Bonneagar Iompair Éireann
Transport Infrastructure Ireland

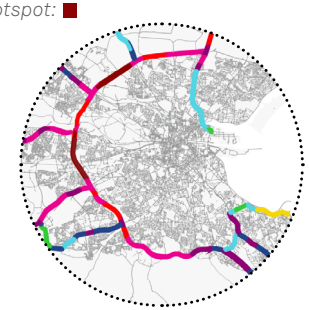
TRANSPORT INFRASTRUCTURE IRELAND

NATIONAL ROAD NETWORK INDICATORS 2015

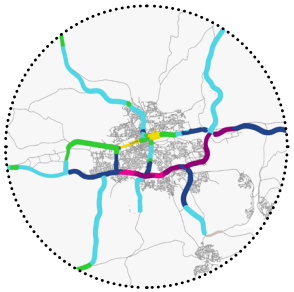
A: KEY TREND SUMMARY

TRAVEL HOTSPOTS:

M50 Dublin area:
130,000+ vehicles per day
Hotspot:



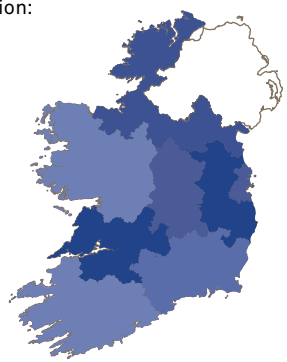
N40 Cork area:
75,000+ vehicles per day
Hopspot:



TRAFFIC GROWTH:

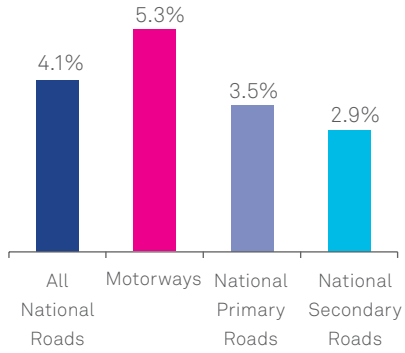
Traffic Growth by Region:

Mid-East	*5.9%*
Mid-West	*5.4%*
Dublin	*5.2%*
Midlands	*4.8%*
Border	*4.4%*
South East	*4.1%*
West	*2.6%*
South West	*2%*



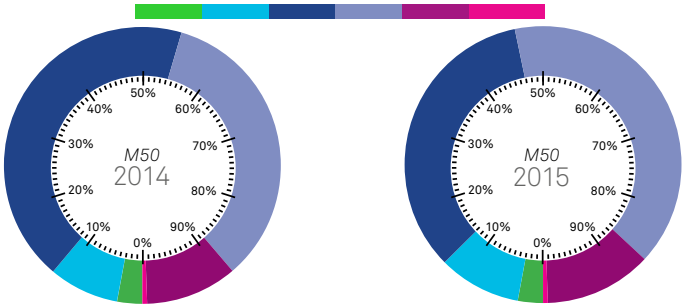
+4.1%

Traffic Growth across the network in 2015 was 4.1%.



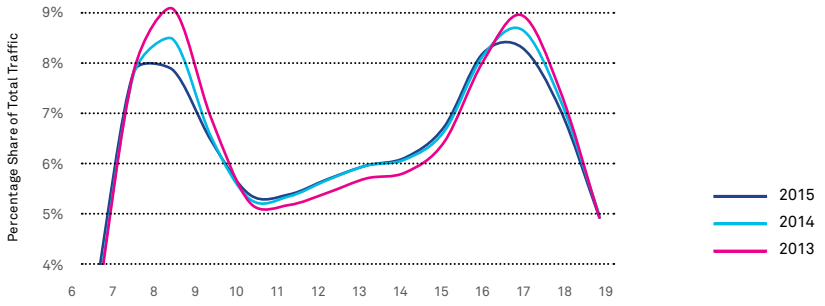
M50 LEVEL OF SERVICE:

Morning rush hour: *Free flow to ⟶ forced or breakdown flow*



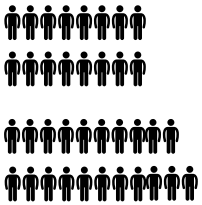
CHANGES IN PEAK HOUR SPREAD M50:

Peak hour spreading continues to occur with the peak periods expanding to 6.30 – 9.30 and 15.30 – 18.30. This is as a result of continued growth on the National Road network and traffic demand reaching previously unreached levels especially on the M50.



FATAL COLLISIONS ON THE NATIONAL ROAD:

Pedestrians:

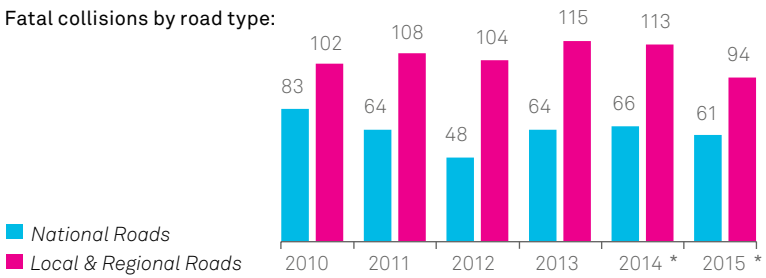


2015 16

2010 21

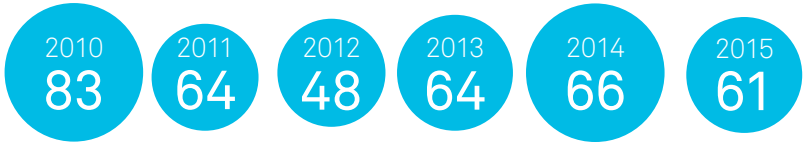
-24%

Fatal collisions by road type:



Total fatal collisions on the National Roads (2010-2015):

-27%



**Fatal collisions 2014: Garda Pulse data (not verified by RSA) & fatal collisions 2015: AGS data (not verified by RSA)*

B: NEWS + UPDATES

Establishment of TII

In August 2015, the National Roads Authority (NRA) and the Railway Procurement Agency (RPA) were merged to become Transport Infrastructure Ireland (TII).

To find out more about TII visit www.tii.ie

National Transport Model (NTpM)
Since its release in 2013 the NTpM is updated annually using data from the Traffic Monitoring Units. Documentation regarding the National Transport Model can be located on the TII website at *www.tii.ie/tii-library/strategic-planning/*

Traffic Monitoring Units
TII now have over 370 traffic monitoring units around the country which will be used to monitor traffic patterns and will be used to plan future interventions.
See website: *www.nratrafficdata.ie*

Motorway Service Helpline
A Motorway Service Helpline has been set-up to assist roads users in difficulty on a Motorway. All calls are directed through the Motorway Traffic Control Centre (MTCC) and the number is:

0818-715-100 or;
operator@nraits.ie

Further information and live traffic updates are available on www.tiitraffic.ie

CONTENTS

INTRODUCTION

Transport Infrastructure Ireland's mission is to deliver transport infrastructure and services that contribute to the quality of life of the people of Ireland and support the country's economic growth

For this purpose, TII has overall responsibility not only for the planning and supervision of the construction and maintenance works on these roads, but also for ensuring the efficient use and safe operation of the National Road network.

Efficient use of the National Road network provides benefits to road passenger and road freight users in the form of shorter journey times, reduced congestion and reductions in the cost of operating vehicles. Society as a whole benefits from increased economic productivity, reduced energy consumption and a better environment.

If the National Road network is operated to a high standard, then road users will enjoy safe journeys with short and predictable journey times.

Transport Infrastructure Ireland considers it important to monitor the performance and use of the National Road network and to share this information with the public.

This publication sets out some key indicators of performance and usage of the National Roads network.

ONE: ROAD NETWORK

A: LENGTH OF NATIONAL ROAD NETWORK

Length of National Road network by road type 2015

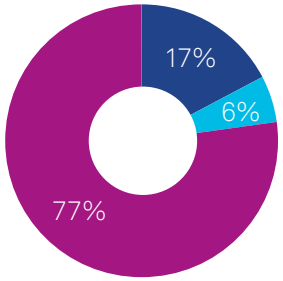
There are in excess of 5,300 kilometres of National Road network in Ireland.

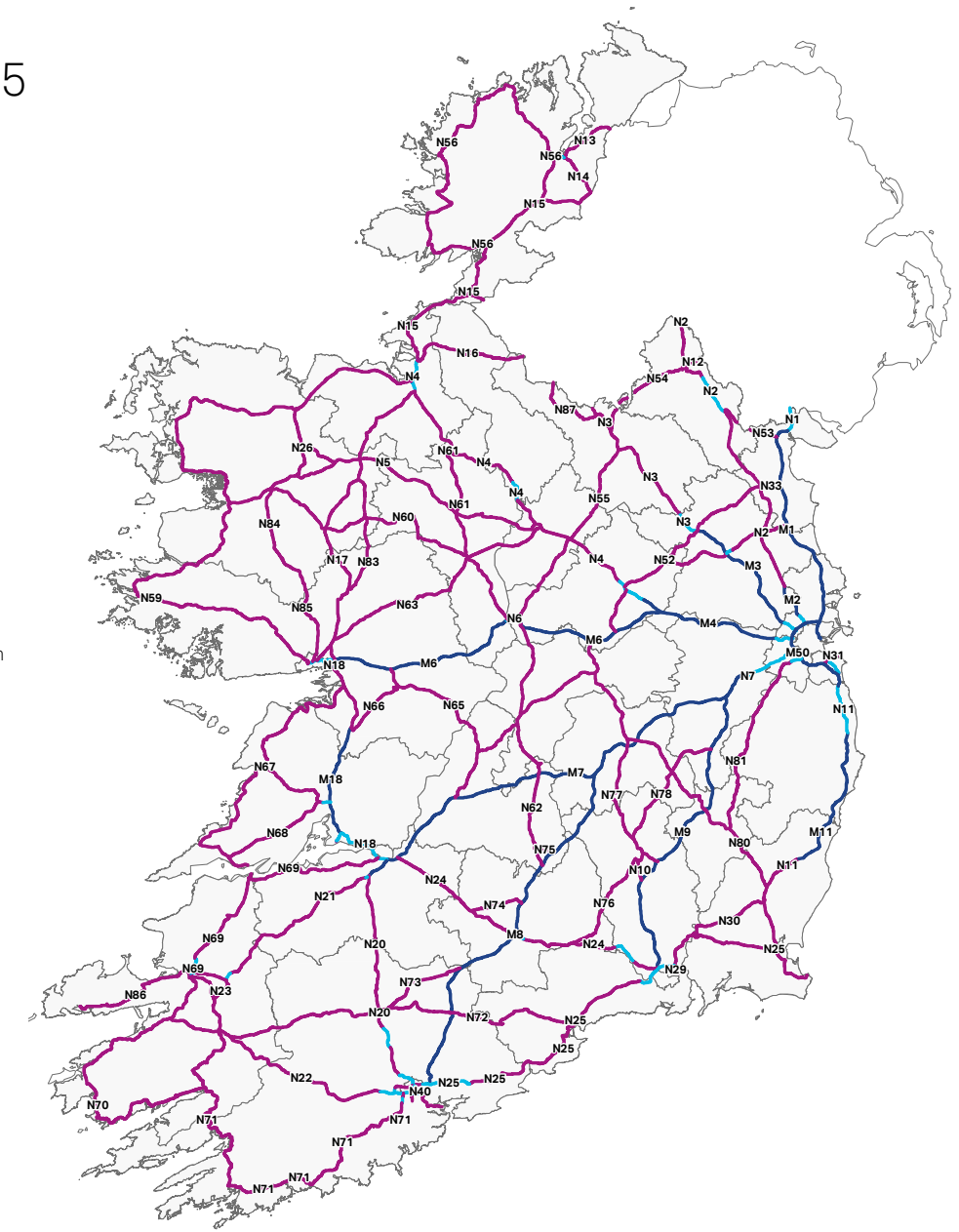
The National Road network is comprised of 916 kilometres of motorway, 293km of dual carriageway, and 4,097km of single carriageway.

The actual length of the National Road network fluctuates year on year due to road reclassification, realignments to existing National Roads, new roads, opening and analysis/updating of data in the TII Roads Database. For example, the opening of the M11 Arklow/Rathnew scheme (July 2015).

Road type:

Motorway	916km
Dual carriageway	293km
Single carriageway	4,097km



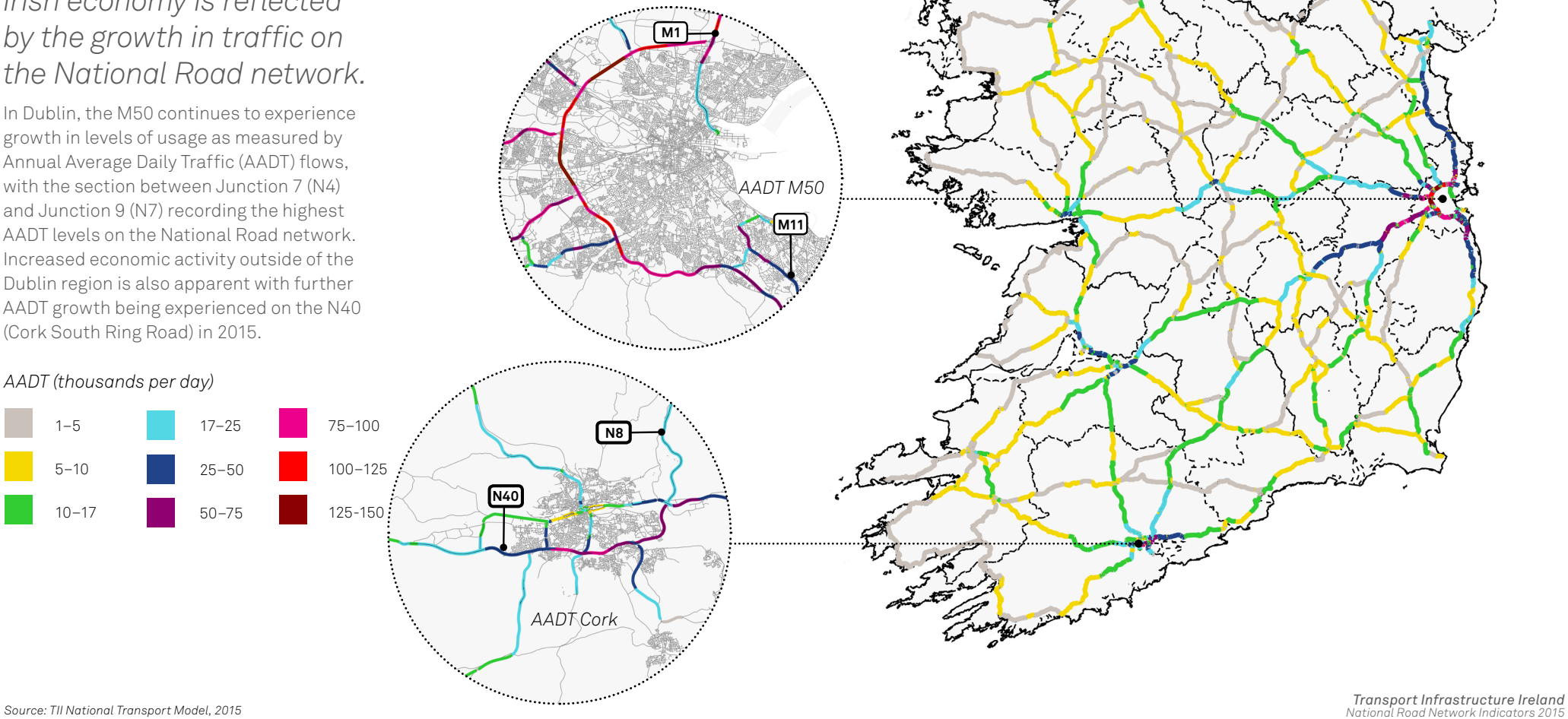


B1: LEVEL OF USAGE OF THE ROAD NETWORK

Level of usage of the National Road network as measured by Annual Average Daily Traffic (AADT)

The continued growth in the Irish economy is reflected by the growth in traffic on the National Road network.

In Dublin, the M50 continues to experience growth in levels of usage as measured by Annual Average Daily Traffic (AADT) flows, with the section between Junction 7 (N4) and Junction 9 (N7) recording the highest AADT levels on the National Road network. Increased economic activity outside of the Dublin region is also apparent with further AADT growth being experienced on the N40 (Cork South Ring Road) in 2015.

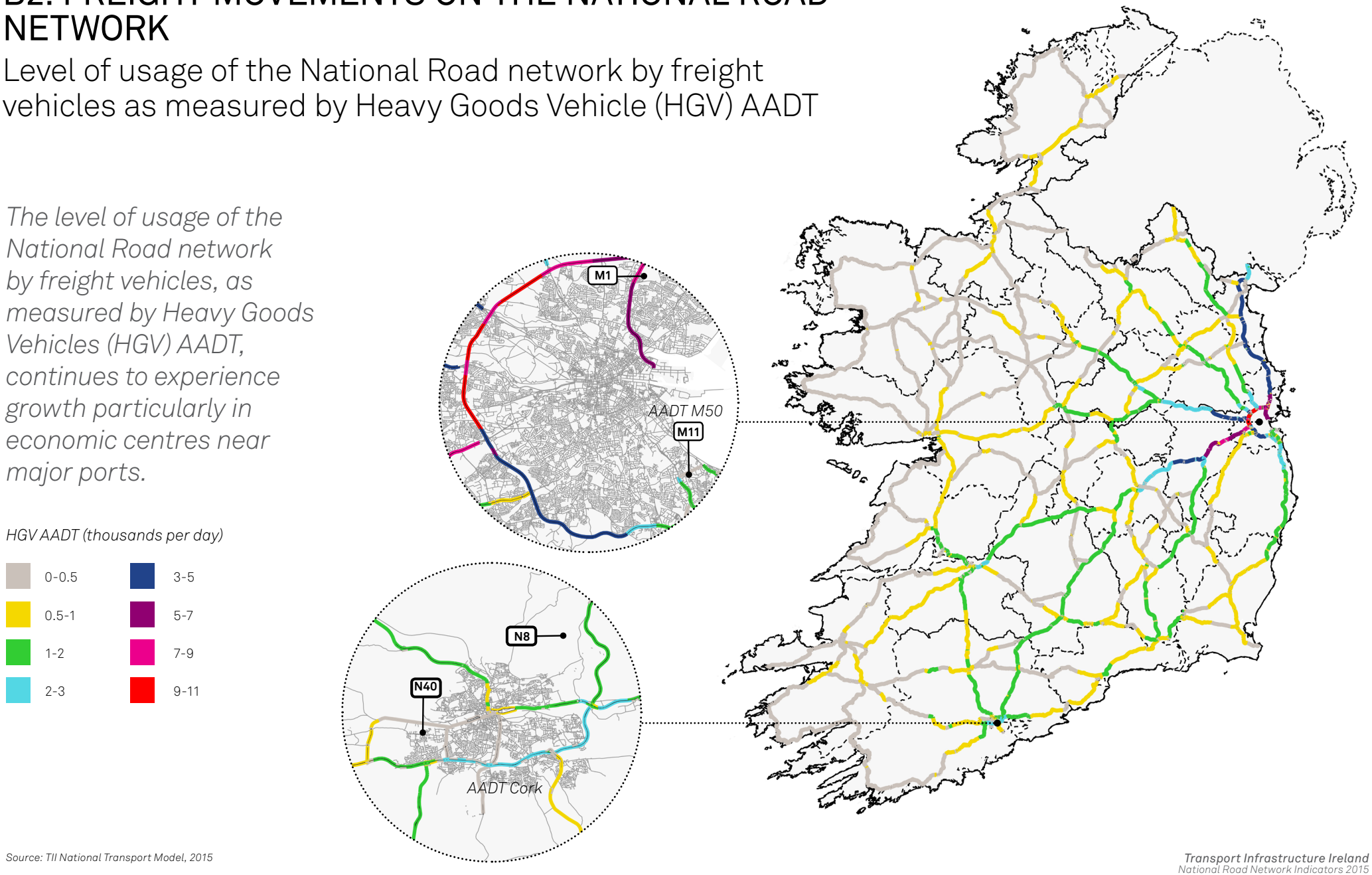


Source: TII National Transport Model, 2015

B2: FREIGHT MOVEMENTS ON THE NATIONAL ROAD NETWORK

Level of usage of the National Road network by freight vehicles as measured by Heavy Goods Vehicle (HGV) AADT

The level of usage of the National Road network by freight vehicles, as measured by Heavy Goods Vehicles (HGV) AADT, continues to experience growth particularly in economic centres near major ports.



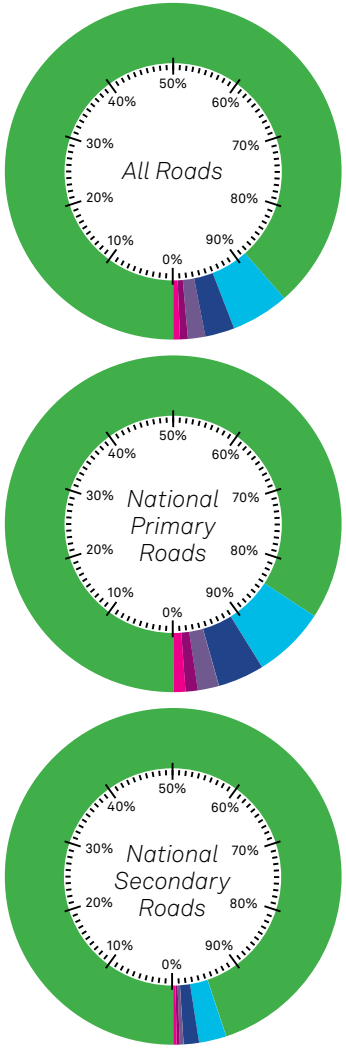
Source: TII National Transport Model, 2015

C1: LEVEL OF SERVICE:
MORNING RUSH-HOUR, NATIONAL ROADS

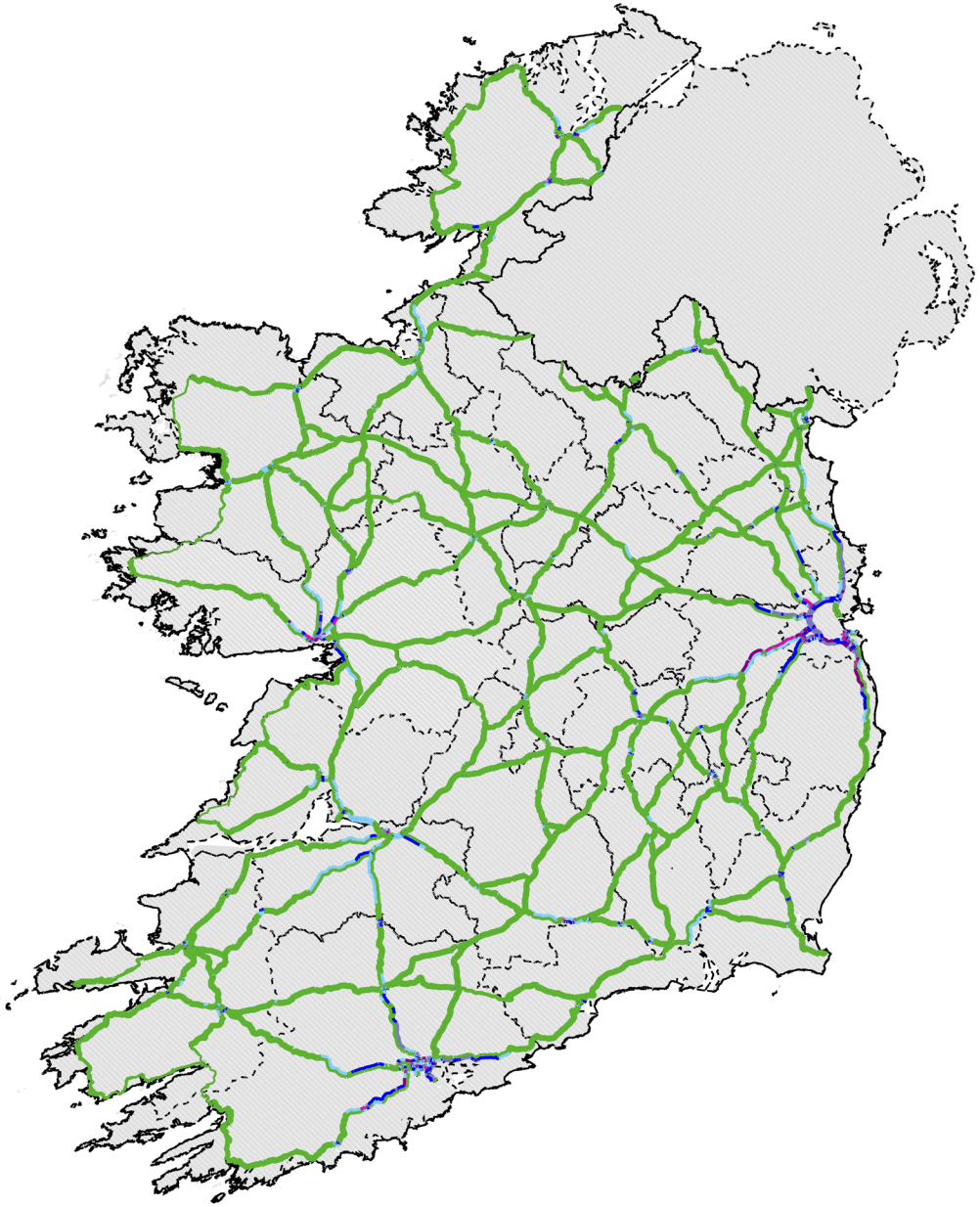
Proportion of the National Roads network operating under each level of service condition

The level of service (LOS) provided by roads may be assessed using recognised international standards. LOS is a quality measure describing operational conditions within a traffic stream. Following the substantial investment in National Roads over the last decade, most route sections are operating to the highest standard of service. However, for certain roads such as the M50, further interventions such as demand management are required to ensure that higher levels of service are achieved.

For further information see: Transport Research and Information Note: A Study of Lane Capacity, online at www.tii.ie/tii-library/strategic-planning



- A. Free flow
- B. Reasonably free flow
- C. Stable flow
- D. Approaching unstable flow
- E. Unstable flow
- F. Forced or breakdown flow



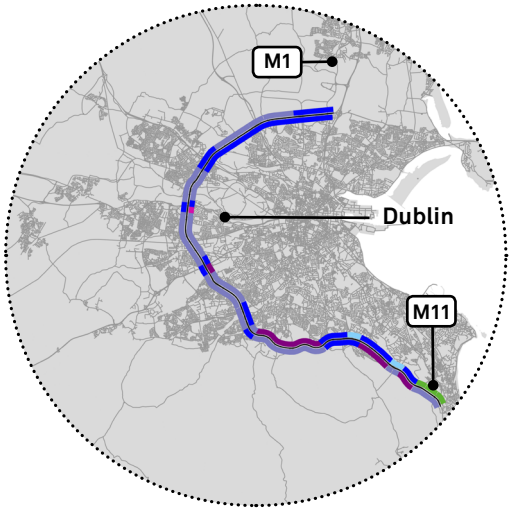
Source: TII National Transport Model, 2015

C2: LEVEL OF SERVICE
M50 AND N40
Proportion of the M50 and Cork Ring Road operating under each level of service condition

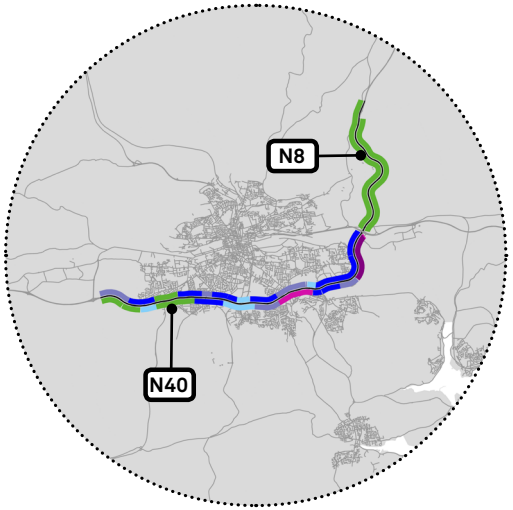
The level of service on the M50 in Dublin and Cork Ring Road is presented opposite. The proportion of the M50 operating at free or stable flow decreased by 8 percentage points between 2014 and 2015.

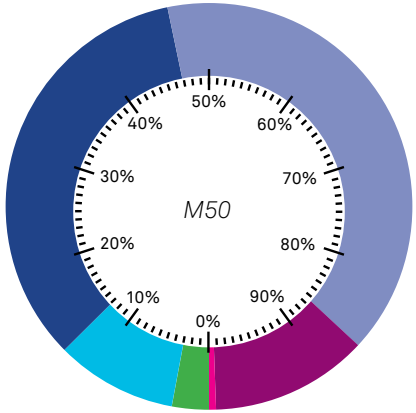
- A. Free flow
- B. Reasonably free flow
- C. Stable flow
- D. Approaching unstable flow
- E. Unstable flow
- F. Forced or breakdown flow

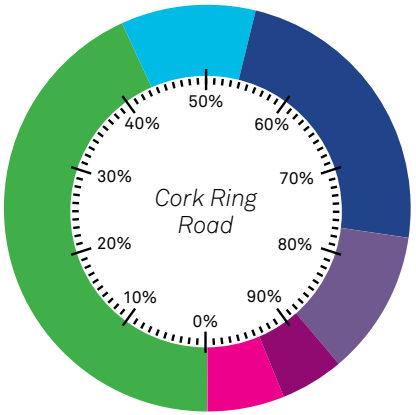
M50



Cork Ring Road







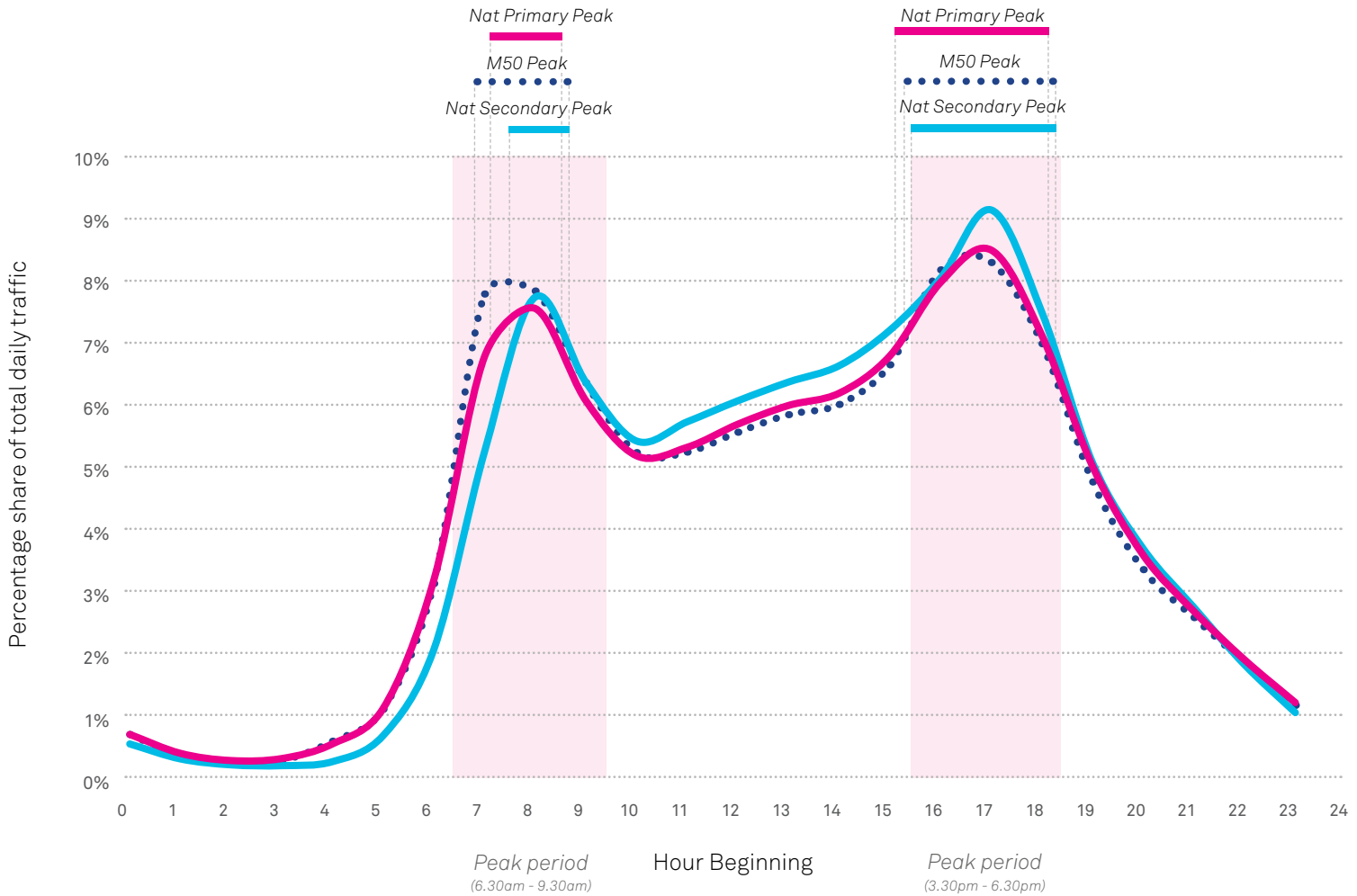
Source: TII National Transport Model, 2015

D: ROADS USAGE OVER THE DAY

Profile of the usage of the National Road network by time of day

The peak periods on our National Roads are extending outwards due to increased demand and congestion.

In the morning, the peak period lasts between 6.30am and 9.30am whilst in in the evening, the peak covers the period between 3:30pm and 6:30pm. Peak traffic hours have a level of traffic some 30% to 50% above off-peak levels. The M50 is the most used road in the country with daily weekday traffic of over 130,000 along its busiest sections. The peaks on the M50 are more prolonged than other roads with significant traffic flows being maintained during off-peak periods. The trend of 'peak hour spreading' continued in 2015, with the peak period share of total daily M50 traffic reducing by 1% point compared to the previous year.



M50 Motorway
National Primary
National Secondary
Peak period

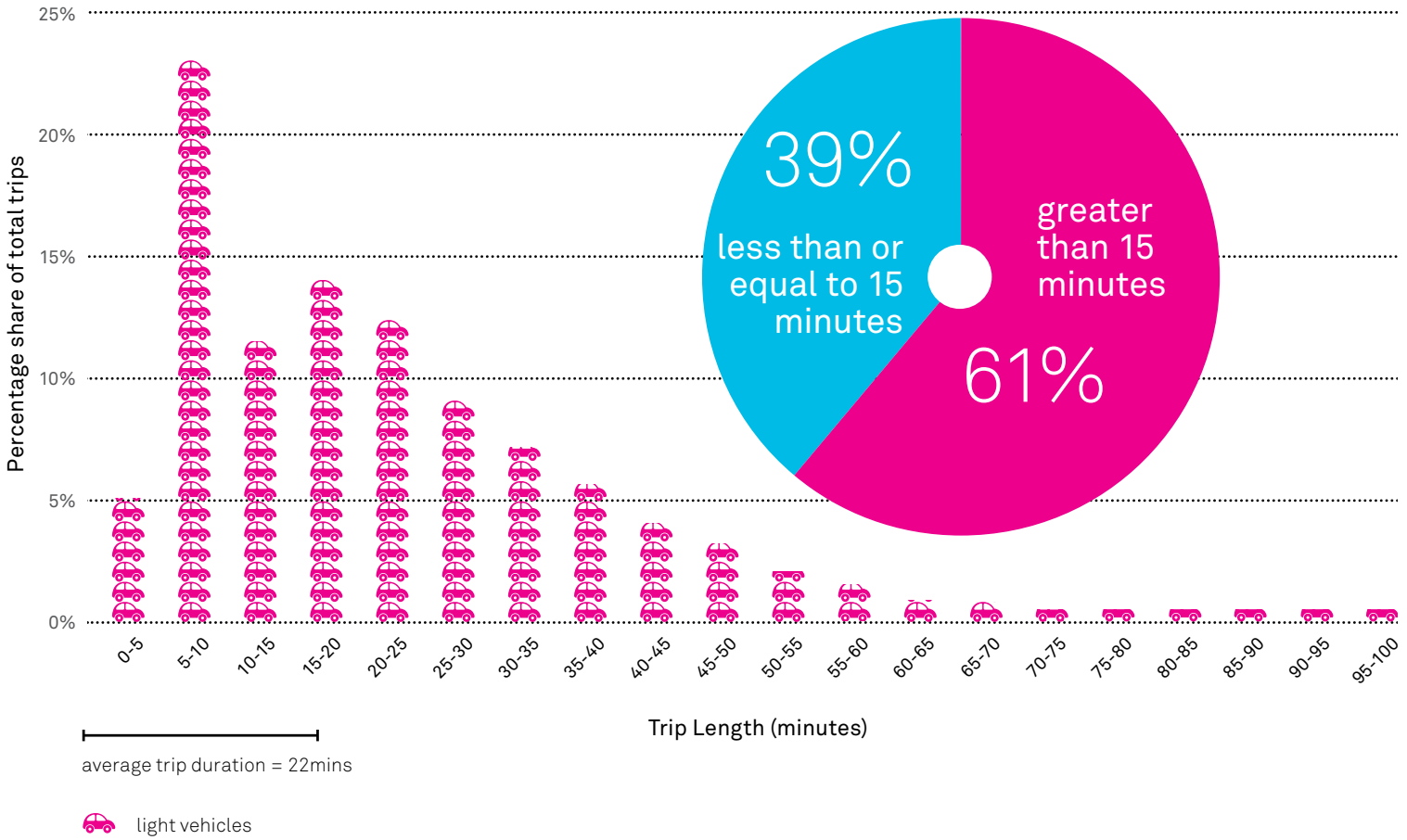
Source: TII National Transport Model, 2015

E: TRIP DURATION

NATIONAL ROADS AND REGIONAL ROADS - AM PEAK

Profile of the trips made on the National and Regional Roads network by their duration

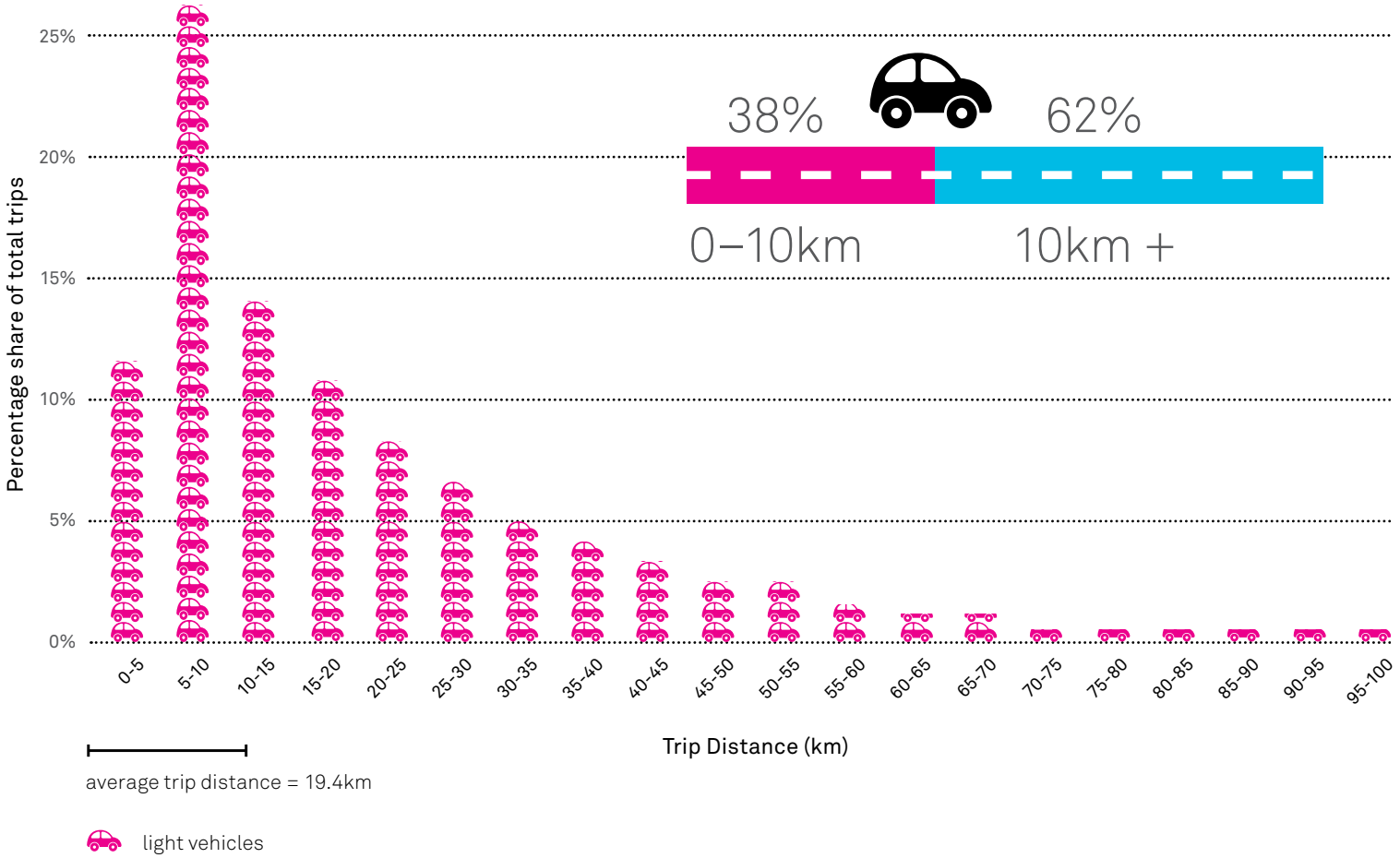
Across the road network, a significant portion of trips that people make are of short duration. In total, 39% of trips are of 15 minutes duration or less.



Source: TII National Transport Model, 2015

F: TRIP DISTANCE
NATIONAL AND REGIONAL ROADS - AM PEAK
Profile of the trips made on the National and Regional Roads network by their distance

Across the road network, a significant portion of trips that people make are short distance. In total, just over 50% of trips on the National and Regional road network are 15 kilometres or less.



Source: TII National Transport Model, 2015

G: ANNUAL TRAFFIC GROWTH RATES

Annual Traffic Growth 2014-2015

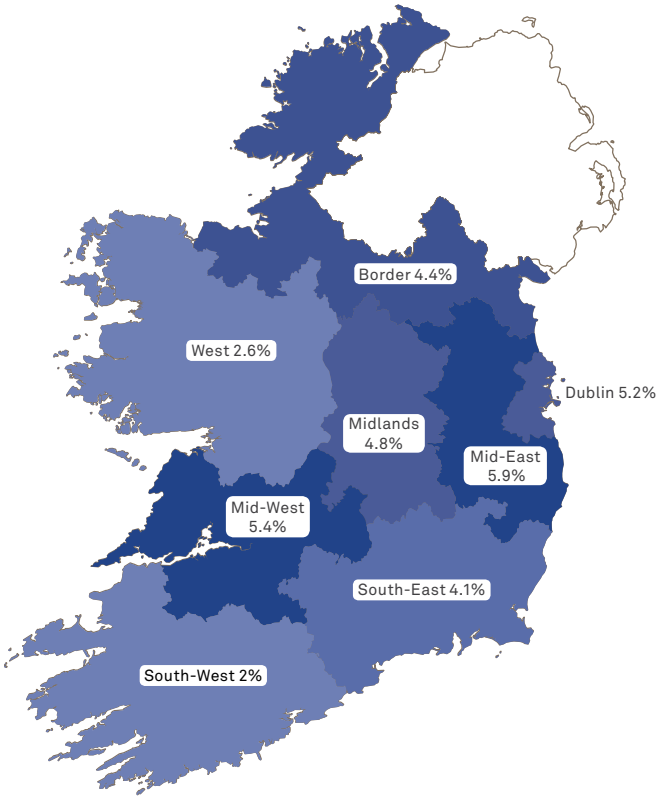
Traffic growth was 4.1% across the network in 2015.

The highest regional growth recorded in 2015 was in the Mid-East with 5.9% for the year. The Mid-West and Dublin also experienced significant growth at 5.3% and 5.2% respectively. The South West and West had the lowest year on year growth at 2.0% and 2.6% respectively.

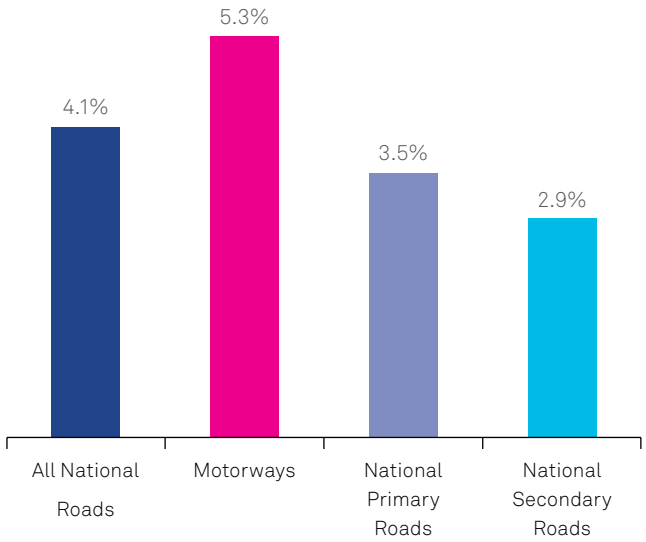
The greatest year on year traffic growth by road type was recorded on motorways; where traffic has increased 5.3% comparing 2014 with 2015.

Source: TII Traffic Monitoring Units

Growth by Region *(All Vehicles)*



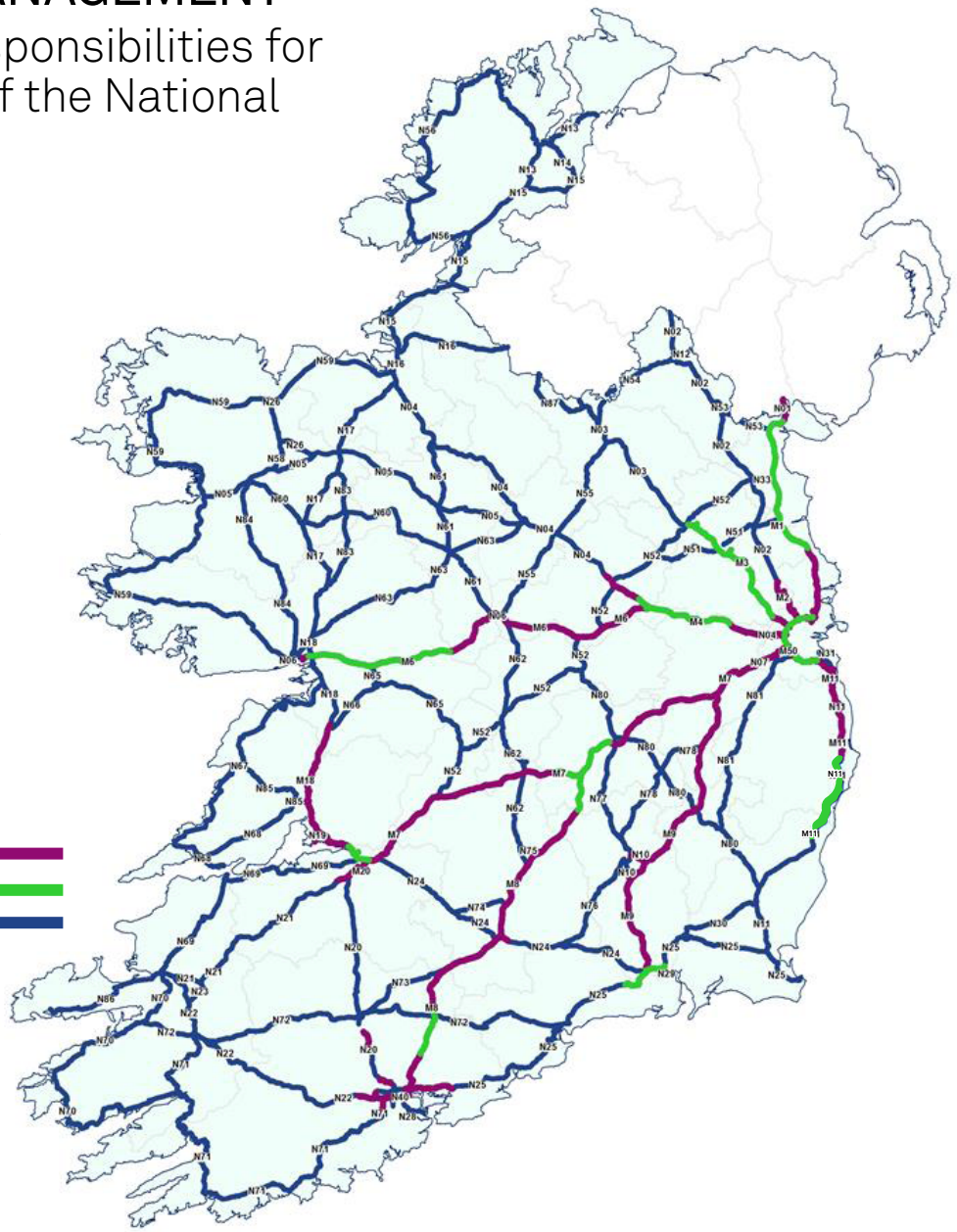
Growth by Road Type



H: NETWORK MANAGEMENT

Overview of the responsibilities for the Management of the National Road network

The management of the National Road network is assigned to a number of bodies with the majority share of National Primary and National Secondary roads being managed by Local Authorities. Motorways are managed under the Motorway Maintenance and Renewal Contracts (MMaRCs) or by PPP Concession companies in the case of the tolled motorways. The NRA manages the maintenance of 2,296 bridges, which includes all bridges on National Roads other than on PPP roads.



Key facts:

327
demountable snow ploughs

Our winter service fleet consists of:

360
salt spreaders

31,000
tonnes of salt were used on National Road Network in 2015

10,253
all emergency calls received by Motorway Traffic Control Centre including SOS phones

1,410
SOS phones in the country

49
nights in 2015 where the temperature reached below zero

96
weather stations in operation on the National Road Network

TWO: ECONOMIC

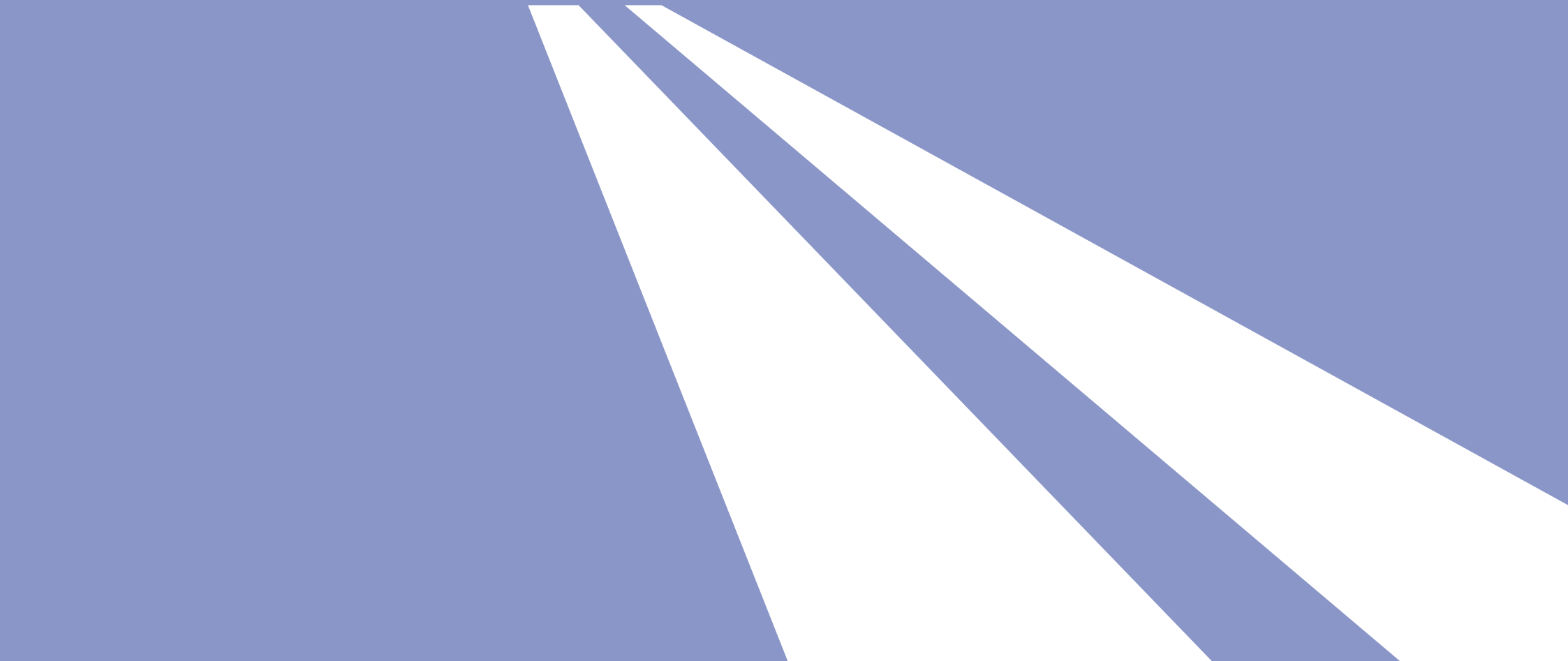
The economic indicators presented in this report are unlikely to alter significantly year on year so have been omitted for this version.

Please see the 2013 National Roads Indicators Report for the latest information.

The report is available at

http://www.tii.ie/tii-library/strategic-planning/

THREE: ROAD CONDITION

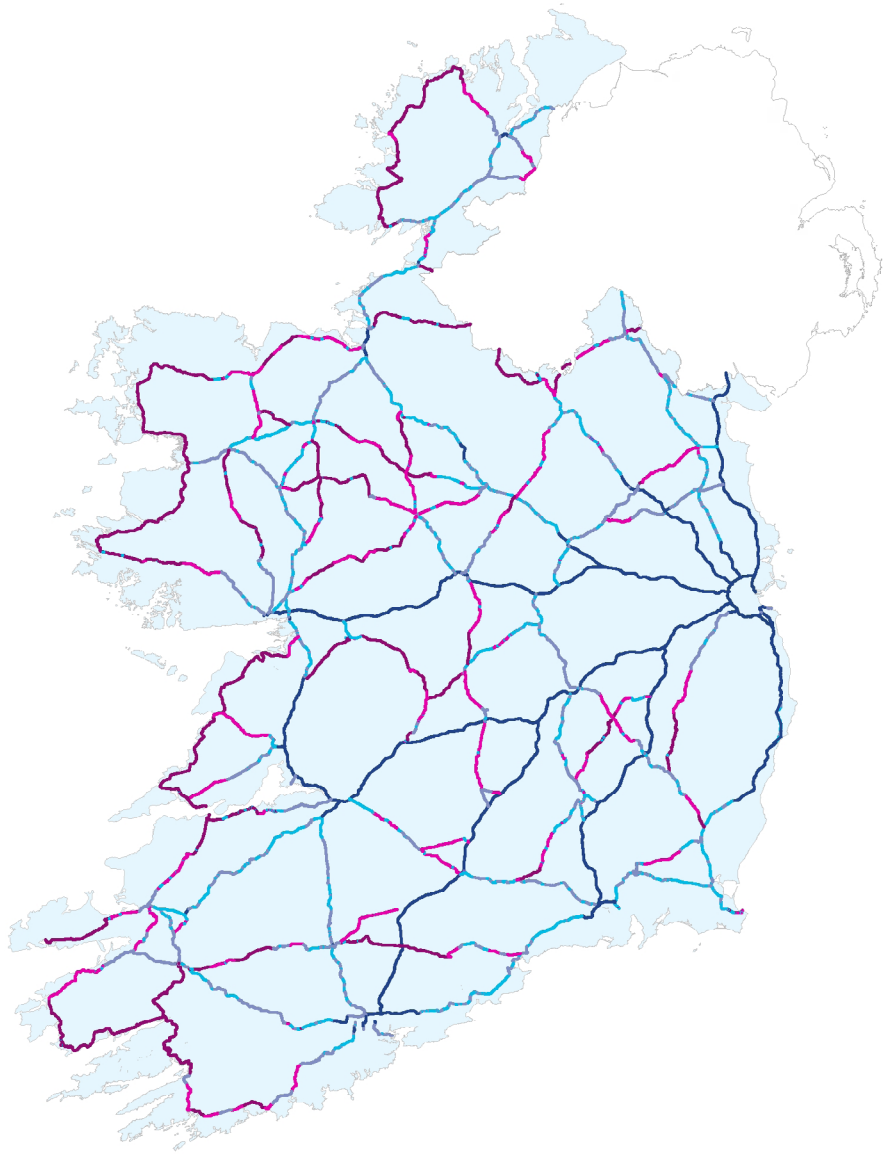


A: PAVEMENT MAINTENANCE

Overview of the status of the road pavement across the national road network by subnetwork type

The National Road network consists of over 5,400 kilometres of road pavements. The pavements are predominately made of layers of flexible materials designed to support traffic volumes/loads over their design lifespan of between 0 and 40 years. Owing to the diversity that exists across network pavements a series of 5 Subnetwork types has been defined, to assist in the ongoing management of the network. These Subnetworks are defined in terms of their characteristics, e.g type of pavement construction, pavement age, and traffic volumes carried.

Subnetwork		Classification
0	Motorways + dual carriageways	High speed, high volumes pavement, made up of Motorway and Dual Carriageway sections of the network. Much of this subnetwork is less than 10 years old.
1	Engineered pavement	Significant geometric and pavement design has taken place in the construction and/or rehabilitation of the pavement sections. Typically carry reasonably large volumes of traffic, and are identified by presence of hard shoulders adjacent to the carriageway.
2	Legacy pavement – high traffic	Legacy subnetwork, typically constructed without formal geometric or pavement design. Typically carries traffic volumes less than 10,000 AADT.
3	Legacy pavement – low traffic)	Legacy subnetwork, typically constructed without formal geometric or pavement design. Typically carries traffic volumes less than 5000 AADT.
4	Legacy pavement – very low traffic	Legacy subnetwork, typically constructed without formal geometric or pavement design. Typically carries traffic volumes less than 2000 AADT.



Source: NRA Pavement Condition Report 2015

B: CURRENT STATUS OF THE ROAD PAVEMENT CONDITION

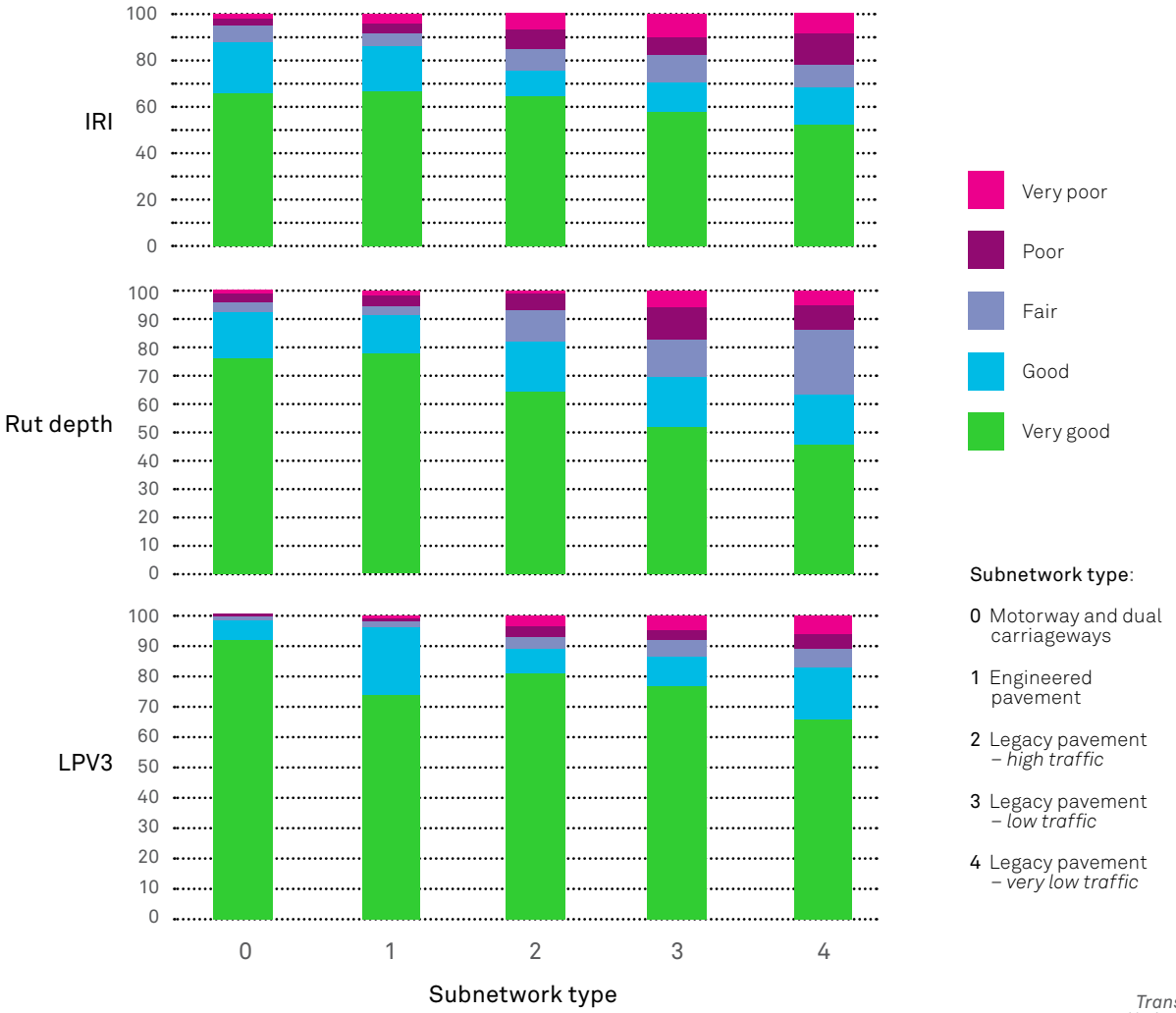
Overview of the condition of the road pavement across the National Road network by some key indicators

TII collects data on the pavement condition across the entire pavement network annually, using high speed machine survey vehicles. This data is used to select sites for treatment under the Pavement and Minor Improvements programme. As part of the annual survey of road pavement condition, data on a number of key indicator parameters are collected, including:

- **IRI (International Roughness Index)** which measures the response of vehicle to the pavement surface conditions
- **Rut Depth** which measures the level of rutting/deformation on the pavement caused by heavy traffic
- **LPV3 (Longitudinal Profile Variance)** which measures the level of bumps, potholes, sags etc in the pavement

In 2015, it was identified in relation to roads belonging to motorway/dual carriageway that:

- 67% of the network had very good IRI;
- 76% of the network had very good Rut Depth
- 90% had very good LPV3 levels



Source: NRA Pavement Condition Report

C: NATIONAL ROAD BRIDGE STRUCTURES

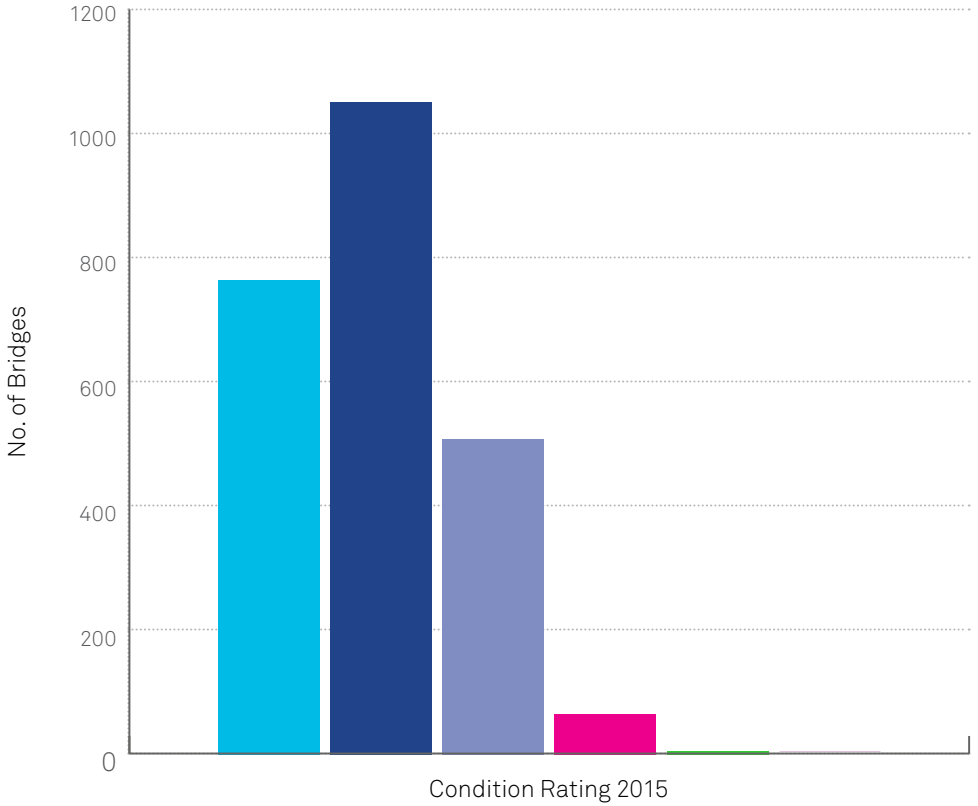
Overview of the quantum and condition of bridge structures on the National Road network

Bridges are key elements of the National Road system and maintenance and rehabilitation of bridges is a key part of the TII's asset management strategy.

The National Road network includes approximately 3,000 bridge structures of which 421 are on roads provided by public private partnerships.

Bridges are inspected on a regular cycle. Bridge components which are allocated a condition rating of 0 or 1 do not require repair work, whereas those assigned a rating of 2 or higher are scheduled for future repair.

The amount of bridges falling into the CR3+ categories reduced since 2014 however there was a, potentially associated, slight increase in the amount of bridges in the CR1 category.



CR 0: No or insignificant change.

CR 1: Minor Damage but no need of repair.

CR 2: Some Damage, repair needed when convienent.

CR 3: Significant Damage, repair within next financial year.

CR 4: Damage is critical, repair at once.

CR 5: Ultimate Damage. The component has failed or is in danger of total failure.

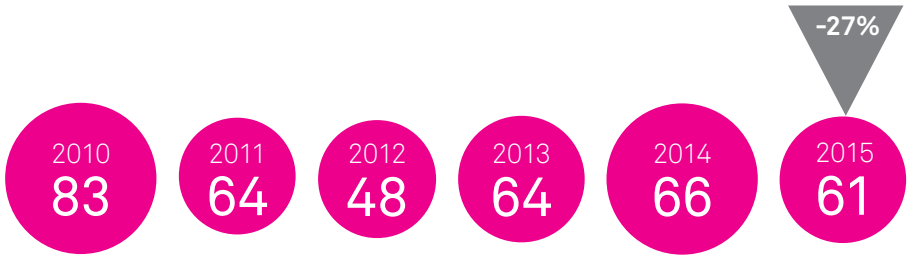
FOUR: SAFETY

A: FATAL COLLISIONS NATIONALLY

Trends in fatal collisions nationally by road type and collision type*

Total fatal collisions on National Roads:

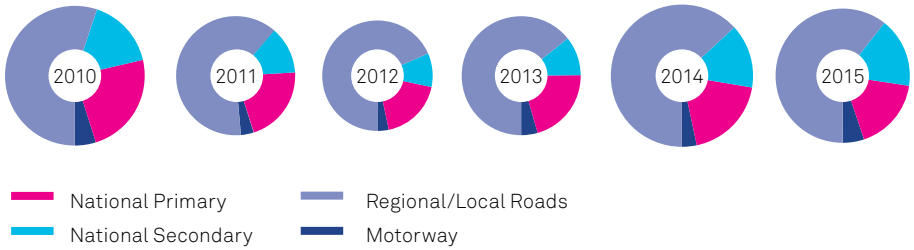
2010–2015



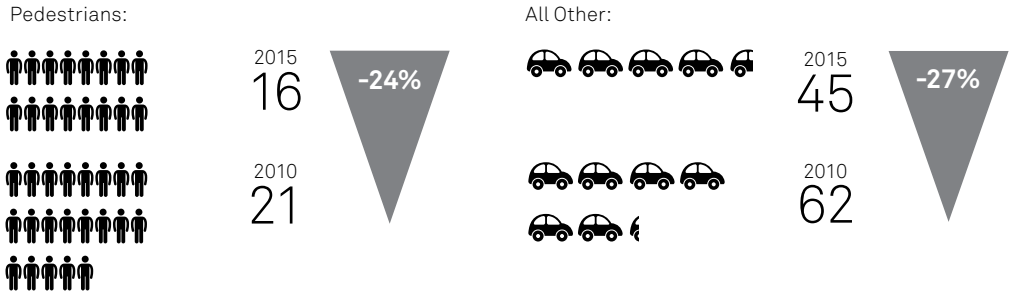
Trends in the distribution of fatal collisions by the type of road on which they occur, show that an increasing proportion of fatal collisions are occurring on non-National Roads.

The number of pedestrian related fatal collisions has been relatively volatile, as is expected due to the small numbers of such incidents overall.

Distribution of fatal collisions by road type (National & non-national):



Recent trends in total fatal collisions on National Roads:



The number of fatal collisions on the National Road network in Ireland has declined since 2010 and in the past number of years has remained reasonably consistent despite annual increases in traffic volumes. Provisional data available for 2015 show that fatal collisions are down 27% compared to 2010 when traffic volumes would have been significantly lower.

*Fatal collisions 2015: AGS data (not verified by RSA), Fatal collisions 2014: Garda Pulse data (not verified by RSA)**

FIVE: ACCESSIBILITY + ENVIRONMENT

The indicators pertaining to accessibility and environment presented in this report are unlikely to alter significantly year on year and have been omitted from this report.

Please see the 2013 National Roads Indicators Report for the latest information.

The report is available at

http://www.tii.ie/tii-library/strategic-planning/

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