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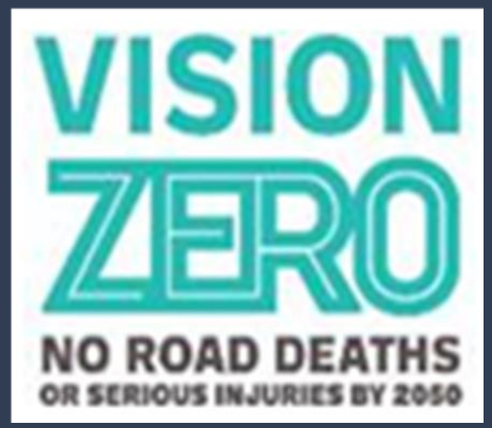

The Role of TII and Local Authorities in Achieving ***Vision Zero***

(Road Safety Targets on National Roads)

Alastair DeBeer
Dr. Suzanne Meade

Session 5: *29th September 2023*

Vision Zero - Safe Systems Approach

The Seven Pillars are:

- **Safe Roads and Roadsides**
- **Safe Speeds**
- **Safe Vehicles**
- **Safe Road Use**
- **Post-Crash Response**
- **Safe and Healthy Modes of Travel**
- **Safe Work-Related Road Use**

15 SAFETY PERFORMANCE INDICATORS (SPIs)

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Overview

1. Role of TII Road Safety
2. Safety Trends and Rating (**Action 1 & 2** - RSS)
3. Speed Limit Review (**Action 6** - RSS)
4. TII Park and Share Programme (**Action 71** - RSS)
5. Speed Management – Average Speed Cameras (**Action 8** - RSS)
6. Dedicated Road Safety Engineer resource (**Action 63** – RSS)
7. ***Next Steps***

Role of TII Road Safety

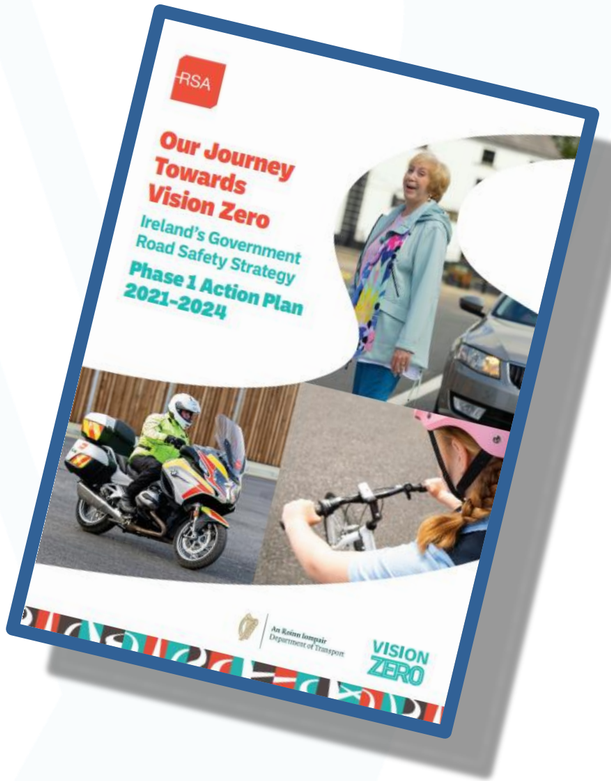
Aim: Reduce collisions on National Road Network

Legislation and Policy:

- TII Statement of Strategy
- EU Directive on Road Infrastructure Safety Management (EU RISM), transposed by S.I No. 612 of 2021
- Government's Road Safety Strategy (2021-2030)

Role:

- Identifying safety issues by proactive and reactive analysis,
- Funding safety improvement schemes through Local Authorities (Action 2 of RSS)
- Overseeing Road Safety Audit Team approvals and training
- Other: Data Analysis, Road Safety Impact Assessments, Road Works Portal, Geometric Standards, Research, training.



VISION ZERO
NO ROAD DEATHS
OR SERIOUS INJURIES BY 2050

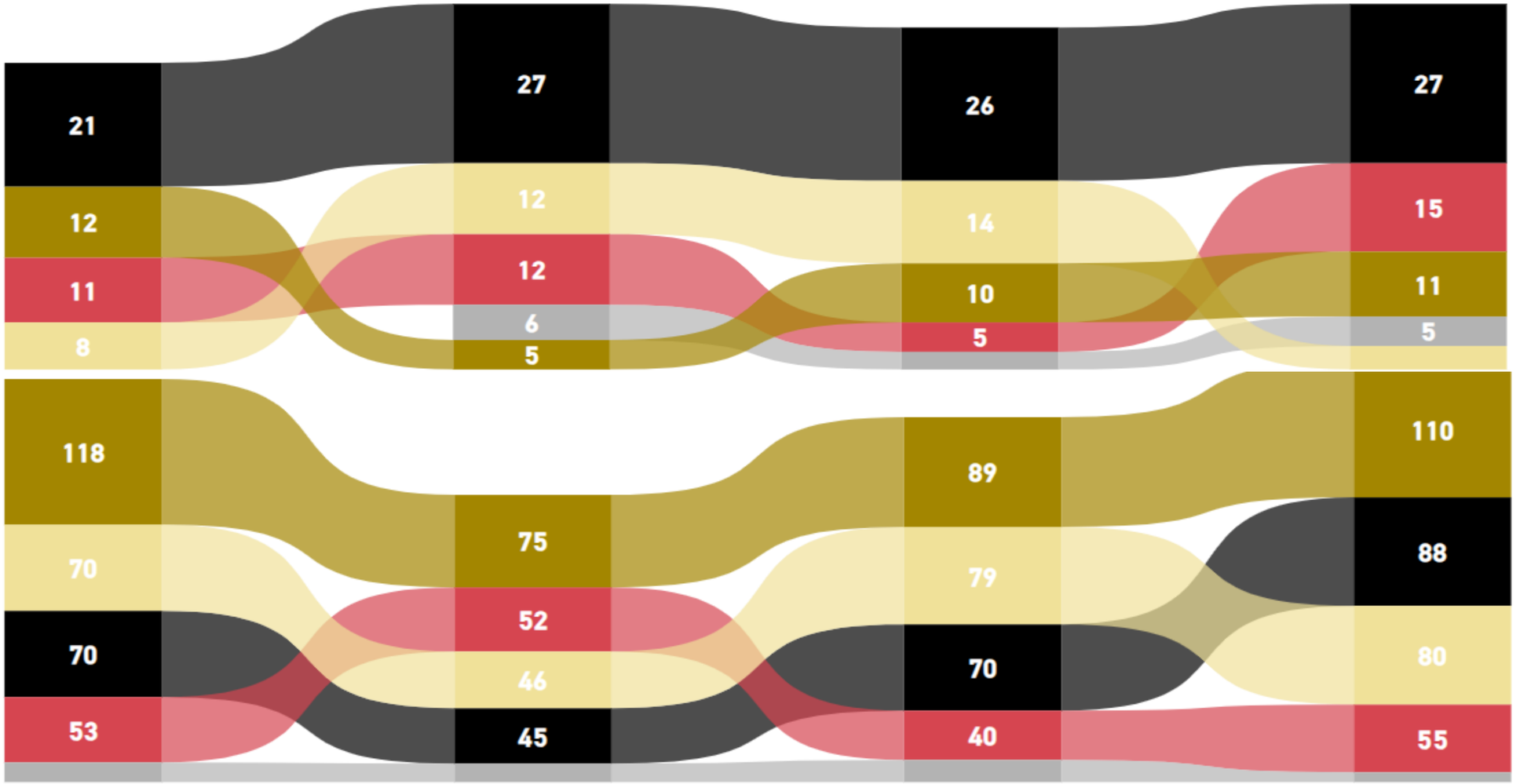
National Road Network

✓ ***Safety Trends***

Collisions Trends road networks (2019 to 2022) by Broad Collision Type

Fatal

Serious Injuries



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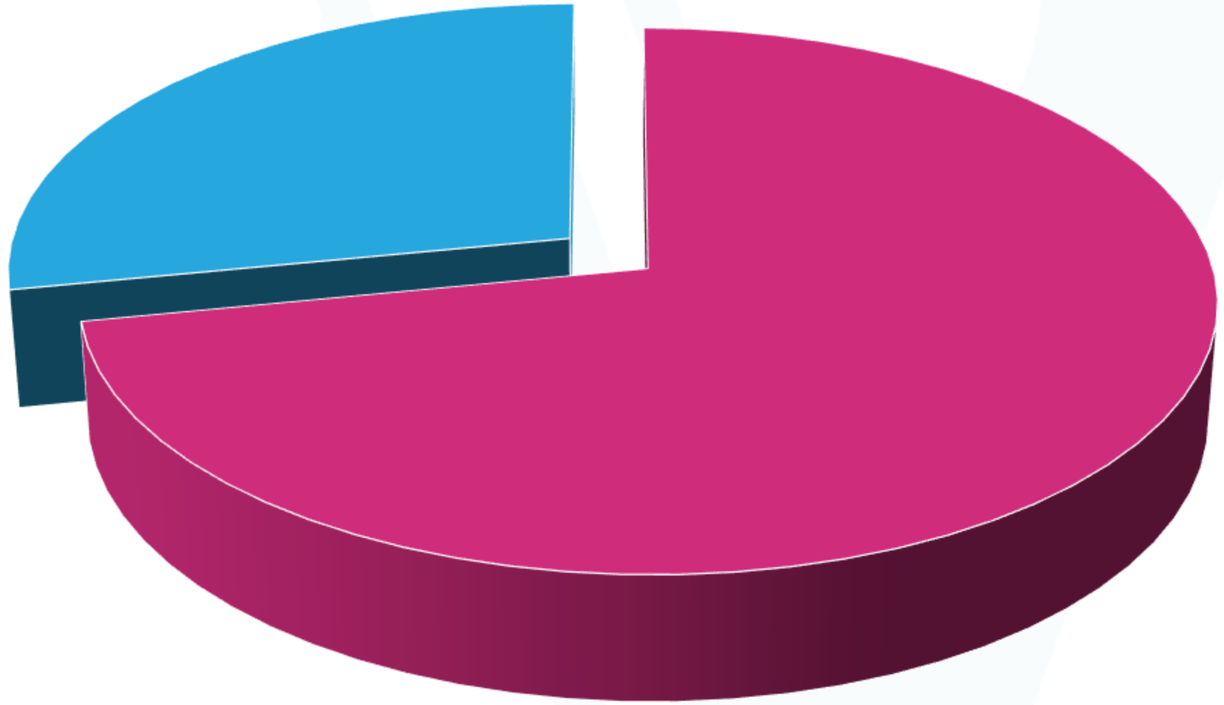
92% of fatalities occur on High Speed Single Carriageway National Roads,

They account for only 38% of all veh.km travelled on National Roads

Fatal collisions National Roads



Head-On

- **Divided Roads**
- **Reduce Speeds**

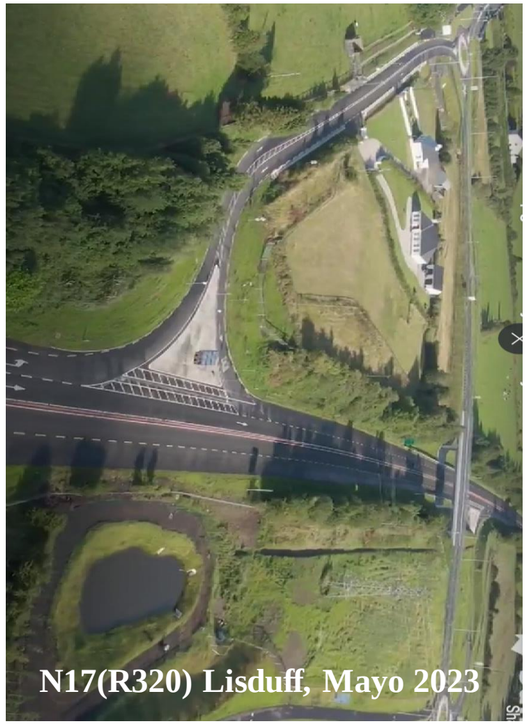
(Speed Limit Review)

NMU

- **Urban Safety**
- **Rural Bus Stops**
- **Reduce Speeds**

N3 Virginia Main St.. Cavan 2022

Vehicle to Vehicle



N17(R320) Lisduff, Mayo 2023

- **Reduce Speeds**
- **Segregated Junctions**
- **Reduce Access**

SVC

- **Reduce Speeds**
- **Forgiving Roadsides**

Speed Limit Review

Published 14th September 2023

Action 6 RSS - A working group established to examine and review the framework for the setting of speed limits on Irish roads.

As part of this review there was a specific consideration of the introduction of a 30 km/h default speed limit in urban areas.
(Stockholm Declaration 2020)

National Road Network

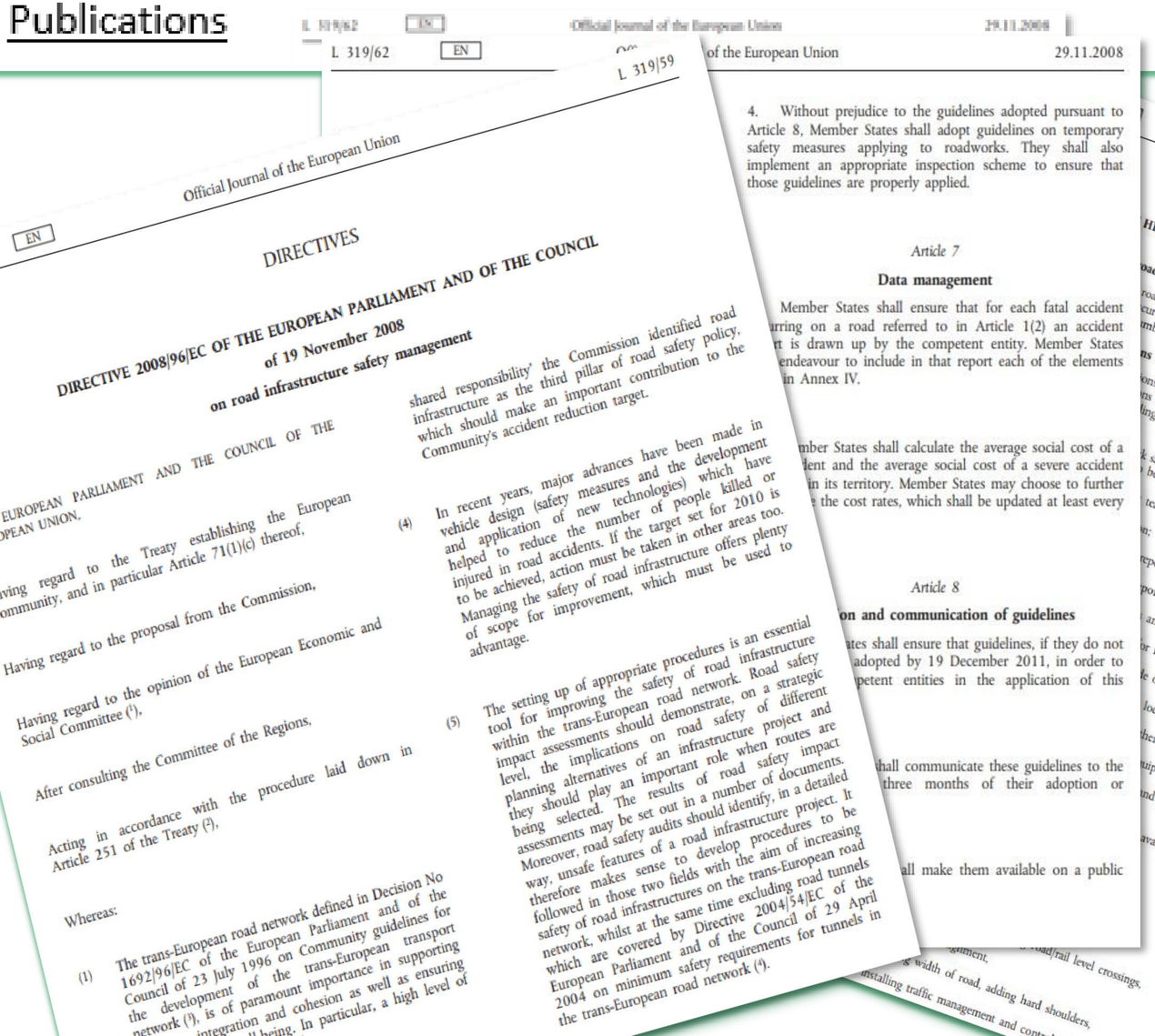
✓ ***Safety Rating***

EU RISM Directive 2008/96/EC

Transposed into SI 472 of 2011 – TII (NRA) Implementing Body

EU Directive on Road Infrastructure Safety Management (RISM) are met through T

Publications


L 319/62 EN Official Journal of the European Union 29.11.2008

DIRECTIVES

DIRECTIVE 2008/96/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 19 November 2008

on road infrastructure safety management

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 71(1)(c) thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Economic and Social Committee (1),

After consulting the Committee of the Regions,

Acting in accordance with the procedure laid down in Article 251 of the Treaty (2),

Whereas:

(1) The trans-European road network defined in Decision No 1692/96/EC of the European Parliament and of the Council of 23 July 1996 on Community guidelines for the development of the trans-European transport network (3), is of paramount importance in supporting integration and cohesion as well as ensuring well-being. In particular, a high level of

shared responsibility' the Commission identified road infrastructure as the third pillar of road safety policy, which should make an important contribution to the Community's accident reduction target.

(4) In recent years, major advances have been made in vehicle design (safety measures and the development and application of new technologies) which have helped to reduce the number of people killed or injured in road accidents. If the target set for 2010 is to be achieved, action must be taken in other areas too. Managing the safety of road infrastructure offers plenty of scope for improvement, which must be used to advantage.

(5) The setting up of appropriate procedures is an essential tool for improving the safety of road infrastructure within the trans-European road network. Road safety impact assessments should demonstrate, on a strategic level, the implications on road safety of different planning alternatives of an infrastructure project and they should play an important role when routes are being selected. The results of road safety impact assessments may be set out in a number of documents. Moreover, road safety audits should identify, in a detailed way, unsafe features of a road infrastructure project. It therefore makes sense to develop procedures to be followed in those two fields with the aim of increasing safety of road infrastructures on the trans-European road network, whilst at the same time excluding road tunnels which are covered by Directive 2004/54/EC of the European Parliament and of the Council of 29 April 2004 on minimum safety requirements for tunnels in the trans-European road network (4).

4. Without prejudice to the guidelines adopted pursuant to Article 8, Member States shall adopt guidelines on temporary safety measures applying to roadworks. They shall also implement an appropriate inspection scheme to ensure that those guidelines are properly applied.

Article 7

Data management

Member States shall ensure that for each fatal accident urring on a road referred to in Article 1(2) an accident rt is drawn up by the competent entity. Member States endeavour to include in that report each of the elements in Annex IV.

mber States shall calculate the average social cost of a dent and the average social cost of a severe accident in its territory. Member States may choose to further the cost rates, which shall be updated at least every

Article 8

on and communication of guidelines

ates shall ensure that guidelines, if they do not adopted by 19 December 2011, in order to petent entities in the application of this

hall communicate these guidelines to the three months of their adoption or

all make them available on a public

Official Journal of the European

ANNEX III

HIGH ACCIDENT CONCENTRATION SECTIONS

oad sections with a high accident concentration

road sections with a high accident concentration ta
curred in previous years per unit of road length in
mber of such accidents per location of intersectio

ns for analysis in network safety ranking

ons for analysis in network safety ranking tak
ns shall be classified into categories. For each
ing to safety-related factors, such as accident

k safety ranking shall result in a priority list
be highly effective.

teams' site visits:

n:

reports on the same road section;

ports;

and of severely injured persons in the three previous years;

or realisation within different timescales considering for example:

le obstacles,

local speed enforcement,

ther and light conditions,

uipment such as road restraint

nd position of

vala

width of road, adding hard shoulders,

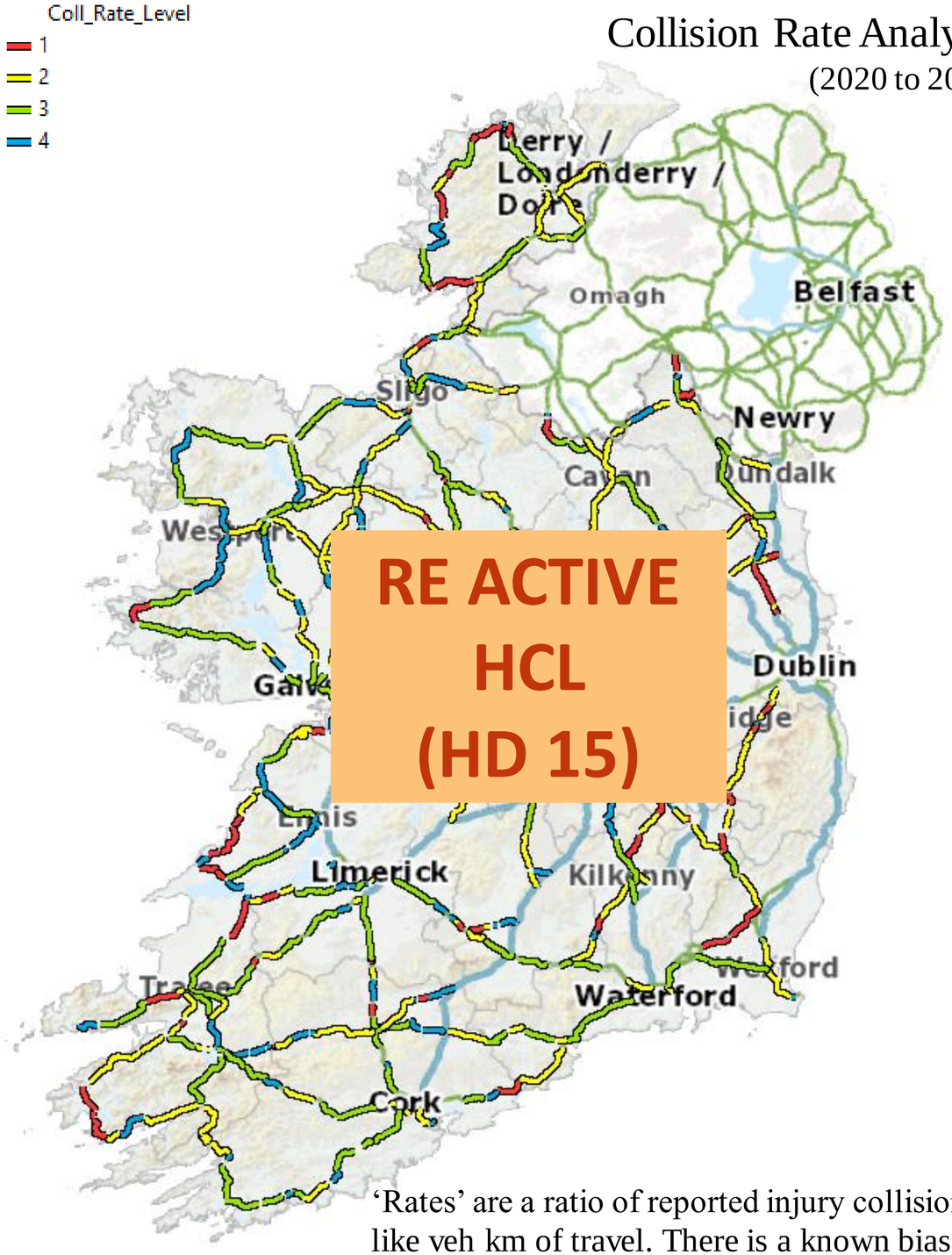
installing traffic management and cont

/rail level crossings,

Action 1: Safety Rating informing investment by 2024

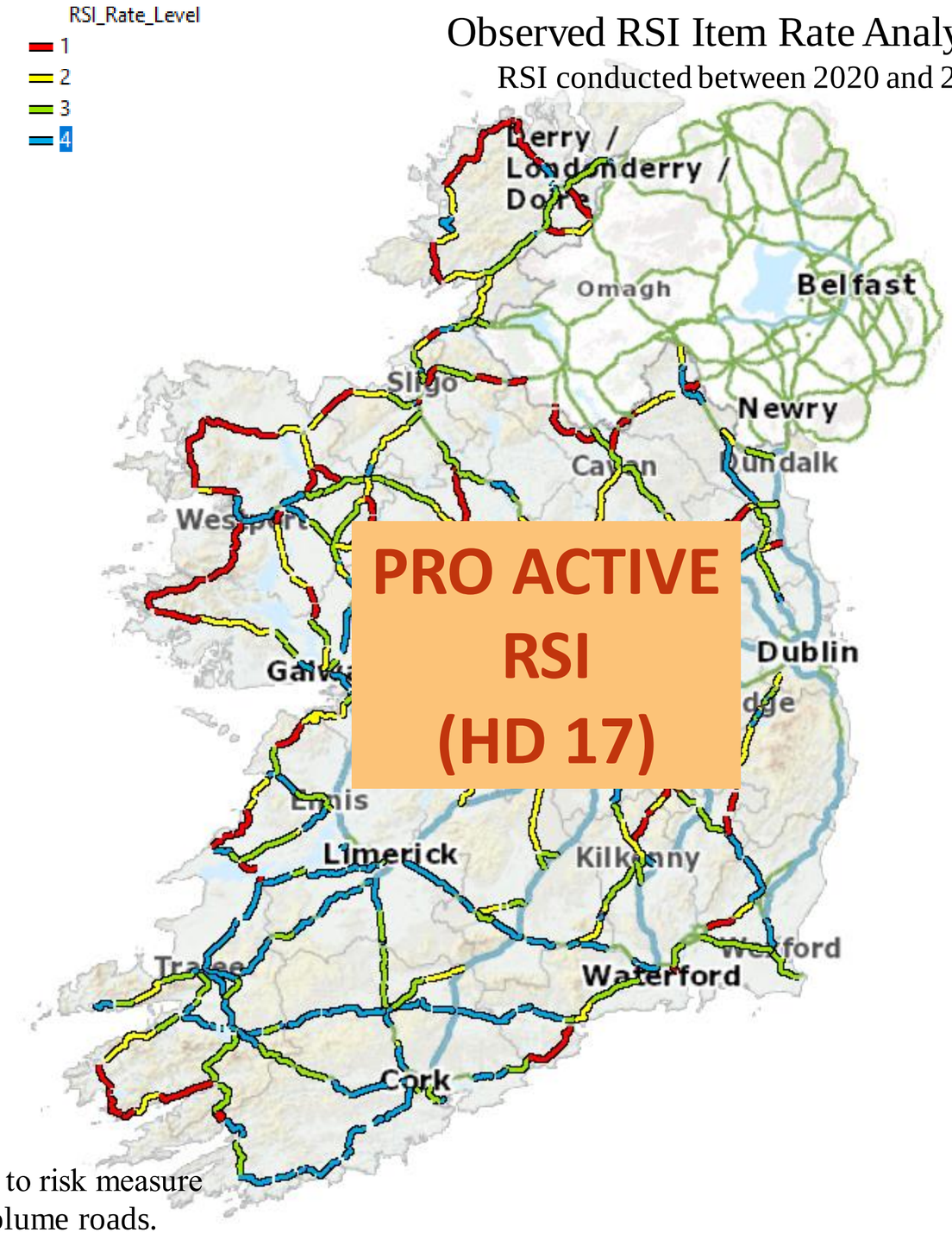
Collision Rate Analysis

(2020 to 2022)



Observed RSI Item Rate Analysis

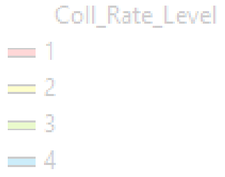
RSI conducted between 2020 and 2022



‘Rates’ are a ratio of reported injury collisions to an exposure to risk measure like veh km of travel. There is a known bias towards lower volume roads.

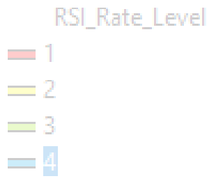
Collision Rate Analysis

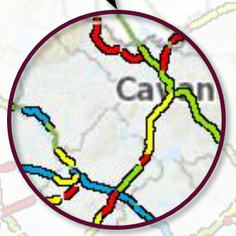
(2020 to 2022)



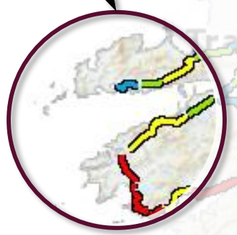
Observed RSI Item Rate Analysis

RSI conducted between 2020 and 2022





A visual check shows some correlation in the results from the independent safety analysis. More robust statistical testing will be carried out.

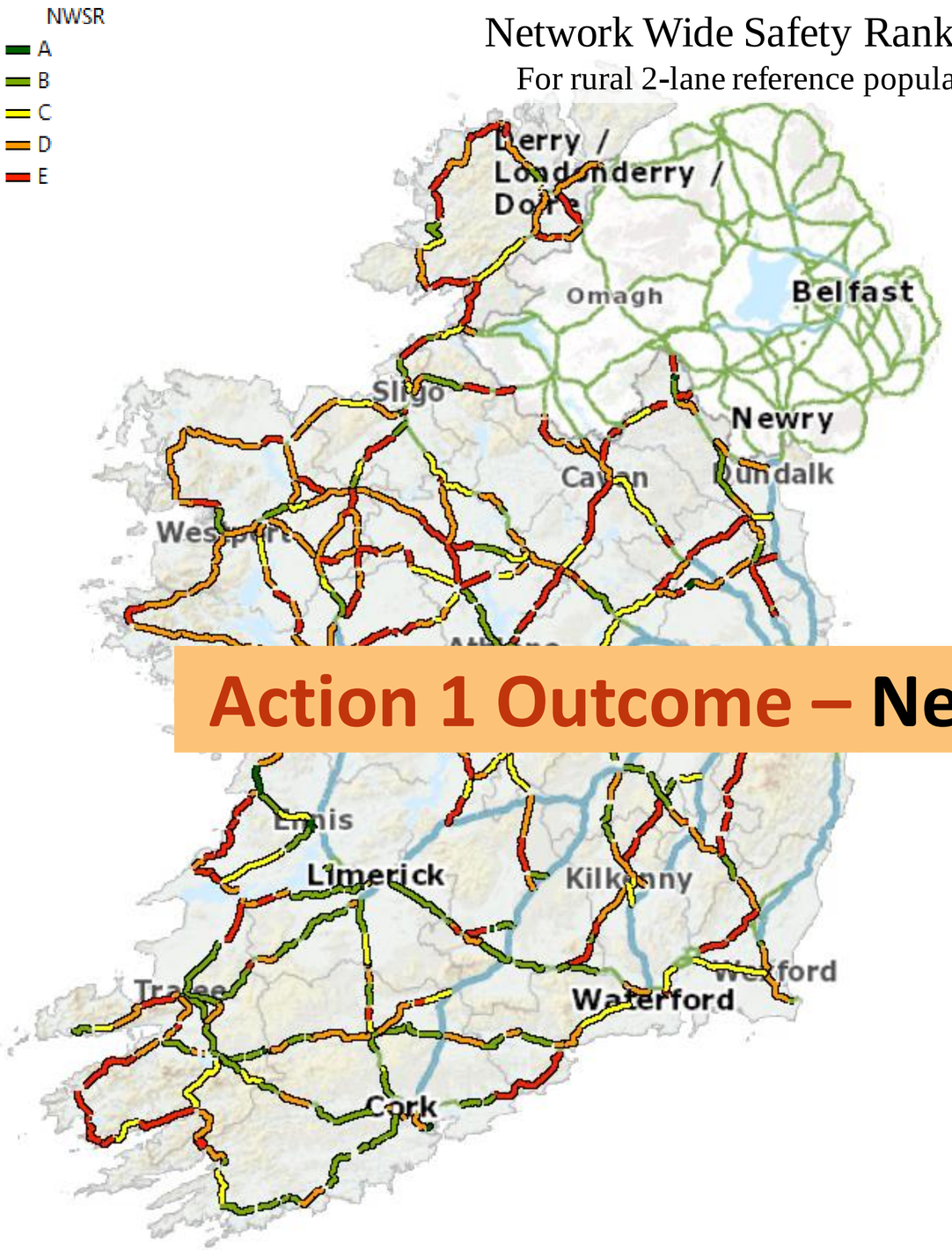


Statistical Correlation Testing

‘Rates’ are a ratio of reported injury collisions to an exposure to risk measure like veh km of travel. There is a known bias towards lower volume roads.

Network Wide Safety Ranking

For rural 2-lane reference population



Reported collision rate classification

RSI observer issue rate classification	1	2	3	4
1	E	E	D	D
2	E	E	D	C
3	E	D	C	B
4	E	D	B	B

Action 1 Outcome – Network-wide Road Safety Ranking

Classification	Length KM	%
A	31.551	0.9%
B	765.765	22.1%
C	547.544	15.8%
D	1186.841	34.2%
E	940.055	27.1%

RSS Action	TII is the Lead Agency	2022	2023
1	Safety Rating by 2024	Testing/Beta	On-target
2	60 Safety Improvement Schemes (RSIS) each year	over 60	On-target
63	Fund dedicated LA Road Safety Engineers	-	4/5 Appointed
65	Embed Safe Systems in TII Standards	On-target	On-target
66	Provide training to key stakeholders *(incl. Level 9 Cert. ATU)*	1213 (Days)	On-target
71	Improve safety at 10 rural bus stops each year	over 10	On-target
Various	Support Agency for Action 3, 6, 8, 10, 22, 53 etc.		

Research and Development	2022	2023
Tendered Research Calls (incl. CEDR)	5	5
Research Papers	1	5
Pilot and Trials	4	5
Conferences (Road Safety Audit and Engineering - Biannual)	1	1
New Tool	CRUSE	CMFs
New TII Safety APPs		2

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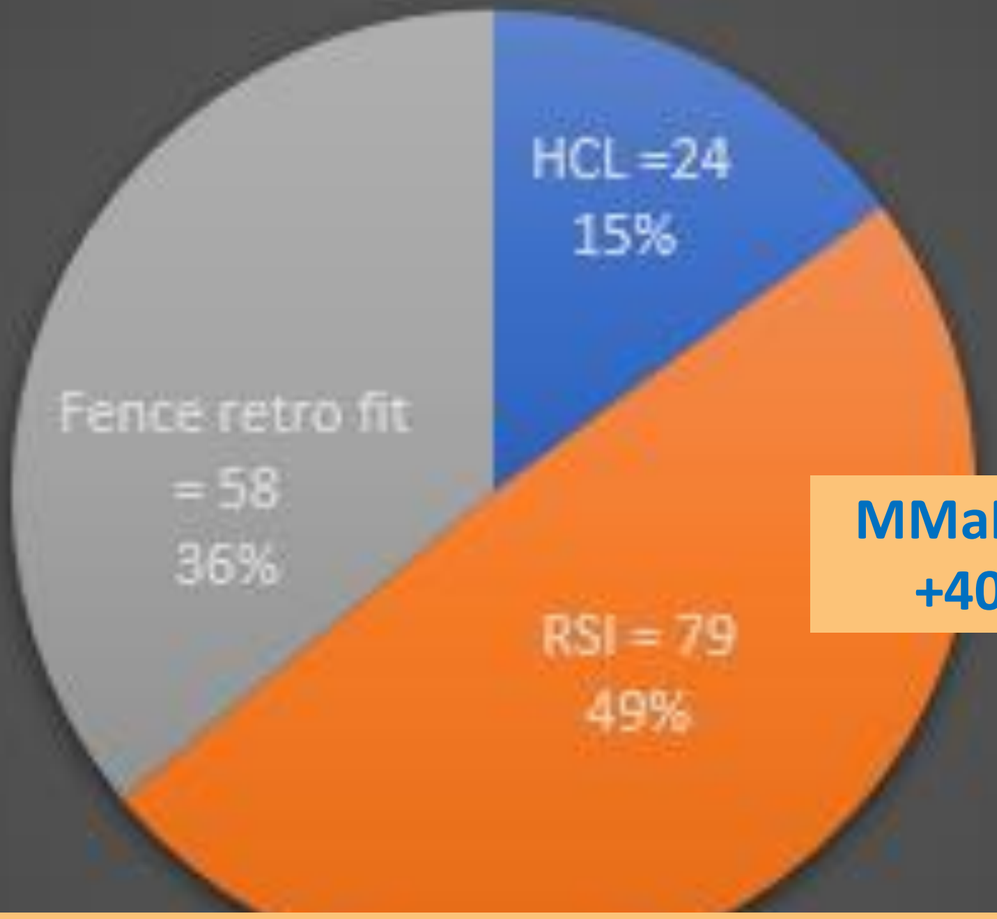
RSIS Completed 2022



MMaRC A, B & C
+40 RSI sites

5 / 31 LAs treated zero sites!

RSS Action 2 Outcome 2022 **+60 Safety Sites treated**

TII Park and Share Programme

Road Safety Problem - *Vehicles Parked in the Hardshoulder*

Road Safety Inspection (Image UbiPix 2020)

Car Sharing = Unintended Safety Problem

NMU

Vehicle to Vehicle

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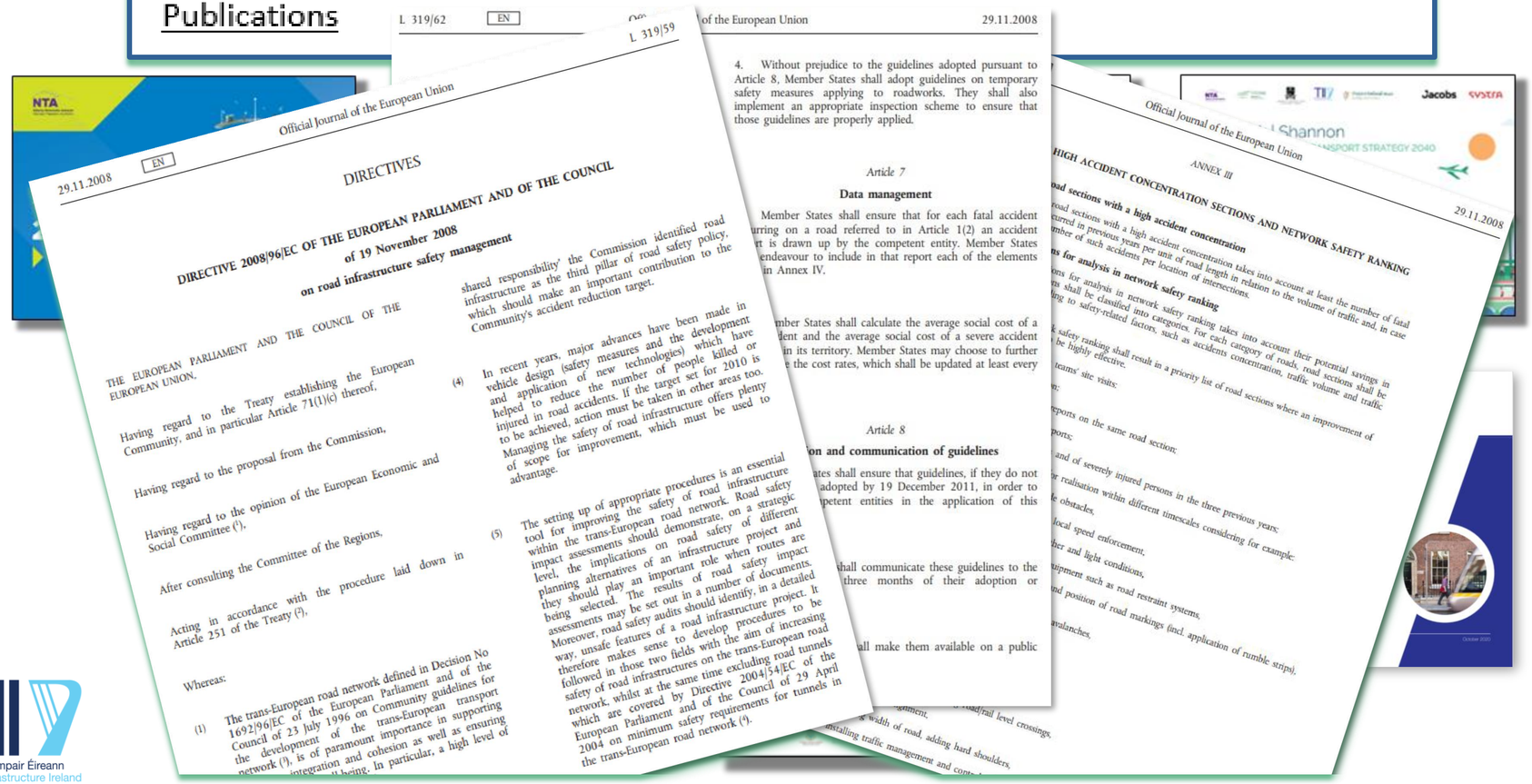
Car Sharing, Park & Ride , Park & Share

EU RISM Directive 2008/96/EC

Transposed into SI 472 of 2011 – TII (NRA) Implementing Body

EU Directive on Road Infrastructure Safety Management (RISM) are met through TII Publications



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Park & Share Programme

Safety Problem

01

- Hazards in road side
- Pedestrian movements
- Vehicles turning or merge/diverge

Vision Statement

02

Objective 1 - Safe and Efficient
Objective 2 - Integrated Mobility
Objective 3 - Decarbonise

Actions

03

Action 1
Action 2
Action 3
Action 4

Outcomes

04

Phase 1 2022 -2026
Phase 2 2025-2027
SPI / KPI

M1 Pilot – Ex-Post Evaluation - Customer Survey (2023)

- High level of satisfied users
- Main motivation - reduce transport cost
- Main destination is Dublin
- Customers report that they previously used hard shoulder to park
- Facilities feedback
  - Feel safe
  - would like a longer set down area,
  - Shelter while waiting for pick up,
  - A coffee station,
  - Less litter, and
  - Increased signage on the M1.

Sites Identified by TII 2018

TII Reviewed Network 2022

– *increased sites and intensification at existing sites.*

- Increased pressure to reduce single occupancy car use and private car trips

- Increased transport costs

Implementation Challenges for TII

Administrative Challenge

- Can a new access be provided on a National Road for the purposes of a Park and Share facility? (Spatial Planning and National Roads Guidelines 2012)
- Not all P&S – Some P&R required where known bus stop causing parking (remit?)

Communications Challenge

- Do we need a customer platform? Occupancy , disability , map etc.?

NR2040 Funding Challenge

- Are we only treating National Road Jn or are Regional Rd junctions with Motorway also to be considered?

Size and Number of Facility

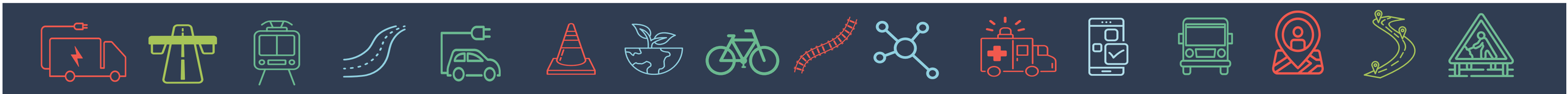
- One large vs numerous small facilities at junctions
- Land available at junctions

Electric Charging Provision

- Are Electric Charging points required?

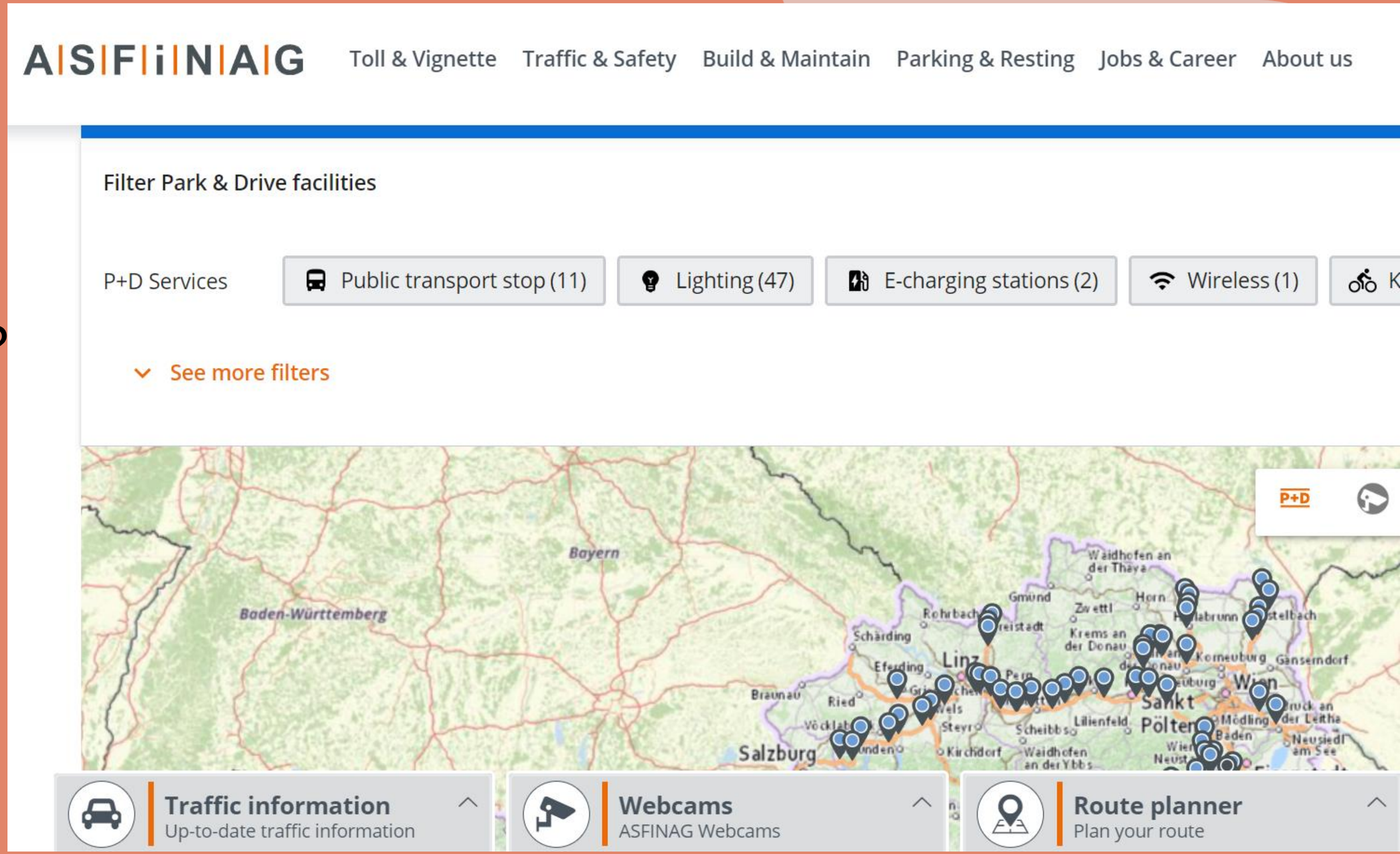
Road Safety Challenge

RISM and RSS



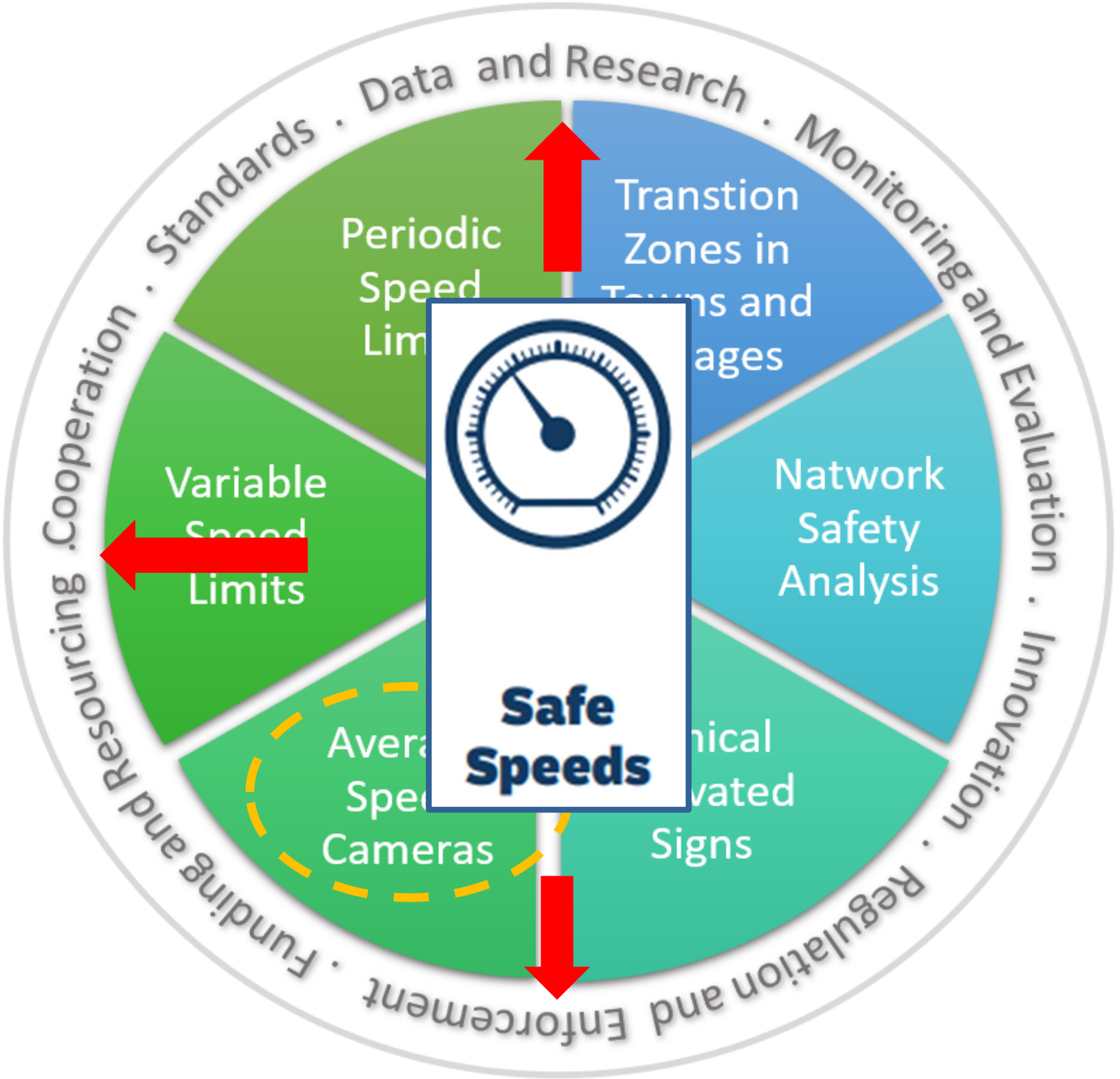
How have other NRA's integrated P&S into their Operations ?

Austria (ASFiNG)



Speed Management

Average Speed Cameras



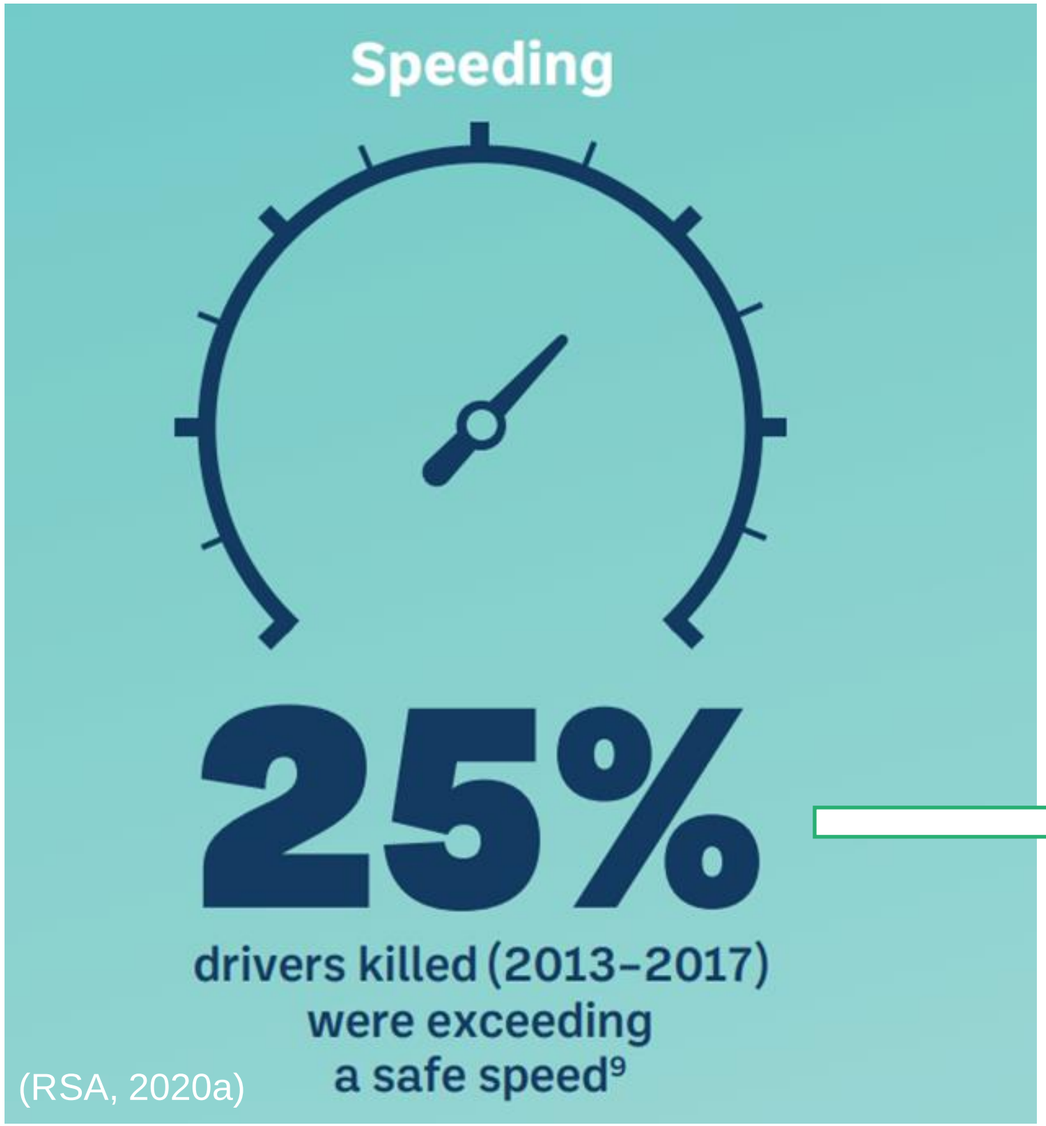
RSS Action 8

Expand speed management measures

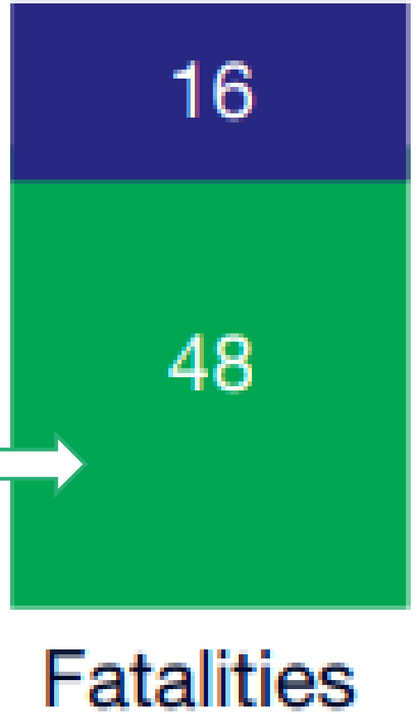
(RSA, 2020b;Pg 5)

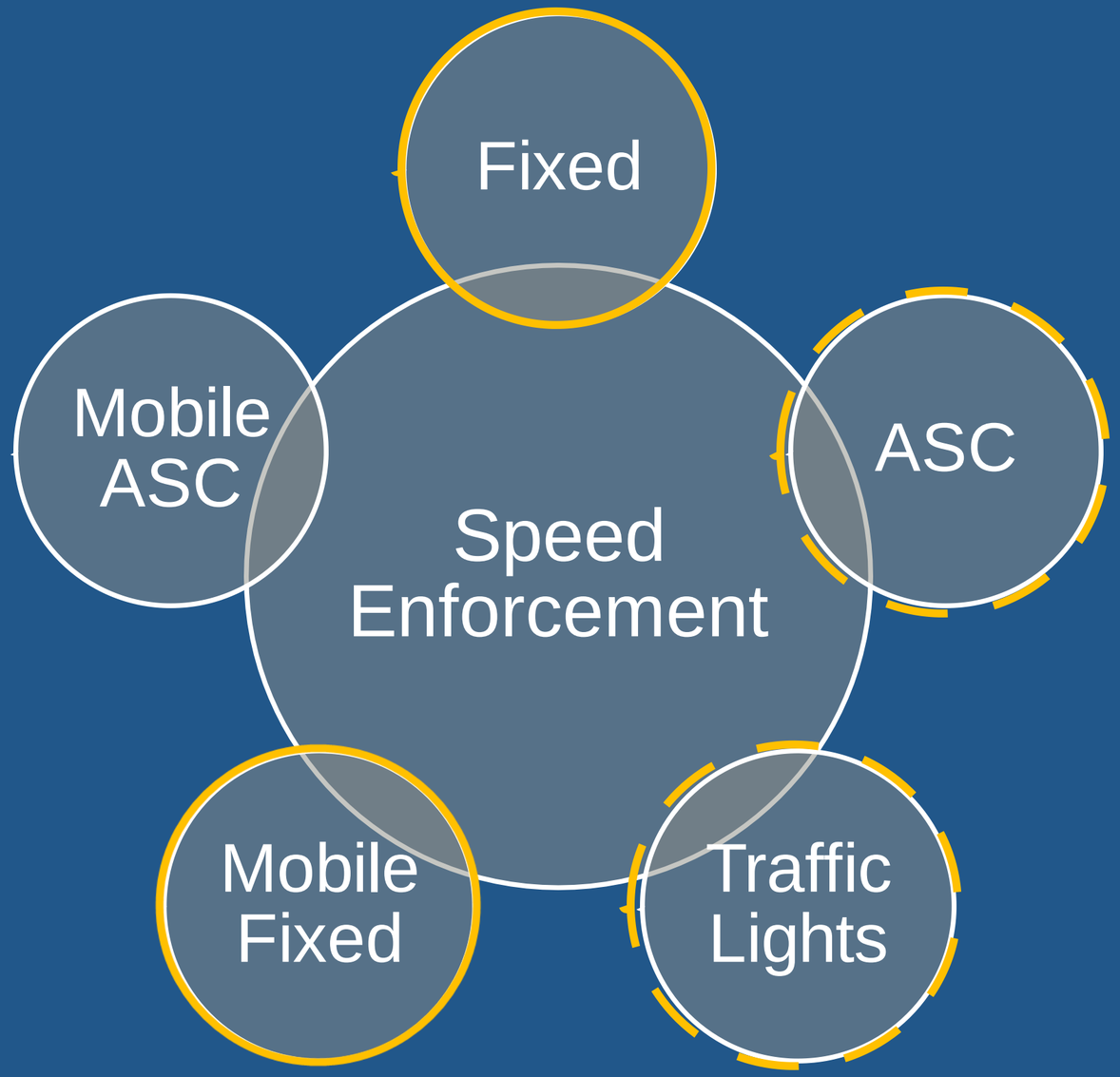
***34% of Irish drivers say its acceptable to exceed 100 km/h speed limits** by more than10 km/h.*

An **increase from 2014-2019** at 18%.(RSA, 2020a)



(RSA, 2020a)





Static Options

Fixed spot-speed – measuring speeds at the spot

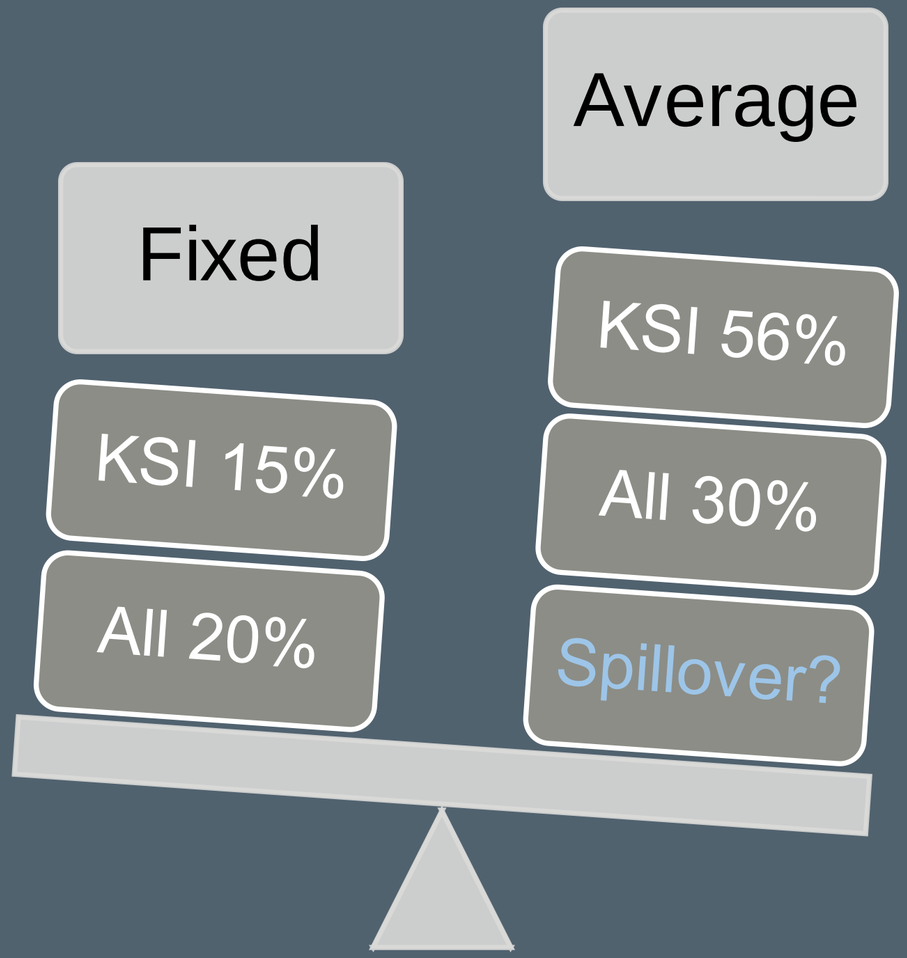
ASC / Point-to-point (P2P) cameras/Section Control- measuring average-speeds over a route/section,

Red-light/speed cameras at signalised intersections - measuring spot-speeds on an approach road as well as red-light running offences.

Mobile Options

Mobile speed cameras (MSC) measuring spot – speeds - moved from location to location to for a period of time

Mobile ASC / P2P camera units measuring average-speeds over each pre-defined road section for a period of time (e.g. TTM)



(Adapted from Høye, 2014)

Technical Report

Literature Review

Effectiveness

Best Practice

Site Selection

Cooperation

Best Practice Approach

(Scotland, Belgium, Sweden)

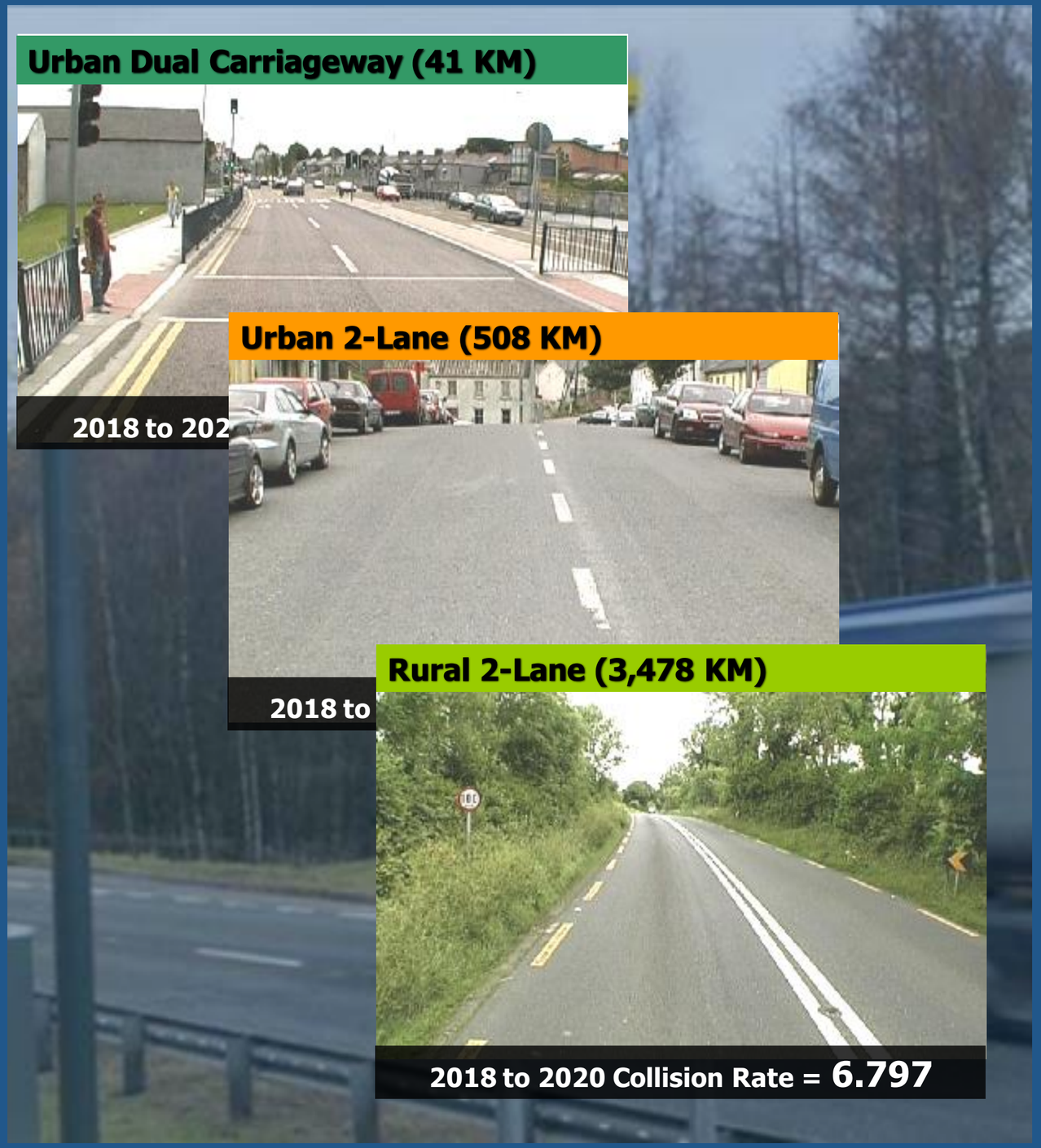
1) ***Speed-related collisions*** *where Engineering & Education not effective/possible*

2) *High Collision Rates*

3) *High % Exceeds Mandatory Speed Limit*

4) *Partnership*

Fixed
Mobile ASC
Suite of Speed Enforcement Options
ASC
Mobile Fixed
Traffic Lights


Urban Dual Carriageway (41 KM)
2018 to 202
Urban 2-Lane (508 KM)
2018 to
Rural 2-Lane (3,478 KM)
2018 to 2020 Collision Rate = 6.797

ASC - Global Speed Enforcement Solution?

N56

Safe Speeds

N24 Carrick-On-Suir Urban Street

N71 Legacy Road Network

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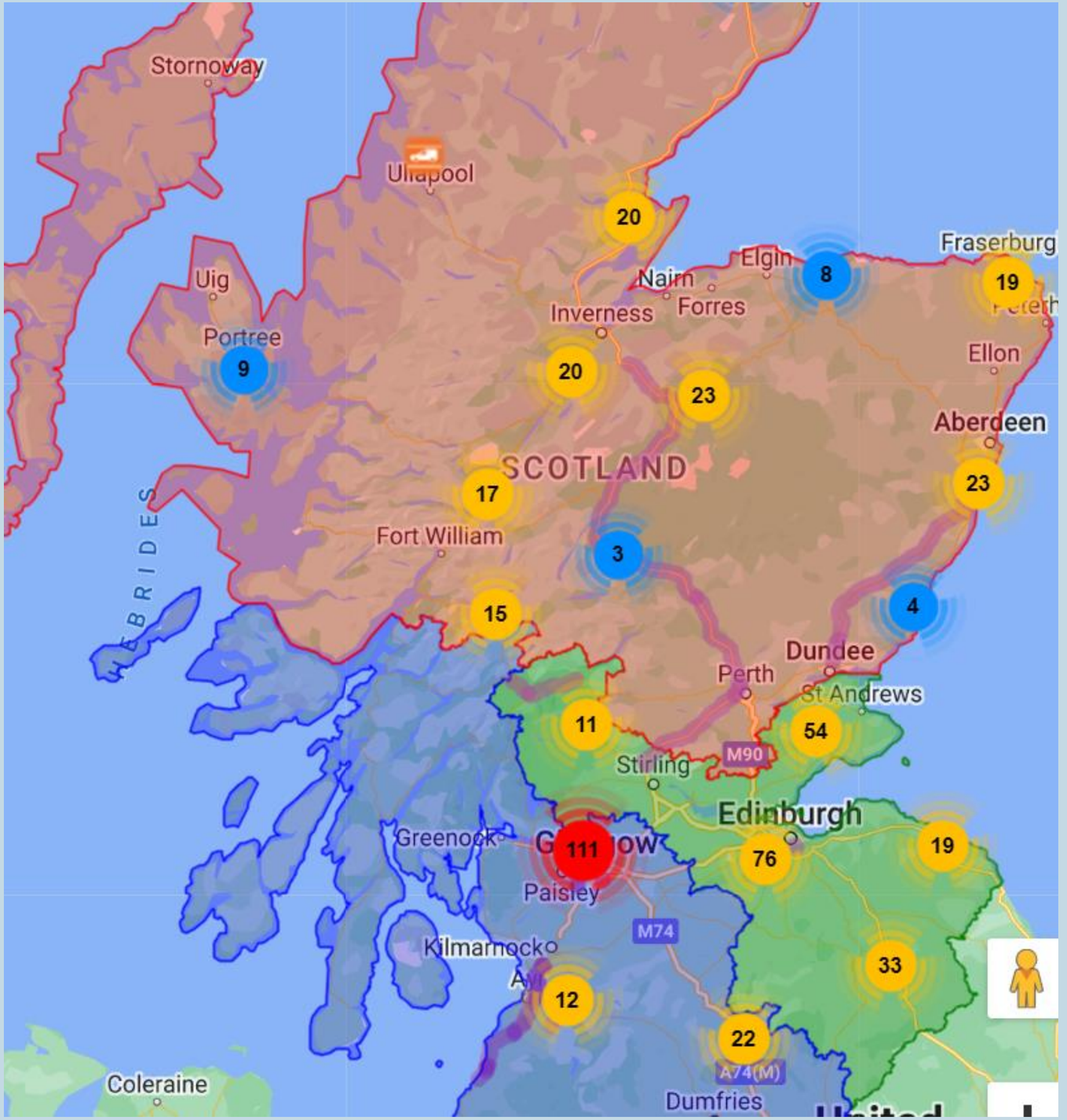
ASC Scotland

1. **Rural ASC -** 158 km Total Length. 4 sites (6.8% of network) @ A9, A77, A82/A85 & A90) - 66% reduction.
2. **Urban ASC –** Various: Glasgow, Edinburgh and Aberdeen
3. **Mobile ASC - Temporary for Road Works** - 1 Site and more planned

In addition to…

4. **Red Light /Speed -** Various sites @ urban junctions
5. **Mobile Cameras -** 29 Vans @ across many sites
6. **ITS -** Queensferry Bridge



https://www.safetycameras.gov.scot/cameras/safety-camera-locations/

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7. ***Next Steps***

Action 53 – Await outcome of GoI *Speed Limit Review* and evaluate median barrier need on NRN.

Action 63 – Monitor impact of DSE. Increase role out with DoT.

Action 71 – Route level reviews on-going review opportunity for integrating P&S.

Action 8 – Complete Technical Paper ASC for DoT.

Achieving Vision Zero Challenges for TII and Stakeholders?

Planning Processes – Urban RSIS hindered/Stalled

Capacity/Resource Availability -

Changing users – P&S, e-scooters, SUV, active travel, commuting.

More complicated Safety Interventions required – e.g., closing some accesses/roads

VISION ZERO

NO ROAD DEATHS
OR SERIOUS INJURIES BY 2050

Thankyou

Go raibh míle maith agaibh