certain roads,
- The consistency of Speed Limits across Ireland.
- Inappropriate location of Speed Limit signs.
- Poor mechanisms of public interaction such as an appeals mechanism.
- Poor oversight and co-ordination

Other

- The ability to deploy Road Works Speed Limits,
- The time it takes for a local authority to set Special Speed Limits,
- Issues arising out of the link between Speed Limit and road classification,
- Enforcement.

Many of the issues are long standing but some have arisen since the introduction of the new system of Speed Limits. It should also be noted that, in 2009, the Road Safety Authority policy advisory panel also carried out a Speed Limit Review that made recommendations addressing a number of the issues arising.

An underlying difficulty arises due to Ireland's length of road being more than double the EU average per head of population as well as the inconsistency of the road network. It is thus very difficult to have a 'one size fits all' for Speed Limits. At present local authorities can introduce Special Speed Limits to change from the Default Speed Limit as required in accordance with the Guidelines. This can, however, lead to inconsistencies in Speed Limits where some roads are allocated lower Special Speed Limits by road authorities and others are left at the default value.

3.1. Main Issues

Appropriateness

A number of general observations on appropriateness of Speed Limits can be made. A key factor when setting a Speed Limit is what the road looks like to the driver, such as its geometry and adjacent land use. Drivers are likely to expect and respect lower limits, and be influenced when deciding on what are appropriate speeds, where they can see corresponding potential hazards. For example narrow roads, bad bends, no verge and density of private accesses. The key to success is to try to ensure that Speed Limits are chosen that match the appropriate conditions. The following are some observations of Appropriateness and Speed Limits by road class:

- National Primary Road Network (NPRN): - Although the Speed Limit of 100 km/h on single carriageway roads is generally seen as correct (RSA average speed of 90.2 km/h). However variation does exist where higher speed sections such as the N25 (Dunkettle – Carrigtohill) or N1 (Dundalk to Border) have 120km/h limits. Additionally Speed Limits on un-realigned sections may still be considered as being too high, therefore a lower limit may be more appropriate for these sections. Examples include sections of the N4 in south Sligo and the N20 between Mallow and Buttevant in Cork.
- National Secondary Road Network (NSRN): - The National Secondary network, like the National Primary Network has a default Speed Limit of 100 km/h. However, the majority of the NSRN is a *legacy road network but has significant stretches that are narrow and poorly aligned and where it is not possible to drive at the posted speed limit for long stretches* (2010 RSA Policy Advisory Panel Speed Limit Review report). A key issue is quantifying this, of which the following is of note: -

- According to the 2009 RSA Speed Limit review report, approximately 33% of the network has issues with narrow roadway and poor alignment where it is not possible to drive at the posted Speed Limit for long stretches. However, the percentage is nearer to 100% for such roads along the west coast of Ireland.
- RSA free speed surveys for the National Secondary Network give an average speed of 82 km/h for cars. Although this is an average figure for actual speed, whereby some sections may have higher speeds and some lower speeds, it does correlate with the other information on the network.
- The 2011 National Secondary Needs Study Report states that *48% of the network length has a lane width of less than 3.0m and therefore fails to meet minimum geometric standards*. Based on this study, more than 50% of the network does not meet a standard suitable for 100km/h.

The above therefore suggests that a Speed Limit of 100km/h for a significant portion of the National Secondary Road Network is too high and does not fit with the current network characteristics.

- Regional Roads: - In many respects, the default Speed Limit of 80km/h for the Regional Road Network is seen as appropriate. However, there are notable exceptions such as former National Roads that are now bypassed by the new motorway network and where the Speed Limit might, more appropriately, be set at 100km/h.
- Local Roads: - There are issues with the non-national Speed Limit of 80 km/h on local roads where, in a lot of cases, it is not possible to drive at anywhere near the posted Speed Limit. Prior to metrification there were no Speed Limit signs on these roads as there was a General Default of 60 mph (100 km/h) and a delimiter sign. Although the Speed Limit has been reduced in actual terms by 20km/h, some drivers see a posted limit of 80 km/h as a 'target'. For Local Tertiary Roads and some Local Secondary Roads, it is arguable whether any of the current Speed Limit signs would be appropriate or whether a Speed Limit should be posted at all.

Notwithstanding any of the above it must be emphasised that local authorities and the NRA can amend and set Speed Limits, as appropriate, for the road network in accordance with Speed Limit Guidelines.

Poor practices and inappropriate use of Speed Limit signs

Issues have arisen in relation to perception or understanding on the part of road users whereby the system of Speed Limit (signs) can be perceived as 'target' speeds. That is "it is safe" to drive at any speed up to that which is posted. Much of this can be due to drivers being uninformed that the displayed speed is a limit but it is also clear that signage should be correctly informing and self-explaining.

Issues have also arisen in relation to inappropriate Speed Limits and signage caused by poor practice or by an arbitrary interpretation of the current requirements (Guidelines) for Special Speed Limits as well as the use of current signage in a range of scenarios. Examples are: -

- Use of 100km/h or 80 km/h Speed Limit repeater signs entering into a bend or outside a school.
- Use of Speed Limit repeater signs on sections of road where a Speed Limit change is approaching and speeds should be reducing.
- Speed Limit signs displayed in advance of a junction of a road with a different Speed Limit
- Speed Limit signs located on short links
- Speed Limits on the approach to towns.

These issues often arise out of poor co-ordination of signs or incorrectly utilising a Speed Limit sign when other more appropriate warning signs such as SLOW, BENDS AHEAD should be considered. Many of these issues were raised in DTTAS Circular RST 2/2011. Appendix B illustrates examples arising out of the above.

Consistency

In relation to consistency, there is the issue of perception as to whether a Speed Limit is too high or too low for a road and how to ensure an appropriate Speed Limit is in place to match road conditions. Examples are: -

- Different approaches to setting of Speed Limits for roads with limited access, good geometry or dual carriageways,
- A dual carriageway road, having a limit of 80 km/h, whereas another legacy segment of the same road that is a narrow, un-realigned single carriageway having a higher limit of 100 km/h,

The issue of consistency and appropriateness can exist across a network, between counties or even within a county. This also arises in the context of differences between locally set Special Speed Limits caused by different

interpretations of the same Special Speed Limit Guidelines or by different local authorities or the NRA. For National Roads, although NRA approval is required for the setting of Special Speed Limits, it does not have powers to initiate, intervene, direct local authorities or set Special Speed Limits to ensure consistency on National Roads. Notwithstanding the limited powers, the NRA does make interventions on Speed Limits.

It should be noted that, as an example of the effort and cost required to address some of the above issues on the National Road Network, the NRA and the Kildare National Roads Office (NRO) have been evaluating videos and other survey data to identify inappropriate signage locations and subsequently commissioning contractors to remove such signs. This task has been on-going and is due for completion during 2013.

Arising out of these issues, one of the motoring organisations, AA Ireland, has produced a list of potential inconsistent and inappropriate Speed Limit locations based on submissions from members of the public.

3.2. Other Issues

Appeals

Members of the public who consider that a certain Speed Limit is inappropriate often feel that they have little recourse of action other than to make a submission as part of a review process or on an ad-hoc basis to the City/County Council, a local Councilor or the Minister. Some independent stakeholders organizations such as AA Ireland also receive queries. Although through these channels queries can be addressed, this is not necessarily a formal or a robust process that leads to change.

Road Works Speed Limits

As part of the introduction of the 2004 Road Traffic Act, provision was made for the first time, for regulatory Road Works Speed Limits. This is where temporary Speed Limits, for a maximum of 1 year, can be introduced by Manager's Order in consultation with the Garda Commissioner (generally his representative at Divisional level) and subject to NRA approval for National Roads. Similar to a temporary road closure, a notice must be advertised, four weeks in advance, specifying the dates, times and duration of the Road Works Speed Limit.

In practice, the application of Roadworks Speed Limits has occurred for larger scale projects but not for smaller or short duration roadworks. In general for large, planned roadworks projects the notification period is workable. However, the requirement has proved too rigid for smaller or shorter term roadworks, particularly those that are weather dependent or where a final decision to proceed with such works may not be made until a few days in advance. As a result local authorities have mostly used Cautionary Speed Signs in lieu.

Issues also exist in relation to the requirement to locate Speed Limit signs to match the zone, resulting in potential inconsistencies between where Road Works Speed Limits apply and where the roadworks are actually taking place. This leads to long stretches of road not having roadworks but having a Road Works Speed Limit in place. There are also issues relating to time periods for the roadworks relating to duration of the limits, days of the week and times within a 24 hour period. In addition problems occur where a Road Work Speed Limit is in place but no roadworks are actually taking place due to early set up or delayed removal of limits, night time and roadworks moving location within a zone.

Enforcement issues

Speed Limit signs are needed to provide information to the driver as to what are perceived as appropriate maximum safe speeds, as determined by circumstances such as built-up areas, national primary dual and single carriageway roads. Speed Limits need to be credible to the driver, otherwise they will not be adhered to and thus make enforcement difficult. Ideally, road users should be educated to know what the national default Speed Limit is on a particular road type without necessarily seeing a sign.

Enforcement of Speed Limits has always been challenging particularly with the more complex and varied possibilities that exist for setting Speed Limits. Even the use of new technologies presents its own set of problems, particularly in terms of accuracy and resources required to transpose a 'detection' into a notice, fine or penalty points.

A significant issue, in relation to enforcement is the requirement for resources, cost and time, even when new technologies are used. This requires deployment of Garda resources or the Go-safe contract, both in terms of

detection but also significantly in back office operations. Enforcement is and will continue to be challenging, even in the context of new technologies such as Variable Speed Limit signs.

A further issue relates to whether a Speed Limit sign was in place or not when an offence is alleged to have occurred. Cases exist whereby either signs do not match Speed Limit zones, are missing or are incorrectly erected. Records may not also be correct or accessible. Gardaí, as a result, have placed greater reliance on the legal bye-laws in place rather than the sign. These issues relate to Default, Special and Roadworks Speed Limits.

Education, Training and Communications.

Although it is very clear that road signs should be legible, understandable and not confusing, it is also the case that road users must understand that Speed Limit signs display limits and should not be seen as safe speeds or target speeds. There is often a lack of understanding of the impact and relationship between increasing speed and the type and seriousness of collisions. There is often little real understanding as to how small a time benefit can be gained from excessive speeding. There is thus a need for greater emphasis on communication, training and education on the risks and impacts excessive speeds can have on road users.

Separately it should also be noted that there are education and training needs for those tasked with setting, monitoring and reviewing Speed Limits.

Other Matters

In addition to the foregoing matters, there are also a range of other issues as follows: -

- Speed Limits Process - Local Authority experience in setting Speed Limits can be quite varied in terms of preparing draft bye-laws, consultation and, in many cases, the length of process.
- Because default Speed Limits are associated with road classification, when a Classification changes, the Speed Limit changes as a result. This can take up to a year or more to reset back to that before the classification changed.
- A built-up area default Speed Limit of 50 km/h applies to 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. Not all towns fall within the definition of Built-up Area and in many cases, even very large towns 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.
- Consistency in setting Special Speed Limits for approach roads to towns and villages.

Administrative

Although the Guidelines on Special Speed Limits fulfill a central role in the making of Special Speed Limits, local authorities generally only have to *have regard to them when making ... bye-laws*. In addition their scope is narrow in that they are specifically relating to the *making of bye-laws*. The Guidelines are currently not able to address the issues relating to management, review or audit of Speed Limits.

There is a need to ensure that all Circulars, forms and guidelines are up to date and consistent with one another. For example, the current NRA 2007 Circular on Special Speed Limits is dated 2007 and pre-dates the current Department Guidelines on Speed Limits.

The on-going review and update of Speed Limits can be time consuming. For example, the need to ensure accurate records on Speed Limits and the requirement to use the Speed Assessment Framework creates demands in their own right. Another example is the effort required by the NRA to review signage on the National Road Network also necessitating resources in terms of staff and funding.

In the current environment, the issue of resources for the management and on-going review of Speed Limits for local authorities and the NRA is even more challenging.

Similarly there is a lack of oversight for consistency to include the monitoring and tracking of both local authorities and the NRA (for National Roads) in the overall management of Speed Limits, particularly when changes occur such as the introduction of new Guidelines.

4.0. Solutions

4.1. Overview

In looking at solutions to the issues that have been identified it is critical to do so reflecting the current international thinking as well as the regulatory, administrative and enforcement framework that exists in Ireland. The main stakeholders involved are recognised as:-

- DTTAS (Legal framework & oversight)
- NRA (National Roads),
- NTA (Greater Dublin Region)
- City and County Councils (Road Infrastructure)
- Gardaí (Enforcement)
- RSA (Education, Training & Communication)
- Road Users and Organisations

It is important to bear in mind that the Guidelines for Special Speed Limits was most recently updated in January 2011 in Circular RST 2/2011. This sets out many of the issues that are discussed here.

Knowledge of the existing road network and its needs is a critical first step. Once an appropriate speed has been determined for a road or section of road, steps should be taken to ensure acceptance and that the infrastructure is suitable through engineering measures. Once a road authority is satisfied that this has been achieved, an appropriate Speed Limit can then be set, communicated and enforced.

Having regard to the above this chapter addresses the issues identified as lead and support actions, brought together as a single overall plan. The resulting actions also allocate responsibilities and identify timeframes.

4.2. Lead Actions

4.2.1. Action 1 – Revise Speed Limit Signs

Many of the current issues arising regarding Speed Limits do not relate to the actual Speed Limit itself but to the sign posting of that Speed Limit. In particular, Speed Limit signs can be misinterpreted as ‘being safe to drive at any speed up to the limit (or number) displayed’ or can be seen as a ‘target speed’ as opposed to a more correct meaning where judgement is applied by the driver to drive, having regard to the road conditions, at a safe speed up to the limit displayed. More often than not, because of their number, the sign in question is the 80km/h sign but can also relate to other speeds.

It is important to note that the system of Speed Limit signage in Ireland displays numbers such as 50km/h, 80km/h or 100km/h and not symbols. No qualifier or supplementary plate is displayed. Although these numbers are exact, they are only limits and thus there is a need for drivers to understand this difference. An 80km/h sign on a Boreen, as a limit, can be the correct default limit for that type of road, even though it may look odd. It is recommended that the system of Speed Limit sign posting be amended by: -

- Modifying, simplifying and amending the system of Speed Limit Signage through increased use of symbols, rather than a number,
- Removing Inappropriate Signs.

The system of Speed Limit Signs

Based on the evidence, the current situation is confusing, particularly for certain roads such as Boreens and can lead to discrediting of the Speed Limit Signage and it is obvious a change is required. However, in doing so there are a number of basic requirements.

It is essential to have a clear and comprehensive system of Speed Limit signs. This is necessary from a road safety perspective, but is also the case for reasons of enforcement whereby motorists should have a clear awareness and understanding as to the prevailing Speed Limit and be informed where it changes. Signs are required, at a minimum, where these changes occur (i.e. interface points) and may also be used at other appropriate (repeater) locations. It is also important that signs are recognisable and understandable. Signs also need to follow established convention and practice.

For Regional and Local Roads in rural areas (90% of the network) a default Speed Limit of 80 km/h applies. This includes for a wide variety of road types from high quality Regional Roads to Local Tertiary or narrow Boreen type roads that reflect the inconsistency of the network. Most of these roads are signposted using the numerical 80 km/h sign. A small proportion of these roads have also had their limits raised or lowered through Special Speed Limit Bye-laws.

In looking at signs, a number of key principles need to be kept in mind: -

- Signs should be easily understood and recognisable,
- Any solution should be consistent with normal practice and, in particular, with the UN (Vienna) Convention on Road Signs and Signals (1968),
- Deployment and maintenance costs should be minimised.

A limited implementation should be considered that focuses changes on locations or road types where current signs have raised concern. In this regard solutions should apply particularly to Local Roads.

In looking at options, it is important to note, at the outset, that there is a strong desire to simply remove inappropriate signs at locations such as interfaces with poor Local Roads, where the above issues arise. However, it is also recognised that this approach could lead to uncertainty, inconsistency in signage and thus an undermining of the system of Speed Limits.

A number of options are possible to address the inappropriateness of Speed Limit signs and where 80km/h signs are currently erected on Boreens. Of these, the following are considered the most feasible: -

Option 1: - Maintain existing signage and educate/communicate the meaning of the signs. This places great and on-going emphasis on education/communication.

Option 2: - Maintain existing sign system and assess/adjust Speed Limits according to road conditions for each individual section of road on the network. However, due to the inconsistency of the road network, this would lead to constantly varying Speed Limits, a significant increase in signage leading and resultant concerns on road safety. A significantly longer implementation period and increased costs would also result.

Option 3: - Maintain existing Speed Limits but change or supplement the Signs. Options include:

- a. Introduce a sign similar to previous 'Vienna Convention' general Speed Limit sign [type 1] as a 'Rural Speed Limit' which would equate to 80km/h and be understood through education and communication. As this sign is a symbol rather than a number it would mean that driver judgement would apply. The use of an explicit number such as the 80km/h sign differs from the use of the 'delimiter' or 'rural Speed Limit' sign whereby the former should represent a road that is safe to drive up to the posted limit.
- b. Introduce alternative 'Vienna Convention' delimiter sign [type 2]. This type of sign states what the departing Speed Limit zone is but not what the commencing Speed Limit is.
- c. Use 'Slow' supplementary plate or warning sign to accompany Speed Limit signs.
- d. Use 'Limit' supplementary plate to accompany Speed Limit signs.

Illustrations and examples of these signs are below. Illustrations of other sign types considered are in Appendix E.

Sign Types



Option 1
Existing

=



Option 3(a) and 3(c)
[Type 1]
Rural Speed Limit

=



Option 3(b)
[Type 2]



Current Sign



Recommended Rural Speed Limit sign

It is recommended that option 3a plus 3c be progressed with a view to being implemented for Local roads. However, because of the inconsistency of the road network, aspects of the other options should also be progressed such as: -

- Option 1 - The need for Education and Communication.
- Option 2 - Assess and adjust Speed Limits for Regional and National Roads and where necessary for some sections of Local Roads.
- Option 3b – The use of the type 2 delimiter sign may, combined with existing signs, have a role to help better inform drivers in conjunction with other Speed Limit Signs.
- Option 3c & 3d – The use of supplementary plates can, on occasion, have a role to help better inform drivers in conjunction with Speed Limit Signs.

All of the above constitutes part of an overall solution that can be implemented as required in a flexible manner in support of recommended options for Local Roads. Initially, a limited and as a result a more rapid implementation is only necessary. This flexible approach should be more cost effective to deploy, lead to improved understanding and road safety and can be built up over time.

It is important that the approach should be subject to monitoring and evaluation to test user reaction and effectiveness as well as to ensure that it is implementable, robust, enforceable and enduring.

The introduction of the new signage would need new regulations as well as an update to the Traffic Signs Manual to be prepared by DTTAS. Subsequently, the local authorities shall identify locations for deployment.

Action 1	<p><u>Revise Speed Limit Signs</u></p> <p><i>That Speed Limit signs be replaced, simplified and amended to address the issue of: -</i></p> <ul style="list-style-type: none"> - <i>Inappropriate 80km/h signs on poor quality Local Roads or Boreens,</i> - <i>That Speed Limit signs being seen as 'limits' and not 'targets',</i> - <i>Promoting a general rural limit of 80km/h,</i> <p><i>That an accompanying programme of signage replacement be implemented by the local authorities for Local Roads.</i></p>
Lead	DTTAS
Supporting	Local authorities
Timeframe	Q2 2014 to Q3 2015

4.2.2. Action 2 – Update and Implement Driver Education, Training and Communication.

Education, training and communication are essential elements of a comprehensive speed management policy and are a prerequisite for success in conjunction with other elements of a policy package, such as infrastructure measures, enforcement, Speed Limits and traffic signs. Regulations and supportive safety measures will also be more effective and better accepted as a result.

Notwithstanding the above, there is an apparent lack of understanding of Speed Limits and Speed Limit signs (i.e. Target Speed Signs etc.). In addition, road users at all times need to be 'warned' and 'informed'. To address this there is a need for an improved and co-ordinated approach to education, training and communication in relation to speed and Speed Limits so that road users understand: -

- That Speed Limit signs are limits and are not safe speeds or target speeds
- The impact and relationship between speed and the type and seriousness of collisions

- How small a time benefit can be gained from excessive speed

For speed and Speed Limits, road users need clear and correct signs as well as proper education and training. Drivers should, as a result, be aware of default Speed Limits, unless otherwise signposted and should not need to be constantly informed. It is also critical to engage with road users of different types from an early age.

Communication

The media has an important role to play in making Speed Limit signs known and well understood. By working in close co-operation with the media, the road authorities can reinforce the meaning and importance of signing in achieving road safety and environmental outcomes. This is particularly important when new signs are introduced to ensure that users understand Speed Limit signs are limits and not to be seen as safe or target speeds.

Among road users there is a lack of understanding of the relationship between increasing speed and the type and seriousness of collisions. There is often little real understanding as to how small a time benefit can be gained from excessive speed.

Specific examples include two very significant joint North / South ads (Slow Down Boys and Mess) produced in the last decade that specifically addressed the issue of excessive speed. While the narrative needs to educate about the 'speed fallacy' concept and to address the issue of low level speeding, the focus needs to be put into raising awareness of the issue of excessive speeding. In addition, there was a major Government campaign implemented, at the time of the changeover to Metric in 2005, which focused on getting the public to always 'Check the signs, Check your Speed' that should also be taken into account.

It is recommended that the RSA develop a communication strategy to address the futility of speeding or "speed fallacy" as well as the changes to and meaning of Speed Limit Signs. Such a strategy can utilise different media types and can also be tied to actions or processes such as when a driver licence or motor tax is renewed.

Education

In the framework of speed management, the role for education of primary school children is in the context of road users, such as pedestrians or cyclists knowing the risks due to speed. Most road safety education and training takes place informally, and is provided, principally, by the family and outside the school. Children can be directly affected by the risks that speeding vehicles represent for them. Educating children regarding road traffic is therefore important.

Importantly the need for road user education continues throughout the education cycle for, as children get older, the needs change. This can be through increasing awareness by including some road safety education in school classes or activities in one form or another and also by embedding into a broader approach to get young people aware of risks and safety and to be interested in traffic and the wider aspects of an individual's transport needs.

The current policy is to deliver road user education in a cumulative approach through the life stages. There are many education programmes that are designed to educate all road users on the various topics, including speed and how it contributes to deaths and serious injuries on Irish roads. All of these programmes have material relating to speed and speeding. However, it is recommended that this material is updated to reflect changes to signage, the meaning and understanding of Speed Limit signs and the duty of care of a road user. Inclusion in the school curriculum should also be considered.

Training

Driving too fast for the conditions may be one of the consequences of the tendency to overestimate skill and underestimate the risk. Therefore, the impact of speeding should be prominent in driver education and training.

Driver training needs to emphasise the impacts of speeding from a different point of view to road users in general. Drivers should be made aware of the risks and impacts of speeding, the system of Speed Limits and its enforcement. This should occur as part of initial driver training but should also be part of re-education of drivers as part of an enforcement policy. It is recommended that the driver training programmes and associated tests be strengthened regarding the issue of speed, its impact and how to control it as well as Speed Limits. Additionally, it is recommended that the Rules of the Road be revised.

Action 2	<u>Update and Implement Driver Education, Training and Communication</u> <i>That a communication strategy be developed and that existing education and training programmes and documents, such as the Rules of the Road be updated to address: -</i> <ul style="list-style-type: none"> - <i>Changes to Speed Limit signage,</i> - <i>The meaning and understanding of Speed Limit signs</i> - <i>The futility of speeding</i> - <i>The Responsibility and the duty of care of road users.</i>
Lead	RSA
Supporting	DTTAS / NRA
Timeframe	Q1 2014 to Q4 2015. Also on-going.

4.2.3. Action 3 – Implement Appeals, Oversight and Co-ordination.

The Speed limits process is quite often subject to the external scrutiny of the public or other organisations. However the only formal interaction occurs when notifications are published about a speed limit review whereby members of the public can view and comment on proposals. Informally it is also open for the public to write to a Local Authority, to contact elected members or the Minister. However many other legal functions or processes are open to a separate and formal appeal process whereby where by a decision can be queried or appealed. Given this, the public nature of Speed Limits, the need to provide a formal interaction for the public or interested parties, the need to demonstrate a robust system that is subject to scrutiny an appeals system should be put in place. This should help address anomalous Special Speed Limits and will allow interested parties or members of the public to appeal a given speed limit to the local authority. If dissatisfied with the local authority response the appeal can be escalated to a national body that will assess the speed limit against the requirements of the Guidelines for the Application of Speed Limits. This body will be empowered to instruct a local authority to change a speed limit if it is found to be inappropriate. This is a key requirement to ensure consistency.

In addition to the above an effective system of oversight, monitoring and inspection of both the NRA and local authorities is necessary to ensure the actions in this report are implemented, that Guidelines are revised and kept up to date as required, and that appeals and queries arising on Speed Limits are dealt with and to provide support and advice to the Minister. This is also particularly necessary to address the on-going issue of consistency and appropriateness. Because of the role of the Minister, it is recommended that this should be addressed by DTTAS by establishing such a unit or body.

It is important to note that the work should not need to be isolated and could parallel other activities in the area of road safety such as road safety audits/inspections or road collision investigations. In regard to the body or unit, DTTAS should consider efficient options to resource and manage this in conjunction with other work or activities in roads and traffic. It should also be noted that, for Speed Limits, there would be a heavy workload for the first 2 years in implementation and bedding down and reducing thereafter.

Action 3	<u>Implement Appeals, Oversight and Co-ordination</u> <i>That a unit or body be established to: -</i> <ul style="list-style-type: none"> - <i>Manage appeals and queries arising on Speed Limits and the Speed Limit process (including the Reserved Function).</i> - <i>Manage and update Speed Limit Guidelines</i> - <i>Monitor, audit and inspect Local authorities and NRA on implementation of Speed Limits.</i> - <i>Provide support and advice in relation to Ministerial Functions.</i> <i>DTTAS to consider options and make recommendations in advance.</i>
Lead	DTTAS
Supporting	
Timeframe	Q1 2014 to Q2 2014

4.2.4. Action 4 and 5 - Update Speed Limits.

The setting of Speed Limits has to have regard to a number of criteria and in the context of what is happening internationally such as: -

- Self-explaining roads. A traffic environment that is uncomplicated and easy to interpret by adopting homogeneous and consistent design principles.

- Safe System Approach. Describes new methods to define and manage road safety. Such an approach in relation to Speed Limits can be to reduce the limits or re-engineer the road.
- Function of roads. In the Guidelines for Special Speed Limits, a two-tier hierarchical approach is taken that differentiates single carriageway roads, with a strategic function (flow and distribution), from those with a local access function. However, other function types can relate to 'Movement' or 'Place' as set out in the Design Manual for Urban Roads and Streets (DMURS). It is important to note that, for some of these roads, engineering measures may be required to support a lower speed requirement.
- Design Speed. Increasingly, a new approach to design speed is now broadly used whereby the design speed of a road can be defined as: *the highest speed that can be maintained safely and comfortably when traffic is light* (e.g. ETSC, 1995). In principle, the required design speed depends on the function of the road and hence on the desired speed level. If, because of the road function, high speeds are desired, road quality and roadside protection need to be of an appropriate standard. Critically, the design speed should not be lower than the Speed Limit and a Speed Limit should not be much lower than the design speed of a road.

The intention is that roads are to be self-explaining, in accordance with their function. Therefore, horizontal and vertical alignment, cross-sections, junctions, as well as the operational mode of a road, are linked to the Speed Limit and have to be determined for the types of road functions described above. Notwithstanding the function of a road and the desired design speed / Speed Limit, the alternative to an improved road standard is to reduce the Speed Limit and actual speeds to a more appropriate level consistent with the current standard and risk pertaining to the road.

Road Classification, Categories and Types

Roads may be categorised to reflect their location (inside/outside built-up areas) and types (e.g. motorways or a laneway). However, as before a one size fits all approach is not possible, as it relies on the network being physically homogenous and consistent and appropriate for each category of road. However this is not the case with many examples of inconsistency such as some Regional or Local roads being constructed or aligned to a higher standard than some legacy National Roads. In considering this, the following are particularly important: -

- Like other countries and in order to take a simple approach, Ireland has a system of default Speed Limits. These reflect the appropriate Speed Limit for a classification category at a network level, and can vary between 120km/h for motorways and 80km/h for Regional and Local Roads in rural areas and 50km/h in built up areas.
- The NRA DMRB defines a number of cross sections for road types (and road speeds) such as a Type 3 single carriageway cross section for use on low traffic volume roads that corresponds with a lane width of 3.0m and a design speed of 85 km/h. In addition, the lane width for 100km/h design speed is based on the Type 2 standard at 3.5m.

The following assessment of the road network is by Classification: -

Motorway Network [Default 120km/h]

The motorway network in Ireland has been developed mostly over the last 10 years and has been designed to set standards allowing for Speed Limits of 120km/h. Notable exceptions, however, include the M8 Glanmire by-pass and the M50 Dublin where the limits are 100km/h.

National Primary Network [Default 100km/h]

The default Speed Limit for the non-motorway National Primary Network is 100km/h. However, there are stretches of 120km/h such as the Dunkettle to Carrigtohill section of the N25 or 80km/h for sections such as N11 at the Ballinameesda Bends in County Wicklow. Most of the network is generally considered suitable for 100km/h. However, there are a number of sections where a variation of the Speed Limit should be considered, such as a lower 80km/h for the N4 in south Sligo or N20 for Buttevant to Mallow section.

National Secondary Network (NSRN) [Default 100km/h]

The National Secondary Network, like the National Primary Network has a default Speed Limit of 100 km/h. However, as per chapter 3, a lower limit may be appropriate over a significant section of the network.

The 2011 National Secondary Needs Study Report states that, in addressing the need to upgrade the network that *the current national default Speed Limit for National Roads is 100kph and much of the NSRN will be currently operating under this Speed Limit. The full application of the DMRB standards for a design speed of 100kph to road improvements could result in extensive realignment schemes that could not be justified on environmental and economic grounds because many of the lower traffic volumes on some of the NSRs.*

The current overall condition of the NSRN is unlikely to change significantly in the foreseeable future, given that the National Secondary Road Needs Study identified an investment requirement of €1.558 billion to upgrade the network. No timetable has been given and funds for investment will be limited. Where investment has occurred in recent time, it is often to a design standard of 85km/h the limit for the newly improved section of road needs to be reduced to 80km/h when it is complete and opened. However the Speed Limit for the adjoining road sections may be posted at 100km/h.

Although the NSRN is seen as having a strategic role, it is clear from the foregoing evidence that the Speed Limits for a substantial portion of the Network should be amended to 80km/h to better fit current conditions.

Consideration was given to amending the default to 80km/h and to amend upward high speed sections. However, it was felt that this would not give any benefit relative to the level of effort required to assess the network and, as a result, the default should not change. It should also be noted that neither mechanism should affect the ultimate outcome.

Regional Road Network [Default 80km/h]

Given the assessment in chapter 3, the Regional Road Network should be assessed in accordance with the Guidelines for Special Speed Limits by the local authorities to identify sections where a different limit is more appropriate and the Speed Limit amended accordingly.

Local Road Network [Default 80km/h]

It is arguable whether the default for Local (Rural) Roads should change and whether such roads should have posted Speed Limit signs, as at a network level 30km/h, 50km/h or 60km/h may/may not be correct due to the variety of road types. This is well illustrated in that there are over 76,700km of rural Local Roads of different types whereby some are to a higher design standard and have higher traffic levels than National Roads. A one size fits all solution would not work.

Therefore the default Speed Limit for Local Roads should remain the same. However, as per Action 1, a system of 'Rural Speed Limit' signs should be deployed that will emphasise that although a rural Speed Limit of 80km/h applies, drivers should travel at a safe speed within that overall limit.

At-Risk Locations

Speed Limits should not generally be reduced for isolated road hazards, except for 'at-risk locations' where there is a history of road collisions which cannot be addressed by other measures such as warning signs or, otherwise, where there are road geometry constraints or hazards.

Speed zoning of at-risk locations must be undertaken as part of a route-based approach to ensure the consistency of road environments with Speed Limits. At-risk speed zones should minimise the impact of the reduced Speed Limit on motorists without compromising safety. The current system of Speed Limits allows for Special Speed Limits at such locations. However, the Guidelines for Special Speed Limits should be also strengthened (Action 7).

Queries from the Public.

Queries on Speed Limits can arise for a number of reasons, such as part of a review process or those that may be submitted from time to time by members of the public or organisations such as the AA. These queries should be addressed in accordance with the Guidelines for Special Speed Limit and in a managed way on an on-going basis and in particular when a comprehensive review is underway. Where queries have not been properly addressed, members of the public should have a right of appeal.

Change in Classification

A difficulty with the system of Speed Limits in Ireland relates to the default Speed Limits being linked to Road Classification. This has resulted in many additional interface points such as those between National and Regional

or Local Roads. In addition if the Road classification changes, the default Speed Limit automatically changes accordingly.

Inconsistent Road Network

There are many examples to illustrate the inconsistency of the road network, for example former National Roads that are now Regional Roads, the R639 (previously N8) having a significantly higher standard of construction and alignment to some National Roads such as the N59 (Galway to Sligo) or the N4 in south Sligo that have a poor alignment and cross section that would be more akin to a Regional Road. Thus Speed Limits for the R639 might arguably be 100km/h, whereas the N59 or the section of the N4 might arguably be 80km/h.

Recommended Solution on issues for setting Speed Limits

It is emphasised that the existing system of limits is already flexible and allows for Speed Limits to be adjusted as appropriate. This flexibility is important to retain, due to the inconsistency of the road network. However it is recommended that the system of signage should change for Local Roads (Action 1) to improve simplicity and in particular that 80 km/h limit should be promoted as the Rural Speed Limit.

The key objective is to ensure that the Speed Limit for relevant sections is appropriate while ensuring simplicity. Based on this, it is recommended that local authorities and NRA (for National Roads) should conduct a comprehensive status review, network assessment and update of Speed Limits to include:-

- Verification of the legal status and inventory of existing Speed Limits.
- In accordance with the Guidelines for Special Speed Limits, review requests for changes to Speed Limits on foot of submissions from the public as well as community and motoring groups.

In general, for rural areas, the Speed Limits should vary from 80km/h to 120km/h depending on above criteria. Proposals for a reduction below 80km/h in rural areas should be avoided unless there is a compelling road safety issue that cannot be otherwise addressed. The road network should be reviewed to identify locations where:-

- Sections of National Roads where lower Speed Limits (i.e. less than 100km/h) should apply;
- Sections of the Regional and Local Road Network where higher Speed Limits (i.e. greater than 80km/h) should apply.
- At-risk locations should also be identified where lower limits (i.e. lower than 80km/h) may be considered.

This should be carried out in accordance with the Guidelines for Special Speed Limits. It is recommended for National Roads that the NRA, supported by local authorities, carry out the above exercise. For Regional and Local Roads the same should occur, but in a co-ordinated manner overseen by the County and City Managers Association (CCMA).

The review and update of Speed Limits should also be a more systematic and regular process and be subject to external monitoring and review. This should incorporate the above recommended solution and should be repeated at intervals no greater than 5 years. In doing so, it is anticipated that the initial exercise will be a large undertaking that could take up to 2 years to complete. This would be a much smaller exercise subsequently, particularly if proper digital records are maintained.

A table summarising the range of recommended default and permitted Speed Limits, arising in this section is set out in Chapter 5.

Action 4	<u>Update National Road Speed Limits</u> <i>That the Speed Limits on the National Road Network be updated in accordance with the Guidelines to ensure appropriate fit to:-</i> <ul style="list-style-type: none"> - Confirm existing Speed Limit bye-laws and signs. - Implement 80km/h on those sections that are not suitable for a 100km/h Speed Limit. - Implement Speed Limits lower than 80km/h as appropriate for 'at-risk' locations. - Review Speed Limits at locations where there have been queries. <i>To be repeated at intervals no greater than 5 years.</i>
Lead	NRA
Supporting	Local authorities
Timeframe	Q2 2014 to Q1 2015.

Action 5	<u>Update Regional and Local Road Speed Limits</u> <i>That the Speed Limits on the Regional and Local Road Networks be updated in accordance with the Guidelines, to ensure appropriate fit to:-</i> <ul style="list-style-type: none"> - Confirm existing Speed Limit bye-laws and signs. - Identify and implement 100 km/h Speed Limits on those sections that are suitable. - Implement appropriate Speed Limits lower than 80km/h for at-risk locations as appropriate. - Review Speed Limits at locations where there have been queries. <i>To be repeated at intervals no greater than 5 years.</i>
Lead	Local authorities.
Supporting	-
Timeframe	Q2 2014 to Q4 2015.

4.2.5. Action 6 - Remove Inappropriate Signs.

As stated previously, there is a strong desire to simply remove inappropriate Speed Limit signs such as at interface locations or other locations. Many of these signs relate to repeater signs that are incorrectly placed, such as in the vicinity of bends ('bend ahead' sign), traffic calming scheme signs, and narrow bridges. Appendix B illustrates the types of examples. Such signs should be either: removed, relocated or replaced by a more appropriate sign such as a Warning Sign.

This exercise is designed to remove, or replace signs in areas where it is not possible or appropriate to travel at that speed. This exercise is already underway on National Roads and is being led by the Kildare National Road Office (NRO) and is due for completion during 2013. The work has taken over a year to complete for 5,600km of National Road.

For Regional and Local Roads, this exercise is more substantial and is yet to commence. Financial and staff resources will be required. A co-ordinated local authority approach should be considered that would reduce the impact on otherwise tight resources. If local authorities are unable to undertake this work individually other options exist to undertake it either on a shared basis or utilising the NROs. It should also be noted that this exercise would have to take account of any changes in signage that may occur.

Action 6	<u>Remove Inappropriate Signs</u> <i>That existing locations of inappropriate (repeater) Speed Limit signs be identified (logged and mapped) and subsequently removed, relocated or replaced as appropriate for: -</i> <ul style="list-style-type: none"> - National Road Network by the NRA - Regional and Local Roads by local authorities
Lead	Local authorities and NRA
Supporting	-
Timeframe	Underway. To Q2 2014 for National Roads and end of Q4 2015 for Regional and Local Roads.

4.2.6. Action 7 – Strengthen Road Works Speed Limits.

Since the introduction of Road Works Speed Limits in 2004, there have been many practical difficulties in its use. This is particularly so for smaller and short term works due to the need for one month's public notification. In addition the exact timings of such works can also change due to a range of factors, such as weather. This suggests a need to introduce greater flexibility, while ensuring that adequate notification is given, the public is informed and that full and proper records of the Road Works Speed Limits are maintained. Given the foregoing, it is recommended that the setting of Road Works Speed Limits be broken into a number of stages for flexibility as follows: -

- **Stage 1 – Road Works Speed Limit Zone Order:** -The notification and the setting of a Road Works Speed Limit Zone Order should occur similar to as at present and setting out the overall intended time period, timings and the overall zone for road works. The following notification periods are suggested: –
 - A weeks notification on a website for short term road works of duration of up to one week
 - Four weeks notification for road works of duration up to a year.
- **Stage 2 – Road Works Operations:** - Road Works Speed Limits should only be in effect when the Speed Limit Signage is in place as follows: -

- That subject to Stage 1, approval of the designated Temporary Traffic Operations Supervisor would be responsible for the maintenance of Speed Limit signs within a Road Works Speed Limit Zone.
- That Road Works Speed Limit Signs be managed, in terms of timings and location, subject to the overall terms of Stage 1 and to agreement of the local authority, the Gardai and NRA for National Roads.

There is a need to focus on the accuracy and accessibility of records in relation to what Speed Limit zone applied at particular dates as well as whether, what and when signs were in place. Thus it is also recommended that all records of zones and signs be maintained on a road works management system, in tandem with other road works information.

This action will require primary and possible secondary legislation, as well as an update to the Guidelines. Further action will also be required to amend and update the Traffic Signs Manual, road works Guidelines, as well as training & procedures for road works.

Action 7	<u>Strengthen Road Works Speed Limits</u> <i>That the system of Roadworks Speed Limits be reformed to improve use & implementation by allowing for:-</i> <ul style="list-style-type: none"> - Improved flexibility for notification periods depending on scale and duration. - Improved flexibility for erection & dismantling of signs within the terms of a Road Works Speed Limit
Lead	DTTAS
Supporting	-
Timeframe	Q1 2014 to Q1 2015

4.2.7. Action 8 –Update and Strengthen Guidelines and Circulars.

Section 9(9) of the 2004 Road Traffic Act provides that the Minister may issue Guidelines relating to the making of byelaws under this section and may amend or cancel any such Guidelines. Where any such Guidelines are, for the time being, in force, a county council or city council shall have regard to them when making any such bye-laws. The Guidelines constitute a Direction of the Minister.

The purpose of the 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 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 a special Speed Limit on a National Road or motorway and to other interested parties.

It is important to emphasise that the focus and intent of the Section 9 Guidelines is to contribute to the establishment of a uniform and standard application of appropriate Speed Limits nationally. It is a key tool and will be subject to on-going review to improve or augment the contents, as required. It is published on the Department's website with the most recent update of the Guidelines was published in early 2011, when the Department of Transport issued a new Circular (RST 2/2011).

The main changes contained in the 2011 Guidelines for the setting of special Speed Limits are:

- New Speed Assessment Framework for the setting of Special Speed Limits on rural roads.
- Provision of a new 40km/h special Speed Limit as provided for in the Road Traffic Act 2010.
- Additional technical criteria by road type to further assist the decision making process.

Notwithstanding the introduction of these Guidelines for Special Speed Limits, it is important that follow up actions occur on training as well as monitoring of Local Authorities and NRA in use and adherence. In addition to ensuring that the Guidelines are being implemented, it is recommended that they be further strengthened to include: -

- 5-yearly comprehensive reviews
- Consultation / Approvals / Departures from Department (for Regional & Local Roads) or NRA (for National Roads),
- Standardised Forms
- Certification by a Director of Services in advance of submitting to elected members
- Improved guidance on the writing of Byelaw Schedules
- Strengthen and refine the Speed Assessment Framework further and tools such as software, spreadsheets or examples to assist.

- Requirements for Training in assessing Speed Limits.
- Requirements for maintaining records and mapping such as MapRoad
- Improved clarity on Speed Limits for road types
- Speed Limits for approaches to towns
- Speed Limits for approaches to Schools such as Periodic Speed Limits
- The use of Variable Speed Limits
- The use of Driver Feedback Signs

The Guidelines should themselves be strengthened in the legislation from 'have regard' to 'shall follow' status, thus ensuring that if they are not followed, Speed Limit bye-laws cannot be made. In addition their scope should be widened from Guidelines relating to the making of bye-laws to include the management of Speed Limits.

The introduction of a Speed Assessment Framework as part of the revised Ministerial Speed Limit Guidelines in 2011 has increased the role of a technical evaluation of Speed Limits. It in turn is based on practice elsewhere such as the UK. Notwithstanding the progress made in developing and issuing the Assessment Framework there is a need to both progress and support the Assessment Framework. These include: -

- Monitoring Local Authority and NRA implementation and usage.
- On-going evaluation of effectiveness of the Guidelines through piloting, testing etc.
- Development of support software and spreadsheet tools.
- Enhancement of MapRoad to improve records and storage of Speed Limits & Signs, Accident data, mean speed data & measurement (using mobile App), traffic data and speed assessment results.

There will also be a need for further on-going updating of the Speed Assessment Framework from time to time as required.

Circulars

The issue of updating and managing the system of Speed Limits, based on what has already been set out, has been emphasised in DTTAS Circular RST 2/2011 as well as the Speed Limit Guidelines that was issued in early 2011. As this constitutes a Legal Direction of the Minister for Transport, all other documents such as the current NRA Circular 4/2007, which predates the Guidelines, should be revised or withdrawn accordingly.

An example where an inconsistency can currently occur is when proposals are made to lower the Speed Limit for a section of road; the approach set out is not to consider such proposals *where the full length of the identified section cannot be safely driven at the proposed Speed Limit*.

Action 8	<p><u>Update and Strengthen Guidelines and Circulars</u></p> <p><i>That the Guidelines on Speed Limits be updated to: -</i></p> <ul style="list-style-type: none"> - <i>Improve clarity on Speed Limits for road types</i> - <i>Address Speed Limits for approaches to towns</i> - <i>Address Speed Limits for approaches to Schools</i> - <i>Address the use of Variable Speed Limits</i> - <i>Address the use of Driver Feedback Signs</i> - <i>Require training in assessing Speed Limits</i> <p><i>That the Speed Assessment Framework should be monitored and strengthened where necessary.</i></p> <p><i>That other existing Circulars on Speed Limits be updated or withdrawn to ensure consistent approach in accordance with the Guidelines for the Application of Speed Limits</i></p>
Lead	DTTAS
Supporting	-
Timeframe	Q1 2014 to Q2 2014

4.2.8. Action 9 - Update Function to Set Special Speed Limits.

The role of setting Special Speed Limits is a Reserved Function of a City or County Council. This attracts a considerable amount of public interest that has to be accounted for and, as a result, can also be quite a slow process. However, the process of setting of a Speed Limit is technical and an engineering function and thus, to ensure consistency, the recommendations for setting Speed Limits should, therefore, be by people, trained and competent in the assessment and procedures as set out in the Guidelines for Special Speed Limits. It is also important that local Speed Limit recommendations adhere to these nationally set Guidelines.

Local Authority experience with the Special Speed Limit process itself is that it is slow and time consuming, often taking a year or more to undertake. There is, thus, a need to ensure that this is reformed in accordance with nationally predetermined time limits. Road authorities should carry out a county wide Speed Limit review, as a whole, within a maximum period of one year.

The Speed Limits process is quite often subject to the scrutiny of the public or other organisations. However the only direct interaction occurs when notifications are published about a Speed Limit review, whereby members of the public can view and comment on proposals.

National Roads Speed Limits should be managed or co-ordinated with a national perspective and not locally. Thus, the National Roads Authority should have a much stronger role and, in particular, have that function for certain roads.

Considering these points, it is the view of the group that the setting of Special Speed Limits could be served as an executive function as is the case in many countries. However, recognising the role of the public and public representatives, it is recommended that the function to set Special Speed Limits remain a Reserved Function of a local authority but be subject to monitoring and a new appeals process.

There is currently no appeals process whereby the public can query a Special Speed Limit, seek for a Speed Limit to be reviewed or appeal a decision of a local authority to the Minister for Transport or NRA (for National Roads). It is thus recommended that such a process be set out in legislation and managed through the Guidelines.

The Reserved Function itself should be monitored, particularly in the context of other reforms, such as appeals, and should be reviewed after five years. Implementation of the above recommendations will require primary legislation and by amending the Guidelines on Special Speed Limits.

Action 9	<u>Update Function to Set Speed Limits</u> <i>That legislation for the function to set Special Speed Limits be implemented so that: -</i> <ul style="list-style-type: none"> - <i>The role should remain a Local Authority Reserved Function but be subject to an appeals process. The retention of the Reserved Function in this context should be further evaluated after five years.</i> - <i>The NRA have a stronger supervisory and controlling role for National Roads in general, and, in particular, have the full function in circumstances where the NRA is Road Authority (i.e. motorways and high speed dual carriageways)</i>
Lead	DTTAS
Supporting	-
Timeframe	Q1 2014 to Q1 2015

4.2.9. Action 10 - Update Legislation.

The current legislative basis for Speed Limits in Ireland is the 1961 Road Traffic Act, as amended by the 2004 Road Traffic Act. The 2004 Act provided for the metrication of Speed Limits as well as the ending of a single 'national' Speed Limit and replacement by a number of default Speed Limits in respect of various designated road types with further provision for the setting of Special Speed Limits as required. Part 2 of the Act provides specifically for Speed Limits and is divided into 12 sections to include as follows: -

- Section 5 - Built-up Area Speed Limit.
- Section 6 - Non-urban Regional and Local Roads Speed Limit.
- Section 7 - National Roads Speed Limit.
- Section 8 - Motorway Speed Limit.
- Section 9 - Special Speed Limits.
- Section 10 - Speed Limits at roadworks.

Section 9 sets out the essential requirements and procedures for the making of Special Speed Limits including the publishing of notices, requirement to give notice to a Town Council or the Garda Commissioner or requirements to obtain written consent of the NRA for National Roads. Additionally the following is of note:

- Section 9(8)(a) gives the Minister power to make regulations in relation to the varying of the specified Speed Limits.
- Section 9(9) gives the Minister power to issue Guidelines relating to the making of bye-laws for Special Speed Limits and that a county or city council shall have regard to them when making any such bye-laws.

This has resulted in a more complex system than existed previously that also allows for a large degree of flexibility but has also placed a large onus on ensuring that the system is correctly managed to ensure consistency and appropriateness. Consequently, powers and mechanisms need to be strengthened to support this and the following is recommended: -

Powers of Minister

There is a need to strengthen the oversight role and powers of the Minister to ensure consistency and appropriateness nationally across local authorities and the NRA. This is particularly so because of the role of the Reserved Function. In particular, there is a need for powers to support monitoring/reporting, direction, guidelines and where necessary intervention with local authorities and the NRA to help ensure consistency and appropriateness. It is thus recommended that: -

- Guidelines. The role of the Guidelines for the setting of Special Speed Limits be strengthened to be mandatory and that they have a wider role in the overall management and setting of Speed Limits.
- Directions. A power, similar to other legislation, whereby the Minister may issue Directions on specific or general matters to local authorities and the NRA should be provided.
- Regulations. That the Minister can enact regulations for the setting and management of Speed Limits.
- Monitoring. That the Minister should have powers in relation to being consulted/notified on Special Speed Limit proposals or changes.
- Appeals. A formal Appeals mechanism on Speed Limits be built into the process for the setting of Speed Limits.

Role of the NRA for National Roads

At present the only role that the NRA has in relation to the Setting of Speed Limits relates to the requirement for a Local Authority to obtain NRA consent for proposals on National Roads. The NRA has no power to commence a review, intervene or to set Speed Limits itself. There is however a greater need to ensure consistency and appropriateness across the National Road Network, particularly between counties.

In terms of strengthening the role of NRA for National Roads, the needs of the National Road Network itself. For example, there is a strong case for the Speed Limits for motorways and high speed dual carriageways to be managed directly by the NRA as a single network. However, extending this to other parts of the network would be more difficult, if not impossible. Thus, the more traditional NRA role, as a Supervisory Road Authority, is seen as more appropriate. Reflecting this, there is still a need to strengthen NRA powers for Speed Limits to be more in line with powers in the Roads Act. The following is recommended: -

- Directions. In a manner similar to the Roads Act, the NRA would have the power to issue Directions on specific or general matters to Local authorities for National Roads.
- Propose Speed Limits. The NRA would have the power to Direct a Local Authority to initiate a Speed Limit review.
- Powers of intervention. Where a Local Authority does not carry out a direction of the NRA, the NRA would have the power to intervene or assume the role of a local authority.
- Certain National Roads. The NRA assumes the role of a Local Authority (Road Authority) for the management and setting of Speed Limits for certain roads. This would be particularly beneficial for motorways or where Variable Speed Limits may be introduced.

Built-up Area

The current definition of a built-up area is narrow in scope, with many towns in Ireland, large and small being outside of this. Due to the definitions link with that of City and Town Councils and the current reform of local government it is recommended that this should be reconsidered and widened.

Change in Classification

Arising from the changes in Speed Limits that results from a revision of Road Classification and the consequential extended time period to reset them, provision should be made whereby amendments to classification do not result in a Speed Limit remain unchanged for up to 5 years or the next Speed Limits review, whichever is less.

Failure to implement

A critical issue that has to be considered is the possibility of a failure of a Local Authority or the NRA to follow Guidelines or Regulations in the setting or managing of Speed Limits. It is, thus, recommended that, in such circumstances, step in rights should be provided whereby an Inspector or other designated person could be assigned the role for setting Special Speed Limits for a fixed duration.

The following Action encompasses the above recommendations as well as that for Roadworks as set out separately.

Action 10	<u>Update Legislation</u> <i>That legislation necessary to support Speed Limits be implemented to: -</i> <ul style="list-style-type: none"> - Strengthen and widen the role of the Speed Limit Guidelines to be mandatory and to include for the setting, management and maintaining of Speed Limits. - Provide for an appeals mechanism. - Strengthen Powers and functions of the Minister in relation to Regulations, Directions and powers of Intervention in situations of persistent failure to operate to the Guidelines. - Strengthen the powers and functions of the NRA for National Roads in relation to Directions, powers of Intervention as well the function to set Speed Limits where it is a Road Authority. - Address where Speed Limits change as a result of re-classification. - Widen the scope of definition of 'built up area'. - Enable the system of Roadworks Speed Limits to be improved.
Lead	DTTAS
Supporting	-
Timeframe	Q1 2014 to Q1 2015

4.3. Support Actions

In addition to lead actions there are a number of necessary support actions for implementation as follows: -

4.3.1. Action 11 - Update Traffic Regulations and the Traffic Signs Manual.

The Traffic Signs Manual (TSM) is the principal document for road traffic signs in Ireland. It constitutes a Direction of the Minister for Transport and, as such, it is a legal requirement to adhere to it in the provision of road traffic signs. Signs outside the Manual are not permitted. Although it was last updated entirely in 2010, issues arise (other than Speed Limits) on an on-going that will necessitate updates (on a chapter by chapter basis). In particular and in relation to Speed Limits, the following updates will be needed:

- Updates to reflect the changes and revisions to Speed Limit signs
- More precise requirement on use of Speed Limit signs and particularly repeater signs and their sizes
- Use of Variable and Periodic Speed Signs
- Use of Driver Feedback Signs

Matters relating to records and how such signs interface with static Speed Limit signs also arise. The Traffic Signs Manual will need to be updated to reflect the proposed new signs in Action 1 but also how and where they should be used.

Variable and Periodic Speed Limits are already provided for in legislation and the Traffic Signs Manual, but there is limited provision in the Guidelines. These Speed Limit signs are generally intended for use on motorways, tunnels and at schools. However, there are issues regarding enforcement relating to what Speed Limit is in force and when.



Driver (Speed Limit) Feedback sign



Periodic School VMS sign

Driver Feedback Sign

The 'Your Speed' Sign is an increasingly popular radar equipped speed sign that is also called a Driver Feedback Sign (DFS). This is an interactive sign that displays vehicle speed as motorists approach. The purpose of the sign is to slow cars down by making drivers aware when they are driving at unsafe speeds. They are used as a traffic calming device in addition to, or instead of physical devices such as speed ramps, speed cushions or speed tables. Studies conducted both in the UK and in the US have found DFS signs to be effective in slowing traffic down. Section 3.8 of the TSM provides some guidance on these signs, further guidance is required as to their location and use to ensure that they are effective.

Action 11	<u>Update Traffic Regulations and Traffic Signs Manual</u> <i>That the Traffic Regulations and Signs Manual and other related guidelines be revised to address: -</i> <ul style="list-style-type: none">- Amendments to Speed Limit Signs.- Clarity in the use and type of Speed Limits Signs (particularly repeater signs)- Driver Feedback Signs
Lead	DTTAS
Supporting	
Timeframe	Q1 2014 to Q2 2014

4.3.2. Action 12 – Implement Speed Limit Management Awareness and Training.

It is important to ensure that those involved in the managing, reviewing and setting of Speed Limits are fully aware of any requirements that apply and are trained accordingly. This is particularly so regarding the Speed Assessment Framework and is important for ensuring consistency and best practice, in the roles that the local authorities, NRA and Gardai have in the managing and updating of the Speed Limit process.

It is recommended that the Local Authority Roads Service Training Group (RSTG) should hold Workshops and Seminars on managing, reviewing and setting Speed Limits and develop a standardised course on the managing and review of Speed Limits, as well as carrying out of speed assessments using the Guidelines and Speed Assessment Framework.

Action 12	<u>Implement Speed Limit Management Awareness and Training</u> <i>That the Local Authority Roads Service Training Group would: -</i> <ul style="list-style-type: none">- Hold Workshops and Seminars on the setting and managing of Speed Limits;- Develop and run a standardised course on the managing and review of Speed Limits, and on the carrying out of speed assessments using the Guidelines and Speed Assessment Framework.
Lead	Roads Service Training Group
Supporting	DTTAS, NRA, Gardai
Timeframe	Underway. Q4 2013 to Q4 2014.

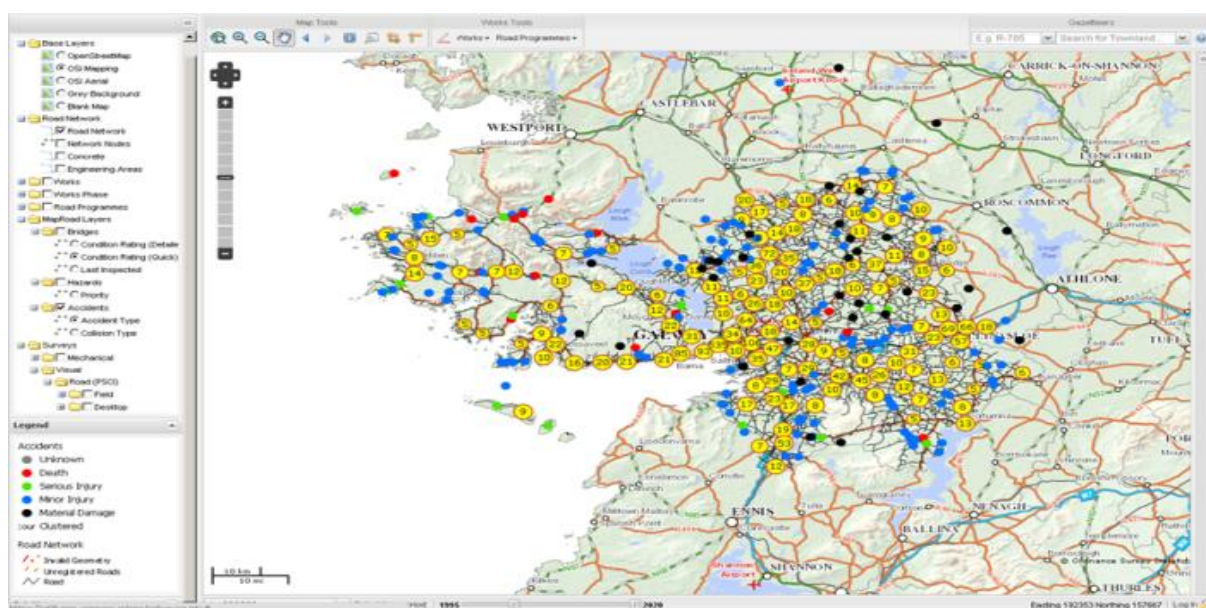
4.3.3. Action 13 - Maintain Digital Record and Maps.

Having an effective national (digital) records and mapping system for Speed Limits is critical to support monitoring, inspections and consistency nationally. However, there are also many local benefits such as being

able to draw attention to anomalies, inconsistencies and inappropriate limits. This is particularly beneficial if a centralised national map based graphical information system (GIS) is used that can: -

- Be an accurate record and register of all zones and signs.
- Be an online record of historical Speed Limits.
- Be able to check for anomalies between current signs and zones
- Allow for correlation and analysis of Speed Limits with other data such as collisions.
- Have an up to date record that other agencies, such as the Gardai, can access and utilise.
- Be a basis for rolling out newer technologies such as Intelligent Speed Adaption (ISA).
- Support the monitoring of Speed Limits in an efficient and cost effective manner.

Currently, the Local Government Management Agency (LGMA) MapRoad GIS enabled Roads Management Information System that is owned and managed on behalf of local authorities, is in operation in all Local authorities in Ireland. The Department and NRA have both funded the development of the system. MapRoad is based around four main elements – a desktop system, a web based interface, a roadworks control system and a mobile Android App. The System already has a facility for recording Speed Limit zones and signs that is currently being upgraded.



It is recommended that a national standardised records and GIS mapping system, using MapRoad, be utilised that meets the current requirement for the mapping of Speed Limit signs and zones to be on MapRoad (Circular RST 2/2011). The LGMA should also further upgrade MapRoad to include additional functionality such as site inspections, sign asset register numbers and condition.

Action 13	<u>Maintain Digital Records and Maps</u> <i>That Speed Limit records be logged and maintained on a national standardised MapRoad (GIS) to facilitate consistency and that DTTAS ensure that: -</i> <ul style="list-style-type: none"> - Local authorities and NRA complete and maintain a digital speed map of zones and signs (including a system of sign asset register numbers) using MapRoad as currently required. - LGMA further upgrade MapRoad to provide additional functionality.
Lead	DTTAS
Supporting	Local authorities, NRA & LGMA
Timeframe	Underway. Q4 2013 to Q4 2014.

4.3.4. Action 14 – Strengthen Engineering and Infrastructure Guidelines and Standards.

The Guidelines for Special Speed Limits refers to the concept of speed management where account must be taken of the requirements of traffic flow, with the primary focus being on road safety.

The Guidelines emphasise that successful speed management programmes apply a progression of actions/decisions as set out in Section 1. The role of Design Speed is critical, due to its link to the road function

and, hence, on the desired speed. Having decided the function of a road, it is important that engineering techniques are appropriate to ensure that the road is self-explaining, safe relative to its function. The speed of the road should be appropriate for the Speed Limit to be applied. Infrastructure, or road engineering, measures can make a very effective contribution to managing speed on the roads.

Roads should be self-explaining whereby the physical and traffic environment is uncomplicated, easy to interpret, homogenous and consistent with design principles. This approach seeks to inform drivers of corresponding potential hazards such as narrow roads, bad bends or absence of verge. This influences the perception of the Speed Limit, from the point of view of the road user and results show that a change in the appearance of the road through changes in infrastructure is needed to influence drivers' speeding behaviour, not only in the short term but in the longer term as well.

By comparison, where Speed Limits have been changed but no other action taken the change in average speed has only been about one quarter of the change of the actual Speed Limit.

Changing the appearance of the road to influence speeds by the use of road engineering measures is well established in built-up areas but is less well used in non-built-up areas. Infrastructure measures can range from standardising road classifications to construction, traffic calming and management, signing and lining.

Traffic calming in urban areas, to physically enforce lower traffic speeds and to reduce traffic volumes, has a long and proven history with also the idea of the "Woonerf" (which means "living street") concept appearing in Delft in the Netherlands. Since then, speed management via infrastructure measures in urban areas has become increasingly popular and has contributed to saving lives in many cities of the world.

In recent times, traffic calming and other speed management techniques have spread not only through urban areas, but have also started to be implemented on rural roads. Thus today, speed management through infrastructure changes is a significant part of policy and operational decisions concerning roads and road traffic. Changes aimed at managing speeds have now extended well beyond traffic calming in built-up residential streets, with wide variations of such approaches now applied to all types of roads, including motorways and main roads including urban arterial roads to cope more safely with increasing flows of fast moving traffic.

It is important that the design speed in non-built up areas is consistent over a long stretch of road and that a substantial Speed Limit reduction should only be considered for 'at-risk locations' and must be consistent with the road design characteristics.

Approaches to Towns (transition zones)

Ideas such as gateways to villages and towns are good speed management measures in transition zones between non-built up roads and built-up roads. This can be particularly important as drivers, when entering a lower speed zone after a period of driving at a high speed, will generally underestimate their speed and consequently not reduce their speed enough. Here specific infrastructure measures can help to define the transition from one traffic environment to another, and thus help drivers adjust to the lower speed.

Engineering/Design

In order to help ensure that correct outcomes are achieved from the above, it is necessary to look at the standards, manuals, Guidelines and processes that underpin the various techniques. These need to be consistent and kept up to date, reflect best practice to achieve the necessary outcomes. In addition, to ensure value for money, it is important to ensure that proposed solutions are cost effective.

The following is a list of main current relevant documents: -

- Design Manual for Roads and Bridges (DMRB) (NRA). Principal road design standards document, primarily focused on rural main roads. This is regularly updated.
- Draft Traffic Calming Guidelines (NRA). This is primarily geared towards entry treatment to towns and villages, but has some guidance on traffic calming within towns.
- Traffic Management Guidelines (TMG) (DTTAS/DTO/NTA). This document, published in 2005 is an overall traffic management document for urban areas. It has a particular focus on speed management and traffic calming. Although the document is still current there is a need for updating.
- Design Manual for Urban Roads and Streets (DMURS) (DTTAS/DECLG). This is the principal urban road and street design manual that was published in early 2013. This document will need regular updating.

It is recommended that these documents be revised and updated to ensure that they correctly, consistently and adequately address the issue of managing speed and infrastructure. It is also recommended that an on-going and co-ordinated programme of updating is required to address the above and to improve the range of low cost solutions available to manage and control speed. To achieve co-ordination, this should be led by DTTAS.

In addition to the above, it is recommended that in order to ensure that required outcomes in relation to speed and Speed Limits are achieved, processes such as 'Road Safety Inspection' and 'Road Safety Audit' could be amended to include for traffic speeds and appropriate Speed Limits.

Action 14	<p><u>Strengthen Engineering and Infrastructure Guidelines and Standards</u></p> <p><i>That road design and traffic management standards and guidelines be updated to support road fit to Speed Limits, gateways to urban/built up areas, self-explaining roads and a range of low cost solution, based upon international practice.</i></p> <p><i>That the following current guidelines, in particular, be updated and re- published: -</i></p> <ul style="list-style-type: none"> - <i>Guide to Road Safety Engineering in Ireland (DTTAS / NRA)</i> - <i>Traffic Calming Guidelines (NRA)</i> - <i>Traffic Management Guidelines (DTTAS / NTA)</i> <p><i>DTTAS to co-ordinate with NRA and NTA to ensure consistency</i></p>
Lead	DTTAS
Supporting	NRA & NTA
Timeframe	Q3 2014 to Q4 2015

4.3.5. Action 15 – Trial and Implement Quiet Lanes and Shared Space.

An option to address speed in particular circumstances is to change the legal status or designation of a road that would, amongst other things, result in lower default and permitted Speed Limits than would otherwise apply. The circumstances for such would separately relate to rural and urban roads as follows:

1. Rural (Quiet) Lane

Quiet Lanes are minor rural roads which are appropriate for shared use by walkers, cyclists, horse riders and motorised users. They should have low traffic flows travelling at low speeds. In Ireland this concept, already applied in the UK, could be applied certain situations whereby a rural lane or Boreen could be formally designated under the Roads Act. It is recommended that such a measure be developed and piloted such that it would specifically imply a lower default and maximum permitted Speed Limit with very low limits also being permitted. Other legal measures such as weight or traffic restrictions would also be possible.

Rural (Quiet) Lanes could be particularly beneficial in terms of safety and appropriateness for rural housing clusters or for roads where there is substantial use by pedestrians, cyclists etc. Engineering and signage measures may also be required to achieve this designation. It should also be noted that many rural roads will not be suitable for designation as Quiet Lanes.

2. Urban Shared Space (Homezones)

Shared space is an urban design approach which seeks to minimise demarcations between vehicle traffic and pedestrians, often by removing features such as kerbs, road surface markings, traffic signs and regulations. Typically used on narrower streets within the urban core and as part of living streets within residential areas, the approach exists in many forms in many countries such as Woonerf (Netherlands) or Home Zones (UK).

Like Rural Lanes, it could be a formal designation under the Roads Act and would allow for a lower Default and Maximum Speed Limit as well as the possibility of other measures such as changing the hierarchy of use. It should be noted that the approach is often opposed by organisations such as those representing the blind or partially sighted. In Ireland, the National Disability Authority (NDA) has sponsored research in this area.

As an aid to allow more appropriate Speed Limits on Rural (Quiet) Lanes and Urban Shared Spaces, it is recommended that further research and trials be carried out by DTTAS and the NDA with a view to implementation, including legislation based on the results.

Action 15	<u>Trial and Implement Quiet Lanes and Shared Space</u> <i>That proposals for Rural Quiet Lanes and Urban Shared Space (or Homezones) be developed and implemented and provide for very low Speed Limits such as 30km/h or 20km/h. Proposals to be supported by research and trials.</i>
Lead	DTTAS
Supporting	
Timeframe	Q1 2015 to Q4 2015

4.3.6. Action 16 – Trial Intelligent Speed Adaption.

Intelligent Speed Adaptation (ISA) is an in-vehicle system that uses information on the position of the vehicle on a network in relation to the Speed Limit in force at that location. ISA can support drivers in helping them to comply with the Speed Limit everywhere on the network. This is an important advantage in comparison to the Speed Limiters for heavy good vehicles and coaches, which only limit the maximum speed. ISA is a collective term for various systems that can be: -

- Open ISA, which advises and warns the driver (visibly and/or audibly) that the Speed Limit is being exceeded. The driver him/herself decides whether or not to slow down.
- Half-open ISA, which changes the pressure on the accelerator pedal depending on the Speed Limit (the 'active accelerator').
- The closed ISA limits the speed automatically if the Speed Limit is exceeded. It is possible to make such a system mandatory or voluntary.

The currently available ISA systems are based on fixed Speed Limits. However it will become increasingly possible to include dynamic Speed Limits that take account of the actual circumstances at a particular moment in time.

Practical experiments with ISA have been carried out in a number of countries, including UK (London & Lancashire), Australia (New South Wales), Sweden and the Netherlands. The types of trials and technologies used have varied. However, they and driving simulator studies have demonstrated positive effects on speed behaviour and, in turn, large safety benefits.

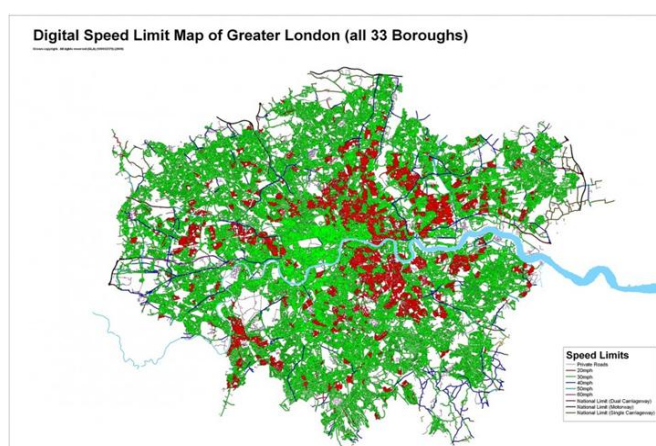
In the UK, Transport for London (TfL) has been working on two kinds of ISA to be made available to drivers on a voluntary basis. These are: -

- Advisory ISA. This system displays the Speed Limit information via a dashboard unit.
- Voluntary ISA. This system makes it difficult to accidentally accelerate beyond the Speed Limit.

The key to both systems is that the vehicle is aware of its location on the road and the Speed Limit at that location. It does this by using a Global Positioning System (GPS) signal and a Digital Speed Limit map which is held within the ISA unit. This does not impact on the responsibility of the driver to comply with the Speed Limit.



Dashboard ISA display (Image source Avego/Mapflow)



Digital speed map of London (Image source TfL)

ISA may have many benefits beyond the expected reduction in casualties. These include:

- Reduced possibility of speeding offences
- Improved driver style

- An associated reduction in CO₂ and fuel costs

There is potential to trial ISA in Ireland, particularly in conjunction with SatNav companies and with a view to eventual deployment in Ireland on an advisory and voluntary basis, similar to London. It should, however, be noted that much background work needs to be done on developing a Speed Limits GIS database in advance. It is recommended that Intelligent Speed Adaption be researched and trialled for Ireland with a view to eventual deployment on an advisory and voluntary basis. The European Commission has also indicated ISA as area of interest as part of the ITS Directive.

Action 16	<u>Trial Intelligent Speed Adaption</u> <i>That proposals and recommendations for the deployment of Intelligent Speed Adaption (ISA) be developed based on research and pilot studies.</i>
Lead	RSA
Supporting	LGMA
Timeframe	Q4 2014 to Q4 2015

4.3.7. Action 17 –Develop New Legal Evidence Mechanisms.

There are a number of areas for which legal enforcement can occur. In Ireland this can take the form of ‘on the spot’ or fixed camera detection. However, internationally, route based average speed detection is increasing. In addition, detection is increasingly dependent on the use of Intelligent Technology Systems (ITS) technology. This in turn presents implications for the legal framework and, in particular, requirements for evidence.

Section 9(12) of the 2004 Road Traffic Act provides for a Special Speed Limit bye-laws serving as evidence in court and in legal proceedings. To introduce greater flexibility, the option of using evidence of the Speed Limit sign being in place or displayed should be considered. Such evidence could include records such as a log that confirms the limit displayed at the time of an offence (to support Variable Speed Limits), photo, co-ordinates and authorisation to erect the sign. Authorisation would need to link to the existence of bye-laws but could include asset register number or Manager’s Order on foot of a bye-law.

Such a system would be important to support newer scenarios and technologies that are arising, such as Variable Speed Limit signs, Periodic Limit signs or Roadworks Speed Limit signs. Further consideration and scoping of this will be needed and may need primary and secondary legislation.

Action 17	<u>Develop New Legal Evidence Mechanisms</u> <i>That new evidence mechanisms be legislated for, regulated and developed to strengthen enforcement and use of new technologies such as Variable Speed Limits and Average Speed Enforcement.</i>
Lead	DTTAS
Supporting	
Timeframe	Q1 2014 to Q1 2015

4.3.8. Action 18 - Improve Detection and Enforcement.

Speed Limit enforcement is the action taken by appropriately empowered authorities (the Gardai) to check that road vehicles are complying with the Speed Limit in force on public roads. Methods used include roadside speed enforcement set up and operated by the Gardai, as well as automated roadside ‘speed camera’ systems which may incorporate the use of an automatic number plate recognition system.

Speed enforcement is not a stand-alone measure. To maximise its effect, it is best supported by other measures such as credible Speed Limits and publicity. It is also important that speed enforcement is embedded in a wider supportive framework. In addition, best practice points towards working together with other agencies or partners on speed management and enforcement activities. It is also important to emphasise that speed enforcement should be two-pronged, whereby there is a system of voluntary or self-enforcement backed up by an effective system of legal enforcement

There are a number of traditional and net methods of speed detection and enforcement. Due to the use of newer technologies there is an increasing volume of detections and hence greater pressure on the system of enforcement as a whole. It is likely that this trend will continue.

Instantaneous speed. This is where cameras measure the speed at a single point. These may either be a semi-permanent fixture or be established on a temporary basis. In Ireland, An Garda Síochána deploy a range of speed enforcement across the road network. The range of equipment includes:

- Handheld and tripod mounted laser guns;
- Vehicle mounted Puma speed detection equipment, (both marked and unmarked vehicles);
- Van mounted automatic speed detection radars (Garda operated);
- Van mounted Go-Safe vans (civilian operated).

An Garda Síochána has contracted a company called GoSafe to operate mobile safety cameras across Irish roads. As well as 6,000 enforcement hours, the cameras survey and count the numbers and speed of vehicles on the road at geographically dispersed locations, on a monthly basis, at high collision locations. The Garda National Traffic Bureau (GNTB) determines the locations and times of on-road operations of the safety camera operations. They are deployed on the roads across Ireland where fatal collisions are happening as a result of inappropriate speed. On-going surveys are conducted to ensure that these sections of roads continue to represent locations where speeding is happening.

Average speed. This method has not been deployed in Ireland and is a relatively new and very technology dependent speed enforcement technique. Average speed control systems measure the average speed over a road section (often 2 - 5 km or longer). The vehicle is identified when entering the enforcement section, and again when leaving it. The average speed can be calculated based on the time interval between these two points.

Average speed works 24 hours a day, 7 days a week, which means the chance of being caught is close to 100 per cent. On a stretch of road where average speed control is employed, most drivers obey the Speed Limit. On sections where Speed Limits were frequently exceeded in the past, average speed control can bring back the number of offences to a few per cent, or even less than one per cent.

Average speed is still quite new, not yet widely applied. Benefits evaluation in Austria on an 80 km/h motorway stretch running through a tunnel, suggested a reduction in average speed by more than 10 km/h in its first year of operation. It was also estimated that after two years of operation average speed control reduced injury crashes by 33.3% and fatal and serious injuries by 48.8%. Such technology should be considered for high volume, high speed roads such as the M50 (Dublin) or N40 (Cork).

Resources [back office]. Although many of the new technologies have improved and increased the level and volume of detection there has also been a consequent increase in resources to manage and support enforcement. This is through verification of the detection and subsequently the translation of the detection into an offence (Garda and GoSafe respectively) as well as penalty points (Garda only). Given the trends, pressures and costs involved, further efficiencies should be sought not only through simplifying the business processes but also through the use of additional technologies such as deployment of tags that identify both the vehicle and driver.

Sharing ITS Infrastructure. The deployment of ITS infrastructure is increasing across local authorities, particularly in cities and towns, but also on other roads, such as National Roads. Much of the deployment has focused on traffic management but there are, in addition, a number of traffic management centres in existence such as Dublin (3), Kildare, Cork, Limerick and Galway. This is in isolation to separate Garda deployment of enforcement infrastructure. Given the cost for the deployment and operation of such technologies it is recommended that an integrated and multi-agency approach to the use of such technologies, be taken on a national or regional basis.



Action 18	<u>Improve Detection and Enforcement</u> <i>To improve speed detection the Gardai to review and make recommendations on: -</i> <ul style="list-style-type: none"> - Increased deployment and outsourcing of speed detection - The deployment of average speed detection - Widening the overall function of outsourced back office work <i>Link to other sources of detection and seek to maximise the integration and shared use of ITS technologies.</i>
Lead	Gardai
Supporting	
Timeframe	Q1 2015 to Q4 2015

4.4. Other Actions Considered

A number of other matters were considered which it was decided not to advance at present. However, it is recommended that these could be further considered in a number of years and post implementation of the recommendations in this report. These items are: -

Weather Dependent Speed Limits

Consideration was given to the issue of lower weather dependant Speed Limits for motorways and high speed roads. This type of limit exists in other countries such as France for limited access roads, whereby in normal conditions, a limit of 130 km/h may apply; for wet conditions a limit of 110 km/h may apply; or heavy fog or snowy/icy conditions a limit of 50 km/h may apply. Although it is considered that this proposal has merit, there is uncertainty as to the benefits and the ability to enforce. Thus it is recommended that this should be further researched.

Minimum Speed Limits

Internationally, some roads such as motorways and tunnels also have "minimum Speed Limits". Such limits can be useful where slow speeds can impede efficient traffic flow. However, it is viewed that this would lead to very limited benefits in Ireland. Thus, no action is recommended other than to monitor the future needs

Cautionary Speed Signs

A Cautionary or advisory Speed is a Speed that traffic is recommended not to exceed, that is recommended by a governing body, but is not enforced. Use of Cautionary (Advisory) Speeds varies from country to country, but they are generally used to reduce speed along short stretches of dangerous road, such as on the tight curves of an off-ramp. It should be emphasized that Cautionary Speed are not legally binding on drivers, but it is likely that, in the event of a road traffic collision, the issue of compliance would be taken into account. An additional benefit of Cautionary Speed is that, because they are non-regulatory, they would be simpler to deploy compared to a legal limit.

In Ireland the use of Cautionary Speed is permitted as part of Chapter 8 of the Traffic Signs Manual for roadworks. Cautionary Speeds are purposely different from legal Speed Limits and always display a Speed Limit that ends in 5, for example 35 km/h, 45 km/h. Cautionary Speeds should be used judiciously to ensure effectiveness but would be a benefit at appropriate specific locations and would be a useful assistance to a warning sign. Thus, a strict criterion would need to be developed to their use. As such, it is recommended that this proposal be further researched and developed before permitting deployment.

5.0. Summary and Conclusion

5.1. Summary

The previous chapter set out a series of 18 individual solutions and actions of which 10 are lead and 8 are support. These are, in turn, split into lead and support actions that reflect a system of speed management, Speed Limits and the inconsistent road network in Ireland. The Lead Recommendations and Actions are set out in Appendix A.

Overall, the recommended solution calls for a more appropriate 'Rural Speed Limit' signs that better serve the needs of the road network. This also entails that the road network is assessed to identify sections suitable for 100km/h and set a limit of 80km/h for the remainder of the network except for 'at-risk locations' where a lower limit may be suitable.

Given the flexibility of the current system of limits but the low level of Special Speed Limits being set to take advantage of that, the recommended changes need to be supported by management, engineering procedures, education, training, communication and enforcement. All of the foregoing, in turn, needs to be underpinned by a strengthened legal and regulatory framework as well as oversight.

Based on the previous chapter, the following table summarises the recommendations for default and permitted Speed Limits that would apply. The table sets out the ranges of default, permitted and restricted use Speed Limits for different road types for both urban and rural areas.

Recommended Speed Limits									
		High Speeds		Standard Speeds				Very Low Speeds	
		120	100	80	60	50	40	30	20
Class	Motorway	D	P	R	R	R		R (3)	
	National Primary	P	D	P	R	R			
	National Secondary	P	D	P	R	R			
	Regional		P	D	R	R			
	Local		P	D	R	R			
	Rural Lane (Proposed - See Note 2)					D		P	
Urban	All Urban Roads			R	P	D	R (1)	R	R
	Urban Shared Space (Proposed - See Note 2)							D	P
Notes		(1) Limited only to particular situations in built up areas							R = Restricted
		(2) Subject to verification by trials and separate implementation							P = Permitted
		(3) Restricted to certain on/off ramps							D = Default

In comparison to many countries, the system of Speed Limits in Ireland is quite flexible, allowing for a range of differing Speed Limits to be set for both rural and built up areas. However, the use of these limits needs to be further regulated and controlled using the Guidelines for Special Speed Limits.

Many of the tools and practices listed above are already in place and the solution seeks as much as possible to build on that. It is also the case that the actions are interrelated and not isolated and ultimately has to be considered as a single solution.

5.2. Costs and Timeframe

While some actions can be absorbed by current budgets, a full implementation over a 2.5 year period would be expected to cost in the order of €8 million. Subsequent on-going costs will also arise but should be met by the local authorities and NRA respectively. An overall time frame to the end of 2015 has been set to implement. However, some of the actions will be on-going. These are indicated in the Implementation Programme Timeframe Table in Appendix A.

Resourcing implementation in relation to finance and staff is needed. It is recommended that a number of options be considered to support the expertise and skill necessary to ensure consistency and appropriateness in a cost effective manner. Such solutions should consider sharing resources across a number of local authorities or between agencies on a national or regional basis. The requirement for oversight will also create a demand for resources. However this can be developed in a manner that also supports other parallel work.

5.3. Conclusion

The recommendations are designed to deliver an effective speed management structure, by improving signs and updating Speed Limits, to achieve more appropriate and consistent Speed Limits across the road network. The recommendations also call for an improved legal framework, administration and enforcement of Speed Limits.

To ensure progress of the overall plan, it is recommended that a Steering Group be established comprising main stakeholders and supported by the oversight unit within DTTAS (Action 13). This group should have overall responsibility for delivering on the recommended actions and should seek to track progress by reporting every 6 months until completion. It is recommended that after this a closeout review should be prepared.

The actions, when implemented, will lead to a more credible and consistent system of Speed Limits. Road users will be better informed and educated regarding appropriate speed and Speed Limits. This, in turn, should help improve safety and reduce collisions.

Appendix A

Tables of Actions and Implementation Programme

Table 1: - Lead Actions

Action 1	<p><u>Revise Speed Limit Signs</u></p> <p>That Speed Limit signs be replaced, simplified and amended to address the issue of: -</p> <ul style="list-style-type: none"> - Inappropriate 80km/h signs on poor quality Local Roads or Boreens, - That Speed Limit signs being seen as 'limits' and not 'targets', - Promoting a general rural limit of 80km/h, <p>That an accompanying programme of signage replacement be implemented by the local authorities for Local Roads.</p>
Lead	DTTAS
Supporting	Local authorities
Timeframe	Q2 2014 to Q3 2015
Action 2	<p><u>Update and Implement Driver Education, Training and Communication</u></p> <p>That a communication strategy be developed and that existing education and training programmes and documents, such as the Rules of the Road be updated to address: -</p> <ul style="list-style-type: none"> - Changes to Speed Limit signage, - The meaning and understanding of Speed Limit signs - The futility of speeding - The Responsibility and the duty of care of road users.
Lead	RSA
Supporting	DTTAS / NRA
Timeframe	Q1 2014 to Q4 2015. Also on-going.
Action 3	<p><u>Implement Appeals, Oversight and Co-ordination</u></p> <p>That a unit or body be established to: -</p> <ul style="list-style-type: none"> - Manage appeals and queries arising on Speed Limits and the Speed Limit process (including the Reserved Function). - Manage and update Speed Limit Guidelines - Monitor, audit and inspect Local authorities and NRA on implementation of Speed Limits. - Provide support and advice in relation to Ministerial Functions. <p>DTTAS to consider options and make recommendations in advance.</p>
Lead	DTTAS
Supporting	
Timeframe	Q1 2014 to Q2 2014
Action 4	<p><u>Update National Road Speed Limits</u></p> <p>That the Speed Limits on the National Road Network be updated in accordance with the Guidelines to ensure appropriate fit to: -</p> <ul style="list-style-type: none"> - Confirm existing Speed Limit bye-laws and signs. - Implement 80km/h on those sections that are not suitable for a 100km/h Speed Limit. - Implement Speed Limits lower than 80km/h as appropriate for 'at-risk' locations. - Review Speed Limits at locations where there have been queries. <p>To be repeated at intervals no greater than 5 years.</p>
Lead	NRA
Supporting	Local authorities
Timeframe	Q2 2014 to Q1 2015.
Action 5	<p><u>Update Regional and Local Road Speed Limits</u></p> <p>That the Speed Limits on the Regional and Local Road Networks be updated in accordance with the Guidelines, to ensure appropriate fit to:-</p> <ul style="list-style-type: none"> - Confirm existing Speed Limit bye-laws and signs. - Identify and implement 100 km/h Speed Limits on those sections that are suitable. - Implement appropriate Speed Limits lower than 80km/h for at-risk locations as appropriate. - Review Speed Limits at locations where there have been queries. <p>To be repeated at intervals no greater than 5 years.</p>
Lead	Local authorities.
Supporting	-
Timeframe	Q2 2014 to Q4 2015.

Action 6	<p><u>Remove Inappropriate Signs</u></p> <p>That existing locations of inappropriate (repeater) Speed Limit signs be identified (logged and mapped) and subsequently removed, relocated or replaced as appropriate for: -</p> <ul style="list-style-type: none"> - National Road Network by the NRA - Regional and Local Roads by local authorities
Lead	Local authorities and NRA
Supporting	-
Timeframe	Underway. To Q2 2014 for National Roads and end of Q4 2015 for Regional and Local Roads.
Action 7	<p><u>Strengthen Road Works Speed Limits</u></p> <p>That the system of Roadworks Speed Limits be reformed to improve use & implementation by allowing for:-</p> <ul style="list-style-type: none"> - Improved flexibility for notification periods depending on scale and duration. - Improved flexibility for erection & dismantling of signs within the terms of a Road Works Speed Limit
Lead	DTTAS
Supporting	-
Timeframe	Q1 2014 to Q1 2015
Action 8	<p><u>Update and Strengthen Guidelines and Circulars</u></p> <p>That the Guidelines on Speed Limits be updated to: -</p> <ul style="list-style-type: none"> - Improve clarity on Speed Limits for road types - Address Speed Limits for approaches to towns - Address Speed Limits for approaches to Schools - Address the use of Variable Speed Limits - Address the use of Driver Feedback Signs - Require training in assessing Speed Limits <p>That the Speed Assessment Framework should be monitored and strengthened where necessary.</p> <p>That other existing Circulars on Speed Limits be updated or withdrawn to ensure consistent approach in accordance with the Guidelines for the Application of Speed Limits</p>
Lead	DTTAS
Supporting	-
Timeframe	Q1 2014 to Q2 2014
Action 9	<p><u>Update Function to Set Speed Limits</u></p> <p>That legislation for the function to set Special Speed Limits be implemented so that: -</p> <ul style="list-style-type: none"> - The role should remain a Local Authority Reserved Function but be subject to an appeals process. The retention of the Reserved Function in this context should be further evaluated after five years. - The NRA have a stronger supervisory and controlling role for National Roads in general, and, in particular, have the full function in circumstances where the NRA is Road Authority (i.e. motorways and high speed dual carriageways)
Lead	DTTAS
Supporting	-
Timeframe	Q1 2014 to Q1 2015
Action 10	<p><u>Update Legislation</u></p> <p>That legislation necessary to support Speed Limits be implemented to: -</p> <ul style="list-style-type: none"> - Strengthen and widen the role of the Speed Limit Guidelines to be mandatory and to include for the setting, management and maintaining of Speed Limits. - Provide for an appeals mechanism. - Strengthen Powers and functions of the Minister in relation to Regulations, Directions and powers of Intervention in situations of persistent failure to operate to the Guidelines. - Strengthen the powers and functions of the NRA for National Roads in relation to Directions, powers of Intervention as well the function to set Speed Limits where it is a Road Authority. - Address where Speed Limits change as a result of re-classification. - Widen the scope of definition of 'built up area'. - Enable the system of Roadworks Speed Limits to be improved.
Lead	DTTAS
Supporting	-
Timeframe	Q1 2014 to Q1 2015

Table of Support Actions

Action 11	<p><u>Update Traffic Regulations and Traffic Signs Manual</u> That the Traffic Regulations and Signs Manual and other related guidelines be revised to address: -</p> <ul style="list-style-type: none"> - Amendments to Speed Limit Signs. - Clarity in the use and type of Speed Limits Signs (particularly repeater signs) - Driver Feedback Signs
Lead	DTTAS
Supporting	
Timeframe	Q1 2014 to Q2 2014
Action 12	<p><u>Implement Speed Limit Management Awareness and Training</u> That the Local Authority Roads Service Training Group would: -</p> <ul style="list-style-type: none"> - Hold Workshops and Seminars on the setting and managing of Speed Limits; - Develop and run a standardised course on the managing and review of Speed Limits, and on the carrying out of speed assessments using the Guidelines and Speed Assessment Framework.
Lead	Roads Service Training Group
Supporting	DTTAS, NRA, Gardai
Timeframe	Underway. Q4 2013 to Q4 2014.
Action 13	<p><u>Maintain Digital Records and Maps</u> That Speed Limit records be logged and maintained on a national standardised MapRoad (GIS) to facilitate consistency and that DTTAS ensure that: -</p> <ul style="list-style-type: none"> - Local authorities and NRA complete and maintain a digital speed map of zones and signs (including a system of sign asset register numbers) using MapRoad as currently required. - LGMA further upgrade MapRoad to provide additional functionality.
Lead	DTTAS
Supporting	Local authorities, NRA & LGMA
Timeframe	Underway. Q4 2013 to Q4 2014.
Action 14	<p><u>Strengthen Engineering and Infrastructure Guidelines and Standards</u> That road design and traffic management standards and guidelines be updated to support road fit to Speed Limits, gateways to urban/built up areas, self-explaining roads and a range of low cost solution, based upon international practice. That the following current guidelines, in particular, be updated and re- published: -</p> <ul style="list-style-type: none"> - Guide to Road Safety Engineering in Ireland (DTTAS / NRA) - Traffic Calming Guidelines (NRA) - Traffic Management Guidelines (DTTAS / NTA) <p>DTTAS to co-ordinate with NRA and NTA to ensure consistency</p>
Lead	DTTAS
Supporting	NRA & NTA
Timeframe	Q3 2014 to Q4 2015
Action 15	<p><u>Trial and Implement Quiet Lanes and Shared Space</u> That proposals for Rural Quiet Lanes and Urban Shared Space (or Homezones) be developed and implemented and provide for very low Speed Limits such as 30km/h or 20km/h. Proposals to be supported by research and trials.</p>
Lead	DTTAS
Supporting	
Timeframe	Q1 2015 to Q4 2015
Action 16	<p><u>Trial Intelligent Speed Adaption</u> That proposals and recommendations for the deployment of Intelligent Speed Adaption (ISA) be developed based on research and pilot studies.</p>
Lead	RSA
Supporting	LGMA
Timeframe	Q4 2014 to Q4 2015

Action 17	<u>Develop New Legal Evidence Mechanisms</u> <i>That new evidence mechanisms be legislated for, regulated and developed to strengthen enforcement and use of new technologies such as Variable Speed Limits and Average Speed Enforcement.</i>
Lead	DTTAS
Supporting	
Timeframe	Q1 2014 to Q1 2015
Action 18	<u>Improve Detection and Enforcement</u> <i>To improve speed detection the Gardai to review and make recommendations on: -</i> <ul style="list-style-type: none"> - Increased deployment and outsourcing of speed detection - The deployment of average speed detection - Widening the overall function of outsourced back office work <i>Link to other sources of detection and seek to maximise the integration and shared use of ITS technologies.</i>
Lead	Gardai
Supporting	
Timeframe	Q1 2015 to Q4 2015

Implementation Programme Timeframe

Action Number	Title	Lead Responsibility	Support Responsibility	2013			2014					2015					Comment												
				Q4			Q1		Q2		Q3		Q4		Q1			Q2		Q3		Q4							
				O	N	D	J	F	M	A	M	J	J	A	S	O		N	D	J	F	M	A	M	J	J	A	S	O
Lead Actions																													
1	Revise Speed Limit Signs	DTTAS	LAs																										
2	Update & Implement Driver Education, Training & Communication	RSA	DTTAS, NRA																										
3	Oversight, Co-ordination & Appeals	DTTAS																											
4	Update National Road Speed Limits	NRA	LAs																										
5	Update Regional & Local Road Speed Limits	LAs																											
6	Remove Inappropriate Signs	LAs & NRA																											Underway
7	Strengthen Roadworks Speed Limits	DTTAS																											
8	Update and Strengthen Guidelines and Circulars	DTTAS																											
9	Update Function to Set Speed Limits	DTTAS																											
10	Update Legislation	DTTAS																											
Support Actions																													
11	Update Traffic Regulations & Signs Manual	DTTAS																											
12	Speed Limit Management Awareness & Training	RSTG	DTTAS, NRA, Gardaí																										Underway
13	Mauntain Digital Records & Maps	DTTAS	LAs, NRA, LGMA																										Underway
14	Engineering & Infrastructure	DTTAS																											
15	Quiet Lanes & Shared Spaces	DTTAS	NRA & NTA																										
16	Intelligent Speed Adaption (ISA)	RSA	LGMA																										
17	New Legal Evidence Mechanism	DTTAS																											
18	Improved Detection & Enforcement	Gardaí																											

Note: - LAs = Local Authorities
RSA = Road Safety Authority

DTTAS = Department of Transport, Tourism and Sport
NTA = National Transport Authority

NRA = National Roads Authority
LGMA = Local Government Management Agency

Appendix B

Examples of Inappropriate Speed Limits

Signs at an interface between different Speed Limits

Speed Limits are signposted where the limit changes. Under the current signage system these signs are numerical and represent maximum Speed Limits. However such signage could be perceived as indicating a safe driving speed.

80 km/h Speed Limit on a Local Tertiary Road

The illustration illustrates a Boreen with grass growing up the middle that has a posted Speed Limit of 80km/h even though it is not possible to drive at that speed. Notwithstanding the perception the reality of the situation is illustrated in the photo below. In addition is it possible to post any appropriate Speed Limit?



The reality is that the signage is technically correct in that it is at an interface between a Local Tertiary Road and the N55 National Secondary Road that has a 100km/h Speed Limit in County Westmeath.



(Image source Google)

In the situation when moving from an 80km/h road onto another 80km/h road it is not necessary (unless for particular circumstances) to re-sign the Speed Limit at the interface of the two roads. This is particularly so for former national roads which are now bypassed and have become regional/local roads and have a default Speed Limit of 80km/h. In these situations unnecessary signs should be removed.

Speed Limit signs displayed on sections of road where speeds should be reducing or a Speed Limit change is imminent.

Use of repeater signs on the approach to a town whereby a 100km/h or 80 km/h road repeater signs should not be located within close proximity of the 60km/h Speed Limit (or 50km/h as the case may be).

80 km/h entering into a bend

Another issue exists with the deployment of Speed Limit signage, particularly repeater signs at arbitrary locations on a road which may be incapable of being driven at that speed. This sends mixed signals to the driver. An example is an 80 km/h sign as the road is entering a bend where it is clear the road cannot be driven at this speed and the road user should be slowing down – See picture adjoining.



The provision of a 100km/h Speed Limit sign on a poorly aligned stretch of national road (e.g. locations containing a series of bends or road narrowing where warning signs markings are warranted) immediately after a junction with a lower Speed Limit road – See picture adjoining.

Speed Limit signs displayed in advance of a junction of a road with a different Speed Limit.

For example, on a regional road just in advance of the junction with a national road the Speed Limit of 100km/h for the national road should not be shown on the regional road – See picture adjoining.

Also the Speed Limit sign of 80km/h for a regional road should also not be shown on the approach to the junction. These signs should be rationalised and possible replaced with junction ahead warning signs. Care should be taken not to obscure any other signage such as yield or stop signs.

Speed Limit signs located on short links.

It is not necessary to show Speed Limit signs on short links where a vehicle would be incapable of getting close to the Speed Limit. Discretion and judgement should be used in these instances.



Inconsistent Speed Limits along roads

Examples where limits are inconsistent along routes or across County boundaries exist as a result of different interpretations of Guidelines and inadequate oversight and communication.

Inconsistent Speed Limit across County boundaries.

The following images show two views of the N52 at a county boundary and at the same location but looking in opposite directions. Different Speed Limits of 80km/h and 100km/h are displayed.



N52 (100 km/h) (Image source Google)



N52 (80 km/h) (Image source Google)

Inconsistent Speed Limit along a route.

The following shows two sections of the N4. The first a high quality dual carriageway with a Speed Limit of 80 km/h and the second of a narrow legacy section with a Speed Limit of 100km/h.



N4 (80 km/h) (Image source Google)



N4 (100 km/h) (Image source Google)

Appendix C

**Typical Road Types
(Rural Single Carriageway)**

100 km/h

N52 (West of Tullamore) (Image source Google)



R639 (former N8, Thurles) (Image source Google)

80 km/h

N51 (Meath) (Image source Google)



R693 (Kilkenny) (Image source Google)

Appendix D

Extracts from Vienna Convention on Signs & Signals

Convention on Road Signs and Signals (Vienna, 8 November 1968)

The Vienna Convention on Road Signs and Signals is an international treaty designed to increase road safety and aid international road traffic by standardising the signing system for road traffic (road signs, traffic lights and road markings). This was agreed upon by the United Nations Economic and Social Council at its Conference on Road Traffic in Vienna 7 October 1968 to 8 November 1968, on 8 November 1968 and came into force 6 June 1978. Amendments, including new provisions regarding the legibility of signs, priority at roundabouts and new signs to improve safety in tunnels were adopted in 2003.

Sixty two (62) States across all continents are party to the convention with the only countries in Europe that are not party to the Convention are Ireland, Moldova, Andorra, Malta and Liechtenstein, while Spain, the United Kingdom, and the Vatican City are all signatories but have yet to ratify the Convention. In addition, from an Irish point of view it is also worth noting that the US, Canada, Australia and New Zealand are also not party to the Convention.

Although Ireland has not signed the convention it is still desirable to adopt its signage where possible. For Speed Limits the following are relevant extracts illustrating such signage: -

Page 41**5. Speed Limit**

(a) Notification of a Speed Limit shall be given by sign C, 14, "MAXIMUM SPEED LIMITED TO THE FIGURE INDICATED". The figure appearing on the sign shall indicate the maximum speed in the unit of measurement most commonly used to express the speed of vehicles in the country concerned. After or below the figure expressing the speed may be added, for instance, "Km" (Kilometres) or "m" (Miles).

(b) To indicate a Speed Limit applicable only to vehicles of a permissible maximum mass exceeding a given figure, an inscription comprising that figure shall be placed on an additional panel below the sign in accordance with Article 8, paragraph 4 of this Convention.

8. End of prohibition or restriction

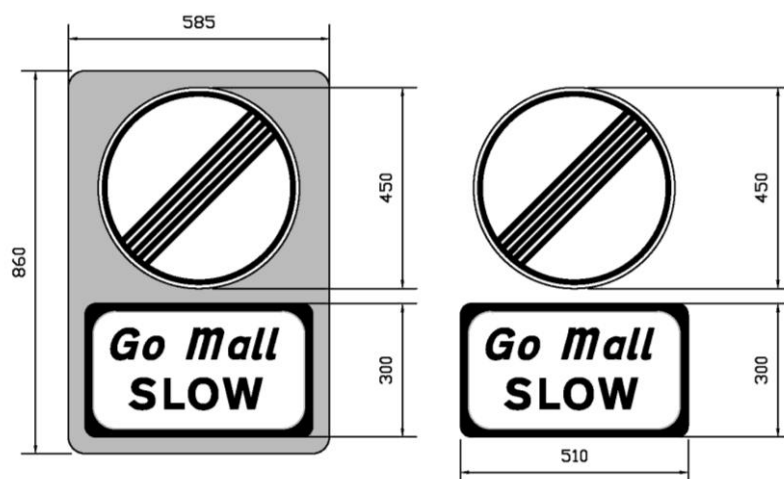
(a) The point at which all prohibitions notified by prohibitory signs for moving vehicles cease to apply shall be indicated by sign C, 17a "END OF ALL LOCAL PROHIBITIONS IMPOSED ON MOVING VEHICLES". This sign shall be circular and have a white or yellow ground; it shall have no border or only a black rim, and shall bear a diagonal band, sloping downward from right to left, which may be black or dark grey or consist of black or grey parallel lines.

(b) The point at which a particular prohibition or restriction notified to moving vehicles by a prohibitory or restrictive sign ceases to apply shall be indicated by sign C, 17b "END OF SPEED LIMIT" or sign C, 17c "END OF PROHIBITION OF OVERTAKING", OR SIGN C, 17d "END OF PROHIBITION OF OVERTAKING FOR GOODS VEHICLES". These signs shall be similar to sign C, 17a, but shall show, in light grey the symbol of the prohibition or restriction which has ceased.

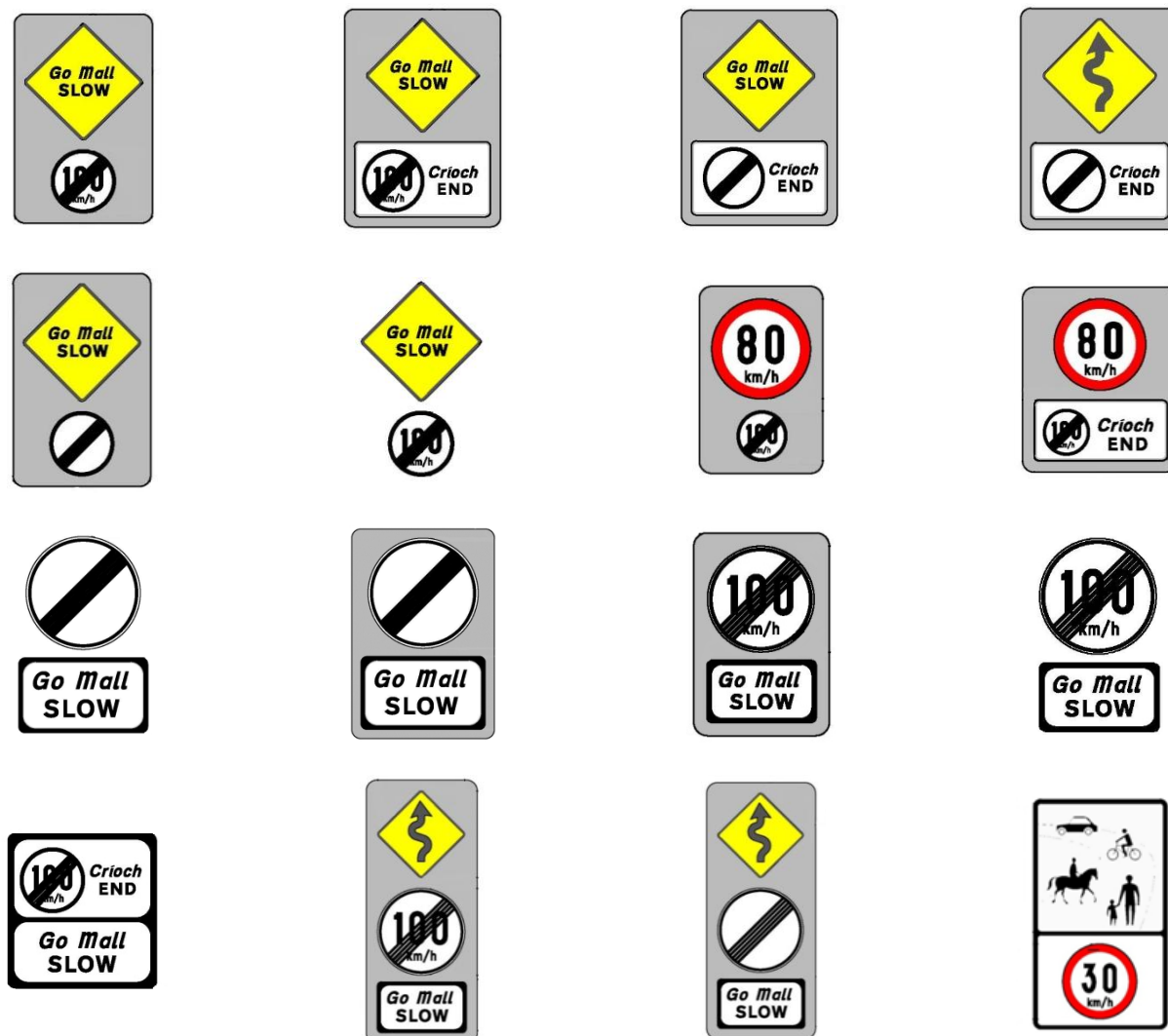
Page 91 & 92.**Sign C, 14 (Speed Limit)****Sign C, 17a (End of all Prohibition)****Sign C, 17b (End of Speed Limit)**

Appendix E

Speed Limit Sign Type Options

Recommended 'Rural Speed Limit' sign option.

Sizes illustrated would be appropriate for a low speed Tertiary Road or Boreen. Other sizes may apply.

Other options considered (Not to scale)

The above table of options considered are for illustrative purposes and are not to scale. Sizes would vary depending on circumstances such as location or road type.

**Department of Transport,
Tourism and Sport**

November 2013