



RSA

# Free Speed Survey 2023

Safe Speeds

March 2024









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## Executive Summary

- Excessive speed continues to be a leading contributory factor in fatal and serious injury collisions in Ireland and internationally.
- It has been estimated that 10-15% of all collisions and 30% of fatal collisions are the result of speeding or inappropriate speed (ERSO, 2020). Therefore, tracking speeding compliance rates is critical.
- The RSA has been conducting free speed surveys since 2006. Rates of non-compliance have typically been higher on urban roads (approximately 50%) than on rural roads and motorways (where the rate of non-compliance has generally been under 30%).
- One of the key findings from the Free Speed Survey 2023 was that rates of compliance with the speed limit generally increased as the speed limit of the road increased.
- For instance, the rates of compliance were considerably higher on roads with a speed limit greater than 80km/h when compared to roads with a speed limit of less than 80km/h.
- One of the noticeable results when analysing speeding by vehicle type was that 80% of HGV drivers exceeded the speed limit on 100km/h roads. This finding is consistent with a trend that has been observed on this road type in recent studies.
- In addition to an analysis of speeding by vehicle type, a breakdown of speeding by time of week (weekday vs. weekend), time of day and degree of violation is also provided in this report.



## Report Overview

-  Safety Performance Indicators
-  Methodological Approach
-  Summary of Results
-  Analysis by Road Type – 30km/h, 50km/h, 60km/h, 80km/h, 100km/h, 120km/h
-  International Comparison
-  Key Results



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# Safety Performance Indicators

# Safety Performance Indicators (SPIs) in the Government Road Safety Strategy, 2021-2030



- This observational study on free speed has been conducted in the context of the SPI approach as part of the Government Road Safety Strategy.
- Use of performance indicators have been recommended in international guidance from global organisations, including ETSC and ITF/OECD.
- It is critical that SPIs have an evidence base and established relationship with safety performance (i.e., death and serious injury reduction).
- They reflect elements of the operational and safety context to better understand the road traffic system.
- In an Irish context, SPIs will be used to measure our performance in specific areas, known to contribute to death and serious injury reduction, to help us refine our policy interventions.
- An SPI has been developed as part of the Safe Speeds intervention area to determine the incidence of drivers of all vehicle types driving on Irish roads while speeding, and, therefore, presenting a road safety risk.



## EC Projects

- Ireland participated in the EC Baseline Project from 2020 to 2022. A Baseline Project Report was published in early 2023: [Baseline Project Summary](#).
- Trendline is the follow-up to Baseline and will last until 2025. Further details about this project can be found at <https://trendlineproject.eu/>.
- The main aim of these projects is to ensure that a consistent approach to data collection and SPI reporting is adopted across the Member States.
- Ireland will collect and analyse data for the various SPIs over the course of 2023 and 2024, with the intention of delivering data to Trendline in late 2024/early 2025.
- A Trendline Project Report will be published by the end of 2025, and individual SPI reports will also be made available.
- A Speeding SPI was included as part of Baseline and has also been included as part of Trendline.

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# Methodological Approach

## Study Objectives

- Speed surveys are designed to monitor changes in the free speeds of vehicles on various road types, and also to measure drivers' choice of speed.
- Free speed can be defined as the speed at which drivers choose to travel when unconstrained by road geometry (e.g., sharp bends, intersections, or hills), or traffic conditions (e.g., congestion).
- This report will outline the methodology used for the 2023 Free Speed Survey and will present the findings from the study.





## Methodology and Sampling Approach – Tracsis Data

- **Fieldwork:** The fieldwork element of the study was outsourced to Tracsis, and data was collected at nearly 80 sites nationwide. The data collection exercise featured a broad regional distribution, with surveys taking place in 18 different counties.
  - Tracsis is a provider of software, hardware, and data analytics/GIS and services for the rail, traffic data and wider transport industries.
- **Road Types Covered:** The following speed limits were covered as part of this study: 30km/h, 50km/h, 60km/h and 80km/h.
- **Study timeframe:** 16 April 2023 – 06 May 2023.
- **How was the data collected?** Automatic Traffic Counters (ATCs) were used for data collection at all of these sites, allowing observations to be captured for a 24-hour period at each site. As a result, data was collected during daylight and nighttime hours across the entire week (including at weekends).
- **Analysis approach:** In order to select a representative subset of the datasets for analysis, a sampling approach was adopted. This involved selecting several 2-hour time periods for each site across the entire week and analysing the data during these time periods.

## Methodology and Sampling Approach – TII Data

- **Data collection:** Data for 100km/h roads and 120km/h roads was analysed using Transport Infrastructure Ireland's (TII) traffic count data.
- Data for 100km/h roads was collected at 11 sites and data for 120km/h roads was collected at 10 sites.
- **Study timeframe:** 19 April 2023 – 27 April 2023.
- TII's traffic count data system involves detecting the speed of vehicles as they pass over loops embedded in the road surface, and this approach also allowed for comprehensive data collection at all times across the week (including at weekends).
- **Analysis approach:** A sampling approach similar to the one adopted to analyse the data collected by Tracsis was used to select a representative subset of the datasets for analysis. Once again, this involved selecting several 2-hour time periods for each site across the entire week and analysing the data during these time periods.

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## Summary of Results

# Overall Results

- The table below provides a high-level summary of speeding rates on various road types based on the results of the 2023 study.
- Overall, rates of compliance with the speed limit were greater on the higher-speed road types.
- For instance, 58% of drivers were found to have driven in excess of the speed limit on 30km/h roads, whereas this rate drops to 17% on 120km/h roads.

Road Type	% Speeding	% Not Speeding	Sample Size
30km/h	58%	42%	3264
50km/h	46%	54%	9503
60km/h	49%	51%	9365
80km/h	33%	67%	3042
100km/h	30%	70%	9187
120km/h	17%	83%	14661



## Recent Historic Comparison

- The table below shows compliance rates by road type over the last 3 years. It was not possible to conduct surveys on the 50km/h road network in 2022, but this limitation was addressed as part of the 2023 study.
- The rate of compliance on 50km/h roads in 2023 represents a significant improvement when compared to the findings at sites for this road type in the 2021 study.
- A relatively similar number of observations was recorded for both of these studies: 9,203 in the 2021 study and 9,503 in the 2023 study.
- However, it must be acknowledged that the time of year and volume of sites analysed differs between the studies, so that needs to be considered when interpreting the results. For instance, the 2021 study was conducted in the month of October, whereas the 2023 study was conducted in the months of April and May. There was also a difference in the geographical spread of the sites between the two studies, with the 2023 study having a larger number of sites (32 in 2023 vs 11 in 2021), as well as a more varied regional distribution. The impact of the Covid-19 pandemic on traffic patterns should also be considered when interpreting the results of the 2021 study.
- Compliance rates were consistently high on both 100km/h roads (approximately 70% compliance) and 120km/h roads (approximately 85% compliance). Once again, differences in the time of year must be considered when viewing these results. For instance, the 2021 and 2022 observations were recorded in October, whereas the 2023 observations were recorded in April.

Road Type	2023 % Speeding	2022 % Speeding	2021 % Speeding
50km/h	46%	NA	77%
100km/h	30%	28%	29%
120km/h	17%	15%	15%

## Analysis by Road Type – 30km/h

## 30km/h Roads Summary

- On 30km/h roads, 3 in 5 (60%) drivers of passenger cars were found to have exceeded the speed limit.
- This rate dropped to approximately 1 in 2 (53%) for drivers of LGVs. The considerably smaller sample size should be kept in mind when interpreting this rate.

Vehicle Type	% Speeding	% Not Speeding	Sample Size
Passenger Cars	60%	40%	2972
LGVs	53%	47%	152

- Rates of compliance with the speed limit were slightly lower at weekends on this road type. 57% of motorists broke the speed limit on 30km/h roads during the week, with this figure rising to 60% at the weekend (Saturday and Sunday).
- Observations on 30km/h roads were conducted at sites in urban areas of Cork and Dublin only.



## Time of day breakdown – 30km/h roads

- The table below captures the speeding rates by time of day on 30km/h roads.
- 81% of motorists exceeded the speed limit on 30km/h roads between the hours 12am-8am, and 79% were driving over the speed limit between the hours 4pm-8pm.
- When interpreting the rate for the 12am-8am time period, the smaller sample size of less than 100 observations should be considered.

Time of day	% Speeding	% Not Speeding	Sample Size
12am-8am	81%	19%	93
8am-12pm	42%	58%	826
12pm-4pm	57%	43%	858
4pm-8pm	79%	21%	704
8pm-12am	52%	48%	783





## Degree of violation on 30km/h roads

- The table below captures the degree of violation on 30km/h roads.
- As can be seen from the data, about 35% of motorists exceeded the speed limit by up to 10km/h.
- 21% exceeded the speed limit by more than 10km/h.

Degree of violation	%	Sample Size
Not Speeding	42%	1384
>30km/h & <=35km/h	19%	632
>35km/h & <=40km/h	17%	561
>40km/h & <=50km/h	17%	565
>50km/h	4%	122



## Analysis by Road Type – 50km/h

## 50km/h Roads Summary

- On 50km/h roads, rates of compliance were relatively low across the major vehicle types, as can be seen in the following table. Approximately 47% of passenger car drivers were speeding, with rates dropping to 46% for LGV drivers and 39% for drivers of HGVs and Buses.
- However, these rates represent a significant improvement when compared to the findings on this road type from the 2021 study, where, overall, approximately 3 in 4 drivers were found to have exceeded the speed limit. This rate dropped to 46% in the 2023 study.

Vehicle Type	% Speeding	% Not Speeding	Sample Size
Passenger Cars	47.20%	52.80%	8261
LGVs	46.38%	53.62%	802
HGVs and Buses	39.15%	60.85%	189

- Rates of compliance with the speed limit were lower at weekends on 50km/h roads. 41% of motorists broke the speed limit on these roads during the week, with this figure rising to 62% at the weekend (Saturday and Sunday).



## Time of day breakdown – 50km/h roads

- The table below captures the speeding rates by time of day on 50km/h roads.
- The hours between 8pm and 8am saw the highest rates of speeding on this road type, ranging from 59% (8pm-12am) to 67% (12am-4am).

Time of day	% Speeding	% Not Speeding	Sample Size
12am-4am	67%	33%	417
4am-8am	64%	36%	907
8am-12pm	41%	59%	2004
12pm-4pm	25%	75%	1657
4pm-8pm	40%	60%	1995
8pm-12am	59%	41%	2523



## Degree of violation on 50km/h roads

- The table below captures the degree of violation on 50km/h roads.
- 30% of motorists exceeded the speed limit by up to 10km/h.
- 16% exceeded the speed limit by more than 10km/h.

Degree of violation	%	Sample Size
Not Speeding	54%	5113
>50km/h & <=55km/h	17%	1646
>55km/h & <=60km/h	13%	1227
>60km/h & <=70km/h	12%	1162
>70km/h	4%	355



## Analysis by Road Type – 60km/h

## 60km/h Roads Summary

- On 60km/h roads, approximately 1 in 2 drivers of passenger cars (49%) and LGVs (50%) were found to have exceeded the speed limit.
- This rate dropped to 41% for drivers of HGVs and Buses.

Vehicle Type	% Speeding	% Not Speeding	Sample Size
Passenger Cars	49%	51%	8111
LGVs	50%	50%	834
HGVs and Buses	41%	59%	376

- Rates of compliance with the speed limit were lower at weekends on this road type. 47% of motorists broke the speed limit on 60km/h roads during the week, with this figure rising to 57% at the weekend (Saturday and Sunday).



## Time of day breakdown – 60km/h roads

- The table below captures the speeding rates by time of day on 60km/h roads.
- Approximately 1 in 2 motorists exceeded the speed limit on this road type across several periods of the day, with compliance rates being higher during the period from 12pm-4pm.

Time of day	% Speeding	% Not Speeding	Sample Size
12am-4am	50%	50%	353
4am-8am	53%	47%	559
8am-12pm	53%	47%	2939
12pm-4pm	34%	66%	1843
4pm-8pm	48%	52%	1559
8pm-12am	54%	46%	2112





## Degree of violation on 60km/h roads

- The table below captures the degree of violation on 60km/h roads.
- Almost 30% of motorists exceeded the speed limit by up to 10km/h.
- Approximately 20% exceeded the speed limit by more than 10km/h.

Degree of violation	%	Sample Size
Not Speeding	51%	4814
>60km/h & <=65km/h	16%	1543
>65km/h & <=70km/h	13%	1186
>70km/h & <=80km/h	14%	1315
>80km/h	5%	507



## **Analysis by Road Type – 80km/h**

## 80km/h Roads Summary

- On 80km/h roads, approximately 1 in 3 drivers of passenger cars (34%) and LGVs (33%) were found to have exceeded the speed limit.
- The non-compliance rate was lower for drivers of HGVs and Buses on this road type, with 18% of observed motorists driving over the speed limit.

Vehicle Type	% Speeding	% Not Speeding	Sample Size
Passenger Cars	34%	66%	2631
LGVs	33%	67%	281
HGVs and Buses	18%	82%	112

- Rates of compliance with the speed limit were higher at weekends on this road type. 34% of motorists broke the speed limit on 80km/h roads during the week, with this figure dropping to 26% at the weekend (Saturday and Sunday).



## Time of day breakdown – 80km/h roads

- The table below captures the speeding rates by time of day on 80km/h roads.
- Just over 1 in 2 motorists exceeded the speed limit on this road type between the hours 12am-8am, with much higher compliance observed across all other time periods.

Time of day	% Speeding	% Not Speeding	Sample Size
12am-8am	53%	47%	208
8am-12pm	32%	68%	1223
12pm-4pm	19%	81%	373
4pm-8pm	39%	61%	630
8pm-12am	32%	68%	608



## Degree of violation on 80km/h roads

- The table below captures the degree of violation on 80km/h roads.
- Just over 20% of motorists exceeded the speed limit by up to 10km/h.
- 12% exceeded the speed limit by more than 10km/h.

Degree of violation	%	Sample Size
Not Speeding	67%	2031
>80km/h & <=85km/h	13%	383
>85km/h & <=90km/h	8%	251
>90km/h & <=100km/h	9%	271
>100km/h	3%	106



## **Analysis by Road Type – 100km/h**

# 100km/h Roads Summary

- On 100km/h roads, approximately 1 in 4 drivers of passenger cars and LGVs were found to have exceeded the speed limit.
- The compliance rate was considerably lower for drivers of HGVs on this road type, with about 80% of observed motorists found to have exceeded the speed limit on 100km/h roads, where HGV drivers are required to travel at speeds of no more than 80km/h. This is consistent with a trend that has been observed on 100km/h roads in recent studies.

Vehicle Type	% Speeding	% Not Speeding	Sample Size
Passenger Cars	25%	75%	7097
LGVs	27%	73%	1121
HGVs	80%	20%	857

- Rates of compliance with the speed limit were slightly lower at weekends on this road type. 30% of motorists broke the speed limit on 100km/h roads during the week, with this figure rising to 33% at the weekend (Saturday and Sunday).



## Time of day breakdown – 100km/h roads

- The table below captures the speeding rates by time of day on 100km/h roads.
- Compliance rates were generally high across the various time periods. At 40%, the period from 4am-8am saw the highest rate of speeding on this road type.

Time of day	% Speeding	% Not Speeding	Sample Size
12am-4am	32%	68%	202
4am-8am	40%	60%	889
8am-12pm	25%	75%	2469
12pm-4pm	35%	65%	2478
4pm-8pm	25%	75%	1330
8pm-12am	30%	70%	1819





## Degree of violation on 100km/h roads

- The tables below capture the degree of violation on 100km/h roads.
- As can be seen from the data, almost 75% of motorists (excluding HGV drivers) did not exceed the speed limit, and approximately 18% of motorists exceeded the speed limit by up to 10km/h.
- Over 55% of HGV drivers broke the speed limit of 80km/h by up to 10km/h, and 23% of HGV drivers broke the speed limit by over 10km/h.

Degree of violation (all vehicles, excluding HGVs)	%	Sample Size
Not Speeding	75%	6221
>100km/h & <=110km/h	18%	1541
>110km/h & <=120km/h	5%	409
>120km/h	2%	159

Degree of violation (HGVs)	%	Sample Size
Not Speeding	20%	171
>80km/h & <=90km/h	57%	486
>90km/h	23%	200



## **Analysis by Road Type – 120km/h**

## 120km/h Roads Summary

- On 120km/h roads, less than 20% of passenger cars (13%) and LGVs (19%) were found to have exceeded the speed limit.
- The rate of compliance was much lower for drivers of HGVs, at 32%. The speed limit for HGVs on this road type is 90km/h. This is consistent with a trend that has been observed on 120km/h roads in recent studies.

Vehicle Type	% Speeding	% Not Speeding	Sample Size
Passenger Cars	13%	87%	10001
LGVs	19%	81%	2172
HGVs	32%	68%	2225

- Rates of compliance with the speed limit were slightly higher at weekends on this road type. 18% of motorists broke the speed limit on 120km/h roads during the week, with this figure dropping to 16% at the weekend (Saturday and Sunday).



## Time of day breakdown – 120km/h roads

- The table below captures the speeding rates by time of day on 120km/h roads.
- Compliance rates were also high overall across the different time periods. Similar to the situation on the 100km/h roads, the period from 4am-8am saw the highest rate of speeding (30%).

Time of day	% Speeding	% Not Speeding	Sample Size
12am-4am	23%	77%	323
4am-8am	30%	70%	1229
8am-12pm	19%	81%	4091
12pm-4pm	15%	85%	2542
4pm-8pm	14%	86%	2413
8pm-12am	15%	85%	4063



## Degree of violation on 120km/h roads

- The table below captures the degree of violation on 120km/h roads.
- As can be seen from the data, 85% of motorists (excluding HGV and bus drivers) did not exceed the speed limit, and 12% of motorists exceeded the speed limit by up to 10km/h

Degree of violation (all vehicles, excluding HGVs and buses)	%	Sample Size
Not Speeding	85%	10424
>120km/h & <=130km/h	12%	1429
>130km/h	3%	345



## Degree of violation on 120km/h roads cont.

- The tables below capture the degree of violation on 120km/h roads for drivers of HGVs and buses.
- Almost 1 in 4 HGV drivers broke the speed limit of 90km/h by up to 10km/h, and 23% of bus drivers broke the speed limit of 100km/h by up to 10km/h.

Degree of violation (HGVs)	%	Sample Size
Not Speeding	68%	1502
>90km/h & <=100km/h	24%	538
>100km/h & <=110km/h	4%	94
>110km/h	4%	91

Degree of violation (Buses)	%	Sample Size
Not Speeding	74%	177
>100km/h & <=110km/h	23%	55
>110km/h	3%	6



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# International Comparison

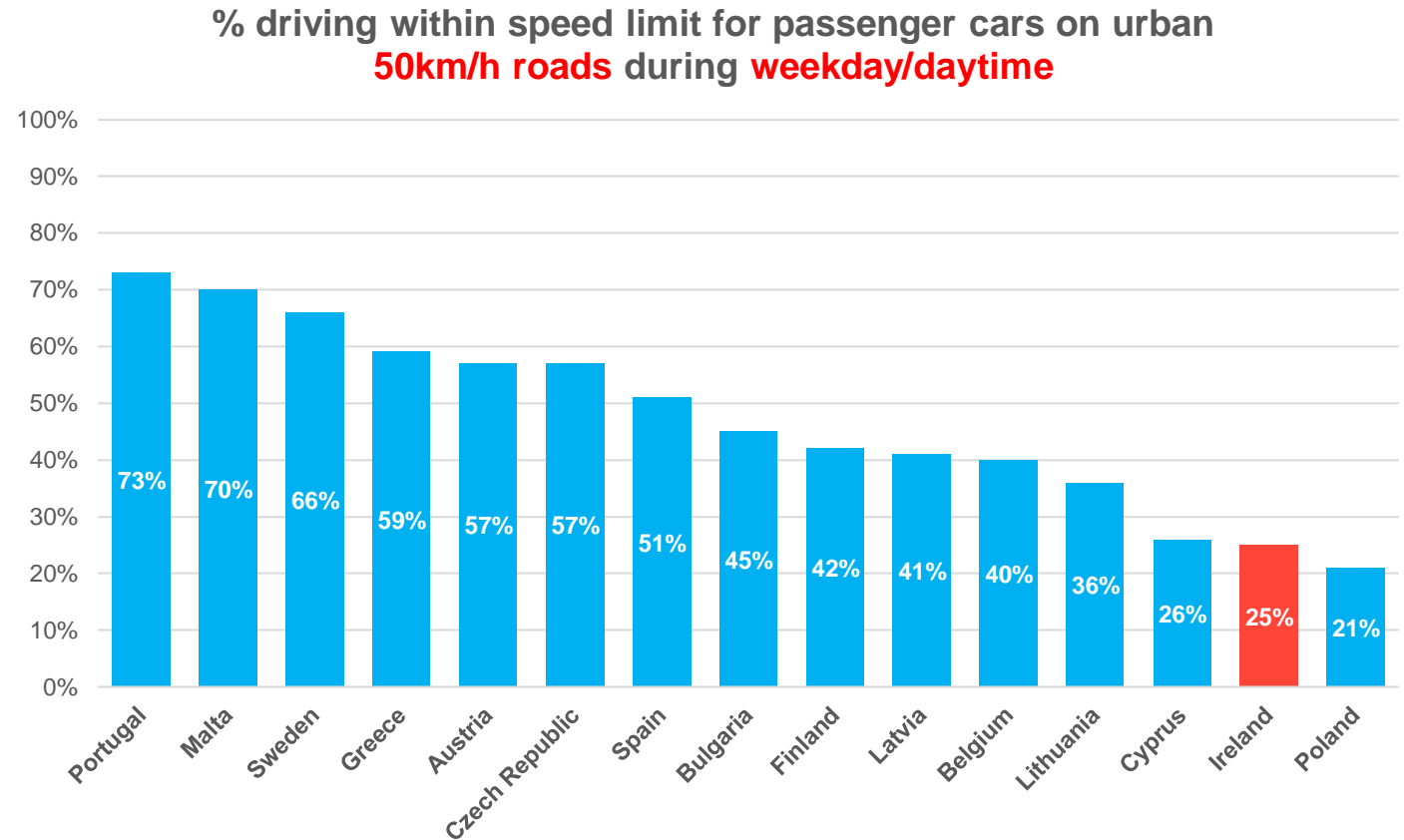
## Baseline Project – Speeding SPI

- As part of the Baseline Project, the percentage of passenger car drivers driving within the speed limit on various road types during weekday daylight hours was calculated.
- Data collected by the RSA in October 2021 formed the basis of this SPI.
- On **motorways**, 88% of passenger car drivers in Ireland were driving within the speed limit during weekday daylight hours – the 2<sup>nd</sup> highest rate across 15 Member States.
- On **rural roads**, 80% of passenger car drivers in Ireland were driving within the speed limit during weekday daylight hours – the 4<sup>th</sup> highest rate across 15 Member States.
- The pattern is different on **urban roads**, however, where only 25% of passenger car drivers in Ireland were driving within the speed limit during weekday daylight hours.
- This rate on urban roads represents the 2<sup>nd</sup> lowest level of compliance across 15 Member States.
- A detailed report on the speeding SPI has been published: [Speeding SPI Report](#)



## Baseline Project – Urban 50km/h Results

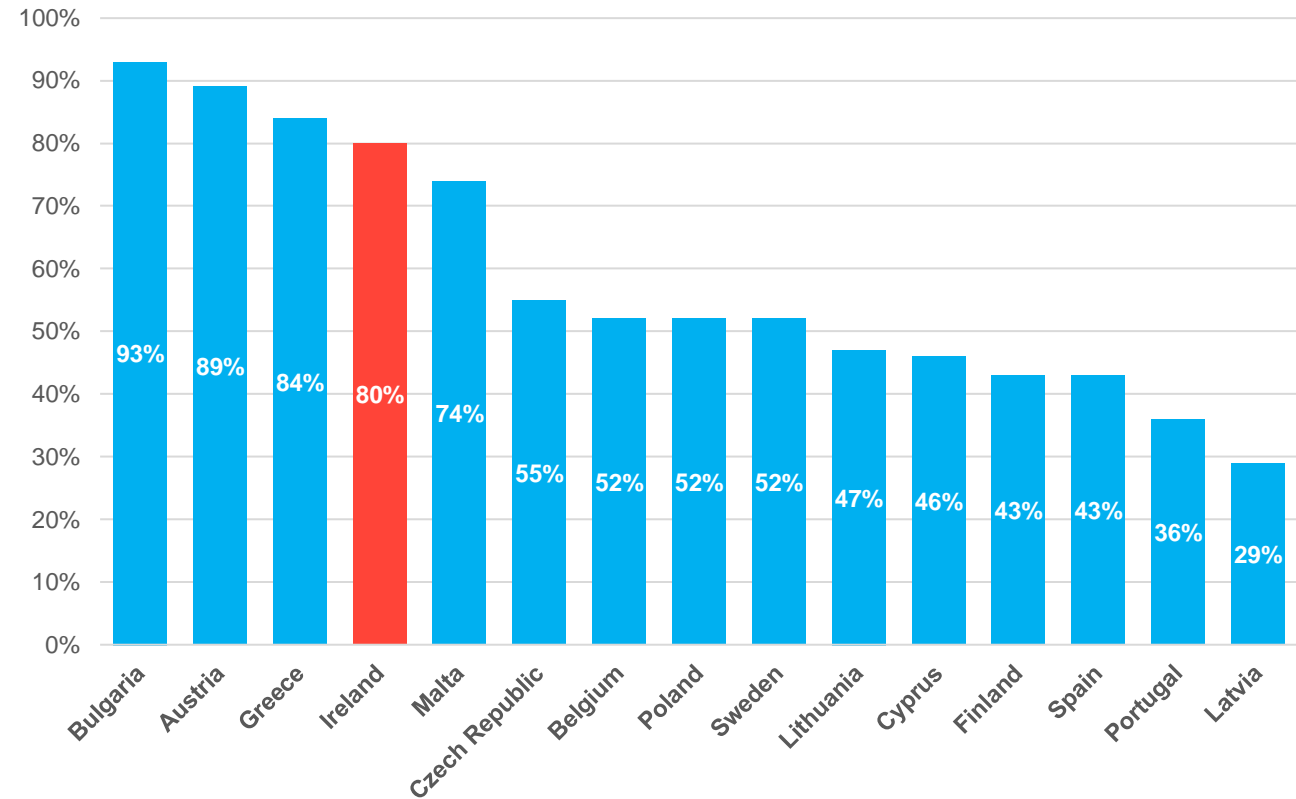
- The figure on the right is an extract from the Baseline Speeding SPI Report, and it shows Ireland's compliance rate for passenger car drivers on urban 50km/h roads during weekday daytime hours.
- As can be seen from this graph, Ireland's performance on urban roads was very poor.
- Data used for Ireland in this figure is based on data collected by the RSA in October 2021.



# Baseline Project – 100km/h Results

- The figure on the right is an extract from the Baseline Speeding SPI Report, and it shows Ireland’s compliance rate for passenger car drivers on 100 km/h roads during weekday daytime hours.
- Data used for Ireland in this figure is based on data collected by the RSA in October 2021.

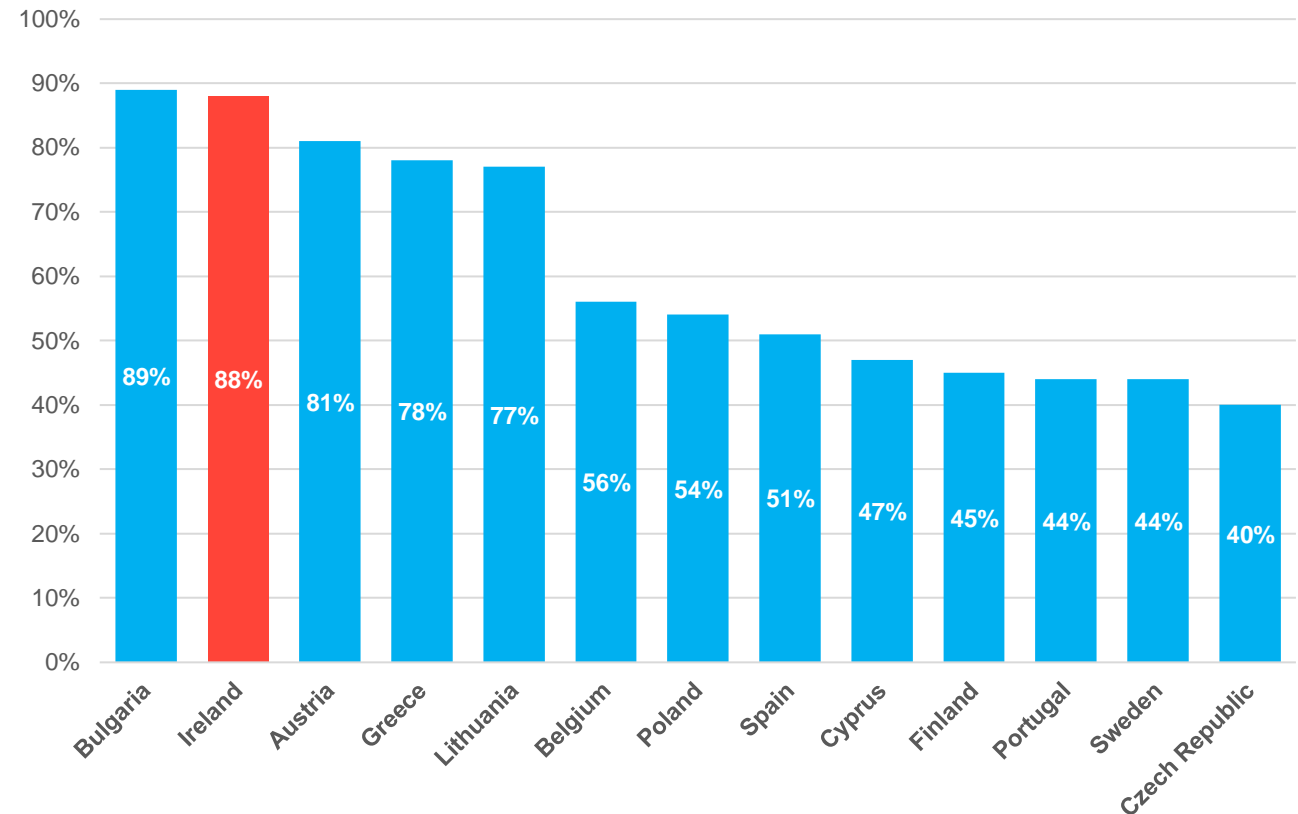
% driving within speed limit for passenger cars on 100km/h roads during weekday/daytime



## Baseline Project – Motorway Results

- The figure on the right is an extract from the Baseline Speeding SPI Report, and it shows Ireland's compliance rate for passenger car drivers on motorways during weekday daytime hours.
- Data used for Ireland in this figure is based on data collected by the RSA in October 2021.

% driving within speed limit for passenger cars on motorways during weekday/daytime



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## Key Results

## Key Results

- Rates of compliance with the speed limit generally increased as the speed limit of the road increased.
- E.g., 58% of motorists were found to have driven in excess of the speed limit on 30km/h roads, with this rate dropping to 17% on 120km/h roads.
- This finding is consistent with recent historic results, where compliance rates were as low as 23% on 50km/h roads in 2021 but have been considerably higher on 100km/h and 120km/h roads.
- For all road types, except 80km/h and 120km/h roads, non-compliance with the speed limit was higher at the weekend. Non-compliance with the speed limit at the weekend was highest on 50km/h roads.
- On all road types the highest rates of non-compliance with the speed limit were observed within the 8pm-8am time periods, oftentimes specifically between 4am-8am, suggesting that speeding is more prevalent late at night and into the early part of the morning.
- The majority of non-compliant drivers on the various road types were found to have exceeded the speed limit by up to 10km/h. The rates of drivers found to be driving in excess of 10km/h on each road type was relatively lower.
- On 100km/h and 120km/h roads, where a different speed limit applies to HGV drivers, this survey found a much higher level of non-compliance for these vehicle types relative to passenger cars and LGVs.
- When comparing Ireland's results with other EU Member States in the context of the Baseline Project, only one country had a higher rate of speeding on 50km/h roads, whereas Ireland's performance was considerably better on both 100km/h and 120km/h roads, 4<sup>th</sup> and 2<sup>nd</sup> highest, respectively. These results are based on data collected by the RSA in October 2021, and relate to passenger cars driving during weekday daytime periods. Trendline results for 2023 and 2024 for speeding will be available by the end of 2025.



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# Appendix

# County Matrix

■ The tables below and in the following slides provide a breakdown of the number of sites used in the study by county and road type.

County	Road Type	Number of sites
Cork	30km/h	2
Dublin	30km/h	12
Cork	50km/h	8
Dublin	50km/h	18
Galway	50km/h	1
Kildare	50km/h	1
Laois	50km/h	1
Limerick	50km/h	1
Mayo	50km/h	1

County	Road Type	Number of sites
Tipperary	50km/h	1
Cork	60km/h	3
Donegal	60km/h	1
Dublin	60km/h	2
Galway	60km/h	3
Kerry	60km/h	2
Laois	60km/h	1
Meath	60km/h	3
Roscommon	60km/h	1



## County Matrix

County	Road Type	Number of sites
Wexford	60km/h	1
Cork	80km/h	3
Galway	80km/h	1
Kildare	80km/h	2
Kilkenny	80km/h	1
Laois	80km/h	1
Limerick	80km/h	1
Monaghan	80km/h	1
Tipperary	80km/h	2
Wexford	80km/h	1
Wicklow	80km/h	1

County	Road Type	Number of sites
Cork	100km/h	2
Donegal	100km/h	1
Galway	100km/h	1
Kerry	100km/h	1
Kildare	100km/h	1
Limerick	100km/h	1
Mayo	100km/h	1
Tipperary	100km/h	1
Wexford	100km/h	1
Wicklow	100km/h	1
Cork	120km/h	1





## County Matrix

County	Road Type	Number of sites
Dublin	120km/h	2
Galway	120km/h	1
Kildare	120km/h	2
Limerick	120km/h	1
Tipperary	120km/h	1
Wexford	120km/h	1
Wicklow	120km/h	1



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